

# Turkish Online Journal of Educational Technology

*Special Issue for INTE 2015*

*August, 2015*

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JOURNAL  
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EDUCATIONAL  
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**ISSN: 1303 - 6521**

**Indexed by**  
Education Resources Information Center – **ERIC**  
**SCOPUS - ELSEVIER**



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Published in TURKEY

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## **Message from the Editor-in-Chief**

Dear Colleagues,

We are very pleased to publish Special Issue 2 for INTE 2015 conference. This issue covers the papers presented at 6<sup>th</sup> International New Horizons in Education Conference which was held in Barcelona, Spain. These papers are about different research scopes and approaches of new developments and innovation in educational.

### **Call for Papers**

TOJET invites you article contributions. Submitted articles should be about all aspects of educational technology. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJET. Manuscripts must be submitted in English.

TOJET is guided by its editors, guest editors and advisory boards. If you are interested in contributing to TOJET as an author, guest editor or reviewer, please send your CV to [tojet.editor@gmail.com](mailto:tojet.editor@gmail.com).

**August, 2015**

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## A Comparison Of Positioning In Business Administration Education Between First Five Established Business Administration Departments At State And Private Universities In Turkey: A Content Analysis On Strategic Drivers And Curriculum

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**ABSTRACT**The main purpose of research is to reveal the positioning of business administration education both at state and private universities and attempt to clarify whether these departments train personnel initially to public sector or private sector organizations by conducting a conceptual content analysis of the curriculum of business administration departments. Courses have been evaluated on the concept of “business administration course”. The research sample consists of the business administration departments of 10 different universities in total including 5 state and 5 private universities which are well known as top 5 rooted universities in terms of business administration education experience in Turkey. Departments have been classified based on the density of business administration course among all other courses. The Business administration department of Istanbul Kültür University, which allege to train human resources for businesses, is taken as a control variable while classifying the departments. Besides, departments have been examined whether the mission-vision statements indicate linearity with curriculum. As a result of conceptual content analysis it has been found out that state universities have positioned to train human resources for public sector organisations except Middle East Technical University with a %85 of “business administration course” rate. On the other hand private universities are mostly positioned to train personnel for private sector organisations excluding 2 universities of the sample.

**Keywords:** Positioning, Curriculum, Private universities, State universities

### INTRODUCTION

When the history of business education evaluated, it is seen that the first example in Turkey traces to the year of 1883 at Hamidiye Trade School which still continues its education as faculty of business administration in Marmara University. However it is commonly assumed that business education was commenced by German scientists and instructors fled from Nazi Germany during the 2<sup>nd</sup> World War and began to work at Turkish universities. After 1960s as it happened in many countries American style of business administration education became prominent in Turkey (Yüksel, 1998). Middle East Technical University and Boğaziçi University are the examples of American-style business education. In the second half of 20<sup>th</sup> century new business administration departments began to establish at Turkish state universities while private universities started to launch their business administration departments in the early 1990s.

Business administration departments of the state universities began the education either under different institution which was transformed into a university or established as one of the departments of faculty of economics and administrative sciences. Private universities’ business administration departments which will be the other part of the research are established directly under the current universities in the early 1990s.

The main purpose of this study is to determine the positioning of business administration education both at state and private universities and attempt to clarify whether these departments train personnel to public sector or private sector organizations by conducting a content analysis of the curriculum of business administration departments, which are under the roof of faculty of economics and administrative sciences or other faculties of 10 universities (5 private, 5 public). These 10 universities have been selected according to the establishment year of their business administration departments. In other words these universities are the most experienced in business administration education.

Initially main concepts of the study; positioning, vision, mission and basic goals which form the theoretical framework will be explained and evaluated in the context of the Business Administration Department. Afterwards, the research method will be described and the data obtained through this method will be reviewed.

Positioning as marketing concept represents the image of product or service in customers’ minds against competing products or services. Consequently positioning activity can be realized by product or service differentiation in the target market considering other competitors (Mucuk, 2012). The concept of positioning is not merely a marketing concept. For instance, a political party can be said to be positioning itself in the political arena. This issue is



examined in terms of political science (Özdaşlı, 2015). In the context of these definitions positioning in universities has to be defined by clarifying the target group who are interested in business departments. This target group covers potential students, current students, students' parents, faculty members, market demand for labour and other authorized people. Hence the positioning in business departments can be revealed by analyzing the purposes of those departments offer education and identifying for which sectors these departments train personnel.

According to Özdaşlı (2015), graduates of business departments generally employed in private sector as officers or managers in various departments such as marketing, finance, accounting, human resources, foreign trade, etc.; as clerk, manager or specialist in banks; as officers or expert in accounting and auditing firm; as expert in insurance companies; employees as advertising or public relations expertise. In public sector based on the scores obtained in public examinations graduates may be employed in A type positions such as assistant expert, expertise, inspector, district administrative judges or in B type positions as computer operator, clerical work, etc. Graduates may prefer to continue their studies and work as research assistant or teaching assistant offered by faculties. Another option for graduates is to run their own businesses as entrepreneurs.

In terms of business management, mission describes establishment and existence reason of an enterprise as well as its mutual values and tasks which distinguish the organisation from its rivals. Vision statement represents a dream or an ultimate goal to reach in the future. Objectives express the gains of the organisation in accordance with its activities and what activities have been carried out to get what (Ülgen & Mirze, 2013).

It might be considered that business administration departments exist to train personnel for private sector. However many people in Turkey especially parents of business students tend to consider job opportunities at public organisations as "job guarantee" or "fixed income guarantee" for their children (Özdaşlı, 2015).

On the other hand, it's obvious that Public institutions in Turkey stimulate business students and even managers who currently work at any private organisation to study for public examinations in order to be employed in prestigious occupations such as expertise, inspector, administrative judge or district governor (Özdaşlı, 2015).

## RESEARCH

Conceptual content analysis technique is used in the study in order to determine the objectives of business administration departments. Content analysis in general is defined as a research technique for making replicable and valid inferences from texts to the context of their use (Krippendorff, 2004). It is used to determine the presence of certain words or concepts within texts. Content analysis is a technique enables researcher organizing, categorizing, and comparing texts and obtaining results from them (Ary, Jacobs, Razevieh, & Sorensen, 2006). In conceptual analysis which is also known as thematic analysis, a concept is chosen for examination, and the analysis involves quantifying and tallying its presence. In this context, courses covered in the curriculum of each business department, categorized based on density of courses. As it was stated earlier, available information about each business department such as strategic drivers, curriculum, ECTS and etc. has been showed on the tables both for state and private universities separately.

**Table 1.** Available Information Related to the Business Administration Departments of Public Universities

Name of the university	Establishment year	Available information about the department
Istanbul University	1954	General information, mission and vision statements, curriculum, ECTS, syllabus.
Gazi University	1955	Objectives, Strategic Plan, curriculum, ECTS.
Boğaziçi University	1959	Curriculum, ECTS, course content
Middle East Technical University	1957	General information, mission and vision statements, ECTS, curriculum, syllabus.
Marmara University	1982	General information, statement of the head of department, mission and vision statements, ECTS, curriculum, syllabus.

As it is indicated on Table 1. According to the main webpage (21.05.2015) of the departments curriculum and ECTS information package of all business departments are available at state universities. Mission and vision statements have been declared by all business administration departments except Gazi and Boğaziçi universities.

The rest of the departments mutually share mission and vision statements with other departments (economics, public relations, international relations etc.) of the faculties.

**Table 2.** Available Information Related to the Business Administration Departments of Private Universities

Name of the university	Establishment year	Available information about the department
Bilkent University	1984	General information, statement of the head of department, objectives mission statement, Curriculum.
Koç University	1992	General information, Curriculum, course content.
Sabancı University	1994	General information, Curriculum.
Başkent University	1994	General information, Curriculum, ECTS, syllabus.
Istanbul Bilgi University	1994	General information, Curriculum, ECTS, course content.

Table 2. shows us the available information about the business departments of private universities. According to the main webpage (21.05.2015) of the departments general information and curriculums of all business departments at private universities are available while ECTS information package has been given only by two departments and mission statement is declared only by one department. The rest of the departments mutually share mission and vision statements with other departments (economics, public relations, international relations etc.) of the faculties.

**Table 3.** The Distribution of Courses to the Areas at Public Universities

Departments University	Business		Law		Economics		Public Finance		Other	
	F	%	F	%	F	%	F	%	F	%
<i>Istanbul Kültür University</i>	60	70,58	2	2,35	4	4,70	1	1,17	18	21,17
Middle East Technical University	70	85,36	2	2,43	1	1,21	3	3,65	6	7,31
Gazi University	59	78,66	4	5,33	3	4,00	2	2,66	7	9,33
Boğaziçi University	90	76,27	6	5,08	6	5,08	2	1,69	14	11,86
Istanbul University	75	68,18	5	4,54	5	4,54	1	0,9	24	21,81
Marmara University	76	67,85	9	8,03	8	7,14	3	2,67	16	14,28

**Table 4.** The Distribution of Courses to the Areas at Private Universities

Departments University	Business		Law		Economics		Public Finance		Other	
	F	%	F	%	F	%	F	%	F	%
<i>Istanbul Kültür University</i>	60	70,58	2	2,35	4	4,70	1	1,17	18	21,17
Istanbul Bilgi University	58	95,08	-	0	-	0	1	1,63	2	3,27
Koç University	55	93,22	1	1,69	-	0	-	0	3	5,08
Bilkent University	108	88,52	4	3,27	2	1,63	1	0,81	7	5,73
Sabancı University	84	67,74	3	2,41	4	3,22	-	0	33	26,61
Başkent University	55	64,70	5	5,88	4	4,70	1	1,17	20	23,52

As it is seen on table 3 and table 4, Istanbul Kültür University (IKU) has been determined as control variable for the conceptual concept analysis. The reason that IKU has been selected as control variable is because business administration department of this university presents program outcomes which state that the department trains professional managers for enterprises.

As it is seen on Table 3 and table 4, density of business administration courses at IKU is %70, 58 while the total weigh of the other courses is %29, 42. When the course plan of IKU business administration department is examined it can be seen that the courses of other areas are mostly preferred from those which can support business functions and activities with its' content. Of course it doesn't mean that the courses except business courses at other departments do not support business functions but these courses are directly related to the questions which take place at public examinations.

When the distribution of courses at public universities is examined (Table 3), Middle East Technical University becomes prominent with its extremely high business administration course density %85, 36 among other public universities. Depending upon the high business course density, it might be inferred that METU has positioned to train professional managers for private organisations. Yet METU business administration department declares that: *The aim of the program is to train specialists and future administrators needed by public institutions and enterprises, and private companies for the fields of finance, organization, marketing, accounting, management information systems and strategic management.* Hence, despite the high business administration course density the department itself do not claim to train professional human resources solely for private organisations.

Istanbul and Marmara Universities have the lowest business administration course density with around %68 among other public universities. These two universities' curriculums contain more of other courses which help students preparing for public examinations. On the other hand, Gazi and Boğaziçi universities have around %77 percent business administration course density which takes a position between METU and Istanbul-Marmara universities. When the strategic drivers of Gazi and Boğaziçi universities are examined, any declaration or statement have not been found about the positioning strategy of both departments.

When the distribution of courses at private universities is examined (Table 4), Istanbul Bilgi, Koç and Bilkent universities have the highest business administration course density with a an average rate of %92. This rate indicates that most of the private universities in the sample position themselves to train personal for private organisations. While Sabancı and Başkent universities profoundly differ from these three private universities with averagely %66 business administration course density. Sabancı and Başkent universities' curriculums include more public and business law courses as well as courses of economics than other private universities which means that these universities do not only focus on training human resources for private sector but also training personal for public institutions.

## CONCLUSION

It is not convenient to infer that other courses are not as important as business administration courses when the density of courses is examined. It is obvious that all the academic staff; instructors and managers of business administration departments are highly qualified in their areas. But there are different approaches among departments while determining the training priorities for students in terms of job opportunities in the future. In this sense some departments may prepare specific curriculums which may lead comparatively higher success in public examinations. However some instructors think that business education is ought to be designed in a way to train human resources for public organisations, hence advanced public or business law courses are not only inconvenient for business education but also do not serve for the ultimate purpose. Yet according to some other instructors, designing the courses and business education system only to train human resources for private sector is not appropriate due to the existence of prestigious positions at public sector such as; administrative law judge, district governor, inspector as well as employment difficulties particularly in Turkey. In this context it can be said that training students either for private sector or public sector is almost equally significant.

Departments focus on specific areas in the 3<sup>rd</sup> and 4<sup>th</sup> year of bachelors program especially with the help of elective courses. These specific areas involve courses mostly related to major field of studies in business administration such as management and organisation, accounting & finance, marketing or numeric methods. In other words a group of courses that focuses on business functions. By means of this focus, students can get a chance to master their skills and gain deeper knowledge in the selected area.

On the other hand, it might not be a proper approach to direct departments to position their education and curriculum only for private or public sector. Because of the reasons related to current internal environment factors (qualifications and quantities of instructors) or external environment factors (socio-economic conditions of the

region), the business departments may determine a position strategy to train personal both for private and public organisations.

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## A Creative And Entrepreneurship Project Promotion Of Primary Schools And High Education

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### ABSTRACT

With the purpose of promoting creativity and entrepreneurship behavior in primary school children and connecting it to entrepreneurship work develop in a High Education Institute with undergraduate students, Produz@ideia arise has a project that makes the link between the two type of levels of education, proposing a multidisciplinary project in multi-level type of education. This project was implemented during a year of work applying a problem-based learning perspective in both level of education and exploring the creativity and analysis implementing the methodology of the “Six Thinking Hats of Bono” with the primary education schools. By putting into action this project we pretended to prove that the empowerment that young children would embrace after the project, being creative, learning to reflect and analyze all perspectives of making things and trying and experiment how to make them, would create on them the access risk in a different way. The way of development that we used, could be audacious, but we expect students of both institutions acquire the necessary taste of not being afraid of taking chances by put into action their own ideas. On the other hand of the education level, in HEI, we tried to promote creativity on students making them to find a way to produce “crazy” ideas and trough that learn to take changes, analyze problems and find solutions and make things happen. Like this this project addresses the fundamental of entrepreneurship education at two levels of education at the same time, making it fun and successful. At the end of the project the entrepreneurship attitudes and behavior were assessed and it was possible to confirm the empowerment and the competence development in analyzing in a problem-based learning view.

### INTRODUCTION

As several studies show entrepreneurship behavior is crucial for economic development (e.g. Acs et al., 2004; Baumol, 2002; or even Schumpeter, 1934). The entrepreneur behavior values creativity, takes risks, is based on an informal organizational structure concerned in formulating strategies and in identifying opportunities. Therefore, is important to create an educational system capable of collaborating with the society in which it is inserted, which can affect change-technological, social, economic – for its development, causing a greater interaction between school and society (Friedlaender, G., 2004). In this sense, we tried to create a project that did just that and also linked different stages of level of education. In doing so, we proposed to promote entrepreneurship and creativity in early age students that could also stimulate at the same time older students taking the youngsters example on creativity and innovative solutions thinking.

This project, called Produz@ideia, will start with the recognition of a necessity/ problem or getting an exist one that it's difficult to solve, goes through an objective definition and means to achieve a solution, a plan of action has to be developed, the resources have to be analyzed and accessed and it's possible to implement a process and a creation. In this way we propose to follow the thoughts of different scientists that characterize the entrepreneurship behavior and access the importance of innovation and entrepreneur attitude in distinctive, if not all, aspects of life (e.g. Mulet, 2011; Friedlaender, G., 2004; Sadler-Smith et al. 2003; Hayton, George and Zahra, 2002; Drucker, 1985).

The didactic innovation project we propose, intends to promote creativity and enhance the power of realization of dreams or ideas, while entrepreneurial skills. To be developed by professors of the Polytechnic, naturally drew a design of didactic innovation that makes the bridge between two levels of teaching basic education and high education, encouraging and using the creative potential of the students of basic education and the power of knowledge and technical realization of Polytechnic School students. In this way, Produz@ideia allows working student's entrepreneurial skills and abilities of the two levels of education.

Objectives of this project are therefore to:

- Encourage creativity in children (elementary school) and young (higher education);
- Empower the entrepreneurial attitude;
- Reduce the fear of risk, through collaboration among peers;
- Making dreams come true, making you believe in their potential for creation, always present;
- Involve the institutions of higher education and primary education.



In this paper we propose to present the methodology we applied in the implementation process of this project and the way it was operationalized, so the objectives defined could be achieved.

## METHODOLOGY

These project main objectives are to motivate children to be creative and entrepreneurs since we want them to have new ideas with novelty, usefulness and appropriateness to it. In this way of thinking we decide to follow the Problem Based Learning (PBL) model because joins creativity with the process of knowledge acquisition that sustains entrepreneurship and help to develop innovative solutions. PBL stimulus people to restructure information that they already know within a realistic context to gain new knowledge and to elaborate on the new information they have learned (Kilroy, 2014). This model relies in three pillars: Ill-Structured Problem; Student-as-Stakeholder; and the Teacher as (Metacognitive) Coach. In this way it deals with the the “Ill structured problem”, that consists of a problem which is described in an ambiguous way, that needs more information research to be more clear and that can be solved in more than one way, that have different possible solutions. When we considered “students as stakeholders” we are saying that they have a significant knowledge and have to make it useful and give it a meaning and select and evaluate their options, monitoring the process towards the solution and at the same time have to defend and give evidence-driven arguments. The role of the teachers as coaches is important to guide students in an ethic perspective of the solutions definition process and help them to develop their self-awareness process of thinking and seeking information (Kilroy, 2014).

Conscientious that we are dealing with children of young age and that might be difficult for them to assume these roles we also follow the “Six Thinking Hats”, by Edward Bono, method so they could easily assume the parts as long as they had the hats on. This method, accordingly to Xerxen (2012), has two main objectives:

1. To simplify thinking, by allowing a thinker to deal with one thing at a time;
2. To allow a switch in thinking.

In this way, instead of having to take care of emotions, logic, information, hope and creativity all at the same time, the thinker is able to deal with them separately. Moreover by turning it into role-playing, the concept of the hats makes it possible to request certain types of thinking (Xerxen, 2012). The Six Thinking Hats is tailored so as to stimulate the inner creativity of participants and to help them to discover how to turn seemingly insoluble problems into real opportunities.

With this methodology in mind we defined our implementation plan to pursue the project goals.

## IMPLEMENTATION

The implementation of Produz@ideia in primary schools has been develop following three different steps:

### Step 1 (Primary Schools Students)

- The authors had went to the two participating schools in the city of Guarda to have short working sessions with primary student classes. While there, they had work for minimum one hour with the PBL and the Six Thinking Hats, promoting the discussion of ideas concerning different areas and their possible solutions. The Six Thinking Hats were seen as a very important part of the work by the children. In their way of thinking it was a completely different process of working. Also from our experience during this year, we feel that their participation need to be encourage to contribute with their valuable opinions. They need to feel the importance of sharing their thoughts and more important than this, the ideas could have a good value, no matter the crazy that they could be. He had ask the children to share their ideas by drawings in the end after the discussion period (Figure 1 and Figure 2)

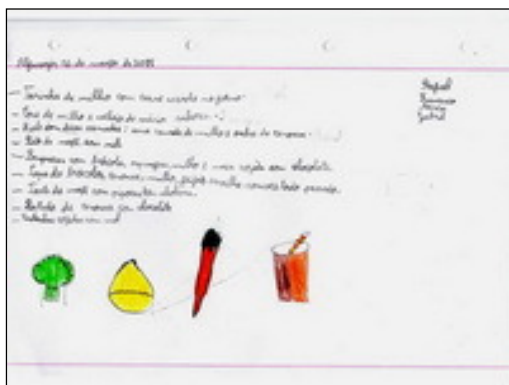


Figure 1: Drawings from the children



Figure 2: Drawings from the children

### Step 2 (Young Students)

- After collecting and analyzing the ideas presented by the children, the authors separated them in several areas: food products, engineering and services. Later discussing the logistic aspects we had choose the food products area for a first experience. Then these were presented to young undergraduate students at Polytechnic of this area. They had understood them and study how they could implement them by using their knowledge and creativity. During this process of developing the idea the authors were updated time to time. Before the final meeting the food products were present and explained (Figure 3).



Figure 3: Food products test

### Setp 3 (Children and Young Students)

- In the end of the year there was a final meeting in the Polytechnic facilities, here the ideas dream by the children in the beginning had appear converted into solid projects capable to be seen as final products used in our daily life.



Figure 4: Final event



Figure 5: Final event

These three steps were carry out always with the help of the authors that had supervised all the process, interfering the minimum to keep the ideas from the children and also from the students uncontaminated. This had given the necessary flavor of purity and originality that turn the project in a successful mission.

### VALIDATION

The process of validation is still being developed but it is supported by an in-depth interview of the students' teachers so it's possible to observe if the children altered their behavior in the different subjects and activities realized in school in a more creativity and entrepreneur perspective. This interview is not structured so it's possible to orient the conversation to the main subject wanted. The interviewer has to have control of the conversation all the time ad keep focusing the talk to objectives questions that permit to evaluate the required behaviors. There will be some written questions to make sure that all the teachers involved have to answer them but beside these requests, the interview has to be completely free.

### DISCUSSION

This year we had gone through the three steps detail previously in the two schools that were selected. In total we had near 50 children involved with 4 teachers and 15 students from our School of Tourism and Hospitality Management.

These type of new and bold projects, like Produz@ideia, always need time to be comprehended by the education system. In our case, the primary schools teachers were very enthusiastic by the participation of their students, referring the interest demonstrated during the year. Also they had state that some students start to be more engage

on making questions and declaring their own opinion, not having afraid of saying something wrong. This is very important in the point of view of the curriculum and the necessary skills and competences need to be achieved.

We are confident to say that in generally the goals were achieved, but in particular the capacity of boosting an important dosage of creativity in children (elementary school) and youngsters (HEI) was the keynote of the work done, alongside the empower of the entrepreneurial attitude. With the last two we reduce the fear of risk, through collaboration among peers, not only in the debate of ideas, but also very important, the discussion of the normal curriculum in primary schools and HEI.

Prodüz@ideia could be one more tool that HEI have to promote the need of changing mentalities in primary students and teachers, but also helping the older HEI students to change their mind set, preparing them to integrate the society by adapting to situations and being creative, being real entrepreneurs in action.

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## A Network For The Enhancement Of Digital Competence Skills

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### ABSTRACT

Digital Competence, as the set of knowledge, skills and attitudes that are required when using Information and Communication Technology (ICT) and digital media to perform everyday human activities, have started to be understood as "life skills". Nevertheless, concerning the integration of innovative technology and approaches, many teachers do not possess required competences for the pedagogical use of ICT in teaching and learning. The DigiSkills project, as a Network for the Enhancement of Digital Competence Skills, aims to support teachers of all levels of education to combine ICT skills with pedagogy, to use ICT skills in the curriculum and in the institutional organisation. In the framework of the network, success is based on the development of a large Community of Practice (CoP) which enables sharing of "DigiSkills best practices" from various European countries to show their own scenarios of use of learning tools and methodologies tested in their real settings. Additionally, to support a larger number of teachers, the project has set up the Digital Competence Academy. The paper provides an insight into the convergence of the project objectives with the findings in the recent reports/initiatives worldwide aiming to investigate which digital technologies and how can be used for meeting the 21<sup>st</sup> century lifelong learning societal needs taking into consideration global as well as local challenges. Furthermore, the paper presents the data analysis and basic findings from one-year long implementation of the DigiSkills tools with teachers' communities that demonstrate the importance of the development of online CoP as the core nodes for teachers' professional development and support.

**Keywords:** life-long learning, communities of practice, best practices, professional development

### INTRODUCTION

Teachers have been constant promoters of innovation in schools. However, the integration of innovative approaches, Information and Communication Technology (ICT) and digital media, numerous teachers do not possess the necessary competences for the pedagogical use of ICT in teaching/learning process. DigiSkills project, as a Network for the Enhancement of Digital Competence Skills co-financed by European Commission under the Framework Lifelong Learning Programme, aims to support teachers of all levels of education to combine Information and Communication (ICT) skills with pedagogy, to use ICT skills in the curriculum and in the institutional organisation. The overall objective of the project is not only to improve school/university/adult learning and teaching practice, but also to raise awareness of the educational community on the need for innovative teaching and learning practices as well as learning to learn skills. The core work of the network lies within the connection of best practices from various European countries to show their own scenarios of use of learning tools and methodologies tested in their own classrooms/institutions. At the heart of the project is the best practice directory, where teachers can upload their own educational scenarios using ICT, as tested in their classrooms. The best practices shared in the directory address a range of subjects and all levels of education, and they are freely available for anyone to use. According to the interim evaluation, 78% of 600 directory users agreed that the proposed best practices had had a significant impact on their professional development. Furthermore, 82% said they would recommend the platform to their colleagues. The sharing of best practices is reinforced with community building, which provides mentoring and encouragement, and fosters group dialogue and peer learning. To support a larger number of teachers, the project has set up the Digital Competence Academy, which will deliver large-scale online professional development courses for teachers in specific areas such as maths, science, technology, rural education, environmental education, and the use of mobile devices in school practices. The academy's modules are organized according to teachers' competence levels, based on the UNESCO ICT Competency Framework for Teachers: basic ICT skills (level 1), skills required for effective introduction of technology enhanced activities in the classroom (level 2), and skills required for the development of technology enhanced learning activities (level 3).

The paper presents the data analysis and basic findings from one-year long implementation of the DigiSkills tools with teachers communities (more than 1000 teachers have been involved in the project activities) that demonstrate the importance of the development of online communities for practice as the core nodes for teachers' professional development and support.

## USING TECHNOLOGY TO SUPPORT LEARNING

Technology can be both a benefit and a disadvantage to learning. If technology is used to engage students, to enhance or extend learning or to enrich the life of a community of practice, then it should be embedded in and closely aligned with current learning theories and models of teaching. Innovative forms of pedagogical practice with technology encourage student-centred approaches, group work and participative learning and promote active learning such as problem solving and creativity. Some practical ideas for supporting active teaching and learning models that fit the criteria for student-centred learning and fall into active learning include: Inquiry-based Learning, Game-based Learning, Learning-by-doing, Problem-based Learning, Team-based Learning, Creative Learning and Experiential Learning (Dawson, Cavanaugh and Ritzhaupt, 2008; Redecker, Ala-Mutka, Bacigalupo, Ferrari and Punie, 2009). Moreover, the new pedagogies require students to create new knowledge and connect it to the world by using the power of digital tools (Fullan and Langworthy, 2014).

On the other hand, considering Bring Your Own Device (BYOD) and the potential of 1:1 computing solutions which have already started in the last years, it is important to recognize that we are only at the beginning of understanding 1:1 pedagogical approaches. There is a need to speed up development and implementation of pedagogical models/approaches for 1:1 computing in education, i.e. a requirement to progressively move the focus away from the devices (technology) to the students/learners and pedagogies, specifically from 1:1 computing to "1:1 learning" (Bocconi, Kampylis and Punie, 2013). Since 1:1 computing refers to the idea of equipping every student with a personal computer (usually a laptop, handheld or tablet), it is not acceptable to identify 1:1 pedagogical approaches to 1:1 computing.

Existing and emerging technologies allow teachers to create pedagogically effective learning activities that support experimental and experience-based learning, promoting and improving motivation and learner involvement. However, it is important to point out that technology is just a means towards pedagogical change (Bocconi, Kampylis and Punie, 2012). Moreover, because effective pedagogical strategies are context-dependent, one solution might not work equally well in a different context, especially when considering large communities of practice. As an alternative for generic pedagogical solutions, best practices in learning could be considered.

### Digital Competences

With the 2006 European Recommendation on Key Competences (European Commission, 2006), Digital Competence has been acknowledged as one of the 8 key competences for Lifelong Learning by the European Union. Digital competence can be broadly defined as the confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society. Digital competence is a transversal key competence which enables acquiring other key competences (for example language, mathematics, learning to learn, cultural awareness). It is related to many of the so-called 21<sup>st</sup> Century skills (for example leadership, communication, emotional intelligence, entrepreneurship, global citizenship, problem-solving and team-working) which should be acquired by all citizens, to ensure their active participation in society and the economy (Ferrari, 2012). In the last decade it has become increasingly clear that basic reading, writing and arithmetic, while essential, are not necessarily enough. The importance of non-cognitive skills, usually defined as abilities important for social interaction, is also noticeable (Pearson, 2014). Competences related to the use of ICT and technology in general have started to be understood as "life skills", comparable to literacy and numeracy, therefore becoming "both a requirement and a right" (OECD, 2001).

In 2012 a report called "Digital Competence in Practice: An Analysis of Frameworks" (Ferrari, 2012) is produced under an umbrella of a project on Digital Competence (DIGCOMP) with an objective to contribute to better understand and develop digital competence in Europe. The report looked at 15 different frameworks, with one of the aims of identifying the key components of digital competency in terms of knowledge, skills and attitudes needed to be digitally competent. The following definition was an encompassing definition of digital competence, based on the many definitions found in the different frameworks in the study: "Digital Competence is the set of knowledge, skills, attitudes (thus including abilities, strategies, values and awareness) that are required when using ICT and digital media to perform tasks; solve problems; communicate; manage information; collaborate; create and share content; and build knowledge effectively, efficiently, appropriately, critically, 4 creatively, autonomously, flexibly, ethically, reflectively for work, leisure, participation, learning, socialising, consuming and empowerment." (Ferrari, 2012, pg. 3-4). Two years later, the report "Measuring Digital Skills Across the EU: EU wide indicators of Digital Competence" which presents the methodology used for the measurement of digital skills in the Digital Agenda Scoreboard, added that "digital competence is a broad concept, including much more than basic/operational skills in the use of ICT – though these are fundamental to it." (European Commission, 2014).

In "Supporting Digital Competence" report (Balanskat, Bannister, Hertz, Sigillò and Vuorikari 2013), digital competence development as a major objective are mentioned in a number of initiatives: (i) the initiative Mobile

Lernbegleiter im Unterricht (Austria) where an exchange of experiences between different levels of education is also envisaged; (ii) the Equipment for School Net DIA.S. initiative in Cyprus aiming to enhance the digital competence of teachers and students; (iii) the Buki initiative in Georgia targeted the ICT skills level of first graders; (iv) two French initiatives, POP1-POP2 and Un collégien, un ordinateur portable, as well as (v) the Vzdelani21/Education 21 initiative (Czech Republic) address ICT skills also as one of the objectives, aiming additionally to also improve ICT skills of parents.

Consequently, according to aforementioned definitions and initiatives, digital competence is not only knowledge and skills, but incorporates attitudes such as being confident and critical. It is about being competent to use technology in different situations (for example work and leisure) and for different purposes (for example learning, communicating, solving problems, online collaboration, creating and sharing). All essentially underpinned by basic ICT skills.

On the other hand when considering digital competence of teachers, the "ICT in education" survey (European Commission, 2013) found that it was only in seven countries that 30 to 50% of students at grade 4 and/or grade 8 were taught by digitally confident and supportive teachers with high access to ICT and who face low obstacles to use of these tools at school. According to the Opening-Up Education communication of the EC (2013) the use of educational content and OER is constrained by the difficulty in finding adequate resources for each user's specific needs: teachers tend to mainly use resources that have been recommended by other colleagues. Communities of practitioners at EU level have proven to be solid solutions for exchanging good practices and for peer support, as shown by the massive engagement of teachers in the e-Twinning platform, with more than 200.000 registered users and in Open Discovery Space (ODS) with more than 500 active teachers' communities ([portal.opendiscovery.space.eu](http://portal.opendiscovery.space.eu)). In order to ensure that large communities of practice benefit from professional development through online resources and peer learning Europe explores ways to leverage the existing networks and create new ones. Attention will also be devoted to explore the potential of collaborative work in teaching and learning in higher education, currently less developed than in research.

### **Communities (Networks) of Practice**

The term Community of Practice (CoP) is of relatively recent coinage. It is a social networking term developed by Etienne Wenger to describe groups that form among peers for the purpose of sharing knowledge and information about their professional interests and activities (Wenger, 2000). The first applications of CoP have been in teacher training and in providing isolated administrators with access to colleagues. There is a wave of interest in these peer-to-peer professional-development activities (Domingo, Aguado, Mor, Barrera and Riviou, 2015). Studies have shown that sharing past experiences leads to innovative future practices and that community members were more likely to develop a more conscious involvement in an activity (Printy, 2008; Barwick, 2009). Moreover, innovative strategies are strengthened within the CoP framework (Sobrero and Craycraft, 2008) and successfully promulgated amongst other teachers, thus increasing the effectiveness of the learning environment.

The development of Professional Capacity is foreseen as the most powerful of all the change drivers (Fullan, 2013). Change leaders have to become experts at fostering professional capacity within their schools in networks and in the system as a whole. In the past, networks were teachers that came together to share ideas, that might be valuable for the individuals but there were not strategies for system changes. An effective network focuses on students' achievements, requires effective leadership and has adults as specific practices learners. It also combines mutual allegiance and collaborative competition. Mutual commitment is when there is interaction between people inside and outside the school and their commitment to each other increases. This encourages a sense of friendly competition, the willing to do things better and share them with everybody. Future areas of investigation should include how far communities of practice along with online support strategies and blended learning approaches contribute to successful teacher training (Balanskat, Bannister, Hertz, Sigillò and Vuorikari, 2013).

### **DigiSkills: a Network for the Enhancement of Digital Competence Skills**

The DigiSkills project, as a Network for the Enhancement of Digital Competence Skills, is co-financed by European Commission under the Framework Lifelong Learning Programme / Key Activity 3 – ICT / Multilateral Project (DigiSkills, 2015). The goal of the DigiSkills project is to support teachers of all levels of education to combine Information and Communication (ICT) skills with pedagogy, to use ICT skills in the curriculum and in the institutional organisation. The overall objective of the project is not only to improve school/university/adult learning and teaching practice, but also to raise awareness of the educational community on the need for innovative teaching and learning practices as well as learning to learn skills. The core work of the network lies within the connection of best practices from various European countries to show their own scenarios of use of learning tools and methodologies tested in their own classrooms/institutions. The best practices shared in the directory address a range of subjects and all levels of education and they are freely available for anyone to use.

### **21<sup>ST</sup> CENTURY LIFELONG LEARNING COMMUNITY NEEDS**

Several initiatives worldwide are aiming at investigating which digital technologies and how can be used for meeting the 21<sup>st</sup> century lifelong learning societal needs taking into consideration global as well as local challenges, see for example (Spector, 2013).

The US National Science Foundation (NSF) Roadmap for Education Technology report, focused on the role and impact of computing and technology in education, included research recommendations and a vision for education the year 2030 (Woolf, 2010). Eight major challenges for education technology were identified: personalizing education, assessing student learning, supporting social learning, diminishing boundaries, alternative teaching methods, enhancing the role of stakeholders, life-long learning approaches and addressing policy changes.

The New Media Consortium (NMC), a globally-focused not-for-profit consortium (<http://www.nmc.org>) established the Horizon Project to identify and describe emerging technologies that seemed likely to have a significant impact on a variety of sectors including on teaching, learning and creative inquiry as well. Each year, trends are presented along with new technologies likely to have a short-, medium- and long-term impact on learning and instruction. In the 2011 Horizon Report (Johnson, Smith, Willis, Levine and Haywood, 2011), four critical challenges are identified. First and foremost, digital media literacy is again ranked as the most important challenge, since it continues its rise in importance as a key skill in every discipline and profession. The NMC 2013 Horizon Report cited the following trends (Johnson, Adams Becker, Cummins, Estrada, Freeman and Ludgate, 2013):

- openness: open content, open data, open resources, easy access to data, transparency,
- MOOCs as alternatives to traditional university courses,
- workforce demands for more informal learning experiences,
- new sources of data for personalizing learning and for meaningful performance measurements,
- changing the role of educators due to vast resources available via the Internet and
- changing education paradigms (more online/hybrid/collaborative efforts).

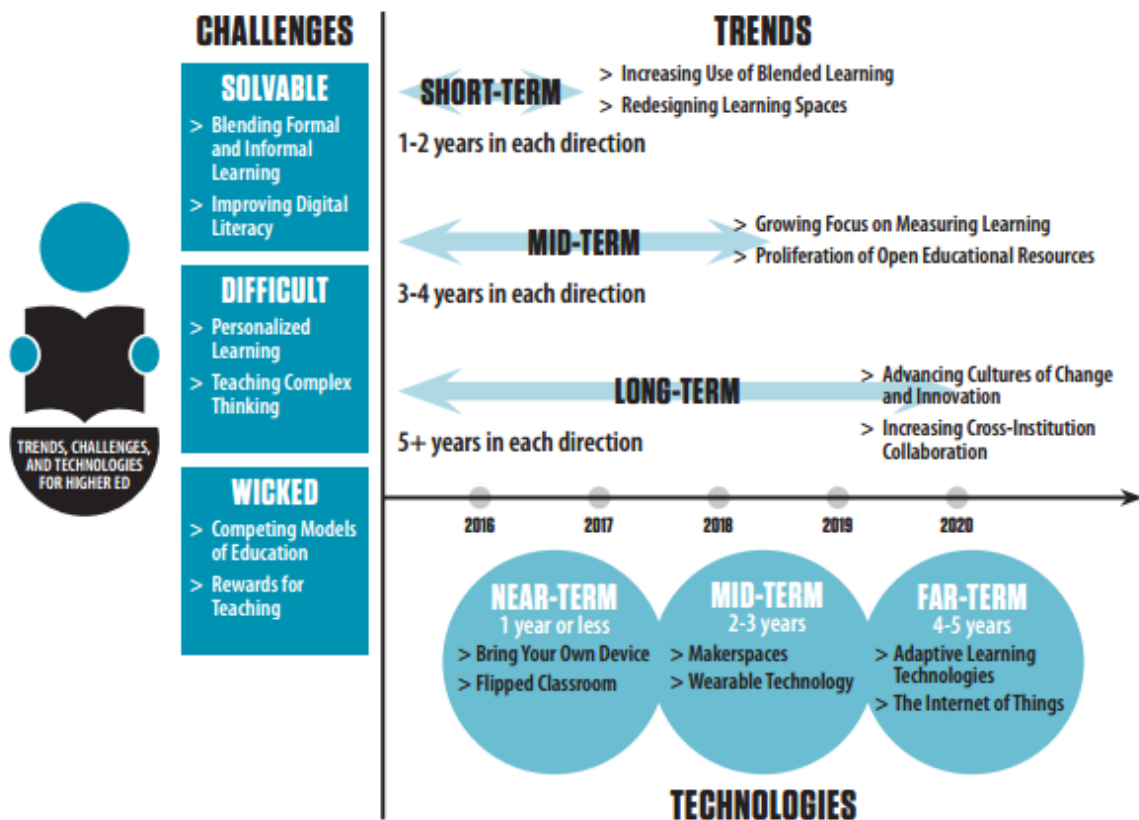
The third source that is addressed with regard to new and emerging technologies is the European Network of Excellence for Technology Enhanced Learning, the STELLAR project, which is developing network of excellence in the area of technology enhanced learning. Consistent with already recognized problems, STELLAR identified a number of ambitious challenges and, in order to address these challenges (which have counterparts in the previous reports), STELLAR adopted the following guiding themes (Gillet, 2012):

- connecting learners: networked learning and learner networks,
- orchestrating learning: roles of teachers, role of assessment, higher order knowledge and skills and
- contextualizing virtual learning environments and instrumentalizing learning contexts: novel experiences and new technologies, mobility of learners, as well as standards for interoperability.

The IEEE technical committee on learning technology curriculum report (Hartley, Kinshuk, Koper, Okamoto and Spector, 2010) is another initiative which has been considered in this context. The IEEE Technical Committee on Learning Technology (TCLT) established a Working Committee to develop specifications for new curricula for advanced learning technologies as a response to the demands and potential of new and emerging technologies. The Working Committee adopted and developed a competency-based approach with regard to curricula and assessments to cover undergraduate, postgraduate and training contexts. Innovative and creative competence domain, as one of the five domains identified by TCLT, specifically recognizes that technologies will continue to change and that there is a need to be flexible and creative in making effective use of new technologies. This competency is especially consistent with the NMC Horizon Report challenge pertaining to the changing nature of education systems and the emphasis in the NSF Roadmap on enhancing the role of stakeholders and addressing

policy changes. The challenges and issues cited in aforementioned reports are consistent; one of the outcomes thread throughout the report are rich repositories of information which are there and should be utilized.

With more than 13 years of research and publications, already mentioned NMC Horizon Project can be regarded as the world's longest-running exploration of emerging technology trends and uptake in education (Johnson, Adams Becker, Estrada and Freeman, 2015). The NMC Horizon Report could be regarded as an unbiased source of information that helps education leaders, trustees, policy makers and others easily understand the impact of key emerging technologies on education and when they are likely to enter mainstream use. Consequently, it is interesting to see the convergence of the DigiSkills project and its aims to improve digital competences and develop communities of practice with the findings in the recent NMC report (see Figure 1). Namely, in order to maintain currency with emerging technologies and the trends, being literate in the area of digital media is vital. Digital literacy is a multi-faceted skill that covers the ability to find, use, interpret, modify and create a variety of digital media. Falling behind in this area contributes to the digital divide, which is widening just when accessibility and resources are expanding (Spector, 2013).



**Figure 1:** Topics addressed in the NMC Horizon Report: 2015 Higher Education Edition (Johnson, Adams Becker, Estrada and Freeman, 2015).

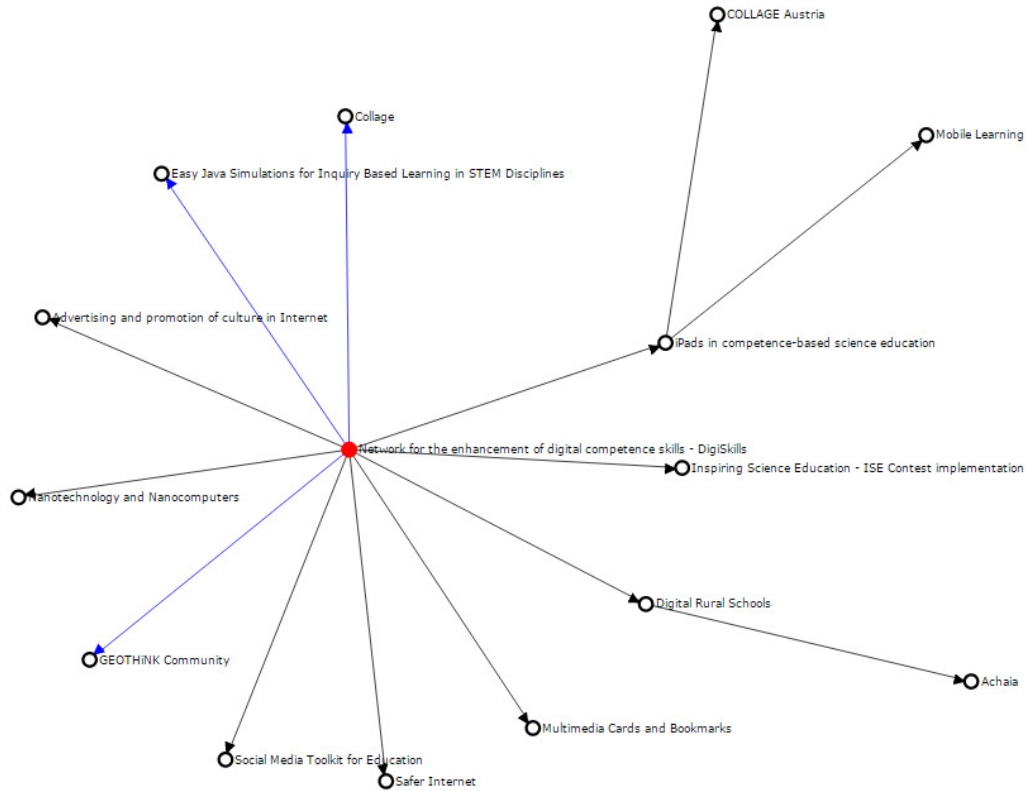
#### DATA ANALYSIS FROM THE DIGISKILLS COMMUNITIES

In the framework of the DigiSkills network success is based on the development of a large community of practice that will implement the project in real settings. Participation in the community is regarded as a Professional Development activity in the framework of the project: teachers are introduced to resources based learning, they are getting familiarized with the use of online tools and apps, they are adopting their practices in new teaching models and approaches while they are exchanging experiences and best practices. Recent results from TALIS study (OECD, 2013) demonstrate the potential of such approaches as an alternative way of teachers' professional development programmes. The DigiSkills consortium aims to create conditions for the development of teachers, new ideas, effective participation and new tools and applications to move the community into positive participation in a more equitable digital future. To support this, the project is led by interested stakeholders, on the basis of a strong process of creative educational community involvement which plays a critical role.



### Communities of Practice

The project provides a platform for sharing best practices in ICT use, as well as an online open course centre, the Digital Competence Academy, where teachers can update their digital skills. Over 1000 teachers are currently participating in DigiSkills activities in different European countries. At the heart of the project is the best practice directory, where teachers can upload their own educational scenarios using ICT, as tested in their classrooms. The best practices shared in the directory address a range of subjects and all levels of education, and they are freely available for anyone to use. Communities of Practice are created with reference to the available Best practices (see Figure 2).



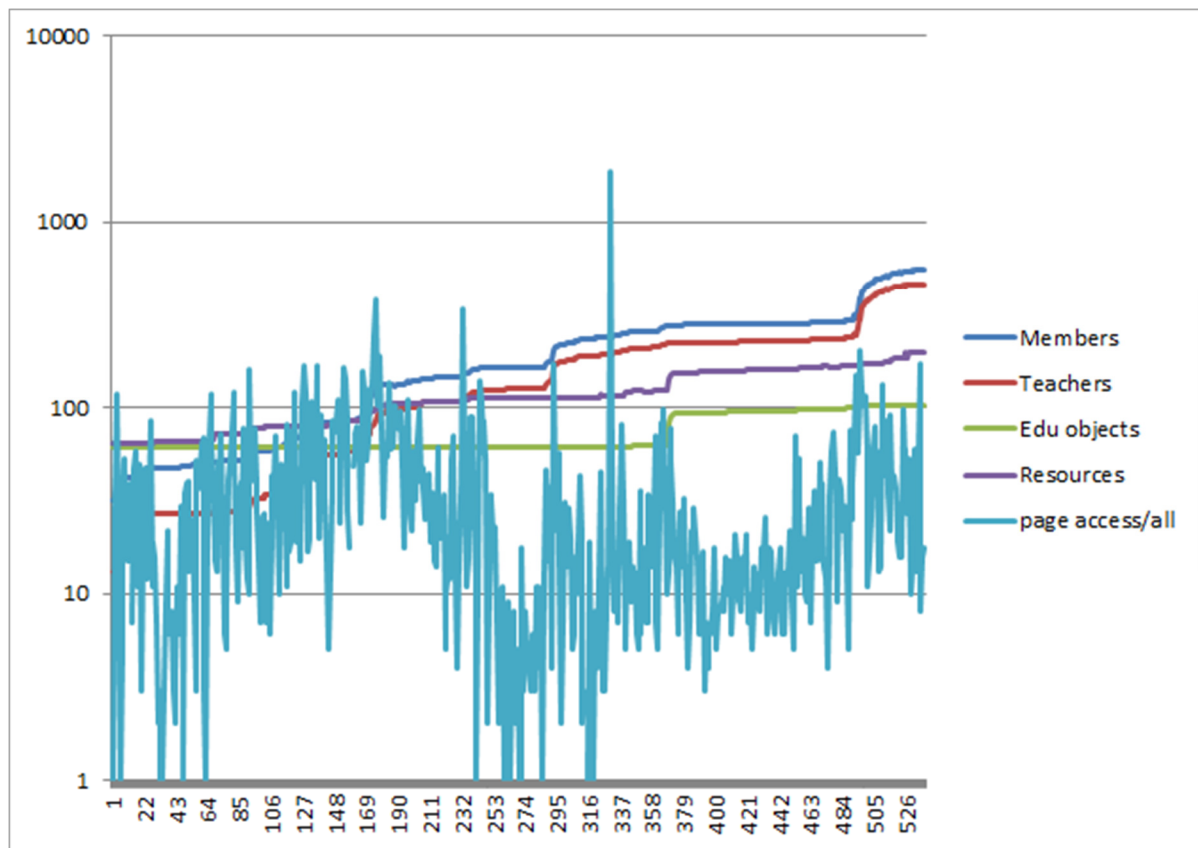
**Figure 2:** Thematic and National teachers' communities are being developed with reference to the available best practices; the teachers' communities of DigiSkills network involve more than 1500 teachers from different European countries.

The DigiSkills users have created communities in order to share their practices and resources. The consortium has selected a number of best practices that have proven their efficacy in developing the digital competencies of the teachers and the students to act as the starting point of the intervention. Initially DigiSkills communities of users were developed around the best practices (thematic communities) while at a later stage a network of communities (see Figure 2) were organised (for example national communities) to facilitate the implementation of the project in different settings.

### Impact Assessment

Consortium has used a series of tools to assess the impact of the proposed methodology. Each teacher's community is monitored and the data collected are analysed. As discussed above each community is considered as a user generated content service. In this way teachers are becoming contributors of resources and at later stage developers of innovative scenarios and educational activities.

Figure 3 presents the analytics of the Easy Java simulations teachers' community. During the period of the operation of the portal 550 teachers were registered, who have contributed to the population of the platform with user generated educational resources, the main outcome of the implementation of innovative projects in their schools. About 200 educational resources were developed by the 550 teachers; 97 of them were extended lesson plans and educational scenarios.



**Figure 3:** The analytics of one of the most active DigiSkills users' community that focuses on the use of Easy Java Simulations in science lessons (period January 2014-May 2015).

Table 1 presents the integrated numbers from all teachers' communities that were created in the framework of the project; about 600 educational resources were developed by 1500 teachers. There are two important findings from the analysis of the web analytics of the usage of portal:

- Almost 40% of the users have contributed to the portal contents. Usually the majority of the users of educational portals are passive users. They are usually downloading resources and they are not sharing their own materials. The data from the DigiSkills communities demonstrate that the teachers are sharing their own resources (probably as they start developing a feeling of trust while being members of the DigiSkills communities) at a significant percentage. Furthermore, one out of five DigiSkills users (20%) are contributing more complex educational resources like lesson plans and educational scenarios for direct classroom use.
- The page views of the community is about 80-90 unique page views per day demonstrating the users are coming back again and again searching for resources and materials that their colleagues are sharing through the DigiSkills communities.

**Table 1:** The number of users and the developed user generated resources for the DigiSkills communities in the period January 2014-May 2015.

Teachers	1500
Educational Resources (User Generated Scenarios)	600 (200)

In the last period of implementation an online questionnaire was applied to the DigiSkills platform users; 760 out of the 1500 registered users provide their feedback. Based on the findings of the online survey that was performed among the DigiSkills registered users over 75% of them agree or fully agree on that the portal offers access to useful resources in the field digital education and eLearning; over 80% of users agree or fully agree that communities are a good environment to exchange best practices; over 80% of users would recommend the platform to their colleagues; 80% would use the tools provided to develop resources and upload their own lessons and materials to the DigiSkills communities. The sharing of best practices is reinforced with community building, which provides mentoring and encouragement, and fosters group dialogue and peer learning. *"We have great*

*educators across Europe but a fragmented situation as far as collaboration between teachers is concerned. At DigiSkills, I can locate content that I find suitable for my work on a single platform. In addition, I can work with colleagues who can help me implement the best practices by providing guidance and support. We can also collaborate in communities to develop content together”,* says George Papadopoulos, a teacher from the Ellinogermaniki Agogi School in Greece, speaking of his experience with the DigiSkills best practices.

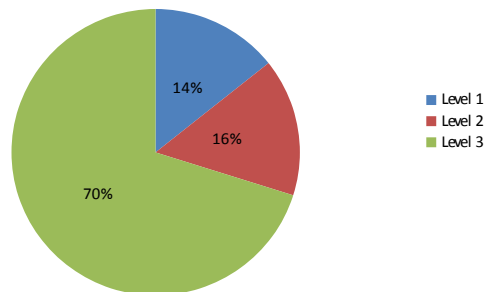
### Digital Competence Academy

To support a larger number of teachers, the project has set up the Digital Competence Academy (ODS, 2015), which will deliver large-scale online professional development courses for teachers in specific areas such as maths, science, technology, rural education, environmental education, and the use of mobile devices in school practices. The Digital Competence Academy raises teachers' digital competence by developing skills in using computers to retrieve, assess, store, produce and exchange digital learning resources. To this end trainees are engaged in learning to learn activities through the development of a training scheme that improves the uptake, sharing and reuse of digital learning resources in schools. Through the training teachers participate in a series of activities using digital content in foreign languages to improve their communication skills in foreign languages. The academy's modules are organized according to teachers' competence levels, based on the UNESCO ICT Competency Framework for Teachers (UNESCO and Microsoft, 2011): basic ICT skills (level 1), skills required for effective introduction of technology enhanced activities in the classroom (level 2), and skills required for the development of technology enhanced learning activities (level 3).

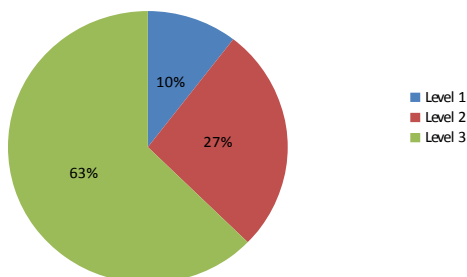
Participating teachers are asked to use the framework to assess their competences, after which specific modules or courses are proposed to them according to their competence level. These modules include a series of practical strategies (identified as the "DigiSkills Best Practices") that have proven their efficiency in developing teachers' digital competencies and, more specifically, in supporting teachers to reach ICT competency level 3, thus becoming developers of educational content and authors of their own technology-enhanced educational scenarios.

The data from the Digital Competence Academy registered users demonstrate that they are quite competent in using ICT tools and services in their everyday practice (please refer to Figure 4 and Figure 5).

#### Understanding ICT in education



#### Curriculum & Assessment



**Figure 4:** Digital Competence Academy teachers' competency level in the Understanding ICT in Education and in the use of ICT in the curriculum and in the assessment of the educational approaches used.

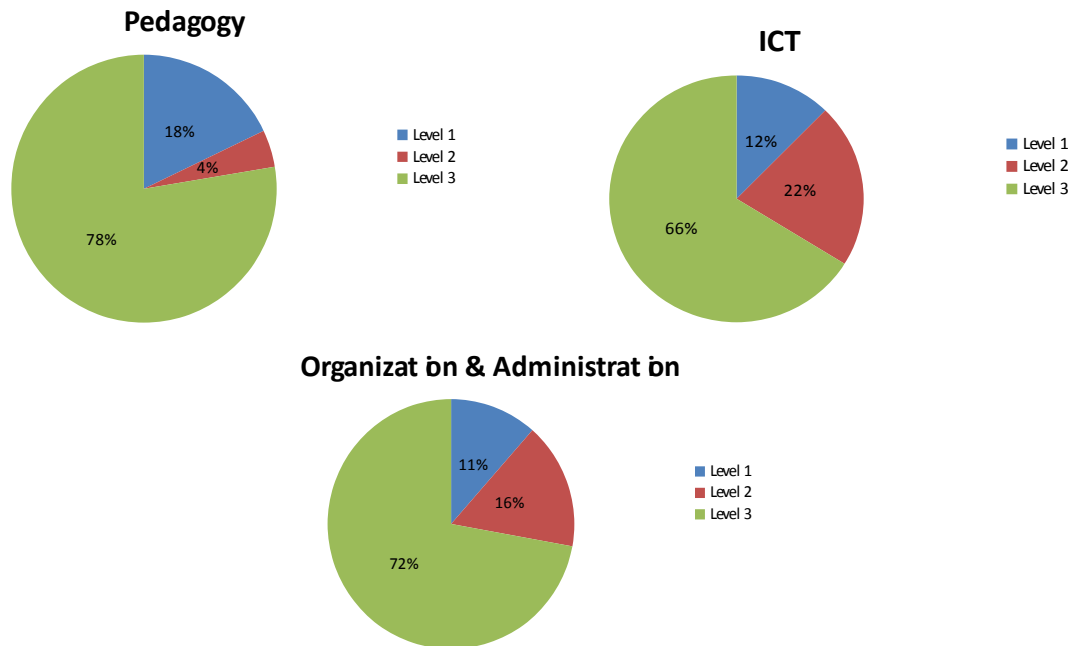
### CONCLUSION

The DigiSkills approach aimed to integrate resource based learning in real classroom environments through effective community building, networking and support. The process supports the teachers' professional development while the community building approach is considered as the main mechanism to facilitate the



development of digital competences to teachers. Through the creative use of the new technologies and the tools offered by the DigiSkills and Open Discovery Space infrastructure, the effective content organisation and the learning processes, teachers were able to generate activities and projects with respect to local school problems. In this way the DigiSkills project aims to address the challenge of the "social appropriation of knowledge" seeking to empower teachers and students through this knowledge and to develop technologies that reflect the school needs.

A strong community of 1500 users was created that developed about 600 education resources expanding the initial pool of about 40 Best Practices that were proposed by the project team. The analysis of the web analytics from the portal and the different sub-communities that were created to facilitate the implementation in local settings demonstrate the users' engagement.



**Figure 5:** Digital Competence Academy teachers' competency level in Pedagogy, ICT and in Organisation & Administration.

#### ACKNOWLEDGMENT

This work has been carried out within the project DigiSkills - "Network for the Enhancement of Digital Competence Skills", partially supported by the European Commission under the Framework Lifelong Learning Programme / Key Activity 3 – ICT / Multilateral Project Number 531300-LLP-1-2012-1-GR-KA3-KA3NW. This document does not represent the opinion of the European Union, and the European Union is not responsible for any use that might be made of its content.

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## An Analysis About The Environmental Behavior Of Brazilian University Students

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### ABSTRACT

With the purpose to check the environmental behavior of undergraduate students in business administration of Brazilian universities, seeking to understand how future managers observe environmental issues in relation to their professional development. Thus, was carried out a survey of 732 college students in 39 universities. The applied scale was based on belief, attitude, concern and consumption and allowed to examine the environmental behavior of public and assume what aspects that generate environmental practices. With the results, it was possible to infer that the current scenario is not conducive to environmental issues in the academic environment, because students think that this matter can be a problem for business development.

**Keywords:** Enviromental Education, Retail, Reverse Logistic, Sustainability

### INTRODUCTION

Factors such as environmental degradation, population growth and the replacement of forests by plantations demonstrate that man is sovereign over natural resources and, consequently, triggering an imbalance occurs in the environment (Braga Junior, Silva & Moretti, 2011).

Thus, the movements that seek to reduce the environmental impacts that arose in the 1970s, have been gaining strength over the years as answers to these industrial activities contrary to the environment (Bandalise, Bertolini, Rojo, Lezana, & Possamai, 2009). These moves are intended to establish rules and regulations for methods of environmental management organizations, emphasizing the importance of the issue and highlighting the emergence of environmentally friendly products and services (Bandalise et al., 2009).

These same concerns (environmental issues and consumption) were the subject of a study of young people in Hong Kong, in order to analyze how these two factors may influence their behaviors (Lee, 2011). For this public, such issues is not new issue, as they are debated in the social and political spheres since the 1960s, highlighting the 1968 student movement in Paris, and the hippies in the United States in the 1970s (Matos, 2012).

According to Cardoso and Cairrão (2011), the youth has been showing signs of autonomy and responsibility to try to seize behaviors to identify young people as main characters to attest their personalities, contrary to the naysayers that characterize them as immature, materialistic and consumerist.

This context, the aim of this study was to determine whether the environmental performance of students from the Brazilian public university influences on their environmental practices. From a scale translated and validated for the Brazilian context, an exploratory quantitative study was conducted through a survey with 35 campuses totaling 1146 respondents and found to analyze 732 questionnaires.

As a result, it can be inferred that the current scenario is not favorable to the development of environmental issues with the students graduating from the Brazilian public universities, as they think this issue as a problem for business development.

### ENVIRONMENTAL BEHAVIOR OF COLLEGE STUDENTS

The concern with environmental issues in students can be seen in the rabbit studies, Gouveia and Milfont (2006), which evaluated university on human values considered important in understanding and predicting attitudes and pro-environmental behaviors. Pinheiro, Monteiro, War and Penaloza (2011) analyzed the reasons and environmental concerns related to environmental conservation practices from the perspective of action of the students of this course.

In another study using the scale NEP (New Environment Paradigm), there is the work of Bechtel, Corral-Verdugo and Pinheiro (1999), which are compared American students, Brazilians and Mexicans in environmental issues, noting that the American students and Mexicans are more divided on the nature and growth, but less radical; already the Brazilians do not see the need to separate these two conditions.

The teaching of environmental issues was Gonçalves-Study Days object, Theodosius, Carvalho and Silva (2009), referring to environmental discussions in the syllabus of Directors on undergraduate courses, as the formation and

the advancement of environmental awareness in business schools represent major challenges and require a profound reflection on the teaching methods of the discipline.

In some countries, higher education institutions have developed environmental practices, and theoretical contents:

- a) Study on Environmental Education and Environmentally Responsible behavior - ERB conducted with undergraduate students from a public university in southeastern North Carolina, USA, maintains that there is an association between environmental education and the ERB, leading them to development of a new measure of ERB focused on impacts on natural resources (Fusco, Snider & Luo, 2012).
- b) Software Utility MC (Concepts Mapping Technique), to achieve the goals of environmental education at the university level of the Universidad Nacional de Educación a Distancia (UNED), Madrid, whose results show the motivational potential of this instrument, as well as its effectiveness to facilitate concepts mapping technique that increase both the analytical thinking of students and their understanding of the relationship between the basic concepts related to environmental issues (Murga-Menoyo, Bautista-Cerro & New, 2011);
- c) Environmental Education Project in Zimbabwe identified results of new forms of activities to meet the challenge of sustainability of this project, proving to be useful for other future environmental education projects financed by donors and can confront them with the same challenge of project sustainability Initial (Ongevalle, Petegem, Deprez & Chimbodza, 2011).

One should also mention the adoption of good consumer practices to bring the students called green consumption:

- a) With advertising campaigns aimed at increasing consumer demand for green energy, emphasizing the psychological benefits of the brand, whose results have confirmed the most predictable effects, demonstrating the overall importance of the psychological benefits of the brand (Hartmann & Apaolaza-Ibáñez, 2012).
- b) The roles of attitudes, subjective norms, perceived control, early emotions, past behavior and the desire to predict pro-environmental behavior intention, showing what was anticipated by the study: that negative emotions and past behaviors are significant predictors of desire to engage in favor of environmental action and the desire, in turn, provides positive behavioral pro-environmental intentions (Carrus, Passafaro & Bonnes, 2008).

Authors	Objetivo	Resultados
Garcia, Silva, Pereira, Rossi e Minciotti (2008)	Identify how these consumers evaluate innovative behavior, relating the existence of rewards to companies that promote social and environmental responsibility.	a) the constructs importance and recognition indicated a membership value, proving that there is a strong causal relationship; b) there is a new consumer behavior, which in its purchase decision reward the socially and environmentally responsible companies; c) this population shows that their behavior tends to remain, and even be strengthened in adulthood, forcing changes in the companies to suit the changing demands of such consumers and to compete; d) this innovative approach can contribute to a new way not only to think but to act with respect to green consumption.
Pinheiro, Monteiro, Guerra e Penãloza (2011)	Analyze the reasons and environmental concerns of undergraduate students of management with respect to environmental practices	a) demonstrate that environmental concerns do not relate to the practice when they say that the environmental problems are being over-treated; b) individuals who have ecocentric motives are more concerned about the consequences of their actions on the environment; c) the ecocentric motives and biospheric concerns are related to the ability of people to act to preserve the environment.
Santos e Tavares (2011)	Seek answers to the question: "Why should a consumer like a product over another?"	a) 75% of students consume soft drinks and 25% juices; b) the main reason for the choice of refrigerant is based on attribute and ease of purchase.
Gomes, Gorni e Dreher (2011)	The study analyzes the behavior, speech and practice of university students in relation to sustainable consumption.	a) The majority are aware of the importance of their actions related to the environment; b) students are aware of environmental problems, but its practice is different, because they consider that the cost-benefit ratio is not relevant compared to the environmental cost-preservation or their personal contribution; c) mention that the higher price of sustainable products, compared to traditional, is related to the lower supply of environmentally friendly products.
Cardoso e Cairrão (2007)	Check sustainable consumption of university students also evaluating its influence on the purchase of environmentally friendly products.	Environmental awareness and attitudes of young people related to sustainable consumption have a positive impact on the purchasing decision of environmentally friendly products.
Promotosh e Sajedul (2011)	Explore the factors that affect the behavior of young consumers attitudes in their green purchasing intentions and understand their purchasing intentions based on the Theory of Planned Behavior (TPB)	a) the influence of parents is the main antecedent of all the variables under investigation; b) the three main predictors (parents, peers and environmental knowledge) are important to understand the buying intentions of young consumers; c) the influence of parents, peers and environmental knowledge plays an important role in the control and the purchase intentions of green products.
Serpa, Ávila e Faria (2010)	Influence of Corporate Social Responsibility - CSR - the consumer's purchasing decision.	a) Research has indicated that consumers are willing to pay more for products from socially responsible companies that develop social actions that directly benefit their lives or their neighborhood. b) They are not willing to pay more for products bearing a neighborhood in another city or another state.

Figure 1. College Students Consumption Behavior

Considering aspects relating size and results linked to environmental behavior, some authors suggested the following relationships:

- Hsu (2004) studied the effects of an Environmental Education Program in environmentally responsible behavior.
- Polina (2010) in a study on the green culture in university students reflected on the ideal types of environmental awareness and behavioral practices.
- Prado, Silva, Junqueira and Almeida (2011) investigated the influence of green marketing in the consumption habits of students of Business Administration courses.
- Gorni, Gomes and Dheher (2012) observed the behavior and sustainable consumption.



e) Salome (2012) had dimensions related to environmental awareness and consumption habits.

In Figure 1, are identified other studies where college respondents have shown awareness of the importance of their actions related to environmental issues. Consequently, Garcia, Silva Pereira, Rossi and Minciotti (2008) bail that this innovative approach can contribute to a new way not only to think but also to act with respect to consumer behavior.

## METHODOLOGICAL PROCEDURES

Given the objective of this study was performed an exploratory quantitative study. Thus, a survey was carried out among a sample of 1,146 respondents, and their responses were collected in Brazilian Federal Universities. The data collected allowed to validate and complete the proposed relationship by chance in the survey.

To understand the environmental behavior, environmental practices were divided into consumption, attitude, concern and beliefs, and the following assumptions were related:

*H1: The Environmental Behavior presents a positive relationship with the consumption potential of students;*

*H2: The Environmental Behavior presents a positive relationship with Real Consumption of students;*

*H3: The Environmental Behavior presents a positive relationship with the local concern of students;*

*H4: The Environmental Behavior presents a positive relationship with Global Concern students;*

*H5: The Environmental Behavior presents a positive relationship with the local attitude of students;*

*H6: The Environmental Behavior presents a positive relationship with the Global Attitude of students;*

*H7: The Environmental influences behavior has a positive relationship with the belief of the students.*

To meet the objective of the research and relate the environmental performance of graduate students with environmental practices in the context of attitude, beliefs, concerns and consumption, the research instrument used in this study was designed in two parts.

First, the NEP scale, constructed and Dunlap VanLiere (1978) for measuring the proposed new paradigm, but this same range was revised in 2000 by the same authors, was established Ecological New Paradigm Scale, in order to cover a better understanding of the main points of the ecological world view, offer a more balanced set of pro and antiambientalistas items, trying to avoid a discriminatory terminology previously detected, and enabling the measurement of the degree of membership of a given population to new ecological values (Dunpal, VanLiere, Merting & Jones, 2000).

Having made these adjustments and following the recommendations DeVellis (2003), the evaluation was subjected to 10 experts from the field of education and environment to carry out the face validity, content validity and the consequent adjustment of the scale to the objective of the research. So experts received the scale along with the concepts of each construct and contributed to adjust the phrases (evaluation) and consider whether they fit in the constructs proposed by research (face validity) (Netemeyer, Bearden & Sharma, 2003).

Aiming to capture and analyze the expectations of respondents, we used primary data sources, with closed questions framed in Likert scale of 4 points, McDaniel and Gates (2001), where alternative measured the intensity level of agreement and disagreement of respondents, starting with the value (1) representing strongly disagree until the value (4) representing totally agree.

For data analysis we used the SPSS 15.0 software for frequency testing and the adherence test to multivariate normal distribution (PK Mardia) the LISREL 8.80 software. As an additional clarification was seen in all tests the significance level ( $\alpha$ ) of 0.05 or 5% to be more rigorous. In the sequel, it was held to Structural Equation Modeling (SEM) to evaluate the consistency of the proposed model. Therefore, the SmartPLS 2.0 software - M3 (Ringle, Wende and Will, 2005) was chosen as it allows a better analysis of noncompliant data to a multivariate normal distribution and more complex model, as recommended by the authors and that was the case of this research.

The models for calculating measurements of SEM are those that do not require the multivariate normality. More specifically three models can be used: DWLS (Diagonalized Weighted Least Square and Least Squares Weighted Diagonalizados), WLS (Weighted Least Square or weighted least squares) and PLS-PM (Hair, Anderson, Tatham and Black, 2009; Jöreskog and Sobom, 1993). The first two require very large samples, as the PM-PLS provides a better fit for the data analysis into smaller samples, which was the case in the present study.

Thus, the PLS-PM was an alternative with quality proven by the international community of researchers in various fields of knowledge (Ringle et al., 2005) and allowed for greater "plasticity" in the data analysis.

## ANALYSIS AND SEARCH RESULTS

Performed procedures for validation and subsequent implementation of the research, the scale had its application directly (M) and electronics (E). The direct application occurred in universities where it was possible its use in the classroom, with teacher support. The electronic application was used as an alternative in universities where it was not possible to count on the support of teachers in the classroom. In this sense, the proposed procedures were followed by Fleming and Bowden (2009) for electronic applications, and the course coordinator at the universities where the direct application could not be provided a link to the survey for students to respond at a time outside the room class.

The research was initiated in September 2012 and closed in July 2014. This time he gave up due to the strike of the servers of federal universities during the application of research and has generated an increase in the data collection period. At the end of the application process, they collected 1,146 questionnaires answered fully and considered to analyze 732 questionnaires.

The selection of questionnaires was conducted by the heterogeneity assessment method not observed, that is, a multivariate statistical method that performs "sweepstakes" random in all the data and selects groups that have some kind of logical relationship or internal consistency (Ringle, Sarstedt & Mooi, 2010). This procedure separates, for example, groups of respondents with bias in the responses or several inconsistencies.

With the collected answers, the model that sought to test and that was the starting point for the analysis of the data was generated by the logical assumption AFC - confirmatory factor analysis of second order (Souza Silva, Moretti, & Garcia, 2014), that is, generates an unmeasured construct (in the case COMP\_AMB) that binds to all other (measured) such that it can evaluate the degree of the causal relationship of each said measured construct "all" (COMP\_AMB).

Following the recommendations of Ringle, Silva and Bido (2014) to validate the sample was 732 respondents used the G \* Power 3.1.7 software with the specifications of Hair Jr. Hult, and Ringle Sarstedt (2014), i.e., Size effect of Medium (0,15) and the test power of 0.80, it follows that would be required for a scale as that used in the research, a sample of 55 respondents, at least, which would be sufficient to detect the effects desired the Structural Equation Modeling with Partial Least Squares method (Partial Least Square - PLS).

For the model fit proceeded to the elimination of variables (one by one) with factor loadings (or correlations) lower. So they were eliminated from the model variables AG\_13, AG\_14, CP\_20, CR\_1, CR\_2, CR\_4, CR\_6, PG\_10, PG\_11 and PG\_12.

Table 1. Adjust quality by eliminating the Construct Global Attitude

	AVE	Composite Reliability	R <sup>2</sup>	Cronbach's Alpha	Q <sup>2</sup>	f <sup>2</sup>
Local Attitude	0.705	0.878	0.409	0.790	0.31	0.4
Consumption Potential	0.583	0.807	0.663	0.644	0.38	0.187
Real Consumption	0.639	0.876	0.601	0.812	0.392	0.398
Beliefs	0.636	0.776	0.113	0.434	0.065	0.021
Global Concern	0.602	0.819	0.057	0.667	0.026	0.22
Local Concern	0.544	0.687	0.075	0.198	0.032	-0.083
Reference Value (Ringle et al (2014))	> 0,50	>0,70	R <sup>2</sup> =2% small effect, R <sup>2</sup> =13% medium effect and R <sup>2</sup> =26% big effect	>0,70	Q <sup>2</sup> > 0	Values 0,02, 0,15 and 0,35 are considered small, medium and large.

After the disposal of the variables mentioned and Global Attitude construct (That was with only one item), the model showed values of quality testing appropriate model. Thus, it proceeded again to initial calculations adjustment quality. Table 1 and Figure 2 show the results of recalculations.

The analysis of Table 1 indicates that the values are adequate, and again three constructs present values of the Cronbach's alpha test below 0.70, but as already mentioned, not hinder the evaluation of the model fit. Also not, exhibit the coefficients for determining Pearson (R<sup>2</sup>). These coefficients measure the portion of the dependent variable explained by the independent. Using the presented criteria (see Table 1), only the constructs beliefs (R<sup>2</sup> = 0.113) and global concern (R<sup>2</sup> = 0.057), which showed approximately medium and are respectively approximately small. The others can be consider large.



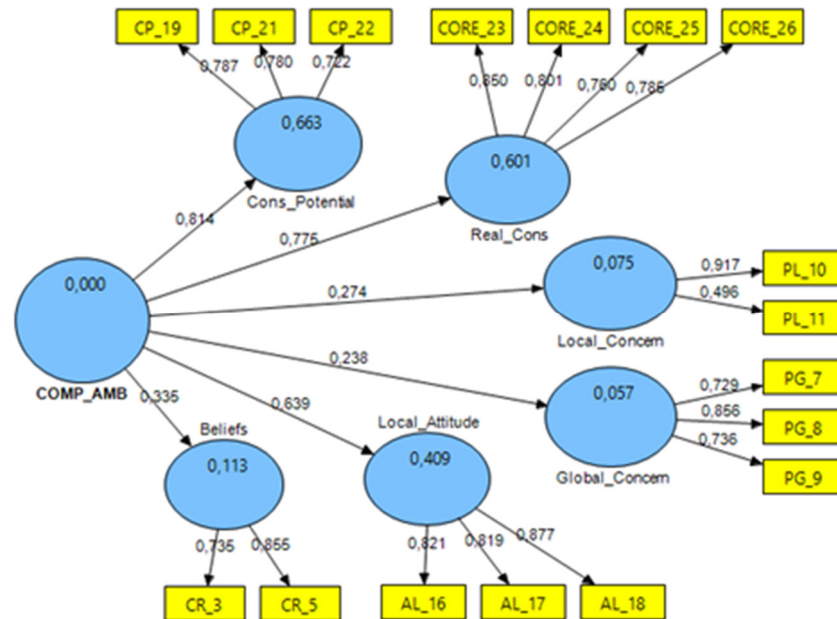


Figure 2. Model to Construct Global Attitude of Elimination

Was shot the Bootstrapping without construct Global Attitude and results, all values were above 1.96 and, therefore, reject up the Ho and correlations and path coefficients are accepted.

	Local Attitude	Consumption Potential	Real Consumption	Beliefs	Global Concern	Local Concern
Local Attitude	0.84					
Consumption Potential	0.37	0.764				
Real Consumption	0.199	0.509	0.8			
Beliefs	0.167	0.175	0.137	0.797		
Global Concern	0.13	0.178	-0.032	0.087	0.776	
Local Concern	0.215	0.163	0.197	0.105	0.168	0.737

Table 2. Validity assessment Discriminant Model - Exchange of Square Roots of AVEs (in yellow) and the correlations between constructs

Continuing, he opted for the criterion of Fornell and Larcker (Ringle, et al., 2014), clearly more robust than the evaluation of cross-charges for assessing the discriminant validity of the model. The values of the square roots of AVEs were calculated and these were placed in the main diagonal of Table 2 (yellow). It is noted that the correlation values are smaller than the square roots of the birds. Thus, it appears that there discriminant validity of the model. This date is very important because through his observation it can be said that the model has distinct elements, even with relationship to each other (Ringle et al., 2014).

Once being adjusted model, it is observed that the values are accepted and can be interpreted in addition to the existence of the discriminant validity. Went to evaluate the Effect Size ( $f^2$ ) or Cohen indicator (evaluates how much each construct is "useful" for model setting) and Predictive Validity ( $Q^2$ ) or Stone-Geisser indicator (evaluates the accuracy the adjusted model) (Ringle et al., 2014). The results are show in table 1 and their analysis reveals that the model presents accuracy in all constructs, but it shows that the constructs Beliefs and Local Concern, respectively, have little importance and slightly above a median effect.

Finally, after all model fitting steps may be interpret the path coefficients (see Table 3). The environmental behavior is best explain by the constructs Local Attitude (0.639), consumption potential (0.814) and Real consumption (0.775), and less explained by the constructs Beliefs (0.335), Global Concern (0.238) and Local Concern (0.274).

Table 3. Evaluation of Hypotheses Search

Path	Beta	t-value	p-value	Conclusion
COMP_AMB =>Local Attitude	0.639	17,193	0.037	Supported
COMP_AMB =>Consumption Potential	0.814	54,611	0.015	Supported
COMP_AMB =>Real Consumption	0.775	33,112	0.023	Supported
COMP_AMB =>Beliefs	0.335	6,359	0.053	Not supported
COMP_AMB =>Global Concern	0.238	4,001	0.06	Not supported
COMP_AMB =>Local Concern	0.274	7,409	0.037	Not supported

## CONCLUSIONS

The theme of the environmental performance of the university has been studied by authors such as Gonçalves Dias-Theodosius, Carvalho and Silva (2009); Pinheiro, Monteiro, War and Penaloza (2011); Bechtel, Corral-Verdugo and Pinheiro (1999); Murga-Menoyo, Bautista-Cerro & New (2011); Carrus, Passafaro and Bonnes (2008) to assess the environmentally friendly behavior of stimulus to the knowledge of environmental practices.

With the purpose of the study to verify the environmental behavior as influencing the environmental practices of graduate students, from a scale translated and validated for application to graduate students in management of the Brazilian federal universities, were expected to understand how future managers note environmental issues.

Thus, based on the scale applied to the research, it can be inferred that the current scenario is not favorable to the development of environmental issues in the academic environment, as students think that this issue can be a problem for business development.

In the constructs potential and actual consumption, where one of the factors involved is the price, the environmental performance starts to take second place. Agreeing with Braga Junior, Silva and Moretti (2011), environmental practices do not relate to consumption and have negative impacts on the decision to purchase green products.

Thus, one can see that the undergraduate students of Brazilian federal universities form their environmental performance by aspects related to their daily lives and connect their attitudes and consumption (potential and actual) to this fact. To construct "real consumption" even getting adjusted to the model, it fits with an average of 2.22 responses and 40% coefficient of variation, that is, students have a low environmental behavior and are unwilling to value products or companies concerned with environmental issues.

This statement can be enhanced when viewed constructs "Beliefs, Global Concerns and Local Concern" which fit the model, but have little importance on the building's environmental performance.

So when we talk about "Beliefs", students show undecided on the belief that the environment must be adapted to the needs of humans, and that this right must be exercised. This fact is due to CR\_3 items (humans have the right to modify the natural environment to meet your needs) and CR\_5 (humanity do not have to adapt to the natural environment because it can modify it to suit your needs) it was found that model and that have an average of 2.9 and 27% coefficient of variation, and you end up demonstrating that they are willing to modify and tailor the environment to meet human needs.

As for the items of the constructs "Global and Local Concern", the answers contradict the construct "beliefs" because here the students go on to take advantage of the environmental issues that are dealt with in the model.

One suggestion - as a result of the results of this research would be to insert and discuss more forcefully the importance of preserving the environment, in order to develop the future managers of the companies the spirit of seeking for alternatives that promote sustainable development of mankind and companies.

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## An Investigation Of Graduate Dissertations About Cooperative Learning: The Case Of Turkey

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### ABSTRACT

The purpose of present research is to designate the main features and tendencies in the graduate dissertations focusing on cooperative learning method in the field of educational sciences in Turkey. Of the analyzed 308 graduate dissertations in sum, the aim has been to conduct a distribution analysis with respect to the years and grades dissertations were submitted (master's/PhD dissertation), employed research method in the dissertations (descriptive/experimental), experimental design used in experimental dissertations, data collection method (quantitative/qualitative/qualitative and qualitative mixed), features of the sampling/study group, subjects/courses into which the application was conducted, employed data collection instruments and the implemented cooperative learning technique. In this research which utilized content analysis it was ascertained that particular method was predominantly studied between years 2004-2013 and jigsaw technique was the most frequently employed technique. Of all the analyzed dissertations, 75,6% were of master's level and 24,3% were of PhD level. In addition, current researches basically focused on middle school students and Sciences Course and quantitative data collection method was employed. In a majority of dissertations prepared via experimental method, pretest-posttest control group design was implemented.

**Key words:** Cooperative learning, master's dissertation, PhD dissertation, graduate education, content analysis

### INTRODUCTION

Cooperative learning, which relates to the general category of a teaching approach devised to strengthen cooperation and interaction amongst students, not only affirmatively boosts students' academic success but also improves students' social behaviors which in effect prepare a cooperative learning environment. In that aspect it is among the latest approaches in education and widely used by the instructors commissioned in almost all educational stages. As a consequence of rapidly multiplying amounts of knowledge, it has become even more critical for individuals to distill from this wide array of knowledge pool the most essential ones addressing to their individual needs. In that case, instead of memorizing the knowledge the ability to construct the knowledge meaningfully to put into everyday use can be viewed as one of the most desired objectives of effective learning. In relevant literature one of the teaching methods serving this objective, cooperative learning, has been described as students' meeting together during school time to achieve a common objective (Woolfolk, 2010). Another definition points out that it is a different teaching approach in which students study in groups created according to dissimilar individual talents (Slavin, 2006), or as argued in a different source it is a method in which students work in small groups to assist each one's learning towards a common objective (Açıkgöz, 2006), or it is a learning environment in classroom in which students gather around heterogeneous groups of 3-4 peers to work on their individual tasks towards a common objective (Johnson, Johnson & Holubec, 1993).

In teaching environments where constructivism is applied learning approaches such as cooperative learning is utilized and in this approach students are basically encouraged to take greater responsibility in the learning process and play active roles. In this method, the individual establishes a link with former experiences and new learning experiences in order to reach a meaningful association. The most pivotal asset of this method is that, by studying, discussing and assisting one another, students can elevate to the highest level of their self-learning as well as the learning level of their peers. Slavin and Johnson (1990) argue that in cooperative learning it matters substantially to create heterogeneous groups with respect to task awards and individual performance in order to raise the



achievement to the highest echelon. In a cooperative distribution of the tasks students should be aware of the fact that participation in activities depends upon their reciprocal assistance to learning process and partaking in discussions. Cooperative learning provides a list of benefits some of which are enabling students' active participation in learning experiences; exposing the individuals to new learning experiences as a consequence of group interactions; reasoning through social environments; refining the highest mental skills such as comprehension and critical thinking; assisting the students in forming attitudes and judgments; presenting positive social behavior models; providing alternative perspectives; boosting cooperative skills, self-respect and sense of achievement (Woolfolk, 2010: 324; Borich, 2014: 356).

### **Purpose and Research Questions**

Analyzing scientific dissertation in any given field may render information on the depth and generality of particular subject and unveil an overall perspective on the analyzed field. In this research it was aimed to examine the dissertations focusing on cooperative learning method and to provide a perspective to educators, researchers and teachers as regards the effectiveness of these papers. This research poses significance on accounts of collectively treating all graduate dissertations prepared to analyze cooperative learning applications in Turkey. Hence it is considered that graduate dissertations focusing on cooperative learning can demonstrate the nature of the general tendency towards this method. Cooperative learning, which aims to utilize students' learning towards common objectives through learning via experimenting, has been a popular method about which researchers have conducted extensive studies in Turkey since the 1990s. In order to designate an accumulative progress of the researches it is considered crucial to exhibit in which courses, what teaching levels and through which research/data collection/data analysis methods dissertations were analyzed. It is also important to demonstrate the dimensions and features open-to-investigation to ensure an accumulative progress. In the conducted literature review any research evaluating the dissertations working on cooperative learning in Turkey hasn't been encountered. The only meta-analysis study relating to cooperative learning method was solely restricted with the effect of particular method on Mathematics course achievement and attitude towards this course (Özdemirli, 2011).

The main problem of this research has been stated such: In the field of educational sciences in Turkey, what are the basic features and tendencies of graduate dissertations related to cooperative learning method?

In the light of designated research objective, two fundamental questions have been put forth:

1. What kind of a distribution do cooperative learning method related dissertations exhibit with respect to the years and grades they were submitted (master's /PhD dissertation)?
2. What kind of a distribution do cooperative learning method related dissertations exhibit with respect to the employed research method (descriptive/experimental), experimental design used in experimental dissertations, data collection method (quantitative/qualitative/mixed), features of the sample/study group, subjects/courses into which the application was conducted, employed data collection instruments and the implemented cooperative learning technique?

### **METHODOLOGY**

Document analysis has been used in this research. Document analysis which involves the analysis of printed and written documents on the projected topics is a component of qualitative research model. Hence this is a qualitative research model (Yıldırım and Şimşek, 2006).

### **Population and Sample**

Population of the research entails graduate dissertations scanned on YOK (Council of Higher Education) Thesis Center to access educational dissertations that focused on cooperative learning method. Since it is possible to access PDF scanned full texts or abstracts of these dissertations, sampling was deemed unnecessary to create.

### **Data Collection**

In order to investigate retrieved dissertations with respect to preset variables, "Dissertation Review Form" developed by the researchers, has been utilized as data collection instrument. This form involves sections such as descriptive information on the identity of dissertation (year and level), application technique, course/subject, research method, model, sampling and data collection instruments. To access relevant dissertations scanning has been conducted by entering different key terms that all referred to cooperative learning. Additionally since the applied cooperative learning technique was already present in a number of dissertation titles, cooperative learning techniques were scanned through their Turkish and English equivalents.

### **Data Analysis**

In the analysis of data, content analysis was utilized. Content analysis is a systematic and repeatable method which allows the texts containing numerous words to be converted into content categories possessing specific rules. Content analysis enables the researchers to simplify a large-volume of data to sift through in a systematic manner

(Stemler, 2001). Dissertations downloaded from YOK Thesis Center were examined through codes given by thesis review form and data were recorded. Every single dissertation was assessed via content analysis in ‘Dissertation Review Form’ and it was attempted to define the data. All the dissertations accessed were examined with respect to the questions stated in dissertation review form and were created parallel to the sub-problems of research. According to the existence or absence of each specified dimension and feature in every single dissertation, appropriate coding was given and data were downloaded to SPSS 16.0 program.

In the conducted analyses, the features of dissertations were registered as units and results of the analysis were presented after converting to graphics, frequency and percentage tables. So as to manifest the reliability between the different sets of coding, Krippendorff Alpha reliability coefficient was computed and found as ,95. The fact that Alpha level is above ,80 indicates a high level of consistency between the scorers (Bıkmaz, 2011). This finding points out that there is high level of consistency between the scorers.

## FINDINGS

### 1. Distribution of Dissertations with Respect to Year

**Table 1:** Distribution of Dissertations with Respect to Year

Year	f	%
1993	2	0,65
1995	5	1,62
1996	4	1,30
1997	1	0,32
1998	5	1,62
1999	8	2,60
2000	2	0,65
2001	8	2,60
2002	13	4,22
2003	9	2,92
2004	16	5,19
2005	20	6,49
2006	30	9,74
2007	28	9,09
2008	22	7,14
2009	21	6,81
2010	26	8,44
2011	27	8,77
2012	27	8,77
2013	25	8,12
2014	9	2,92
Total	308	100

Table 1 demonstrates that the first two dissertations on cooperative learning method were submitted in 1993. As per-year distribution of dissertations is analyzed it surfaces that from 1993 till present date, it has remained to be a popular subject of teaching methods for the researchers pursuing master’s and PhD studies. Table 1 also reveals that as of year 2004 there has been a rise in the number of dissertations dedicated to this particular teaching method. Years 2006 and 2007 are specific years that the method received the greatest interest amongst researchers.

### 2. Distribution of Dissertations with Respect to Level

**Table 2:** Distribution of Dissertations with Respect to Level

Type of Dissertation	f	%
Master’s dissertation	233	75,65
PhD dissertation	75	24,35
Total	308	100

Of all the analyzed dissertations, 76,65% were (f:233) master’s dissertations, 24,35% were (f:75) PhD dissertations which indicates that cooperative learning method was more popular among master’s level studies.



### 3. Distribution of Dissertations with Respect to Research Methods

**Table 3:** Distribution of Dissertations with Respect to Research Methods

Research Method	f	%
Descriptive method	27	8,76
Experimental method	281	91,23
Total	308	100,0

As seen in Table 3, of all the dissertations related to cooperative learning, experimental research method was employed in 91,23% (f:281) and descriptive research method was implemented in 7,79% (f:27) .

### 4. Distribution of Dissertations conducted via Experimental Method with Respect to Experimental Design

**Table 4:** Distribution of Dissertations conducted via Experimental Method with Respect to Experimental Design

Types of Experimental Design	f	%
Pretest-posttest control group design	227	73,70
No data	58	18,83
Pretest-posttest design without a control group	8	2,60
Non-equivalent control group design	6	1,94
Solomon four group design	1	0,32
2 X 3 factorial design	3	0,97
One-group posttest-only design	2	0,65
Posttest-only control group design	2	0,65
Single factor between groups	1	0,32
Total	308	100

As demonstrated in Table 4, 9 different experimental designs were utilized in cooperative learning relevant dissertations. In 73,7% of dissertations(f:227) pretest-posttest control group design was used, in 18,83% (f:58) of dissertations no design was specified but it was stated that the method was experimental. Compared to pretest-posttest control group design the remaining experimental designs were less favored.

### 5. Distribution of Dissertations with Respect to Data Collection Method

**Table 5:** Distribution of Dissertations with Respect to Data Collection Method

Data collection method	f	%
Quantitative	178	57,79
Mixed	115	37,34
Qualitative	10	3,25
No data	5	1,62
Total	308	100

As witnessed in Table 5 in graduate dissertations focusing on cooperative learning, quantitative data (57.79%; f:178) are collected predominantly; however dissertations in which quantitative and qualitative data are collected together constitute 37.34% (f: 115) of all the dissertations. Scientific researches in which qualitative data only are collected constitute merely 3,25% (f:10) of all the studies in sum.

## 6. Distribution of Dissertations with Respect to Employed Cooperative Learning Technique

**Table 6:** Distribution of Dissertations with Respect to Employed Cooperative Learning Technique

Cooperative Learning Techniques	f	%
Jigsaw	63	20,45
Student-Teams-Achievement-Divisions (STAD)	51	16,56
Learning Together (LT)	47	15,26
Others (Think-Pair-Share, etc.)	30	9,74
Group Investigation	17	5,57
Cooperative Integrated Reading and Composition (CIRC)	8	2,60
Teams-Games-Tournaments (TGT)	8	2,60
Team Assisted Individualization	6	1,95
Academic Controversy	5	1,62

Table 6 manifests that in all the dissertations focusing on cooperative learning the most favored technique is “Jigsaw” (20,45%; f:63). The other dominant techniques are “Student-Teams-Achievement-Divisions (STAD)” (16,56%; f:51) and “Learning Together” (15,26%; f:47). The other techniques identified in relevant literature were less common in all the analyzed dissertations. In 106 dissertations out of 308 dissertations based on cooperative learning, it could not be identified which technique was utilized.

## 7. Distribution of Dissertations with Respect to the Features of Sample/ Study Group

**Table 7:** Distribution of Dissertations with Respect to the Features of Sample/ Study Group

Sample/Study Group	f	%
Middle school students	146	47,40
Undergraduate students	61	19,81
High school students	41	13,31
Primary school students	38	12,34
Instructors	14	4,55
No data	3	0,97
Preschool students	2	0,65
Others	2	0,65
Teachers	1	0,32
Total	308	100,0

As seen in Table 7, in almost half of the dissertations focusing on cooperative learning (47.40%; f:146) the sample or study group consists of middle school students which is followed respectively by undergraduate students, (19,81%, f:61), high school students (13,31%, f:41) and primary school students (12,34%; f: 38).

## 8. Distribution of Dissertations with Respect to the Applied Course

**Table 8:** Distribution of Dissertations with Respect to the Applied Course

Applied Course	f	%
Science	72	23,38
Others	46	14,94
Mathematics	37	12,01
No data	29	9,42
Social Sciences	28	9,09
English	22	7,14
Turkish	18	5,84
Physics	13	4,22
Chemistry	11	3,57
Visual Arts	10	3,25
Geography	9	2,92
Biology	7	2,27
Physical Education	6	1,95
Total	308	100

As the applied courses in the dissertations based on cooperative learning issue are examined, it surfaces that with a ratio of 23,38% (f:72) Sciences is the most favored course which is followed by Mathematics course with a ratio of 12,01% (f:37).

## 9. Distribution of Dissertations with Respect to Employed Data Collection Instrument

**Table 9:** Distribution of Dissertations with Respect to Employed Data Collection Instrument

Instrument	f	%
Achievement test	229	74,35
Scale	137	44,48
Questionnaire	75	24,35
Interview	67	21,75
Others	56	18,18
Observation	42	13,64
Aptitude/Personality test	32	10,39

Table 9 presents a list of employed data collection instruments. Noticing that many a number of data collection instruments can simultaneously be employed in the same dissertation, the objective in this analysis is to detect the frequency of the employment of a particular data collection instrument in all dissertations. There is no such status or objective as reaching a cumulative percentage. Out of 308 dissertations, in 229 dissertations (74,35%) achievement test was used whereas in 137 dissertations (44,48%) scale was implemented. Furthermore out of a total of 308 dissertations, interview was used in 67 dissertations and observation was utilized in 42 dissertations as a qualitative data collection instrument.

## CONCLUSIONS

In present research a systematic analysis was conducted in terms of formation and content of dissertations focusing on cooperative learning method and it was aimed to provide an overall profile of the scientific studies bearing the quality of a graduate dissertation. The findings of the analyses pointed to the direction that 81,48% of the graduate dissertations related to cooperative learning method belonged to the 10-year period between 2004-2013 and the highest frequency of studies (30 dissertations in sum) belonged to the year 2006. This might be explained with the reason that due to the curriculum change in 2005 more emphasis was rendered on cooperative learning and its gravity. Johnson, Johnson and Stanne (2000) argue that the reason accounting for the abundance of studies on cooperative learning method is that this particular method provides a rich theoretical foundation and is easily applicable in classroom settings. As the distribution with respect to years is examined it becomes clear that there is an incessant interest towards the method. The fact that cooperative learning is still a popular research topic among the researchers may be construed as indicative of its status as an ever-significant and worthy topic of research. Özdemirli (2011) in his meta-analysis study conducted to investigate the effect of cooperative learning method on students' Mathematics achievement and attitude towards Mathematics course indicated that the studies focusing on this topic were particularly evident between years 2007-2009. On an international scale Johnson, Johnson and Stanne (2000) in their meta-analysis study related to 164 studies on cooperative learning between years 1970-2000 put forth that the researches that first took off in the 1960s gained further momentum in the 1980s. This finding evidences that on an international scale, studies related to cooperative learning date back to much earlier years and research tendencies in Turkey could, compared to international tendencies, occur in a delayed interval. Of all the examined dissertations 75,65% were of master's level while 24,35% were of PhD level which might be explained with the fact that there are fewer number of PhD students than master's students.

57,79% of the graduate dissertations focusing on cooperative learning method employed quantitative data collection method, 3,25% employed qualitative data collection method, 37,34% employed qualitative and quantitative data collection methods collectively. This finding reveals the urgency to place dominance to the researches in which data are collected via mixed and qualitative methods. Of all the analyzed dissertations 91,23% were experimental studies and in the studies employing this method it was identified that the most favored design was pretest-posttest control group design (73,70%). As is the case in the remaining teaching methods and approaches in a majority of scientific studies related to cooperative learning, particular emphasis was paid on the effects of the method on cognitive and affective learning outputs; hence it is safe to argue that experimental method, as the most appropriate and reliable design in modern educational system, non equivalent control group pretest-posttest design was also utilized. In 8,76% of dissertations, the employed method was descriptive method. Echoing the findings of present research it was detected in studies analyzing the effect of a variety of teaching methods that the researches were basically woven around experimental design and quantitative method at most which was then followed by mixed method. (Saban, 2009; Alper, Öztürk and Altun, 2014). Almost half of the

dissertations related to cooperative learning (47,40%) were executed among middle school students. Özdemirli (2011) in his meta-analysis study also pointed out that the most commonly selected teaching level was of elementary and middle school levels. Likewise Johnson, Johnson and Stanne (2000) in their meta-analysis presented that middle school students constitute the group which received the greatest popularity as a study group. As the distribution of dissertations is examined with respect to applied courses, the most favored course appears to be Sciences (Physical Sciences) which is then followed by Mathematics course with a ratio of 37%. A number of international studies suggest that cooperative learning applications are predominant in physical science and /natural sciences courses. (Zheng, Huang and Yu, 2014) As the tendency of dissertations is examined with respect to data collection instruments it surfaces that achievement tests and scales are the most selected data collection instruments. A similar finding was observed in Saban's study (2009) in which the researches that were based on multiple intelligence theory was assessed.

As seen in all the dissertations relevant of cooperative learning the most popular technique was "Jigsaw" as employed in 63 studies. "Learning Together" technique was utilized in 47 studies. Johnson, Johnson and Stanne (2000) in their meta-analysis study covering 164 researches ranging from years 1970-2000 on cooperative learning, a parallel finding was obtained. As also manifested by their research findings the most frequent techniques were "Learning Together" (57 studies) and "Jigsaw" (14 studies). Also "Student-Teams-Achievement-Divisions" (STAD) was employed in 51 dissertations. Echoing this finding, in the meta-analysis conducted by Özdemirli (2011), it was pointed out that of all the 26 studies examined within the scope of research the same technique (Learning Together) was employed in 12 studies and this technique was the most popular cooperative learning technique.

Another noteworthy feature in all the investigated dissertations is that as regards the name of the method there is not a conceptual consensus yet. It is rather interesting that among the dissertations submitted in the same university and even in some parts of the same dissertation, dissimilar concepts are employed. It is safe to claim that using a variety of concepts to indicate the same meaning and inleu of one another may bring conceptual ambiguities itself. Moreover such a lack of consensus is also a clear evidence of the necessity to provide a terminological unity in the field of educational sciences, as also spoken out overtly by educational scientists in a range of platforms.

Since a wide array of the scientific researches examined within the scope of current study were executed via experimental method of which effects on cognitive learning products were investigated, it became a necessity to employ achievement tests as data collection instrument. One limitation of present research is that only graduate dissertations on cooperative learning method were included in the analysis. It is considered that if findings of present research are integrated with the results of papers, articles and projects that aim to question the effectiveness of the method in Turkey, it shall assist the readers greatly in reaching a more holistic finding and be a guide map for the prospective researches who shall dwell on the same method. It was seen that investigated dissertations were basically designed on the essence of comparing cooperative learning with traditional method. In the future it is suggested to conduct studies in which cooperative learning is contrasted with different teaching methods and/or different cooperative learning techniques are compared with one another. In the stage of coding the characteristics of accessed dissertations it was noticed that some dissertations failed to provide the essential information; thus particular attention should be paid in the presentation of dissertations to comply with scientific research methods and follow a more systematic and explanatory system. This research also unveiled the demand for scientific studies geared towards combining via meta-analysis method the effects of cooperative learning (as directed to general or specific subjects) on the cognitive and affective learning products. It is claimed that creating a wider scope of research by integrating with meta-analysis method the findings obtained from independent studies related to this teaching method will most likely provide contributions to relevant literature. As a final remark it should be noted that the analyzed dissertations which are evidences of toilsome labor and effort should not be imprisoned to libraries or archive stores but put into real use whenever and wherever deemed necessary. In particular, provided that Ministry of National Education consults to these dissertations as sources in its curriculum development or (as very frequently done) "change" attempts, the curriculum development activities would gain a further positive quality.

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## Approaches To Teaching Information And Communication Technologies In Pregraduate Teacher Training

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### ABSTRACT

The paper deals with the issue of ICT teaching in pregraduate teacher training on both the Bachelor's Degree and Master's Degree level. The paper also analyses the educational approaches to teaching, trying to capture the possible differences between specializations and identify possible specifics and methods which reflect interdisciplinary relations with an effort to strengthen the professional key competences of a teacher (with an emphasis on communicative language competences). The aim of this paper is to present the results of a content analysis and the proposed measures leading to a higher quality of education outlined in the context of pregraduate teacher training.

### INTRODUCTION

The key to an effective education of the present and future generations of pupils and students is a complex professional preparedness of a teacher, his general knowledge. In concordance with the current trends we do not strictly mean the contents preparedness but mainly the competent preparedness. Activity character of the competences allows a teacher to educate the pupils with a help of cooperation of classical educational methods and modern technologies, mainly the ICT. In this context, the questions emerge, how are the teachers supposed to use the ICT, how to implement them into the instruction process, what methods of pupil's learning will be incited, what key competences can be enhanced by using the ICT in the correct situations (Kubrický, 2013).

The relationship of a teacher to information and communication technologies plays the understandable and important role here. It is not made only by a subjective conviction and interest, but also by the quality of education within the pre-graduate teacher training, alternatively the expanding studies. Our goal is to reflect the content and methods of the Bachelor's and Master's Degree studies within the field of Informative education oriented on preparing the future informatics teachers of the ISCED level 2 and secondary school pupils and students on the Faculty of Education of Palacký University Olomouc. Our effort is to analyse the current state of the instruction from the point of view of prevailing character representation of the teacher's ICT competences in the instruction of chosen subjects of the mentioned field. Regarding the fact that the knowledge of the English language is also one of the decisive determinants of successful gaining of knowledge from the ICT field, we also put emphasis on the perspective strengthening of the English language knowledge.

### ICT EDUCATION ON THE DEPARTMENT OF TECHNICAL EDUCATION AND INFORMATION TECHNOLOGY ON FACULTY OF EDUCATION OF PALACKÝ UNIVERSITY OLOMOUC

At the Department of Technical Education and Information Technology it is possible to study both degrees, Bachelor's and Master's. The Bachelor's degree subject of study "Information education with focus on education" is a field of study that has a priority to create a basis for the follow-up teacher training even though to find an employment is also possible from this Bachelor's degree. This branch of study is focused on the field of information education as a stable part of the preparation of primary school pupils and students of various fields of study throughout the Czech Republic. In this field of study there are included besides the disciplines of an informatics and mathematical character also the basics of electrotechnology and electronics so that the absolvent is fully capable of not only knowing but also mediating all needed terms of information activity, knowledge of software structure, programming, functions of information technology, knowledge of operational systems and also technical knowledge. The applicants can choose this field of study as a double major. The possible fields for combining the double major are B7507 Specialization in pedagogics and B7506 Special pedagogics.

The graduate of the Bachelor's degree is mainly prepared to successfully continue with the study of follow-up Master's degree in the field of technical and information education teaching. The graduate has general knowledge and he knows the basic knowledge and processes in his field. In a creative way, using methods accenting the activity comprehension he is ready to apply the scientific and technical knowledge, creative skills and to instigate creating of desirable bonds and attitudes to the fields of programming, creating of educational materials or administering of e-learning systems and informational systems.



The goal of this field of study is to create the optimal prerequisites for the adoption of the set of competences which are necessary for the employment of a graduate of the study field; by the set of elective disciplines of the study field it is overseen the usage of the individual dispositions of the students in the frame of broad spectrum of information technologies in the educational process conditions.

The set of disciplines of field's study plan is then divided into the technical disciplines of the profiling character, broader scientific basis and also the disciplines including broader context. Then, the selective disciplines of an extending character are implemented. The emphasis is put on the practical side of the graduate's employment. The ratio between the theoretically lectured subject matter and practically aimed exercises also responds to this fact. The professional experience with the length of 10 days is also a part of this study field. This professional experience is realised by students on professional workplaces of school institutions and companies that are concerned with the implementation, administration, operation and development of information technology and its systems.

After finishing of studies a graduate will be able:

- to show an extensive knowledge of subjects and an extent of information technology field;
- to have the knowledge of the most important informatics topics, which are mainly algorithmisation and programming, construction of computers, operating system, administration of computer networks, gaining data from the real processes and its processing, creating and administrating of database and information systems, processing of computer graphics, creating of web applications, also the analyses are in more simple cases possible in the given fields;
- to prove the necessary knowledge of theory, concepts and methods of the field, they are for example able to prove the knowledge of methods from the separate fields of information technology;
- to solve practical problems with the use of professional knowledge and on the basis of a framework defined task in the field, for example they are able to independently design and realise works of a smaller scale (software and hardware products, computer systems, control systems, computer networks), and they are able to do so mainly with the use of the known and verified methods and technologies, they are able to understand the issue of extensive systems;
- to prove, justify and document the chosen methods of solving;
- to administrate smaller software, hardware systems and networks;
- to create extensive texts, and mainly texts describing the intended or realised solutions;
- to find, sort and interpret the information which are relevant for solving of the defined practical problem;
- to test new approaches and technologies, cooperate on the realisation of technological changes and innovative activities;
- to prove their theoretical knowledge of basic topics of the information technology fields;
- to prove their multidisciplinary knowledge of the basic education topics which are needed for creating of educational offer on primary school;
- to explain and evaluate the principles of effective communication;
- to orientate in the primary and secondary literature concerning the scientific fields of subject specialization;
- to interpret the relations between the basic pedagogical and psychological categories and their functioning in the educational process;
- to interpret the psychological and pedagogical principles of development, education and upbringing of a person;
- to didactically transform the multidisciplinary knowledge and skills that are necessary for the educational process in the basic education;

The goal of the follow-up Master's degree study *Učitelství technické a informační výchovy pro střední školy a 2. st. základných škol* (Teaching of technical and information education for secondary schools and ISCED 2 level) is to offer a comprehensive, professionally oriented Master's degree education which prepares a graduate for the instruction of the lectured subjects, thematic topics, courses or projects from the field of technical education, information education and information technology in the school institutions which offer the education. The graduates of the field of study gain the relevant knowledge and skill in the field of technical education, information education (including the information and communication technologies), contemporary didactic conceptions and methodical approaches to the instruction of technical and informational oriented lectured subjects.

The study prepares the graduates mainly for the realisation of instruction focused on the user oriented approach to technology, information and communication technology and to performing of the instruction of technical and information education in the school conditions. Besides the own instruction activities they are also ready to perform the function of ICT coordinator according to "Koncepce státní informační politiky ve vzdělání" (Conception of state information policy in education), to work as advisers and instructors in the field of ICT usage and development on schools, to lead and organize non-instructional activities oriented on the pupil's work with technology and to administrate the school computer information systems.



The graduates can be employed as teachers of mandatory and elective subjects form the field of technical and information education on schools which offer lower secondary or higher secondary education (ISCED 2, ISCED 3, special schools, then mainly technical lyceums, vocational schools, dual education system schools and special practical schools). They can work also as ICT coordinators and administrators of school computer information systems. Then they can work as lectors or organizational workers in school institutions and in the sphere of company training.

### **Expert knowledge:**

After finishing of studies a graduate will be able:

- to show a vast knowledge of scientific disciplines of own approbation and to understand these disciplines, principles of its structure, relations inside and also outside of the disciplines of own approbation;
- to interpret, explain facts, terms, scientific disciplines' statements from which the instructed subjects of their subject approbation are derived;
- to show a vast knowledge of the basic education contents and its understanding;
- to orientate in a vast spectre of instruction methods, interpret and evaluate the instruction strategies and representations in relation to the instruction of a specific curriculum;
- to show a deep knowledge of pupil's personality development mainly in the relation to the learning process;
- to show a knowledge and understanding of assessment and self-assessment criteria;
- to interpret and evaluate the goals of technical and information education instruction;
- to understand the methodology of pedagogics, psychology and scientific disciplines of own subject approbation;
- to orientate in pedagogical conceptions and specializations, in development of opinions on conception of the teaching process in historical context, they evaluate the current tendencies;
- to orientate in main development trends of European education, in alternative and innovative conceptions of education;
- to understand the theories, concepts and methods of present-day knowledge in pedagogical and psychological disciplines concerned with the process of instruction and learning;
- to orientate in the current methods, techniques and tools of research in the field didactics of own approbation, to know how to interpret methodological problems of research in the field didactics of own approbation;
- to understand socio-scientific context of education, to interpret and evaluate the relation between the findings of the socio-scientific disciplines (philosophy, sociology, ethics, psychology, pedagogics) and the instruction and learning processes;
- to analyse the inner relations of the field contents of own approbation subjects, their relations to the practice, their interdisciplinary and beyond-disciplinary overlaps;

### **Expert skills:**

After finishing of studies a graduate will be able:

- to control the transformation process of the field subject approbation knowledge, that means to set goals of instruction, critical analysis, interpretation and structure of curriculum, choice of appropriate instruction forms and methods, to take into consideration the individual possibilities and needs of pupils;
- to choose appropriate assessment and self-assessment methods of instruction methods and learning results, to reflect the processes and result of instruction with the goal to improve the planning of future instruction;
- to plan instruction considering the goals set in the curricular documents and considering the individual possibilities of pupils;
- to choose and functionally use teaching aids and tools during the instruction of a given field;
- to functionally use information and communication technologies in education;
- to apply various instruction methods and organisational forms with regard to own subject specialization;
- to create quality environment for learning, mainly socially-emotional climate based on the mutual respect, cooperation and following the agreed set of rules of behaviour and coexistence in a class;
- to appropriately adjust the knowledge and skills to a specific context of a given school class, given grade, given school or community where the school is situated;
- to apply appropriate diagnostic methods of pupil's performance assessment;
- to communicate with pupils, parents and colleagues in a cultivated manner, with respect and adequately to their age and position;
- to adapt the educational programme in the relevant disciplines to concrete conditions of pupils and school levels;

- to individually and appropriately realise the teaching process of technical and information education in all its phases (planning, instruction realisation, instruction reflection);
- to evaluate own educational activities on the basis of own knowledge and to creatively improve own educational performance on the basis of self-reflection;
- to analyse the educational programme from the point of view of expected outputs from teaching in the field of own subject approbation;
- to formulate a research problem from own field approbation, field didactics, pedagogics and psychology;
- to choose the corresponding research methods for solving a research problem from own field approbation, field didactics, pedagogics and psychology;
- to structure and design an expert text, use expert language, present the result of own research in expert community.

On the basis of these facts we continue working on the level of designing the contents of individual subjects, including the targeted approaches of instruction.

### ICT IN MODERN CONCEPTION OF EDUCATION

The 21<sup>st</sup> century on its beginning introduced in terms of the discussion about ICT in education a targeted shift of attention more to the pupils and students. (Sak, 2007) They changed the position of ICT from the goal of education to the means of education. There is a focus on the functional creativity, adapting of instruction goals, plans and methods. The ICT competences of a teacher became from a separate category a part of integrated whole of teacher's professional competences, a part that is not limited by a technical barrier but is consequent and interconnected with other fields of professional competences.

The outcome and a way of understanding the ICT competences of a teacher are also confirmed by the standards of the American organization *The International Society for Technology in Education* (ISTE, 2008, online). Before it was focused more on the expert technological knowledge and skills of teachers (issued in 2000) but lately it is oriented mainly on the development of pupils' personalities and on the influencing of instruction methods and teaching with the use of expert knowledge and skill (year 2008). In the current conception are the ICT competences of a teacher according to the ISTE organization focused on the complex qualities of a teacher which are then characterised within the detailed elaboration of the following points:

- Supporting and inspiring the learning and creativity of pupils.
- Preparing the educational and assessment activities responding to the digital age.
- Using the technologies while working.
- Building and supporting of responsibility and citizenship.
- Self-improvement and professional growth.

These criteria in their own manner must be projected also in the professional training of the future teachers within the subjects aimed at concrete ICT applications. The approaches which are being created are a reflection of the effort to develop the above stated competence fields on the basis of own experience of students, their interests, link between the other competence fields, self-improvement and steep growth of knowledge, skills and approaches to many useful information in the digital world. So the educational processes such as *e-learning* and *web-based-learning* have more and more space in the training of future teachers. (Klement, 2012) They also allow getting over one of the main obstacles of the effective applied ICT instruction faster. The constant and rapid advancement and with it connected aging and depreciation of many instruction materials. To ensure we kept the motivation and interest of students in concrete fields before, every year we had to vehemently modify the instruction contents of subjects such as *creating of www applications*, with respect to reflecting the current trends, innovations also of advanced options customised to the users of still younger and younger age.

We can incorporate this issue into a theory of so-called digital natives and immigrants. Contemporary generation, from pre-school children to university students, is different from the previous one. The reason of this changes is the arrival and spreading of digital technologies. Everyday life of an individual was significantly influenced and changed by the digital information and communication technologies. They are applied in many new areas, they quality is increasing and they are capable of creating global information networks. These changes have to manifest themselves also in the educational process. Marc Prensky calls this changes a "digital singularity". (Prensky, M., 2001). Prensky calls present pupils and students "digital natives" and the older generation, in which it is possible to include teachers, calls "digital immigrants". Probably the biggest issue of contemporary education is that teachers (as digital immigrants) manage their students (as digital natives) only with difficulties – their opinions and understanding of world is totally different. Teachers have to prepare their pupils for a life in an environment, which they are not able to imagine and it will be constantly developing. Therefore, there is a need to educate students in an adequate way. In the area of methods and content of instruction, the ability to communicate in a language and style of today's students is for today's teachers indispensable. The teachers also have to progress

faster and use randomly acquired information, they do not have to stick to the logical approach step by step every time, they can use multitasking, etc.

**Because of this reason we are today creating the instruction approaches separated from static forms of instruction intensions generated by the progress of ICT development and to it constantly adapted sources, to the dynamically competence requirements.** These can be fulfilled by the operationalization of subjects' goals and linking to the original educational sources, which are in the ICT field characterized by features like **extensiveness, expertness, up-to-datedness, applicability, interconnection, community support** and others. In the next part of this contribution we therefore focus on specific securing of this approach with respect to the instruction contents and subject goals.

## WORK WITH INSTRUCTION CONTENTS

The instruction contents of most of the subjects realised in the thematic ICT unit is designed on the expert and didactic level. Now, we are paying attention to the expert level, which must reflect the current advancement, the already acquired student's knowledge but it also must break away from the routine user activities to the area of knowledge growth in the information education field. The instruction contents is created on the basis of generally recognized accredited wholes comprising of higher instances of education. A dynamic form of education supported by appropriate system of educational sources is then implemented to these wholes. These sources directly influence in the last decade the structure of instruction contents, because they implement the progress in the particular fields of ICT much sooner. They also can to a certain extent simulate the environment that was sooner realised only by classic forms of lectures, seminars and exercise thanks to the technical level of advancement of information presentation. Now we will have a closer look on the particular topics of subject *Creating of web applications* that are implemented in the Information education field, including the comparison of statistically defined goal and its further operationalization in the dynamic conception:

### *Statistically defined instruction goal of subject*

The goal of the subject is to teach the students to create websites with the use of (X)HTML and CSS languages, JavaScript, PHP and MySQL technologies. The subject has an application character; the theoretical lectures are followed by practical exercises. To pass the subject one must write a seminar paper and pass an oral or written exam.

Such defined subject goal is directly connected to specific topics and it does not offer a space for application of dynamic component of instruction, which includes the reflection of teacher's modern conceived ICT competences. The possibility of application of modern educational sources is not appropriated, however it cannot be understood just as one of the determinative components of instruction contents. The operationalization of instruction goal of the subject in the dynamical conception can look as follows:

### *Dynamically defined instruction goal of subject*

The goal of the subject is to offer students a space for own familiarization and orientation in the issue of websites and applications creating thanks to the shared and dynamic information centre. The students will learn to use the particular technologies and understand their purpose on specific examples, they will learn to effectively choose and classify the ready components and put them together into functional units.

The conception of componential topics of instruction follows such defined instruction goal of the subject. Their listing is partially influenced also by the used educational source, as it was discussed above. In the case of the subject *Creating of web applications*, the portal w3schools.com is used for the instruction, which makes the basic dynamic information centre. (W3Schools, 2015, online). The main principle is the fulfilment of all imposed requirements from the point of view of the original educational source, including the focus on specific examples and at the same time the possibility to improve the knowledge of the English language while studying ICT. This fact aids its partial or full implementation within the instruction from the first years of study, including the university instruction. The componential topics of the instruction of subject *Creating of web applications* in simplified version include:

- Basic terms and their meanings in the issue of creating web applications.
- Approaches to creating webpages and web applications – the ways of designing and developing, used technologies, alternative applications and tools.
- Statistical templates of webpages and web applications, frontend frameworks, gaining and sharing of ready-made components.
- Principle and possibilities of user scripting, library and further superstructures, their meaning in the context of making modern applications.
- Exchange of information and communication through web forms, the possibilities of design and use of other party's tools.
- Issue of server scripting and databases, purpose, needs and examples. CMS.
- Domains and Webhosting. Internet marketing. Professional career, specialization and possibilities of employment, creative industries.

- Monitoring of further development, share on building of the educational network and extending of information sources.

The dynamic side of education goal, which means the activity conception directly unpaired with specific tools or technologies, which are considered on the level of means of achieving the given goals must be reflected in the instruction contents whole and in its individual parts. This is guaranteed by a certain extent of own space or deciding of those who study about the choice of important topics, which logically follow in order, however they are limited and usable in the specific context individually. The stated approach naturally does not put gaining of deeper knowledge of specific technologies outside the instruction goals, but it puts them to componential parts tied with specific implementations of absolvent's professional goals.

### THE ENGLISH LANGUAGE IN ICT

The successful gaining of knowledge throughout the subjects such as programming, creating of web applications and databases is conditioned by the basic knowledge of English language. It, as a global standard (sometimes even referred to as a tool), is used almost exclusively for the syntax of programming, query and markup languages, names of entities and objects indexed in databases or for general conventions in naming the agreed processes, methods, algorithms. Therefore, in the un-English speaking countries, the basic foreign language literacy of those who study is necessary, including the knowledge to understand the language lecture of an instruction text written in English. It is not possible otherwise in the environment of original educational sources. The national translation always comes with a delay, we cannot assume its completeness or unconditional correctness. Because of this it is required that the students work with original sources, to know their instruction methodology. Nevertheless, the language competences of most of the students still do not reach the minimal standards, which to some extent limits their further growth. The classical conception of isolated English language and ICT instruction cannot support the dynamic education of competence character in the fields so dependent on up-to date information, their analysis and further application.

The subject instruction contents processed with the help of foreign language, which also mediates the given contents, proceed from the **CLIL** method. It is characterised as *“a didactic approach to effectively integrated instruction of a foreign language and an expert subject, which purposefully and consistently develops the knowledge and skill of a pupil in non-language subject and it also leads a pupil to a natural development of language skills”* (Šmídová, Tejkalová, Vojtková, 2012, s. 9). The concrete realisation of CLIL includes various models, among which the following are important for us:

- The use of instruction materials in foreign language,
- The use of foreign language as the language of instructions
- The use of instruction materials written in foreign language within the e-learning,
- A teacher instructs part of a subject in foreign language, and then he points out in translation the most important passages of instruction contents.

The CLIL method is in its essence an ideal mediator of construction of dynamically conceived education in the direction to gaining the relevant competences. As (Šmídová, Tejkalová, Vojtková, 2012) states, together with the application of CLIL method also the change of a teacher necessarily takes place, a teacher who has a goal not to pass ready-made knowledge in foreign language, but to shift the focus on the students, mainly in:

- Motivation to learning and to sufficient amount of quality impulses.
- Choice of appropriate and stimulating instruction materials.
- Adjustment of language difficulty with the possibility of alternative sources.
- Possibilities to associate newly acquired language knowledge with practical examples of an expert subject.
- Reflection of one's own progress and learning.

The reflection of above stated is possible to see mainly in the pedagogical constructivism, methods of critical thinking or problematic teaching. The main premises are then derived from the need of activity of the one that learns in the process of knowing, make base out of one's interests, life experience, environment which he uses a is familiar and close to him, sharing of knowledge and cooperation with other members of education.

### CONCLUSIONS

In the contribution we tried to answer the important questions which are connected to designing of contents and approach of education focused on effective instruction in the ICT field, on the faculty that is primarily training the future pedagogues. We proceeded from the characteristic of profiles of both Bachelor's and Master's degree graduates. The education quality in pregraduate training plays a fundamental role a because of that it is necessary to proceed from the essence of teacher's ICT competences, which are adapted to the process of constant renewal

and breaking away from the statistical knowledge and skills, which always have a short validity. The use of original educational sources including the possibility of their implementation as a tool for support of development of the English language knowledge can be incorporated among the necessary prerequisites to achieve these defined goals. Within this integration the positive phenomena can occur, mainly the activation, critical thinking, connecting of various information and their structuring, strengthening of the field knowledge in the dynamic environment supported by the possibilities of developing the language competences.

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This paper was prepared under the project of the Student Grant Competition IGA\_PdF\_2015\_033 entitled “Typical approaches of secondary-school students to learning affected by ICT”.



## Are The Entrance Exams Results Of Applicants To University In English And German Languages Equally Good?

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### ABSTRACT

The analysis of entrance examinations to the Faculty of International Relations at University of Economics, Prague (FIR UEP) in the subject of English and German is presented in our paper. We analysed correlations between English exams from and German exams. We provide an overview of points acquired from entrance exams arranged by country of origin of applicants for study. Conclusions point to increasing number of gained points in time from English exam for Czech, Slovak and Russian students and degreasing number for students from Vietnam. Number of points from German is degreasing for students from the Czech Republic and Vietnam and relatively stable for Russians and Slovaks.

**Keywords:** the entrance exams

### INTRODUCTION

Czech universities have considerably changed during the past decade and the end of these changes are still ongoing. (Jarkovska et al, 2011; Doucek, Maryska and Novotny, 2014; Maryska, Doucek, Novotny, 2012) Among the most distinct changes belongs the effort to internationalize studies. A lot of foreign students are entering the Czech education market and, on the other hand, Czech students are leaving for foreign countries. (Doucek and Maryska, 2014). Just like Czech students leave to seek experience and education in the somewhat idealized West (Fischer and Finardi, 2010), foreign students come to the Czech Republic especially from the East. As Mach (2015) mentions, a majority of students come from Slavic countries and thus it is easy for them to learn Czech. There are many students from the Slovak Republic, who typically represent the largest community of foreign students in the Czech Republic. According to Golis, Slovaks come to study mostly medicine, economics and informatics (Mach, 2015). A total of 82% of the Slovak applicants mention the quality of studies and 27% better job opportunities in the Czech Republic as the main motivation for studying in the Czech Republic (Mach, 2015). Regardless of where a student comes from, he should have certain initial knowledge that, according to authorities, is necessary for successful studies of economics and economic fields (Hanclova, 2012) taught at the UEP (Doucek, Maryska and Novotny 2013; Doucek, Maryska, 2011; Doucek, Maryska, Nedomova, 2011).

### PROBLEM FORMULATION

The number of students applying for the university studies in the Czech Republic is relatively stable in time although number of people born in adequate year (usually 21 year ago) is decreasing. This change leads to the fact that for universities studies apply also students that have worse results during their studies at the high school.

Three years ago our university started a deep analysis of knowledge that have students applying for study at the UEP. This paper focus on a relatively specific area – the analysis of results of the entrance exams to study UEP and the analysis of exam results during the studies in the study programs taught in Czech. These analyses support the solution of the key problems that we are currently dealing with, such as in particular whether or not the number of points achieved in the admission procedure, which can be not quite exactly referred to as knowledge, corresponds with the knowledge that the UEP expects from applicants, whether or not there is a correlation between entrance exam results and regular exam results and whether or not there is a correlation between the type of university or nationality and entrance or regular exam results.

This article analyses following work questions:

- Q1: Is there any correlation between the results of the entrance exam from English and the results of the entrance exam from German with respect to all applicants for studies at the FIR UEP?
- Q2: Is there any correlation between the results of the entrance exam from English and the results of the entrance exam from German with respect to all applicants for studies at FIR UEP who have Czech nationality?
- Q3: Is there any correlation between the results of the entrance exam from English and the results of the entrance exam from German with respect to all applicants for studies at FIR UEP who have Slovak

- nationality?
- Q4: Is there any correlation between the results of the entrance exam from English and the results of the entrance exam from German with respect to all applicants for studies at FIR UEP who have Russian nationality?
- Q5: Is there any correlation between the results of the entrance exam from English and the results of the entrance exam from German with respect to all applicants for studies at the FIR UEP who have Vietnamese nationality?

We analysed a data file that only included those applying for Czech study programs, i.e. study programs that are taught in the Czech language.

### **MATERIAL AND METHODS (DATA COLLECTION)**

The data presented in this paper are collected regularly in the course of the admissions procedure from all applicants for studies. The collection process is in accordance with the provisions of Law No. 101/2000 Coll., on the protection of personal data. All collected data are anonymised.

#### **Methodology**

The primary data used for evaluation were exported from the central database systems of the UEP. These were imported to the database of the Microsoft SQL Server 2008 R/2 (Microsoft SQL) through data extracts (MacLennan, Tang and Crivat, 2009).

We have proposed, developed and implemented a specific data model in the application Microsoft SQL that supports requirements on the analysis of data sources. The data were assessed using the “R” tool that allows performing advanced statistical analyses of extensive data sources.

#### **General Data Characteristics**

The data file with entrance exams from English and German for the Faculty of International Relations currently includes 50,515 records with history since the year 2010. Each record contains information about every single concrete applicant in a specific year. If a student went through the admission procedure several times, he is included in the file several times. We have the results of bachelor’s and master’s degree entrance exams, information about a specific entrance exam result, and whether or not a student was accepted.

An important fact, which should be mentioned, is that in 2014 the obligation to take the examination of the two languages was cancelled. So the small sample of data from 2014 is caused by this decision.

### **RESULTS AND DISCUSSION**

As we have already mentioned in the introduction, the article analyses English and German entrance exam results of the applicants for the studies at the UEP and their correlations, regardless of the applicants’ nationality, and also subdivides the applicants based on Czech, Slovak, Russian and Vietnamese nationality.

To make the article more understandable, we divided this chapter into three sections:

- Basic characteristics of source data (number of students, division of students, etc.);
- Analysis of English and German entrance exam results;
- Analysis of the correlations and differences between entrance exam results.

The analysis shows the data from different perspectives. The data is classified by time period which the students applied. The article analyses the data from the years of 2010-2014.

#### **Basic Data Characteristics**

The basic characteristics of the data file based on applicants’ nationality in individual years are shown in Table 1. Interesting trend is a gradual increase in the proportion of foreign students by 2012 and then a sudden drop in 2013 while a proportion of Czech students increased. Table shows that students from Slovakia represent the second largest group of applicants. Their share in individual years is almost identical and fluctuates between 10.51% and 12.09% without counting 2014 when only few applicants made entrance exam in both languages. This share can be explained by the international agreements based on which students from Slovak Republic are studying in the Czech Republic for free. Students with Russian nationality represent the third largest group. We can see that in 2014 the proportion of Slovaks and Russians are very similar. Even there was just a small number of applicants from both German and English exam, we are monitoring the growth of Russian applicants to the UEP which are almost caught up with applicants from Slovakia. We will keep monitoring this trend also in view of the political situation in the world. Vietnamese represent other major group.



	Czech	Slovak	Russian	Vietnamese	Others
<b>2010</b>	86,89%	10,51%	0,88%	0,17%	1,55%
<b>2011</b>	83,63%	11,34%	1,31%	1,68%	2,04%
<b>2012</b>	81,63%	12,09%	2,88%	1,61%	1,79%
<b>2013</b>	86,11%	10,53%	0,85%	1,10%	1,41%
<b>2014</b>	91,67%	3,85%	3,21%	0,00%	1,28%

**Table 1:** Representation of nationalities in % in the admission procedure from English and German to the FIR UEP during the years of 2010 – 2014, source: authors

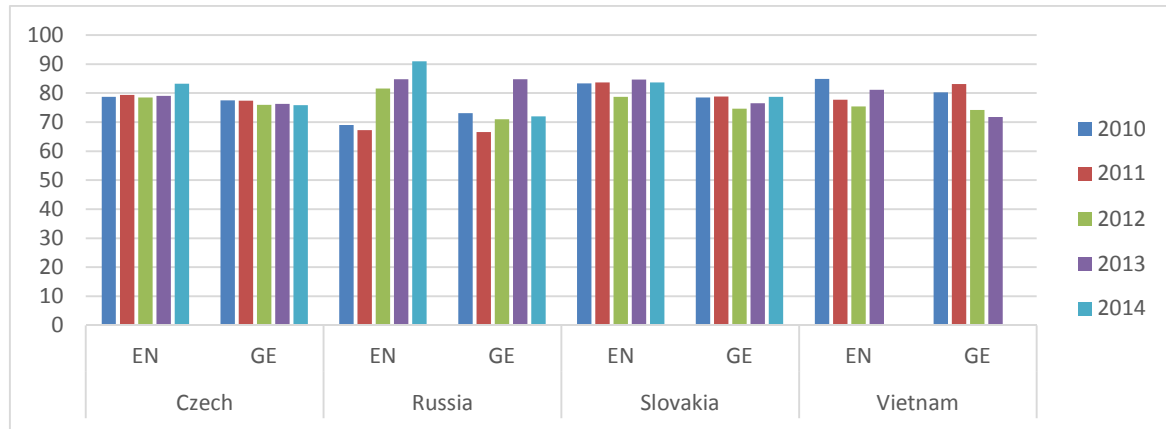
### Results Analysis

Based on the data analysis, we found out that the number of points that the applicants achieved in entrance exams for studies at the UEP fluctuates at the similar level by each year in all basic statistical indicators – Table 2. The average number of points of applicants in English, regardless of year is little higher than German (2 to 3 points), as German is mostly up to second language teaching in secondary schools. The weakest year was 2012 for both exams, but the difference was up to 2 points. Highest score gained applicants from English in 2014. More detailed analysis results are provided in Table 2.

Year	N	Language	Avg	SD	Min	Max	25th	Mod	75th	Skew	Kurtosis	SE	Corr
2010	17241	English	79,22	14,94	6,7	98	72	82	90	-2,24	7,93	0,11	0,68
		German	77,67	16,65	6,2	100	68	80	90	-1,49	3,86	0,13	
2011	14576	English	79,72	14,70	5,6	100	74	82	90	-2,02	6,83	0,12	0,68
		German	77,53	15,69	7,4	100	68	80	90	-1,44	4,01	0,13	
2012	11371	English	78,62	11,34	45	100	72,5	80	87,5	-0,43	-0,20	0,11	0,41
		German	75,63	13,86	42,5	100	65	75	87,5	-0,21	-0,95	0,13	
2013	7171	English	79,92	13,89	10	98	72	82	90	-2,16	8,17	0,16	0,64
		German	76,54	16,16	10	100	66	78	90	-1,10	2,61	0,19	
2014	156	English	83,59	9,11	55	97,5	77,5	85	90	-0,33	-0,49	0,73	0,30
		German	76,03	8,88	52,5	92,5	72,5	77,5	79,06	-0,36	0,09	0,71	
	<b>50515</b>	<b>English</b>	<b>79,34</b>	<b>13,98</b>	<b>5,6</b>	<b>100</b>	<b>72,5</b>	<b>82</b>	<b>90</b>	<b>-1,95</b>	<b>7,08</b>	<b>0,06</b>	<b>0,63</b>
		<b>German</b>	<b>77,01</b>	<b>15,71</b>	<b>6,2</b>	<b>100</b>	<b>66,3</b>	<b>80</b>	<b>90</b>	<b>-1,20</b>	<b>3,02</b>	<b>0,07</b>	

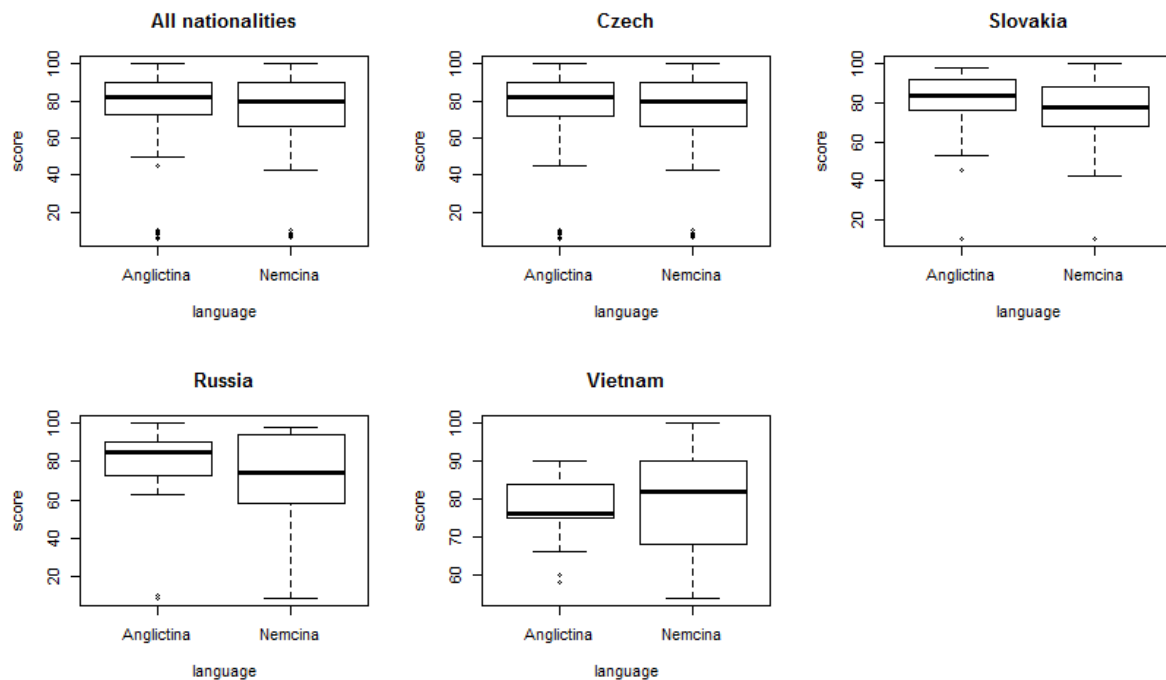
**Table 2:** Total English and German entrance exam results at the FIR UEP, source: authors

Very interesting is the comparison of entrance exam results of applicants having Czech nationality with those of other analysed groups. This comparison is shown in Figure 1. It shows that the tested knowledge of Czech students is the lowest and not increasing the most in comparison to other applicants. On the other hand, applicants from Russia have the best knowledge and are followed by students from the Slovakia. Only Vietnamese and Czech results from German have decreasing tendency.



**Figure 1:** Comparison of the languages entrance exam results of applicants by nationality, source: author

From the boxplots (Figure 2) is readable that only Vietnamese have higher median in score from German than English. That is interesting because their average score is the lowest from all nationalities, but the number is not higher than German median from other nationalities, but has the higher variance. It means they have the lowest median from English exam from all. Czechs and Slovaks have pretty similar variance of both exams. In the figure is also seen that Russians have the best results from English of all.



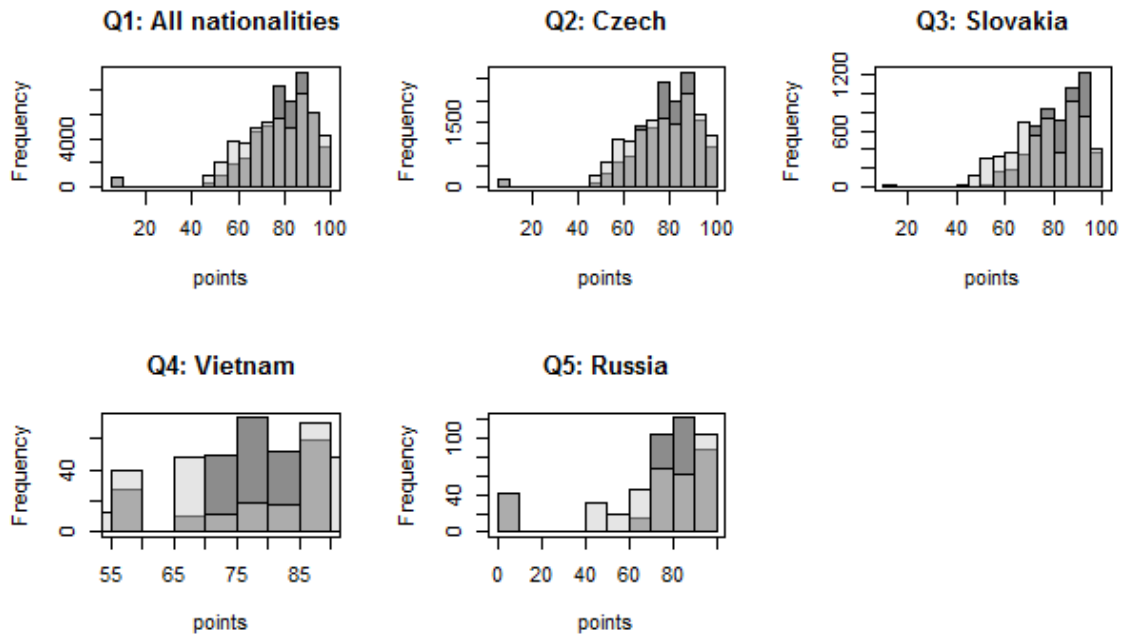
**Figure 2:** Boxplots of the languages entrance exam results of applicants by nationality, source: authors

The figure shows that the Russian school systems prepare students the best for entrance exams. On the other hand, students from the Czech Republic came out of this comparison as the worst prepared for English. One of the reasons that may explain it is the fact that only the best students from abroad apply to Czech universities (Mach, 2015) or that is expected that students from abroad speak very well English.

### Analysis of Work Questions

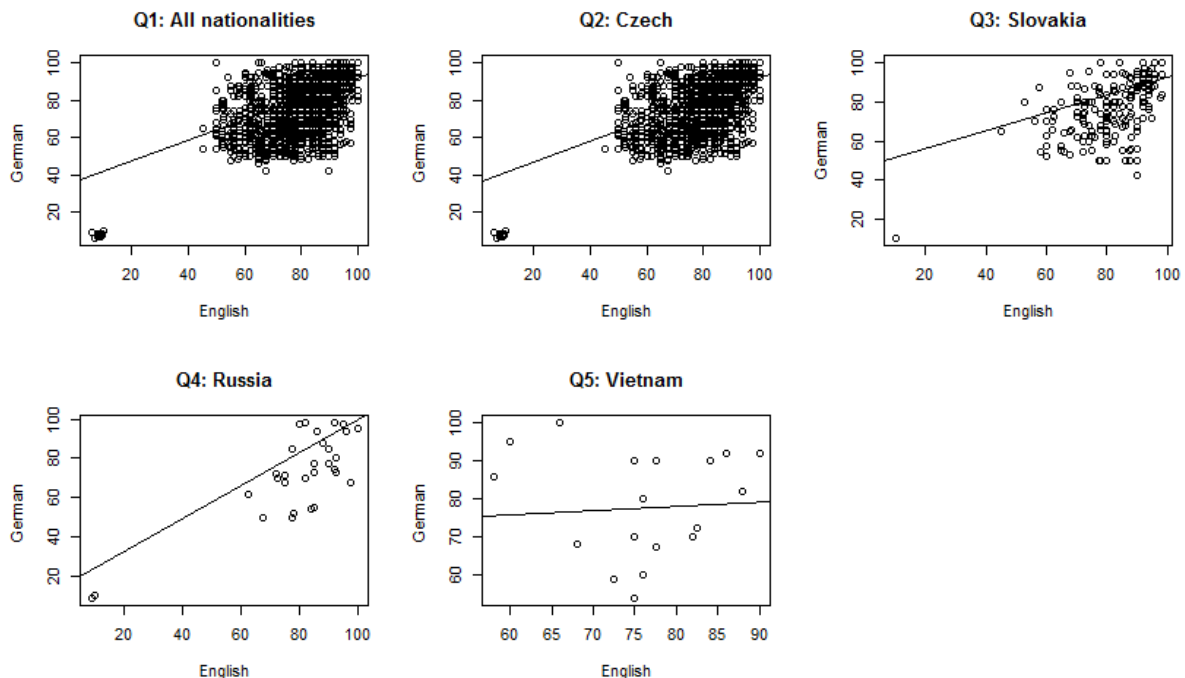
The tables below analyses in detail the results of individual work questions. The first figure (Figure 3) provides the multiple histograms for each question, focusing on achieved points from English (dark shadow) and German (light shadow) exams. It shows, that histograms for both exams for all years for Czech (Q2), Slovakia (Q3) and all nationalities (Q1) which are primarily dominated by Czechs have similar distributions – normal, left skewed. That means that those students have higher score in both exam results. Russian (Q5) histogram has a multimodal

distribution.



**Figure 3:** Multiple histograms of work questions, source: authors

Another charts (Figure 4) are linear regression for work questions. It is seen that charts for Q1 – Q3 support the contention, that those applicants have growing score in both entrance exams. Also Q4 have the tendency for higher score from both exams, which was not so evident from the histogram. We can claim that higher score have applicants from the one exam, they have also higher score from the second exam. But it is seen a large difference between score from the exams for Q5.



**Figure 4:** Regression analysis of work questions, source: authors

Table 3 shows correlation between the English and German exams results with respect to all work questions, focusing on individual years that were assessed. It is seen medium to strong positive correlation for all questions in every year except the 2014 for Q3 and Q4, and Q5 in 2012. Interestingly it is seen very strong correlation for

Q4 and also Q5 in 2010 and 2013. It could be caused due to small number of applicants. Q1 is slightly copying Q2 because of a larger portion Q1 contains sample of Q2.

Assessment questions	2010	2011	2012	2013	2014	All years
Q1	0,68187	0,67951	0,40598	0,63699	0,30057	0,62852
Q2	0,68317	0,64097	0,42067	0,64379	0,40166	0,62161
Q3	0,66662	0,67425	0,31426	0,57562	-0,4625	0,58345
Q4	0,97528	0,97399	0,63077	1	-0,9452	0,89869
Q5	1	0,04276	-0,2101	1	NA	0,16807

**Table 3:** Correlations for assessment of work questions, source: authors

By paired T-test (Table 4) we looked for a differences between means in exams. Results for Q1 – Q4 show that there is a significant relationship between the both exams of each question as we already found in our correlation table (Table 3). We deny the significant relationship between exams for Q5 as the value of T-test is negative and p-value is high.

					95% Confidence Interval of the Difference		
	Corr	Paired T-test	Df	p-value	Lower	Upper	Mean of diff
Q1	0,6285169	40.7142	50514	p-value < 2.2e-16	2.222728	2.447558	2.335143
Q2	0,6216115	31.41	42770	p-value < 2.2e-16	1.839888	2.084792	1.96234
Q3	0,5834548	31,5503	5600	p-value < 2.2e-16	4,798348	5,434147	5.116247
Q4	0,898692	1814040	734	p-value < 2.2e-16	3.347264	5.048927	4.198095
Q5	0,1680665	-0.6853	536	p-value = 0.4934	-1.6307602	0.7871848	-0.4217877

**Table 4:** Paired T-test for assessment of work questions, source: authors

## CONCLUSIONS

The analyses were performed based on the data obtained from entrance exams at the FIR UEP. Our goal was to analyse the number of points achieved in English and German by students, who applied to Faculty of International Relations by year and nationality and compare the results with each other, whether they depend on each other. Based on the performed analysis of the both exams from English and German, we reached the following conclusions:

- The number of points in English achieved by applicants from entrance exams are increasing for Czech, Slovak and Russian students in time. Results for students from Slovakia are stable in time (no big differences and for students from Vietnam are decreasing for years 2010, 2011 and 2012 and increasing in year 2013 again.
- Trend in German language is different. Number of points from German is decreasing in Czech Republic and Vietnam and relatively stable for Russia and Slovakia.
- The correlation analysis has proven a medium to medium strong positive correlation for all questions in years 2010, 2011, 2013. In year 2012 is situation different. The correlation is weak for question Q1-Q3, medium for Q4 and weak (negative) in Q5. In year 2014 we see absolutely different results. Weak correlation is for Q1 and Q2, medium strong and strong negative correlation for Q3 and Q4. Overall results displays medium positive correlation in all questions except Q5.
- By paired T-test we looked for a differences between means in exams. Results for Q1 – Q4 show that there is a significant relationship between the both exams of each question. We deny the significant relationship between exams for Q5 as the value of T-test is negative and p-value is high.

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## Binary Logistic Regression As A Tool For Analysing Student's Preferences Choosing Online Or Traditional Course For A Repeated Exam

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### ABSTRACT

In this study students' preferences are analyzed when they could freely choose between the traditional form of learning in a classroom and the online form of learning. The focus of the study was to find out whether there are significantly different characteristics of those students who prefer to choose the online course compared to those preferring the traditional frontal technic teaching in a classroom. We used statistical methods to establish those features of the students which might influence their choices between the different versions of teaching and learning. We tried to establish those characteristics (variables) which work as „layer-maker” variables. The findings of the study served some expected and some rather surprising results. As we expected their ages, ICT skills, distance from the campus, etc., influence their choice. We regard as a surprise that their attitude to learning (based on their self-evaluations) severely affect their choice too. The „lazier” they regard themselves the larger the chance to choose the online video lessons instead of the classroom work.

### INTRODUCTION

Student attrition has been a continual topic of concern in distance education research. There have been few research explicitly studying the preferences for (asynchronous) online courses versus traditional classroom courses. Drop rates for distance classes have been consistently higher than those of traditional classes (Cookson 1990; Parker 1999; Phipps and Merisotis 1999; Ridley and Sammour 1996). In fact, many educators have implied that the high drop rates—and the resulting lower success rates—of such courses should disqualify online education as a high-quality option to traditional education (Perspective 2001). However large studies have been conducted to compare the effectiveness of the different forms of course delivery and to establish key factors to build up successful online courses with relatively low drop rates (The NMC Horizon Report: 2012; The Efficacy (and Inevitability) of Online Learning in Higher Education. 2010; Evaluation of Evidence-Based Practices in Online Learning: 2009).

The reasons of students' attrition have been intensively investigated.

Four categories of factors have emerged to explain and predict attrition in distance education (Garland 1993; Gibson 1998):

*Student situation:* events that arise from life circumstances such as changes in family and employer support, employment or financial status, educational status, health, and academic self-concept.

*Student disposition:* personal characteristics including learning style, motivation, and perception-of-obligation (i.e., feelings of being obligated to a specific instructor or classmates to remain enrolled in the class) as well as other demographic variables such as academic preparation, GPA, ethnicity, gender, Web and e-mail competency, family size, number of dependents, and socio-economic status.

*Institutional system:* factors relating to the quality of the course such as the instructor's planning, preparation and delivery, and the quality of student support provided by the instructor, other faculty, staff, administrators, and the institution.

*Course content:* the difficulty, or perceived difficulty, of the subject matter.

Diaz (Diaz 2000, 2002) noted that given the differences in populations, online students may drop for different reasons than traditional students and that those reasons may have little or no relationship to students' academic abilities.

Although there have been few research explicitly studying the preferences for online courses versus traditional classroom courses, there have been several investigations of students' preferences for important components of these formats, namely face-to-face interactions and asynchronous discussions. Support for the idea that students would prefer, and learn more from, face-to-face communications comes from a variety of theoretical perspectives including social presence (Short, Williams, & Christie, 1976), media naturalness (Kock, 2005; Kock, Verville, & Garza, 2007), and especially, media richness (Daft & Lengel, 1986). Media richness theory suggests several advantages of face-to-face communications including body language, auditory cues, other non-verbal cues, and immediacy of feedback.



There has been a lack of research studying the factors – known or unknown to the students – which affect their preferences in choosing the different course formats. In this study statistical methods have been applied to establish those features of the students which might influence their choices between the different versions of teaching and learning.

### THE STUDY

In this study students' preferences were investigated at the College of Dunaújváros in Hungary among those 128 students who enrolled to the course of Mathematics 2 in the academic year 2013/14. All these students have failed to pass the exam of this subject previously at least once and they were obliged to take the course once again. Both full-time and correspondence students were allowed to freely choose between the traditional or the online form of the same course.

The classroom course was taught according to the time schedule of the correspondence education, 20 contact hours a semester. The online course was available through the institutional Moodle LMS system. It was built up as a stream of short video lessons with quizzes and self-tests and it was supported by optional synchronous consultation with the instructor. Both courses ended up with oral examination, however in both courses students could earn 40 % of total scores by midterm tests.

73 students enrolled to the traditional classroom course and 55 students chose the online form. In the third week of the semester they were asked to take part in a survey related to this study. 80 students answered to the 36 questions, 44 traditional and 36 online students. The questions were organized into 3 main groups. 1. *Personal data, place of residence.* 2. *ICT related questions.* 3. *Motivation, learning habits, attitude related questions.*

We used statistical methods to evaluate the answers and to establish those features of the students which might have influenced their choices. Commonly used t-tests, Mann-Whitney tests, Fisher exact tests were performed to compare the corresponding means or proportions in the two populations (traditional, online) to check the significance of the difference between the two population parameters. Chi square test was used to check independency between variables. The applied assumptions of the tests (normality, randomness) were also thoroughly investigated. We tried to establish those characteristics (variables) which work as „layer-maker” variables, which influenced (consciously or not) their choices.

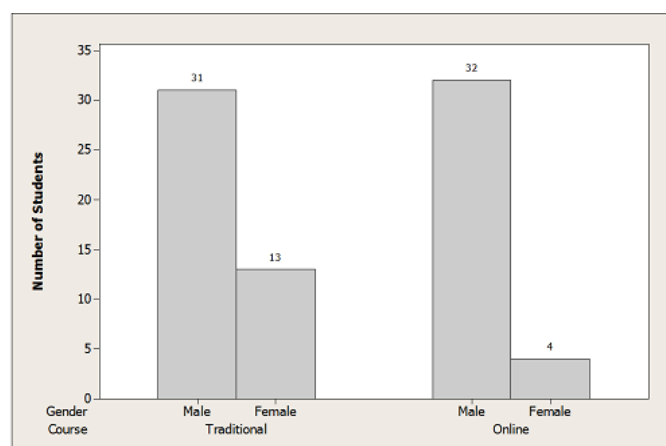
To try to measure the chance of choosing a specific version of learning in the different layers of students we applied binary logistic regression.

### FINDINGS

Some of the findings are below.

#### Gender

The first we investigated was the genders of students in the two courses. Figure 1 shows that the proportion of women preferring online learning is  $4/36=0.111$  while this proportion among traditional group is  $13/44=0.295$ .



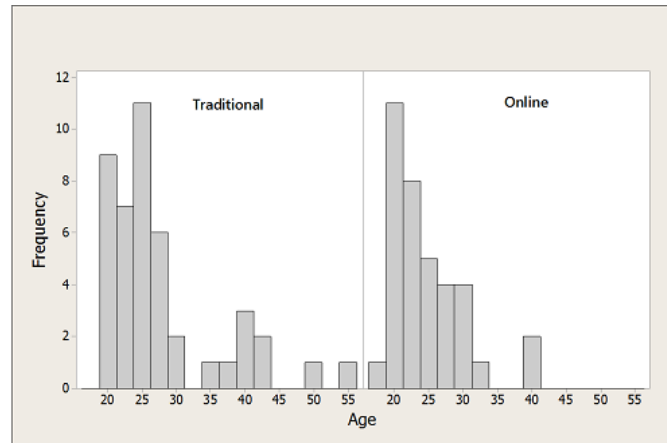
**Figure 1:** Distribution of genders in the traditional and in the online courses

To conduct a hypothesis test we performed the Fischer exact test when as a null hypothesis we assumed that the proportions of female students are equal in the traditional and in the online courses. The p-value, the observed significance level, proved to be 0.057 just above the usually accepted 5% level. Considering the relatively small sample proportions we think that additional research is needed to claim that significant differences could be

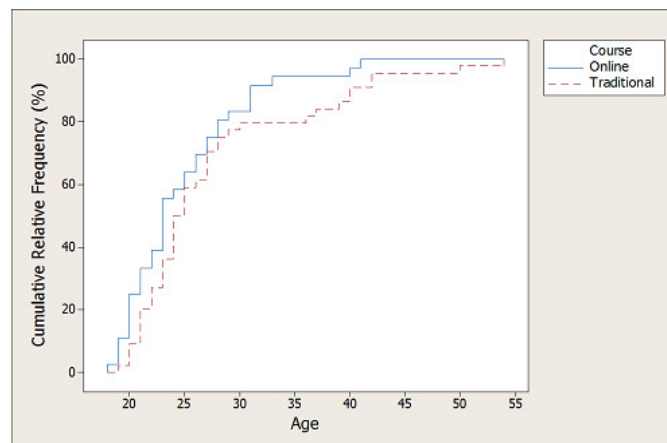
established between the gender proportions in the two populations of the courses.

#### Ages

In Figure 2 the frequency histogram, in Figure 3 the cumulative empirical relative frequency diagram of the ages are depicted in the two course formats. The graphs suggest some differences in the distributions, and the fact that the p-value of the performed Mann Whitney test is below 5% is also an evidence that there is significant difference between the two population's medians. In our study the mean of the traditional and the online course students were 27.6 and 24.78 years respectively.



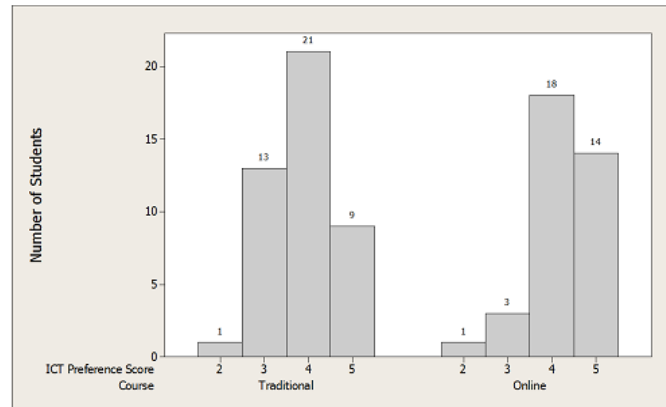
**Figure 2:** Histograms of the ages in the traditional and in the online courses



**Figure 3:** Cumulative empirical relative frequency diagram of the ages in the traditional and in the online courses

#### ICT

The familiarity with ICT was also investigated. The students scored their own preferences on a 5 grade scale to use communication technology in their studies and in their private life, mainly the social media on a daily basis. Figure 4 shows the histograms of the preference scores for daily use of ICT in the two groups.

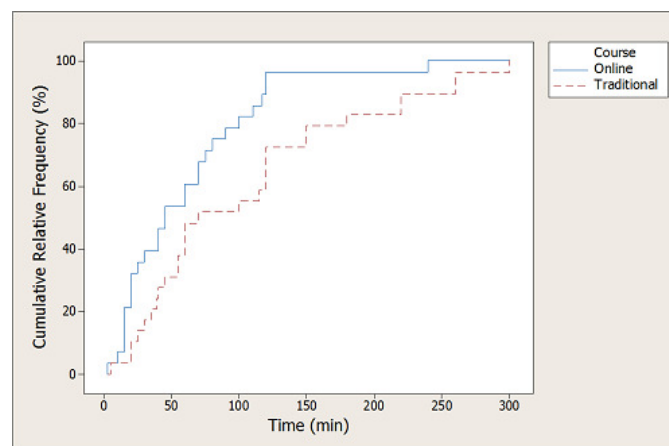


**Figure 4:** Histogram of the preference scores for ICT in the traditional and in the online courses

The observed significance level of the Mann Whitney test is 0.029, which serves convincing evidence that those students, who use ICT more frequently are tendentiously willing to choose online course rather than the traditional classroom work.

#### *Distance*

The comparison of the average distances from the campus site in the two groups served a surprise. We compared the differences measured in km and in minutes to reach the campus and both showed significant differences. Those who took the online courses are located closer to the campus than those taking the traditional classroom training. In Figure 5 the cumulative empirical relative frequency diagram of the times are drawn in the traditional and in the online courses.

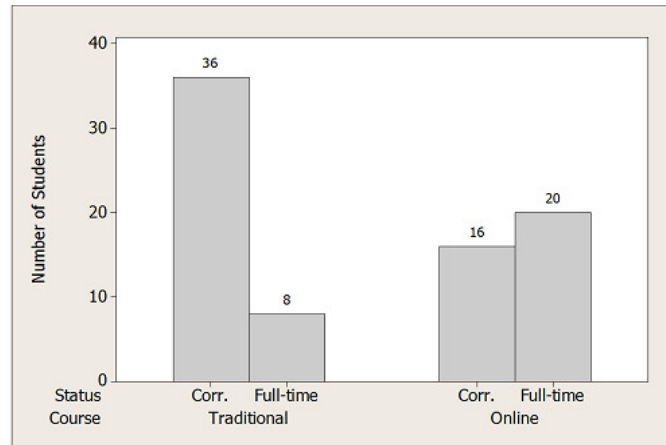


**Figure 5:** Cumulative empirical relative frequency diagram of the times to reach the campus in the traditional and in the online courses

The average times to reach the campus for traditional and online students were 70 and 45 minutes respectively. In the Mann Whitney test when the times to reach the campus were compared, the observed significance level was 0.025, which indicates that really the online students live closer to the university, which is rather unexpected.

#### *Student status*

To figure out some explanation to this unexpected tendency, the proportion of the full-time and the correspondence students were compared. In Figure 6 the distributions are depicted.



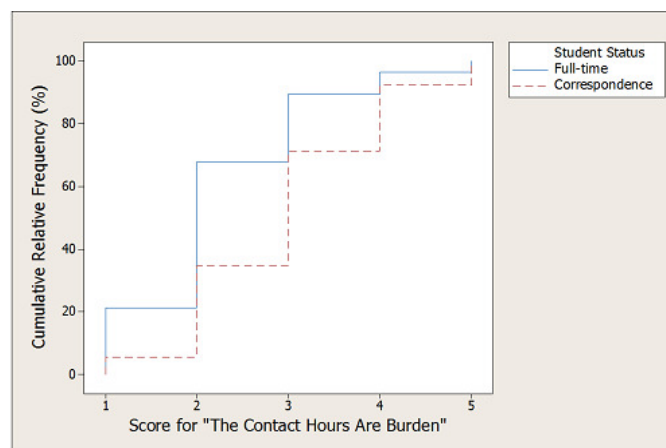
**Figure 6:** Distribution of full-time and correspondence students in the traditional and in the online courses

The figure is rather self-explanatory. Full time students dominantly prefer the online version of the course. To measure the strength of this tendency binary logistic regression has been conducted. As a result the “odds ratio” was 5.62. It means that the probability of choosing the online course is 5.62 times greater in case of full-time students than in case of correspondence students. It raises the question: what are those characteristics of the full-time and correspondence students which might cause this dominant differences.

#### *Motivation, learning habits, attitude*

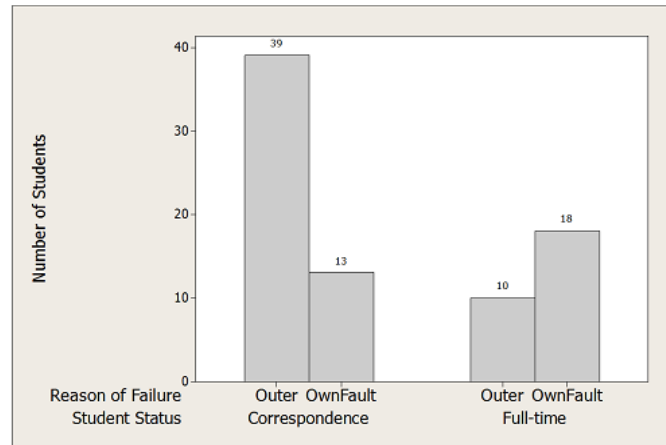
In the Mann Whitney comparison how much burden it meant to take part in the contact hours the observed significance level was 0.1, which raises doubts to claim that there is significant difference between the attitude of traditional and online students in that question.

On the other hand the p-value in the comparison of the full-time and the correspondence students was 0.004, which served a strong evidence to claim that full-time students feel the contact hours more burdensome than the correspondence students. In Figure 7 the cumulative empirical relative frequency diagrams of the scores given by the full-time and the correspondence students convincingly support that conclusion.



**Figure 7:** Cumulative empirical relative frequency diagrams of the scores for the “contact hours are burden” question given by the full-time and correspondence students

In the answers to the question “Why did you fail at this exam before?” the majority of the full-time students blamed themselves while the correspondence students think that outer circumstances influenced their poor performances. In Figure 8 the bar charts well represent the results of their self-evaluations. To measure the strength of this tendency binary logistic regression has been conducted. As a result the “odds ratio” was 5.4. It means that the probability of finding the reason of failure in him/herself attitude to learning is 5.4 times greater in case of full-time students than in case of correspondence students.



**Figure 8:** Distribution of the reason of failure within the full-time and the correspondence students

Table 1 shows the distribution of the self-evaluations of the full-time and the correspondence students to the question “How would you characterize yourself?”

Student status	Attitude			Total
	rather lazy	sometimes lazy	diligent	
Correspondence	22	13	17	52
Full-time	23	2	3	28
Total	45	15	20	80

**Table 1:** Two-way contingency table of the number of students according to the “Attitude” and the “Student status” variables

Performing a chi-square test for the independence of the variables “Attitude” and “Student status” it can be shown that convincing evidences prove that these two variables are not independent. The  $p=0.002$  observed significance level is a strong indication that full-time students consider themselves much lazier than the correspondence students.

## CONCLUSIONS

In this study students’ preferences were analyzed when they could freely choose between the traditional form of learning in a classroom and the online form of learning. We found some characteristics, which seem to influence students’ preferences and serve as “layer-maker” variables. Their ages and their familiarity with ICT are the two most significant layer-maker variables, they dominantly influence students’ choices.

Their gender did not prove to be significant. The distances between their residence and the campus are significantly different for the traditional and the online students but surprisingly the online students live closer to the campus. The explanation to this unexpected result is that the online course is preferred mainly by the full-time students. Analyzing the difference in the attitude to learning of the full-time and the correspondence students it can be shown that the full time students feel the contact hours as a burden, they regard themselves rather lazy and they are aware that the reasons of their failure at the exam are mainly attributable to their own fault.

However it should be emphasized that this study is about those students who are obliged to repeatedly take the course after an unsuccessful exam, so it needs further investigations to generalize these findings for different circumstances.

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## Bridging The Gap: Addressing The First Year University Mathematics And Statistics At Vaal University Of Technology, South Africa

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### ABSTRACT

Vaal University of Technology (VUT) has developed a number of initiatives in order to deal with the delivery of first year mathematics and statistics courses (mathematics 1, mathematics 2 and quantitative techniques/statistics). Students entering Higher Education (HE) are often overconfident in terms of their projected academic performance yet lack the necessary mathematical skills. Hence, their confidence does not translate into automatic academic success. The Centre for Academic Development (CAD), Accounting Department (AD) and the Mathematics Department (MD) at VUT have implemented a variety of strategies to address these issues. This article is a response to the fast growing number of first year University students who are underprepared for mathematics and statistics modules at VUT. Outreach to surrounding high schools so as to promote interest in mathematics is recommended.

**Key words:** first year, mathematics, statistics, initiatives, centre for academic development.

### INTRODUCTION AND BACKGROUND

Vaal University of Technology (VUT) was established in 1966 firstly as a College of Advanced Technical Education (1966-1979) then as Vaal Triangle Technikon (1979-2003). VUT has grown in stature as a higher education institution, drawing students from all over the country and abroad. It is one of the largest residential Universities of Technology, with approximately 17 000 students ([www.vut.ac.za](http://www.vut.ac.za)).

Students from disadvantaged educational backgrounds as well from privileged backgrounds generally enter Higher Education (HE) with insufficient knowledge and skills required for studying key areas such as mathematics (Paras, 2001; Howie and Pietersen, 2001). Underprepared students do not possess the necessary language or mathematical proficiencies required for HE or may have gaps in the foundational disciplines knowledge. University tasks present major challenges for the underprepared students (Hardman and Ng'ambi, 2003).

According to Greene and Foster (2003) approximately two-thirds of recent high school graduates enter HE each year underprepared academically for University-level material.

This article describes efforts by the Centre for Academic Development (CAD), Accounting Department (AD) and the Mathematics Department (MD) at VUT to enhance learning experience of students in their first year mathematics and statistics courses. Particular emphasis is placed on the role of Mathematics Centre at VUT; work done by MD and motivational seminars done by the First Year Experience (FYE).

### CURRENT INITIATIVES BY VUT

#### 1. CENTRE FOR ACADEMIC DEVELOPMENT (CAD)

The CAD Department has various initiatives they are providing to first year mathematics and statistics students through the following units: Mathematics Centre and First Year Experience.

#### MATHEMATICS CENTRE

Mathematics Centre (MC) is a facility offered at VUT to help registered students in addition to their normal classes of teaching through tutorial classes, consultation (one-on-one and small group) and examination revision sessions. MC offers free support to all registered students through well-designed tutorial classes, one on one consultation and small group consultations, where necessary, examination revision classes, extra classes, and developing and using tools that will improve understanding.

The aims and objectives of the MC is to ease transition of all students to HE courses with a significant numerate component and also to provide non-judgmental support for students outside their teaching time with the aim of improving mathematics and statistics pass rate and success rate.

Other objectives is to support students who are struggling with the mathematical and statistical components of their studies and to aid departments who wish to refer students to the MC when specific needs for tutorial or remedial work arise. The MC assists students in developing fully their mathematical knowledge and skills and to help raise their mathematical confidence and also provide one on one support for any student of the University with mathematics difficulties no matter how small it is.

At the beginning of the year, all first year students are encouraged to write a diagnostic testing which covers a range of questions from high school to maths 1 work. The purpose of the test is to identify students early who need extra help (Early Warning System). The diagnostic test is used to check for student readiness to begin maths 1 course. The test will inform if students are well prepared for HE maths. All students who fail to meet 50% mark are referred to MC for further help during the course of the semester.

### **FYE SEMINARS**

First Year Experience (FYE) at VUT is held twice a year to motivate students with aim of good retention and success of first year students. The role of FYE is to assist first year students' transition from high school to University life. Motivational speakers are invited to address first year students with the aim of motivating them on their studies. For applied sciences and engineering faculties where all students are doing mathematics, MC is invited to such seminars to motivate students.

### **2. MATHEMATICS DEPARTMENT**

The following are the initiatives adopted by the Mathematics Department (MD):

#### **REMEDICATION**

There are consultations – open door policy- where students just walk into the office of the lecturer to consult and also extra lessons which are usually 1 hour allocated per day to attend to students' problems by assigned lecturers. The MD also offers winter and summer schools for those preparing for the second opportunity examinations.

#### **INCORPORATION OF TECHNOLOGY IN THE LEARNING PROCESS**

Whilst there is no blanket policy on the use of technology, lecturers are encouraged to apply and to keep abreast with the trends of the use of Information Technology in the learning process.

#### **EXPOSING FIRST YEAR STUDENTS TO UNIVERSITY LIFE**

In coming first years are inducted /orientated by an assigned lecturer who is called a mentor. The duties of the mentor are to guide on study habits and expose the students to the expectations of the department.

#### **BRIDGING COURSES**

Eight hours are allocated at the beginning of the semester for Mathematics 1 in trying to bridge the gap in high school maths and college maths through doing revision of algebra and functions. The emphasis being to strengthen the foundation and to link the basic concepts to the topics they will cover.

#### **CHALLENGES OF LARGE CLASSES**

Many Universities, including VUT, have to accommodate large classes in mathematics and statistics courses. The large classes in many cases contain more than 80 students. This poses extra challenges for the lecturer in dealing with such large numbers. In particular, it is especially demanding for the lecturer to engage with such a large group and create an atmosphere of interaction (Hardman and Ng'ambi, 2003). MD staff at VUT who have experience teaching large groups use a variety of approaches to enhance the learning experience of students in these classes and have developed methods specific for instruction of these courses (Jungic, Kent and Menz, 2006).

### **3. ACCOUNTING DEPARTMENT**

This department offers statistics module called Quantitative Techniques. All first year Management Sciences students are supposed to do this module. As most students were struggling with this module, the department invited Mathematics Centre to offer a supplementary course called 'Numeracy Skills'. The Numeracy Skills course cover topics such as arithmetic operations, percentage calculations, indices, equations and graphs and is offered to students once a week for 1 hour/class.

This programme intervention was formed with the following purposes which include developing learners' knowledge, skills and values, motivating and encouraging learners to like statistics and numbers in general and also to build learner's confidence.

### **RECOMMENDATIONS**

- Outreach to surrounding high schools so as to promote interest in mathematics is necessary (thus bridging the gap).
- The use of clickers and other technologies especially for large classes will help lecturers interact with students.
- A further study into the effectiveness of these interventions is recommended by the author.

## CONCLUSION

In this article, the author has summarised some of the initiatives developed in the Department of Mathematics and Centre for Academic Development at VUT to enhance the learning experience of first year mathematics and statistics. The initiatives must start while students are still at high school by visiting them and motivate them and this should continue into their first year at University by offering a variety of support as mentioned in the study.

## ACKNOWLEDGEMENTS

I would like to thank Anton.M.Pillay who works in the Centre for Academic Development for editing this article and provide me with useful suggestions. I thank you my colleague!

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## Broadcasting Violence Scenes Recorded By Surveillance Cameras Through Television Or Internet News And Media Literacy Education

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### EXTRACT

Consequences created by the use of violence scenes recorded by surveillance cameras in television and internet news are discussed in this study. Use of some scenes recorded by surveillance cameras prove the reality and correctness of the news, thus functioning affirmatively. However, actual violence scenes are used in many news “in an unnecessary manner” as a way of being watched more and attracting more attention. This may not only isolate the event in the news from its social, political and economic context but also create such consequences as desensitisation towards violence and violation of the honour and dignity of individuals.

### INTRODUCTION

At present, reporting is considered to be the most important function of mass communication media. In particular, the news flow which runs in a good manner is deemed to be the most important factor to ensure free formation of the public opinion in Western democracies. In this case, any news reaching the public must be correct and impartial.

Developing technologies have created opportunities which ensure the “reality” concept in news to be proven. One of them is MOBESE (Mobile Electronic System Integration) technology. Surveillance cameras were installed in several locations in 81 provinces in Turkey in 2007 in order to enable security forces to catch criminals easily. Over time, scenes recorded by MOBESE cameras started to be used in their raw state in news videos broadcasted on television and internet. Undoubtedly, such scenes are each a proof of the reality of the event which is the subject of the news and confirm the correctness of the news.

On the other hand, it is possible that such violence-containing scenes as traffic accidents, murders, extortions, physical injuries, suicides, etc. recorded by the MOBESE and surveillance cameras as they are may have adverse effects on the society. Some of them are desensitisation towards violence, consideration of violence to be ordinary and even legitimisation of violence as well as being adversely affected thereby in a psychological way. It is further possible to argue that these kinds of violence scenes may injure the honour and dignity of those individuals who are subjected to violence.

This study is based on the assumption that the broadcasting violence scenes recorded by MOBESE and surveillance cameras in their whole clarity through television and internet news may lead to ethical problems though it considers that the scenes recorded by such cameras are necessary for the reality of the news.

### TABLOIDISATION AND CHANGING NEWS LANGUAGE

In line with the developments in Europe, private television broadcasting started in Turkey in the early 1990s and as a consequence TRT’s official news discourse underwent some change. Now, news bulletins were intended to bring more rating to the channel where they were broadcasted just as in the other types of programmes.

To describe it briefly, tabloidisation is the sensationalisation and dilution of the contents and styles of and the use of unethical methods in collecting the news (Çaplı, 2002: 92). Garnham (quoted by İnal, 2010: 164) states that the characteristic of the tabloid formats is to change the “events” to a theatrical narration by highlighting the aspects of the events which will attract the attention of and to arouse interest in the audience while making the events into news. Even though such theatrical stories usually focus on the private lives of celebrities, disasters happening to the man in the street are increasingly constituting the subject of the tabloid formats in the present day.

It is known that tabloid news leads to several ethical problems. Offenses, especially offenses containing sexuality, and improper actions containing sexuality and exposure of female body are a consequence of news developing synchronously with tabloidisation. Due to the news values formed in tabloid formats, the news is given by breaking it off from the social, political, economic and cultural context of the event while individual offenses, sexuality, scandals, etc. are made into news. Further, tabloid formats are intended for enjoying oneself, spending a good time or looking to those to whom “bad experiences” and “individual disasters” have been happened compassionately and regrettably. Individualisation of the events by isolating them from their social contexts does not make the audience think. Audience watches life in his comfortable and sheltered house and “thanks his lucky stars”.

Audience alienates with the tabloidisation concept, gets free from the concern of displaying a political standing and is pushed into a dormant state. It is not important at all whether such scenes are fictitious or actual. Because, actual or fictitious, the common feature of both is to bring what is personal and the lives flowing away from us just very close to us and change them into a theatrical narration (İnal, 2010: 170, 172, 175 – 176).

Tabloidisation concept is not only related to television. Spreading of internet in Turkey as from the mid 2000s resulted in both the establishment of new web sites intended for news and extension of media companies broadcasting on local, regional and national basis towards the internet domain. Due to its nature, internet is a mass communication medium in which all mass communication media nestle or, in other words, in which writing, sound and image may take place all together. Early on, the way news was presented in internet news portals displayed similarities with printed newspapers. In that period, both the news photographs used and the news language bear tabloid elements. However, spreading of MOBESE cameras and surveillance cameras as from 2007 especially resulted in frequent use of these scenes in internet news. These scenes which are not fictitious but completely reflect the facts usually focus on disasters happening to individuals and fail to contain any exquisite public interest. At the point we have reached today, news portals of national newspapers are broadcasting several news containing violence which may be considered third page news without comments in such sections as “WebTV”, “TV”, etc. of their web sites and isolate the events covered by the news from their social, economic and political context. The basic purpose of such a news concept in which the image is the basic element of narration is to ensure more clicks on the advertisements in the web site and generate more advertisement revenue.

### **USE OF VIOLENCE SCENES RECORDED BY SURVEILLANCE CAMERAS IN NEWS AND RESULTING ETHICAL PROBLEMS**

Considering the communication works, it is observed that they focus on a world which television has created via “fictitious scenes”. In this context, according to the basic hypothesis of the survey entitled “Cultural Indicators”, television has become a strong bonding means just as religion did in the pre-industrial revolution period (Yaylagül, 2008: 67). Therefore, television news is based on such contents given with a rather narrow perspective in a commonplace and twisted manner. In the survey, it is anticipated that the television audience will deviate from their beliefs about the reality at gradually increasing rates.

Gerbner and Gross (2014, 344) dwell upon the “dramatic”, i.e. fictitious violence presented by television. Dramatic world of television is a mixture where the facts and lies and correctness and twisting nestle in each other. It is not a real world but, rather, an extension of the standardised images taught to us since our childhood.

Unlike the abovementioned views, it is not possible to consider the use of raw scenes recorded by surveillance cameras in the news broadcasted on television and internet to be “fictitious” or “dramatic” just as it is with news photographs. Because such scenes are based on the fact itself. However, it is also possible for media companies to fiddle on the reality through such elements as the choice of scenes and duration of the chosen scene; but this is a limited intervention.

Considering the matter from this perspective, it is possible to attribute a positive qualification on the use of some scene containing violence recorded by surveillance cameras in news although they contain violence. Because these scenes may be deemed to be the most important evidence of the reality and correctness of the news. For instance, inclusion of the scenes in which the police have used disproportionate force in a social event into the news will both prevent the reality of the news from being questioned and serve an important social interest in that it reflects a social problem. For instance, the disproportionate violence used against demonstrators by the police and some shopkeepers during the Gezi Park events have been reflected to the public thanks to the surveillance cameras. However, excusing such violence scenes in television and internet news is associated with the exquisite public interest borne by such news.

When one looks into the daily news, it is observed that any kinds of events containing “violence” have been recently being reflected on the screens as they are in line with the increase in the number of both MOBESE and surveillance cameras. Even though such scenes are not fictitious or “built” ones, they are intended for ensuring the audience to look to those to whom “bad experiences” and “individual disasters” have been happened compassionately and regrettably and to be viewed more; and this is the basic rationale of the tabloid news.

It is possible to mention three basic ethical problems created by the use of actual violence scenes in news. These are focusing only on the “explicit” content and isolating the event from its political, social and economic reality, both of which are an aspect of tabloidisation. Thus, the audience will focus on what is surficial and will not access to the essence of the event experienced.



In the news entitled “He Stabbed His Ex-Wife before His Children’s Eyes” which was broadcasted on “HürriyetTV”, which is the web page of Hürriyet Newspaper, on 02.06.2015, murder of a woman recorded by the surveillance camera is shown as it is and the news is built upon the scene. However, no link of this event is established with the reason of the event, medical condition of the woman and the issue of “violence on women” which is a significant social problem. The news only consists of a scene of violence.



The news entitled “Helmeted Robber Bitterly Repented for Robbery” which was also broadcasted in the web page “HürriyetTV” on 02.06.2015 is built upon the scenes of a robber entering a market for robbery in Brazil to be beaten by the clients. The news presented as a scene isolated from the “robbery” concept which is a social problem is supported by such a coarse discourse as “Clients severely beat the robber” which sorts ill with the news language and violence on the robber who must be handed over to the police is merely legitimised.



Another problem created in ethical terms by the use of violence scenes recorded by surveillance cameras in television and internet news is that they injure the honour and dignity of the individuals exposed to violence or murdered and that they are of such nature which will upset their kinsmen. Several events such as ordinary homicide, fight, traffic accident hundreds of which are experienced every day and the broadcasting of which does not have any exquisite public interest may be brought to screens without even pixelating.

In the news broadcasted on “Sabah TV”, which is the web page of Sabah Newspaper, on 23.05.2015, body in a pond of blood of a teacher who lost his life as a result of a fight in Bartın is presented to the audience from a



distance which may be considered a “close-up” without pixelating. We are of opinion that this is of nature which may injure the personal rights of the deceased. Likewise, Dönmezer (1976: 98 – 99) states that the honour and dignity of the deceased individual may be injured in case the memory of the deceased is violated. Özek (1978: 145) approaches the matter from a different perspective and states that the protection of the honour and dignity of the deceased intended for the protection of the kinsmen’s memories of the deceased individual.



Another ethical problem which may be caused by the violence scenes recorded by surveillance cameras is that the scenes in question are of such nature which may have an adverse effect on the audience. However, the effect in question is not one which will encourage people for violence. Views of Gerbner and Gross’un (2014: 366 – 367) about the effects of violence are important. Accordingly, sensorial perception increasing and intensifying on risk and lack of confidence (which may vary by groups of different strengths) will, in all likelihood, result in submitting to the established authority, accepting what is dictated by it and eventually increasing dependence on it. This view is called “Cultivation Theory” in communication studies. The following photograph is taken from Sözcü Newspaper broadcasting a moment of murder as it is, basing on the surveillance camera scene.



And Dündar (2014: 389) states that news containing violence may have two consequences on the society. First of them is that the audience set off in quest of a superior authority which may put a lid on this state of affairs thinking, “Well, everything goes from bad to worse and there does not seem to be any remedy.” The climate which authoritarian regimes like most is this environment of quest. And the second reaction is apathy, i.e. indifference. The audience who are exposed to bloody scene on the screen every day get accustomed to this show of violence and may be so cold-blooded as a student of medicine by a cadaver even when watching the bodies with blown brains. This inurement may be carried one step forward and translated into a call for “more violence” over time. For instance, when a father who walks up to his house’s roof and prepare for suicide is caused to give up at the last moment by the police, the crowd that has gathered in front of the building may utter a “boo”. Influenced by this atmosphere, television cameras start to compete to be able to offer more to the audience and display the wounds of the bodies in a welter of blood and try to remove the cover over the bodies. As it is seen, Dündar’s views on the effects of violence on people and those of Gerbner and Gross are close to each other. However, it is possible to describe “limited effects” as they do not directly encourage people for violence.

### **MAY MEDIA LITERACY BE A SOLUTION?**

Media literacy has emerged for the purpose of studying what individuals do to the media and for what purpose s they exploit the media but not what the mass communication media do to individuals within the context of the “Uses and Gratifications Approach” which was effective in the 1960s. Whereas the media was considered to be a weapon which was influential and bad for children and young people, then media literacy must protect them from the adverse effects of the media (İnceoğlu, 2011: 20).

Media literacy acts by the presupposition that individuals may be “active citizens” before media messages. In this case, it is possible to define the media literacy as a qualification which is gained upon the educational process achieved as from the elementary school so that individuals may intellectualise and make sense of the media messages encoded for a particular purpose.

It is necessary to define the term “media literate” after the media literacy. Media literate is a term which describes an individual who is entitled to the epithet “media competent” as a result of an educational process which requires a separate skill, infrastructural knowledge and educational organisation in order to be able to distinguish and perceive the messages reconstructed in media and to comment thereon (Öncel Taşkıran, 2007: 7)

The media literacy course was included into the curriculum in the school year 2007-2008 in the pilot regions identified as İstanbul, Ankara, İzmir, Erzurum and Adana to start from the 7<sup>th</sup> grade through studies carried out with the Ministry of National Education in Turkey (Öncel Taşkıran, 2007: 129). Four million students were educated by 2014 in the project which started in 2007. In 2014, the curriculum was renewed and the social media domain also included into the curriculum by the cooperation of the Ministry of National Education and Radio and Television Supreme Council (Media Literacy Course to ‘Start Over’, [www.milliyet.com.tr](http://www.milliyet.com.tr)).

There are some problems in terms of teaching the media literacy courses in Turkey. First of them is that the course is not taught by the specialists of the subject. It is known that the media literacy courses have been taught by teachers of social studies in Turkey from the beginning. In our opinion, this is an obstacle before the good teaching of the course – even if the contents of text books are excellent. Because, for instance, it is rather difficult for a teacher of geography or a teacher of religion and ethics to make sense of the history, nature, messages and effects of mass communication as well as a communication specialist.

There are also discussions as to the fact that media literacy courses should be taught by the graduates of Faculties of Communications. However, especially as a result of the reduction in the quality of education in the Faculties of Communications throughout Turkey in recent years, a great number of students graduate inadequately in theoretical terms. Therefore, it is a more rational solution that graduates of Faculties of Communications will teach these courses once they have been provided with a certain training programme. Academicians who volunteer for teaching the media literacy courses may also be benefited in those cities where there are Faculties of Communications.

Another problem which may be experienced in the application of media literacy courses in Turkey is that the level of education throughout the country is still relatively lower. This may result in children’s “failure to practise” the media usage practices which they learn at school at home. For instance, it is a subject which is under the control of parents to a great extent to ensure the children to pay attention to those smart symbols taught in the media literacy courses and used on television and cinema.

Then, considering in terms of protecting the children and individuals from the broadcasts containing violence, it is possible to consider the media literacy practices in Turkey to be well-meant but inadequate. Because the only way of protecting from the harmful effects of media is that individuals should become conscious and enlightened in every sense but not only through the media literacy course. Such a change will change the media which is a part of the society as well as the media messages.

### **CONCLUSION**

At present, televisions, internet and all mass communication media act with the purpose of “being watched more” expressed in such terms as profit and rating, circulation, “box-office return”, “more clicks”, etc. In particular, the object of each programme broadcasted on television channels is to get more commercials advertisers. News bulletins and news programmes are not exceptions.

Profit-oriented broadcasting naturally results in experiencing some ethical problems as well. One of these ethical problems is the tabloidization of the news. Along with the tabloidization concept, news is tried to be presented in amore sensational, and thereby more attention-drawing manner. There are some inconveniences in using violence

scenes recorded by surveillance cameras in ordinary news which does not offer any exquisite public interest. These are the prominence of the violence event in the scene and overlooking of the social, political and economic dynamics of the event. Another important problem is that the honour and dignity of those individuals exposed to violence and the kinsmen of such individuals are attacked. A third problem is that those individuals exposed to violence scenes become increasingly pessimistic and perceive the world in which we are living as worse than it is.

In particular, elimination of the third problem is possible by overcoming it through the self-protection of the society from the media messages. Media literacy has importance at this point. Making sense of media structure's bond with the society and media messages in the media literacy courses will ensure those who take this course to be more protected against media.

When one looks into the functionality of the media literacy education in Turkey, it is possible to say that such practices are well-meant but inadequate due to the fact that these courses are taught by individuals who are not specialised and that the level of education is relatively lower in Turkey.

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## CLIL In Mathematics Education

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### ABSTRACT

The approach CLIL is a relatively new trend in education. It is a combination of content and language learning (from the English: Content and Language Integrated Learning). The article is focused on using the CLIL in the Czech Republic. The article presents research results of the influence on students' motivation in mathematics lessons with CLIL.

### INTRODUCTION

Education should always reflect the current social trends, the requirements of the labour market and the development of the society and technology. Today, we live in an era of information technology, information explosion and migration in order to find better employment. Accordingly, there are increasing requirements for some basic skills in the present-day society. People need to be able to critically evaluate information, speak foreign languages and, at least to some extent, work with the computer, which is an inherent part of many jobs. The CLIL approach may contribute to the improvement of students' language skills.

### CLIL APPROACH

The CLIL abbreviation was used for the first time by David Marsh in 1994. It is the abbreviation of the concept of Content and Language Integrated Learning. The author of the concept, David Marsh, defines CLIL in one of his recent publications as follows:

*"Content and Language Integrated Learning (CLIL) is a dual-focused educational approach in which an additional language is used for the learning and teaching of content and language with the objective of promoting both content and language mastery to pre-defined levels."* (Marsh, 2012)

As can be seen above, the author defines the concept as a dual-focused educational approach in which a foreign language is used for the learning and teaching of a non-language subject. Therefore, skills are improved both in the foreign language and in the non-language subject in question.

The most frequent languages taught in the Czech Republic are naturally English, German and French, but the occurrence of other languages, such as Russian, is possible as well. English, however, is dominant.

CLIL can thus bring many advantages. One of the advantages is for example the expansion of field-specific vocabulary. In language courses as such, there is little time for specific topics relating to scientific subjects such as Mathematics, Physics and Chemistry. Students then lack such vocabulary, which may prevent them from studying or working abroad in many cases. This may also be related to their insufficient confidence in being able to discuss specialist topics in a foreign language. If the CLIL approach is integrated into teaching, it will help students to train and become more confident in terms of foreign-language discussions or studies. Another advantage lies in the possibility of making lessons more interesting, as some activities conducted in a foreign language may vary the stereotype.

Naturally, CLIL constitutes certain disadvantages as well. One of them is the risk that students will be demotivated, especially in two cases. The first case is a situation where students are already experiencing problems with a non-language subject and the integration of a foreign language might mean that they will give up outright – "How am I supposed to solve the task in English when I don't even know how to do it in Czech?" The second case involves students who are talented in non-language subjects but who have problems with learning foreign languages – "I would probably know the solution in Czech but I can't do it in English." Both these cases can be addressed by positively motivating the students to try and solve tasks and participate in activities. Another disadvantage, which is a major negative according to the following research, lies in the relatively high demands placed on the teachers in terms of preparation and even the language skills of the teachers themselves. Insufficient language skills can only be improved by further education and enhancement of the communication skills of the teacher in the foreign language. As for higher demands on preparation, those can be very easily eliminated today. I will discuss these options in more detail in the last chapter.

### CLIL - SURVEYS

Even though the issue of CLIL is relatively new in the Czech environment, there are relatively many different surveys with a focus on the integration of a foreign language into the learning and teaching of non-language subjects. I will mention the conclusions of some of them in the Czech Republic and abroad. Marilyn Hunt of the Educational Institute at the University of Warwick, Coventry, UK examined the popularity of lessons conducted



using the CLIL approach in 2011. 67 % of the students liked the lessons, 66 % liked the activities, and 63 % were looking forward to the following lessons conducted using CLIL. (Hunt, 2011) Similarly, in 2012, Pavlína Hořáková inquired into the issue as part of her dissertation thesis and found out that students who had experienced lessons taught using the CLIL approach viewed foreign languages more positively than students who had never experienced such lessons. (Hořáková, 2012) However, the survey results are frequently accompanied by the fear that it will be difficult and time-consuming to prepare such lessons. One of such examples is the research of Josephine Marie Moate of the University of Jyväskylä, who conducted a survey in 2011 and stated that the first two years of teaching using the CLIL approach had been difficult and demanding for most of the respondents (teachers). Nevertheless, the majority of teachers had then taken a fancy to the method and stopped seeing it as a burden. (Moate, 2011) Similar results were obtained by Světlana Hanušová under the project entitled “CLIL in Czech Educational Practice”. The respondents (teachers) admitted that the integration of a foreign language into the teaching of non-language subjects was beneficial and advantageous. At the same time, however, they were unwilling to participate in the project and start using the approach actively. (Hanušová, 2012)

In my preliminary research, in which I was concerned with the current situation in terms of the use of CLIL at elementary schools and lower grades of grammar schools in the Olomouc Region and the South Moravia Region, I found out that CLIL was used by only 10 % of schools in the Olomouc Region and 13 % of schools in the South Moravia Region. These data were obtained from the managements of the individual schools. In both regions, English was predominant and was generally used in a wide range of subjects. The schools in the South Moravia Region mostly used CLIL in the teaching of Mathematics, Music and Art. In second part of my pre-research, I focused on the effect of the CLIL method on teaching mathematics. The sample consisted of 79 respondents - the pupils of the secondary level at a South-Moravian elementary school where the CLIL method had already been used for some time. Out of the 79 respondents, 32 were boys and 47 were girls. The pupils were given a questionnaire containing 22 statements with respect to which the pupils were supposed to express agreement or disagreement using a four-point scale. The questions focused on the climate in classes, the popularity of mathematics and whether it is worth it to use the CLIL method in classes. It was obvious that the pupils had good mutual relationships and there was a friendly atmosphere. The pupils also denied any derision in the event of failure of one of their classmates. This indicates a good climate for learning. The pupils also stated that the teachers were devoted to the subjects they taught and that the pupils were given tasks which they considered solvable. No classes thus indicated any problems, not even as far as mathematics teachers were concerned. The latest mid-year mathematics marks ranged from 1 to 4. This means that no pupil failed the subject. The general interest in mathematics was rather below average. However, when assessing mathematics taught by means of the CLIL method, there was a positive shift compared to lessons in which this method was not used. One of the frequent misgivings in connection with the integration of a foreign language into the teaching of non-language courses concerns the fear that pupils will not understand the task set in a foreign language. This was not confirmed in the case of these particular respondents, and hardly any of the pupils expressed any fear of non-understanding. What was also above average was the assessment of the pupils' activity; according to them, their activity in such lessons was increased. On the other hand, the lessons taught using the CLIL method were less focused on the actual subject in the pupils' opinion. This may be attributed to the fact that if foreign language activities take the form of games, pupils learn from such activities but do not see them as traditional lessons. This discrepancy between activity and focus on the actual subject deserves further research. Nevertheless, the assessment of the benefit of the method for the pupils' future lives was positive and slightly above average. In the use of a foreign language in mathematics, the pupils thus saw an advantage, whether in terms of their prospective studies abroad or their ability to discuss the issue of mathematics in the given foreign language. As regards the differences between the two sexes, they were not very profound. A relatively significant difference was found in the popularity of mathematics, where boys in general liked the subject considerably more than girls did. On the contrary, the popularity of mathematics taught using the CLIL method slightly decreased with boys, while girls liked the subject much more when taught in this way. Boys assessed their activity more positively than girls did, and participated more actively in the lessons. On the other hand, girls were generally the ones who found learning mathematics using the CLIL method beneficial.

It follows from the selected surveys that students and teachers see the integration of a foreign language into non-language subjects as beneficial, but the fear and unwillingness of teachers to integrate CLIL into their lessons are still prevalent.

### CLIL AND ICT

As was mentioned in the first chapter, one of the reasons why teachers are reluctant to integrate CLIL into their lessons is the rather demanding nature of the preparation of such lessons, both in terms of time and content. When preparing an activity which integrates a foreign language, it is necessary to focus on the content in more detail, create the relevant vocabulary which will be new to the students, and prepare the activity so that it corresponds to the cognitive skills of the individual students, if possible. This may discourage many teachers, as indicated by the surveys mentioned in the second chapter.

However, currently there are many projects that not only aim at the examination of the influence of the integration of a foreign language into the learning and teaching of non-language subjects but also help create various methodological materials, which make it easier to prepare such lessons. In some cases, prospective teachers are already trained in such teaching methods during their studies at the Faculties of Education. An example may be the Department of Mathematics of the Faculty of Education of Palacký University in Olomouc, which offers a course entitled English Mathematical Terminology. It is based on CLIL and the university students of teaching fields can thus master English mathematical terminology and also the ways of integrating English into the teaching of Mathematics.

Teachers have yet another very effective tool at their disposal that can assist them in preparing and conducting their lessons. The tool consists in modern technologies. Modern technologies have become not only everyday part of the lives of most people, i.e. also the present-day youth, but also part of the educational process. Nowadays, most classrooms are equipped with data projectors and interactive boards, and most schools have computer classrooms. Recently, teachers have begun using tablets, which should further increase the efficiency of the use of ICT in teaching and make it more up-to-date. The actual advantages and disadvantages of using tablets in teaching will only be revealed over time; nevertheless, such technologies already constitute benefits for teachers who want to integrate a foreign language into their lessons. Many teachers who are considering the use of tablets criticise the lack of available applications in the Czech language. However, this does not necessarily present a problem in most cases. For instance, there are numerous high-quality Biology programs with pictures, animations, 3D models etc. These include Corinth Micro, Know Your Body and My Incredible Body. The teacher can use the graphical aspects of the applications, at any rate. And of course, they can also include the English biological terminology in their lessons. And what about Mathematics? There is also a wide range of applications, frequently in English. One of them is Mathematics designed for the Android operating system.

There is a number of English words which the students can learn when using the application – e.g. functions, equations, linear function with point and slope, etc.

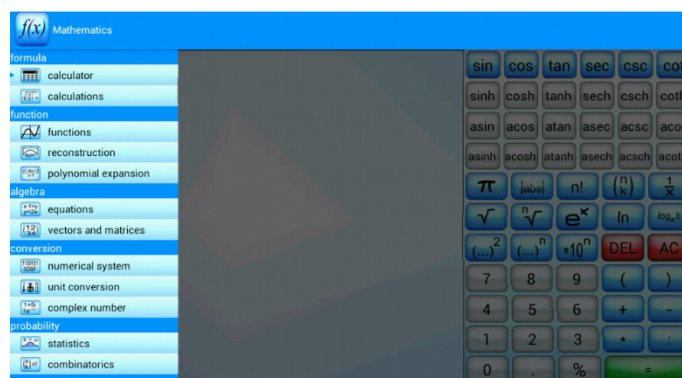


Fig. 1 – User environment of the Mathematics program (Google Play)

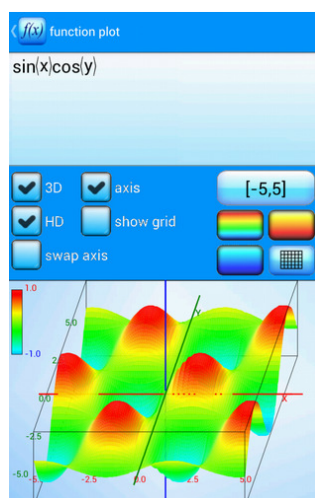


Fig. 2 – User environment of the Mathematics program (Google Play)

Another application is Formulas, again for Android. As can be seen, this application offers not only formulas for calculations but also a wide database of English mathematical terminology – e.g. triangle, area, perimeter, square, etc. Students can learn the vocabulary and also different labelling of perimeters, volumes, areas etc.



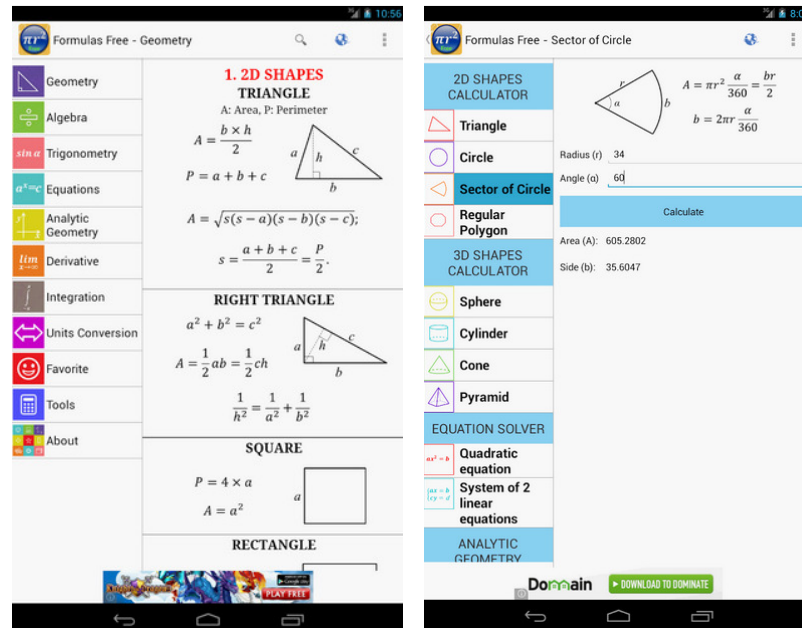


Fig. 3(left) and Fig. 4 (right) – User environment of the Formulas program (Google Play)

As a matter of course, there are many applications for younger children as well, to help them understand basic mathematical operations; again, such applications assist in the development of foreign-language vocabulary. One of such applications is iMath designed for the Windows 8 operating system.



Fig. 5 – User environment of the Mathematics program (Google Play)

The above programs constitute only a small portion of what teachers can use in teaching their non-language subjects. There are similar applications for subjects such as Physics, Chemistry, and Geography, among other things. The effective use of modern technologies, selected high-quality programs and well-chosen teaching methods together form a useful tool which makes lessons more attractive and also facilitates the teacher's work.

## CONCLUSION

As the above research and surveys indicate, CLIL is a relatively popular approach in the educational process, which is however little-used in particular due to the relatively high demands on preparation. Modern technology and suitably chosen programs may eliminate such demands and apply multiple current trends in education – CLIL and ICT – at the same time. There are many high-quality teaching applications in foreign languages that can be used by teachers of a wide range of non-language subjects to improve the quality of their lessons.

*This paper was prepared under the project of the Student Grant Competition IGA\_PdF\_2015\_034 entitled "Influence of the Integration of a Foreign Language into the Teaching of Scientific Subjects".*

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## Communication, Education And Responsibility. Making Healthier Choices Quickly And Easily: The Case Of Uk's Traffic Light Labelling

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*This study was supported by the Doctoral School on the Agro-Food System (Agrisystem) of the Università Cattolica del Sacro Cuore (Italy).*

### ABSTRACT

Education and communication are inextricably linked. Making responsible choices is essential for education towards sustainable best practices. In agro-food sector, for example, a conscious consumer needs truthful information that requires a transparent, scientifically accurate and pedagogically connoted communication. Examining the case of *UK's traffic light labelling*, we analyse issues and ambiguities of this device. This kind of labelling led to the opening of an EU infringement procedure against the British Government with regard to an information system suspected of being misleading in relation to consumer education. The paper investigates the possible educational relevance of a “nutritional traffic light” against obesity.

### INTRODUCTION

The data provided by the World Health Organization (WHO, 2014) relating to the problem of obesity show a sharp increase of cases detected, amounts to more than double compared to 1980: in 2014 there were more than 1.9 billion adults (18 years and older) overweight, of which more than 600 million obese. According to Margaret Chan (WHO, 2014), Director-General of the WHO, the majority of premature deaths due to “noncommunicable diseases”, including those related to eating disorders such as obesity and incorrect lifestyles, are preventable. The phenomenon has reached very high levels of social alarm both among adults and among young people and it's therefore important not only a personal change of individual habits but also the development of appropriate policies by the governments, aimed at promoting greater knowledge and awareness regarding feeding behaviours. It can be found a great concern on the part of the major European and International institutions (WHO, 2014, COM, 2005, WHO, 2005) and there are many actions undertaken to define procedures and instruments. Among the main objectives there is *prevention* (WHO, 2005) with respect to which the education plays a key role in developing the ability to assume correct and healthy behaviours. “To change your eating habits simple medical information is not enough, but you need to *educate*, providing tools that allow to reach consciousness and, consequently, real freedom of choice” (Birbes, 2014, p. 142).

In this paper, examining the case *UK's traffic light labelling*, we will analyse issues related to the birth and the ambiguity of such a device. This kind of labelling led to the opening of an EU infringement procedure against the British Government with regard to an information system suspected of being approximate and misleading in relation to consumer education. The paper investigates the possible educational relevance of a “nutritional traffic light” against obesity.

### BETWEEN EDUCATION AND COMMUNICATION

Education and communication are inextricably linked in many fields, including society, environment, economy and, of course, lifestyle and nutrition. Education marks each of us from birth throughout the life and plays a key role in the integral formation of the individual, providing growth paths within which it's possible to develop independent decisions based on knowledge, but also on observation and listening, reflection and experience, participation and critical thinking. Educating is a process that takes place in formal, informal and non-formal contexts, which can also be structured in not ordinary channels and that can therefore be carried out through a pedagogically connoted communication, accompanying the person to choose by virtue of messages and stimuli received.

Communication is always a primary need and a constituent of the human being, allowing him to build multiple relationships with people and the world around. At the same time, communication is increasingly becoming a key factor in pursuing development goals by society, institutions and businesses. Referring to the theory developed by Marshall McLuhan, who resumes by his own admission the thought of Harold Innis, it's necessary to wonder whether it's conceivable to dwell only on the content of communication or whether it's appropriate to analyse also the tools that transmit the message. To better express what's just reported, it's possible to mention the famous expression of the Canadian sociologist “*The medium is the message*” which in *Understanding Media: The Extensions of Man*, one of his most important works, points out that “*the latest approach to media study considers*

*not only the «content» but the medium and the cultural matrix within which the particular medium operates”* (McLuhan, 1964). From this expression it can therefore be deduced that the structure itself of the instruments used to communicate, beyond the specific content that is expected to be delivered, may have an influence on the recipient.

Especially with regards to the channels through which it occurs, communication has become increasingly important in the context of educational processes, and this urges to a thorough reflection on the current forms of knowledge and elaboration of learning. Today the ability to decode signs and to process more or less abstract concepts must be understood in the light of the changes occurred in the way of perceiving and representing the experience, a transformation brought about by today’s communication tools (Malavasi, 2011, p. 54). In the economy of what reported up to this point, it becomes therefore important to reflect on the issues and ambiguities that can specifically relate to the devices used to implement an education that focuses, in this case, on healthy and correct food lifestyles.

Making responsible choices in feeding today is an urgency that cannot be underestimated and an opportunity to speed up towards the education to best practices for sustainability and integral human development. Education aims to teach and train, to release the inner potential, to produce and transmit knowledge. “Wherever and however made, education cannot forgo agents, objectives, procedures and, if intentionally designed and conducted, it requires continuous feedback” (Malavasi, 2011, p. 52).

### **FROM THE FOOD EDUCATION TO THE CONSUMER AWARENESS**

Hippocrates said that “the good state of health requires knowledge of the primary constitution of the person and individual attention for the food, the physical activity, the season of the year, the wind changes, the age of the individual and the situation of his house” (Hippocrates, 460-375 BC).

Nutrition education is a strategic element to undertake healthy and correct lifestyles and it starts from the consideration that the issues to be examined are various especially when, on closer inspection, the main attention should be oriented to a diet that should be as balanced and comprehensive as possible. According to Corinna Hawkes, head of Policy and Public Affairs at World Cancer Research Fund International in London and specialist in food policy, diet and public health, since 1992 governments, private sector and civil society have taken actions that can be seen as part of “food education” process (Hawkes, 2013), considering it, in the words of R. Isobel Contento (2011), as “any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food and nutrition related behaviours conducive to health and well-being” (Contento, 2011). Likewise, the orientation of the European Union on this same theme is well defined, since it states that unhealthy diets is among the main causes of avoidable illness and premature death, also indicating the rising prevalence of obesity as one of the major public health concern in Europe. For the Council, in fact, it’s important that the Commission studies ways of promoting better nutrition and that Member States, together with the Commission itself, conceive and implement initiatives aimed at promoting healthy diets (COM, 2005).

The awareness of the choices that are made in food and nutrition field is crucial and for this reason the possibility to access to proper education in this sense becomes essential, both through the paths that are developed starting from young age in the multiple educational and training contexts and through all those instruments deemed suitable to provide sufficient information to behave responsibly. While, therefore, “undertaking proper nutrition education, in order to feel good about themselves by eating in a healthy way and avoiding unnecessary waste, appears as an important investment for the future of the young generation” (Birbes, 2014, p. 140), in the same way offering adequate nutritional information of products is an important element: providing consumers with consistent information on the nutrient content of foods and educating them in a proper way it’s possible to allow them to make informed food choices (COM, 2005).

### **VOLUNTARY FRONT-OF-PACK LABELLING: THE CASE OF UK’S TRAFFIC LIGHT SYSTEM**

Among the tools used to provide consumers with information deemed most appropriate to make healthier choices quickly and easily, there are the compulsory and voluntary labelling systems. According to the EU, nutrition labelling is one way that information can be passed on to consumers and used to support healthy decision-making in relation to the purchasing of food and drink (COM, 2007). It’s considered necessary to ensure that information is provided starting from a sound scientific basis so as not to mislead because of inaccuracies and, for this reason, at European level some directives and regulations have been issued (UE, 2011, CE, 2006). If through these systems it becomes possible to contribute to the education of consumers who can use the information received to make informed choices with respect to their diet and the foods to be preferred, it’s appropriate to wonder whether and how it’s possible to identify potential elements of educational relevance.

The considered case concerns the introduction by the British Government of a voluntary front-of-pack labelling system based on a “nutritional traffic light” that, through the three colours green, orange and red, aims to communicate quickly and easily information concerning the content of certain nutritive substances in food. The origin and the birth of such a device is due to the strategies (HM Government, 2010, HM Government, 2008) put in place in the UK to counteract the high phenomenon of obesity that, according to several studies (Craig, 2008, Butland, 2007, Henderson, 2003), has reached very high levels among both adult population and young people. Preparatory to the definition of this traffic light labelling system, a study commissioned by the Food Standards Agency (Malam, 2009) analysed the use by consumers of different voluntary labelling systems which, until that moment, were already developed and which included different information in multiple formats. Among the objectives of the research, there was the desire to highlight any preferences, difficulties and misunderstandings by consumers and to acquire the necessary confirmations with respect to scientific evidences of the device. Also because of legislation on the issue that is not yet uniform and complete within the European Union, the single member states took steps to have instruments on their own. By the document “Guide to creating a front of pack (FoP) nutrition label for pre-packed products sold through retail outlets”, published in June 2013, the British Department of Health and the Food Standards Agency defined the procedures for the voluntary spread of information through “nutrition labels that are compliant with the UK Health Ministers’ Recommendation on the use of colour coding as an additional form of expression and with EU Regulation No. 1169/2011 on the provision of food information to consumers” (HM Government, 2013). For salt, sugars, fatty acids and saturated fatty acids, in addition to the numerical information of the amount in grams and the percentage Reference Intake (%RI), with the traffic light labelling system it’s reported a visual signal through the three colours that are deemed, in intentions of those who created it, an instrument of instant reading to identify low, medium or high levels and, therefore, foods to which pay more or less attention during purchase and consumption, according to their reported content of substances. It’s possible to deepen impact and effectiveness of this communication tool, referring in particular to some elements linked to the possible educational value of this “nutritional traffic light”. If to address the problem of obesity it’s essential to make, as stated before, conscious and informed choices, it’s necessary a food education that allow to acquire adequate knowledge in terms of balanced diet and healthy nutritional intake. Thus, the examined tool can be analysed by outlining some considerations concerning certain proper aspects of the knowledge and of the related education that is necessary for its promotion.

A first perspective of observation in this regard focuses on the concept of *nutrition knowledge* by consumers, intended as the required background information to understand what the label communicates and to operate consequent food choices. It was found that there is usually confusion about the nutrients unlike the caloric values that are better understood (Grunert, 2007) and also that socioeconomic and educational levels are critical with respect to the basic nutritional knowledge (Campos, 2011). Thus, it may follow that a system as the nutritional traffic light, by its nature simpler and more explicit as it is based on a very direct communication, can facilitate the choices *at-a-glance* but nevertheless it remains insufficient in providing more complete and comprehensive information that, if oriented to an adequate consumer education, could ensure greater awareness. A proper nutrition education can foster acquisition and development of knowledge and skills in order to make people free to make their own choices: if on the one hand the investigated tool, which aims to make the message simpler and direct, can be a big advantage especially for those with lower and limited skills, on the other hand it cannot replace the will and the necessary commitment of promoting a real awareness of the choice. Otherwise, in fact, instead of providing an adequate and actual knowledge, the risk may be to offer a distorted vision of the action to be taken with the contemporary belief of having the required information to accomplish it in the best way. If the aim of the British government is to facilitate the voluntary communication by producers and retailers with respect to nutritional information in order to promote reflection and healthier behaviours, it should be well outlined the way this communication can play its educational activity.

The analysis leads consequently to consider a second field that refers to the notions of *perception* and *understanding* on the part of consumers. It’s natural to wonder how the information provided are interiorized and reworked by those who are the recipients and so if a device such as this provides an effective educational contribution to develop greater awareness of choice by those who use it. What arises from different studies is that, generally, nutrition labels are considered a valuable source of significant information with regard to which, however, the meaning is not always clear. Among consumers there is the interest in deepening reported indications, even if the belief of many people is that what is reported on the label is not sufficient to distinguish between more or less healthy foods. This raises again the question of whether an educational impact can be found in relation to a device that, in the intention of those who promoted him, wants to help people make healthier choices quickly and easily. In this sense, one of the issues that, just about the perception and understanding, probably requires further study is the message that is transmitted through the displayed colours. The red, in the mind of the creators, would mean a large amount of a certain substance than the reference dose, without any wishes to report a “ban”.



However it's true that, in the presence of a traffic light system, whoever is in front of the green colour knows that he can proceed without constraints while, watching the red, he has the obligation to stop immediately. Its clear reference to common provisions that are implemented as part of the road traffic would seem to allow few possibilities, in the intentional simplicity and immediacy, to behave differently. The system effectiveness, in order to be verified, should undoubtedly give a feedback of a clear understanding of its meaning so to allow a fully aware use and to provide a decisive contribution to the individual education. The recent European regulation on labelling (UE, 2011) clearly states that these forms of expression provided for additional voluntary labelling, in accordance with Article 35, must "facilitate consumer understanding of the contribution or importance of the food to the energy and nutrient content of a diet" and, in accordance with Article 36, "shall not mislead, shall not be ambiguous or confusing". The intention of the legislator is therefore oriented to provide a transparent and truthful communication to promote the development of a proper awareness in terms of healthy and balanced diet, a necessary prerequisite for a proper nutrition education.

It becomes consequent a question on the concept of *use* by consumers, namely whether such voluntary labelling is used by those who are the primary recipients. A required consideration is to identify in practice how much a tool, such as the nutritional traffic light, shows the desired effectiveness in relation to a conscious choice to buy more or less healthy food, action that at least should partially reflect an educational impact on lifestyles. Even if it referred to a small sample of products, a study carried out in 2007 (Sacks, 2009) analysed the initial impact that the introduction of a traffic light labelling system had, after the first two months, on the sales in one of the major chains of supermarket in the UK. The results didn't show any changes compared to the purchase of foods marked as healthier and the conclusions stated that the use of this communication tool isn't enough to influence the behaviour of many consumers. As the authors remember and as reported before, it doesn't lead to a complete inability of a nutritional traffic light to offer a positive contribution with respect to health, but stresses the need to implement other joint activities so that explain how to use it and educate consumers to make healthier choices based on adequate knowledge, an aspect that is certainly crucial. A related issue to consider is the time factor, which in turn exerts a strong influence over the use of such a device. On the one hand, compared to the results of the previous study, it should be noted that the change of the habits is a process that requires quite a long time to be achieved. On the other hand, the consideration of the time dedicated to the shopping in a society that moves faster and faster and that compresses the opportunity to engage, with the necessary calm, to the preparation of the diet, surely draws a strong attention on how to consider the device. A system that allows you to grasp the message quickly and immediately, that is deemed as necessary when buying, doesn't invite to linger with proper calm and attention on choosing and on the resultant preparation of a balanced diet. A communication tool such as the one under consideration, sending a message with a strong visual impact related to the three colours, could be considered and used incorrectly, not reflecting the educational intentions declared by the promoters.

## CONCLUSIONS

The analysis performed on the case of *UK's traffic light labelling* and on the possible educational relevance of this nutritional traffic light against obesity urges multiple reflections on communication, education and responsibility of choices, above all in the food sector. The complexity related to the lifestyle's change and to the definition of a healthy and balanced diet, necessary conditions to prevent those diseases that today afflict a large number of young people and adults in the world, requires tools and strategies, including communication, which exercise a strong educational activity. The voluntary adoption of correct eating habits requires a comprehensive educational path within which it can develop knowledge and awareness, essential elements in order to make those choices in an appropriate and responsible way. There are many informational devices which can be used but they have to meet those requirements of clarity and transparency, as well as of accuracy based on sound science, required by the major international agencies, including the World Health Organization and the European Union. To fully carry out their duties, including desirable education, it needs to be found obvious contributions in terms of development of knowledge, understanding and use among those who are the main users. The examined voluntary labelling system, alongside positive elements related to its clear potential to transmit messages simply and quickly, has led to make some reflections, with no claim of being exhaustive, on different issues related to its real efficacy in representing an effective tool to make healthier choices in food sector. The European Union itself, even as a results of several requests from some Member States, opened an infringement procedure against the British Government, having found some ambiguities with regard to this specific system adopted in the United Kingdom. The issues under debate regard its poor ability to allow an adequate differentiation between more or less healthy foods and possible unjustified disadvantages for some foods, not providing a comprehensive indication about the various nutrients contained and offering only limited information that could lead to diets not really balanced. To sum up, this case study highlights how the definition of a system to communicate significant information in relation to a balanced diet is a complex action that needs special care to be able to exert an effective educational impact on people in a clear and transparent way, paying a specific attention to all aspects. But the recognized need for an effective food education requires to further deepen the research of all these possible tools, so that they can fully contribute to the



development of greater awareness and proper habits.

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## Comparison Of Perception Levels Of Students At The School Teaching Department Of The Faculty Of Educational Sciences And Physical Education And Sport Teaching Department Of Faculty Of Sport Sciences Concerning Personal Justice In Terms Of Their Decision Making Styles

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### ABSTRACT

The present study aims to determine whether personal justice perception levels (belief in just world) of students at the school teaching department and sport sciences departments at the faculty of education has significant impact on their decision making process. The present research is based on correlational aspect. Method and causal comparative method aim to determine possible causes of a certain behavior pattern by comparing individuals with behavioral pattern with the ones who do not.

*Results:* Concerning these dimensions, when arithmetic means of female and male students are taken into account, it was concluded that male students' perception of just world is significantly higher compared to the female students; and female students' panic decision making levels are significantly higher compared to male students. Consequently, it was found that mean score of students at the department of school teaching concerning their panic decision making style is significantly higher than the students at the department of physical education and sport teaching.

**Keywords:** School Teaching, Physical Education and Sport Teaching, Personal Justice, Decision Making.

### INTRODUCTION

Hypothesis of belief in just world emphasizes protection motive of individuals (Lerner, 1975). This belief enables people to confront their physical and social environment as though it were stable and orderly (Peter et al., 2013). Based on this theory, human beings are inclined to accept that unfortunate persons who experience unpleasant things deserve what they faced and this happens because of them (Lipkus & Siegler, 1993). Many people are guided by values that they have internalised and that they accept as providing sensible and proper criteria by which actions can and should be judged (The Hon Sackville, 2014). According to Dalbert (2002), strong belief among persons who experienced adverse circumstances in just world accelerates recovery of these individuals afterwards the unpleasant experiences and accommodation process to the situation faced. Belief in just world has protective function for individuals from undeserved adverse outcomes psychologically (Pittinsky & Matic, 2005). Thus, beliefs can shape the learning process and the outcomes of teaching, which makes them a valuable research focus to investigate (Cephe & Yalcin, 2015). By integrating belief in just world and the point of view legitimizing the system, Kay et al., (2005) claimed in their study that considering the poor people more happy and honest than rich people relieves the justice motive and increase the support for status-quo (Jost et al., 2001). emphasized the view in their study that "consistent with their belief that the world is a just place based on living conditions, people tend to perceive the social systems and regulations in which they live as just; and accordingly they rationalize and support ongoing status-quo as just and legitimate thing. Especially in persistent injustice situations, persons with helping potential develop negative attitude toward victims such as humiliation and accusation (Reichle & Schmitt, 2002). Appelbaum et al., (2006) stated that although individuals try to better off their position, their belief in just world is jeopardized when they encounter someone needy. Therefore people with strong belief in just world try to protect this belief. According to Zuckerman (1975), individuals with strong belief in just world can explain the relationship between the outcomes and what is deserved with supernatural powers or divine interferences. Furnham & Proctor (1989), claim that when people who lack of their basic needs could not compensate their status, belief in just world is maintained by humiliation of poor people.

Decision making pertains to individuals who are competent in terms of mind, thinking, cognition, and free-will (Kocel, 2001). According to Bagirkan (1983), decision making is determination of the most appropriate result by evaluating a single or a series of issue that has to be resolved with its all dimensions. In the meantime, this complexity of decision making affects individuals negatively in decision making process. Individuals play different roles in an organization by acting as an individual manager, as a team member and as an organization leader. We now examine the role played by the individual in influencing decision making at different levels (Vallabh & Singhal, 2014). State that frustration or fear of frustration cause anxiety and individuals experience compulsion during decision making process (Atkinson et al., 1999). Scott & Bruce (1995), explain decision making styles as learned habit. Whereas appropriate and accurate decisions cause positive changes in a person's life, mistaken and erroneous decisions would affect alignment of life adversely (Gucray, 2003). Characterizes individuals in terms of decision making styles as spontaneous-systematic decision making and introvert-extrovert

decision making (Johnson, 1978). Report that majority of individuals do not use their cognitive capacities completely and they prefer short ways and shortcuts while they are making decision (Candangil, 2005). According to Ersever (1996), there is view for some individuals that decision can be made through rational and mathematical ways. Amount of information used during decision making process may vary according to decision maker (Driver & Mock, 1975). According to Newell et al., (2004) when faced with decision making requirement, it is not always possible to evaluate all options, their characteristics and their potential results simultaneously. Report that individual differences in decision making process are result of promptness of decision and amount of collected and evaluated information (Dunham & Pierce, 1989).

## METHODS

The present research is based on correlational aspect. Method and causal comparative method aim to determine possible causes of a certain behavior pattern by comparing individuals with behavioral pattern with the ones who do not. There are at least two variables in correlation determination method using comparison. Groups are formed based on independent variables; and it is investigated that whether there is difference according to the dependent variable (Borg, 1985).

### Sample and Sampling

The study group is consisted of 208 randomly selected students from the Usak University in fall semester of 2014–2015 academic years. Of these students, while 107 were selected from the school teaching department of faculty of education, 101 were from the department of physical education and sport teaching department of faculty of sport sciences.

### Data Collection

One of the data collection tools is personal belief in just world scale (KADİÖ) developed by (Dalbert, 1999). This scale was adapted to Turkish and its validity and reliability studies were performed by (Goregenli, 2003). As another data collection tool, Melbourne Decision Making Scale was used, whose original was developed by (Mann et al., 1998). The Melbourne Decision Making Questionary was adapted to Turkish; and its reliability and validity studies were conducted by (Deniz, 2004).

### Data Analysis

Collected data during the research was analyzed and evaluated by means of SPSS 13.0 statistical software. In order to portray participant students' demographic information a frequency (f) analysis. A three-point scale was used in the survey conducted in determination of decision making styles of students. As this survey is composed of two sections, six questions in the first section are to determine their self confidence level during decision making process. These questions are consisted of 3 positive and 3 negative expressions. Regarding positive expressions, value of 3 stands for "Correct", value of 2 stands for "Sometimes Correct", and value of 1 stands for "Incorrect". Regarding negative expressions, value of 3 stands for "Incorrect", value of 2 stands for "Sometimes Correct", and value of 1 stands for "Correct". In order to determine students' perception of just world and their decision making styles exhibit difference according to demographic status t test and one-way Anova test were conducted. In the survey to determine students' personal perception of just World, a 7-point scale was used; values of 1, 4 and 7 stand for "Strongly Disagree", "Neutral", and "Strongly Agree" respectively. In order to determine whether there is significant relationship between students' personal perception of just world and their decision making styles, the correlation coefficient between two groups were assessed. Assessment of Pearson Correlation coefficient is that "R 0.00 – 0.25 very weak relationship, R 0.26 – 0.49 weak relationship, R 0.50 – 0.69 medium level of relationship, R 0.70 – 0.89 strong relationship, R 0.90 – 1.00 very strong relationship".

## RESULTS

Mean score of students' answers given to the questions regarding their personal perception of just world is estimated as 3.70. Students' personal perception of just world is in proximity of 4 (neutral) value. Accordingly, it can be concluded that students' personal perception regarding just world is indecisive. (Table 1).

Mean score of the first 6 expressions which determine self confidence level of students' decision making is estimated as 2.46, which suggests CORRECT level. Accordingly, it can be said that self confidence levels of students in decision making is high. (Table 2)

The mean score of answers of students regarding careful decision making style is estimated as 2.54, which suggests CORRECT level. Accordingly, it is possible to say that students are usually careful while they are making their decisions (Table 3).

Based on Table 4, it can be observed that students' perception of just world and their aversive decision making styles do not differ according to their department ( $p > 0.05$ ) On the other hand, there is significant difference among self confidence in decision making, careful decision making, dilatory decision making and panic decision making styles according to students' sport practice levels (Table 4,  $p < 0.05$ ).

When these differences are taken into account; it is observed that self confidence levels of students at the physical science teaching department in decision making process are significantly higher compared to the students at the department of school teaching. Careful decision making, dilatory decision making and panic decision making

levels of students at the department of school teaching were found higher compared to the students at the department of physical education teaching (Table 4).

According to Table 5, it can be observed that students' perception of just world does not exhibit difference in terms of self confidence in decision making, careful decision making, aversive decision making and dilatory decision making styles according to their residential places ( $p>0.05$ ). On the other hand, regarding panic decision making style, it can be seen that there is significant difference according to students' residential place (Table 5,  $p<0.05$ ).

It was observed that there is significant relationship between students' personal perception of just world and their self confidence in decision making. According to the correlation table, it can be seen that there is weak negative relationship between students' personal perception of just world and their self confidence in decision making ( $R=-0.162$ ). Thus, it can be said that as students' personal perception of just world increases, their self confidence level in decision making decreases slightly (Table 6).

## DISCUSSION AND CONCLUSION

Mean scores of students' answers given to the questions regarding their personal perception of just world is estimated as 3.70. Students' personal perception of just world is close to 4 (neutral) value. Accordingly, it is seen that students' personal perception of just world is at indecisive level. The mean score of the first 6 expression which determine self confidence levels of students in decision making is estimated as 2.46, which suggests CORRECT level. Therefore, it is possible to conclude that students' self confidence levels in decision making is high. The mean score of students' answers given to the question regarding careful decision making style is estimated as 2.54, which suggests CORRECT. Accordingly, it can be said that students are usually careful while they are making their decisions. The mean score of students' answers to the question regarding their aversive decision making style is estimated as 1.77, which suggests SOMETIMES CORRECT level. Accordingly, it is possible to say that students sometimes act aversively while they are making decisions. The mean score of students' answers to the question regarding their dilatory decision making style is estimated as 1.91, which suggests SOMETIMES CORRECT level. Accordingly, it is possible to say that students sometimes adopt dilatory attitude while they are making decisions. The mean score of students' answers to the question regarding their panic decision making style is estimated as 2.11, which suggests SOMETIMES CORRECT level. Accordingly, it is possible to say that students sometimes act in panic while they are making decisions. In the studies on personal justice (Belief in Just World), as it is consistent with the people's belief in that the World in which they live is a just place, it was reported that human beings tend to perceive social systems and regulations which they are part of them as fare; and thus, they support and rationalize status-quo (Jost, 2001). Eldeklioğlu (1996), revealed that the most appropriate family environment for development of decision making skill and effective decision making is a family environment adopting democratic attitude. Kasik (2009) was not able to find significant difference among mean scores of students' concerning their decision making styles of self confidence, careful, aversive and dilatory according to their gender. However, when students' decision making panic sub scale mean scores are considered, the researcher found a significant difference. According to Deniz (2002), whereas there is no significant difference between means scores of female and male university students in terms of independent, indecisive and internal-impulsive decision making strategies, nevertheless mean scores of female students were found significantly higher than males in terms of rational decision making strategy. Concerning these dimensions in our research, when female and male students' arithmetic means are considered, male students' perception of just world are significantly higher than female students; female students' panic decision making levels are significantly higher than male students. In other studies, existence of no significant differences among decision making styles based on gender exhibits accordance to findings of some researchers (Kose, 2002; Sinangil, 1993; Tasdelen, 2002). Avsaroglu (2007) found significant difference between mean scores of students' self confidence in decision making and their sub dimension of decision making styles (careful decision making, aversive decision making, dilatory decision making and panic decision making) according to their genders. Can (2009) reported that as individuals gain self confidence in decision making process, they would exhibit careful decision making style in their decision making process. In the meantime, individuals who lack self confidence level in decision making adopt dilatory, panic and aversive decision making styles in their decision making process.

It was observed that there is significant difference according to variables of gender, grade level, department, and residential place. Moreover, significant difference was found in dimension of perception of just world and panic decision making style between female and male students (Table 5,  $p<0.05$ ). Concerning the self confidence in decision making and dilatory decision making styles, there is significant difference according to students' grade levels ( $p<0.05$ ). For self confidence in decision making style, a significant difference was found between students at the departments of physical education and sport teaching. Accordingly, mean scores of students regarding self confidence level in decision making at the first grade were significantly higher than the students at the department of school teaching. For panic decision making style, a significant difference was found between students at the physical education department of faculty of sport sciences and department of school teaching at the faculty of educational science. Accordingly, it was found that the mean scores of students at the third grade regarding panic decision making was found significantly higher than the students at the first grade. We observed that students'



perception of just World and aversive decision making styles do not exhibit difference according to their departments (Table 4,  $p>0.05$ ). Concerning the self confidence in decision making, careful decision making, dilatory decision making and panic decision making styles, a significant difference is observed according to students' sport practice levels (Table 4,  $p<0.05$ ). When these differences are taken into account; it was found that self confidence levels of students at the physical science education department in decision making were significantly higher compared to the students at the school teaching department. Concerning students at the school teaching department, their careful decision making, dilatory decision making and panic decision making levels were found significantly higher compared to the students at the physical education department. We observed that students' perception of just world do not exhibit difference in terms of self confidence in decision making, careful decision making, aversive decision making and dilatory decision making styles according to their residential places (Table 4,  $p>0.05$ ). On the other hand, in terms of panic decision making style, a significant difference is found according to students' residential place ( $p<0.05$ ). There is significant difference between students residing in town and city center in terms of panic decision making style. Accordingly, it can be concluded that mean scores of town-resident students' panic decision making styles are significantly higher than the city-resident students. As a result of correlation analyses carried out in order to determine whether there is significant relationship between students' personal perception of just world and self confidence in decision making and decision making styles, it was observed that there is no significant relationship between students' personal perception of just world and careful decision making style, aversive decision making style, dilatory decision making style and panic decision making style. According to correlation table, it can be seen that there is weak and negative relationship between students' personal perception of just world and their self confidence in decision making (Table 6,  $R=-0.162$ ). Accordingly, it is possible to say that as students' personal perception of just world increases, their self confidence in decision making decreases slightly (Table 5).

**Table 1**

What is the level of students' personal perception of just world?

Mean and standard deviation values concerning students' personal perception of just world			
	N	MEAN	SD.
1. Whatever you say, some groups are more privileged than others.	208	3.19	1.70
2. All groups should be provided equal chance in life.	208	4.97	1.31
3. Superior groups should be dominant over low tier groups.	208	1.98	1.42
4. None of groups should be dominant within society.	208	4.68	1.53
5. If some groups keep quiet, there would be less problems.	208	3.94	1.63
6. The fact that some groups are superior and some are located at lower levels may be good thing.	208	2.68	1.54
7. Social equality should be our social target.	208	4.99	1.33
8. Sometimes other groups should be kept silent wherever they are.	208	3.36	1.65
9. It would be good if all groups are equal.	208	4.22	1.59
10. Equality among groups should be our ideal.	208	4.50	1.52
11. In order to reach our group's target, sometimes it is required to use force against other groups.	208	2.68	1.74
12. We should do our best to provide equal conditions for different groups.	208	4.50	1.45
13. Low tier groups should stay put on their positions.	208	2.04	1.50
14. If we had treated to different groups equally, now we would have less problems.	208	4.40	1.66
15. We should do our best to bring incomes to the more equal point.	208	4.70	1.54
16. Sometime we need to crush other groups so that we can progress in life.	208	2.30	1.77
GENERAL MEAN		3.70	1.56

**Table 2**

What is the self confidence level of students in decision making process

	<i>N</i>	<i>MEAN</i>	<i>SD.</i>
1. I have confidence in my decision making skill.	208	2.55	0.57
2. I feel small more than many people after made my decision.	208	2.59	0.67
3. I consider myself as a successful person at decision making.	208	2.43	0.66
4. I feel so desperate that I give up on decision making trouble.	208	2.57	0.60
5. Decisions I made end up good.	208	2.25	0.55
6. It is easy for other people to convince me that their decisions are correct, not mines.	208	2.34	0.65
<b>Mean</b>		<b>2.46</b>	<b>0.62</b>

**Table 3**

Students' Careful Decision Making Style

<i>Careful decision making style</i>			
	<i>N</i>	<i>MEAN</i>	<i>SD.</i>
8. I would like to consider all options.	208	2.66	0.62
10. I try to reveal disadvantages of all options.	208	2.44	0.64
12. I think thoroughly about how I am going to apply my decision in a best possible way.	208	2.63	0.55
14. While making my decision, I would like to gather information as much as possible regarding the decision.	208	2.40	0.65
18. Before making my decision, I try to clarify my purposes.	208	2.59	0.62
<b>Mean</b>		<b>2.54</b>	<b>0.61</b>

**Table 4**

Comparison of students' personal perception of just world in terms of their self confidence levels in decision making and decision making styles according to their major department.

	<i>Department</i>	<i>N</i>	<i>MEAN</i>	<i>SD.</i>	<i>P</i>
<i>Perception of just world</i>	<i>Phy.Ed.Sport Teaching</i>	<i>101</i>	<i>3.71</i>	<i>0.75</i>	<i>0.835</i>
	<i>School Teaching</i>	<i>107</i>	<i>3.69</i>	<i>0.56</i>	
<b><i>Self Confidence in Decision Making</i></b>	<b><i>Phy.Ed.Sport Teaching</i></b>	<b><i>101</i></b>	<b><i>2.57</i></b>	<b><i>0.38</i></b>	<b><i>0.000</i></b>
	<b><i>School Teaching</i></b>	<b><i>107</i></b>	<b><i>2.35</i></b>	<b><i>0.38</i></b>	
<b><i>Careful Decision Making</i></b>	<b><i>Phy.Ed.Sport Teaching</i></b>	<b><i>101</i></b>	<b><i>2.48</i></b>	<b><i>0.47</i></b>	<b><i>0.044</i></b>
	<b><i>School Teaching</i></b>	<b><i>107</i></b>	<b><i>2.60</i></b>	<b><i>0.40</i></b>	
<i>Aversive Decision Making</i>	<i>Phy.Ed.Sport Teaching</i>	<i>101</i>	<i>1.80</i>	<i>0.44</i>	<i>0.408</i>
	<i>School Teaching</i>	<i>107</i>	<i>1.75</i>	<i>0.46</i>	
<b><i>Dilatory Decision Making</i></b>	<b><i>Phy.Ed.Sport Teaching</i></b>	<b><i>101</i></b>	<b><i>1.84</i></b>	<b><i>0.44</i></b>	<b><i>0.036</i></b>
	<b><i>School Teaching</i></b>	<b><i>107</i></b>	<b><i>1.97</i></b>	<b><i>0.45</i></b>	
<b><i>Panic Decision Making</i></b>	<b><i>Phy.Ed.Sport Teaching</i></b>	<b><i>101</i></b>	<b><i>1.97</i></b>	<b><i>0.44</i></b>	<b><i>0.000</i></b>
	<b><i>School Teaching</i></b>	<b><i>107</i></b>	<b><i>2.23</i></b>	<b><i>0.47</i></b>	

\* $P < 0.05$



**Table 5**

Comparison of students' personal perception of just world in terms of the variables of self confidence in decision making and decision making styles according to their residential places.

<i>Variables</i>		<i>Sum Of Squares</i>	<i>Mean Squares</i>	<i>F</i>	<i>P</i>
<i>Perception of just world</i>	<i>According to residential places</i>	0.390	0.130	0.296	0.828
<i>Self confidence in decision making</i>	<i>According to residential places</i>	0.894	0.298	1.978	0.118
<i>Careful decision making</i>	<i>According to residential places</i>	1.213	0.404	2.122	0.099
<i>Aversive decision making</i>	<i>According to residential places</i>	0.496	0.165	0.801	0.495
<i>Dilatory decision making</i>	<i>According to residential places</i>	0.966	0.322	1.613	0.187
<i>Panic decision making</i>	<i>According to residential places</i>	<b>2.096</b>	<b>0.699</b>	<b>3.238</b>	<b>0.023</b>

\* $P < 0.05$

**Table 6.**

Correlation of between students' personal perception of just world and their self confidence in decision making

<i>Correlation between students' personal perception of just world and their view of self confidence in decision making</i>			
		<i>Perception of Just World</i>	<i>Self Confidence In Decision Making</i>
<i>Perception of Just World</i>	<i>Pearson Correlation</i>	1	-0.162
	<i>Sig. (2-tailed)</i>		0.020 **
	<i>N</i>	208	208
<i>Self Confidence in Decision Making</i>	<i>Pearson Correlation</i>	-0.162	1
	<i>Sig. (2-tailed)</i>	0.020 **	
	<i>N</i>	208	208

\*\* Two-way correlation at 0.05 level.

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## Creating A Powerful, Achievement Oriented And Motivationally Self-Sustaining Classroom Culture And Its Effect On Academic Achievement

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### ABSTRACT

In this research paper, lies the report displaying the findings of the study conducted in one prominent tertiary institution in Turkey to identify the significance and necessity of creating a sustainable achievement oriented classroom fueled by a motivationally self-sustaining culture. And how this could be achieved. It will also put to the fore front the effect of such a culture on the overall academic achievement or success of language learners. Research has shown that acclaimed instructors consciously or sometimes unconsciously reflect their high expectation for their students as it concerns academic achievement. Results of this particular research has also shown that when a culture of achievement is cultivated in any learning environment and a clear understanding of the academic expectations of both parties (the instructor and the learner) are clearly construed, the academic performance of learners tends to be positively influenced. This paper is intent on showing how to go about creating and sustaining an achievement culture in a classroom and also its positive impact on both academic and non academic(extra curricular activities) on the learners.

### INTRODUCTION

As teachers of a foreign language, we all aspire to create a learning environment that goes very much beyond students' proper behavior in the classroom. To facilitate a learning environment which is deemed to be "efficient" not only because of learners' level-headedness but also because students are intrinsically motivated to attain higher grounds academically, we must strive hard and indulge ourselves to creating classrooms with a powerful, achievement oriented culture where students are intrinsically motivated to work hard and collaboratively work with their peers to attain their collective goal for a sustainable better academic achievement. Research with language learners at different levels of tertiary education has indicated a conceptual coherent association between establishing a clear-cut culture of achievement in classrooms and the academic success of individual students. This particular study is intent on further supporting the notion that forming and allowing a climate of academic achievement to permeate, and setting pristine achievement goals in ELT classrooms, play significant role(s) in instilling zeal and facilitating the psychological well-being of learners. Particularly, I will be building on **goal orientation** analysis of adaptive behavior in carefully observing the relationship between assigned academic tasks and the learner's ego goals. This study also aims to shed more light on the "end product" or consequences of school's perceptions of the importance of emphasizing on and encouraging culture of achievement. In the process of conducting this study, it was observed that task goals and perception of the school as per emphasizing task goals were related to positive psychological well-being of learners. On the other hand, should a teacher be redundant at creating culture of achievement in a language learning environment, the related negative psychological well-being and overall low academic performance of language learners are inevitable. This research provides additional data for teachers and school leaders in helping them understand the immense importance and need for teachers to belief in creating a classroom forged on by a tangible culture of achievement and in its priceless influence in imparting and fostering students academic achievement. The second half of the paper will be elaborating on ways and implementable methodologies towards cultivating and fostering a climate of academic achievement.

### BODY

Goal analysis is an important component of the learning process. In a particular learning environment, learners conjugate from different regions and backgrounds. These learners also have different expectations or goals. This being the case, it is of crucial importance that instructors are able to establish, clarify as much as possible, academic goals and achievement goals. **Academic goal orientation** is based on contemporary "goal-as-motives" theory where it is posited that "all actions are given meaning, direction, and purpose by the goals that individuals seek out, and that the quality and intensity of behavior will change as these goals change" (Covington, 2000, p. 174). **Achievement goal theory** is particularly important in education as it is believed that by differentially reinforcing some goals, teachers can influence or totally change the reasons why students learn—that is, change their motivation (Covington, 2000). In other words, the student's intrinsic motivation to strive hard towards achieving academic excellence can be triggered if clearly stated achievement goals are jointly decided upon by teachers and learners.

A variety of groups of researchers have conjugated on strikingly similar findings relating to the importance of academic goal orientation for academic success. The resultant of such findings; *achievement goal theory* has been under significant study and scrutiny during the past decade. **Goal theory** (performance and learning goals theories) focuses on the role that “purpose” plays in motivation attitudes and behavior. Goal theory basically proposes two common goal orientations which can be classified as either *ego-* or *task- involved*. Dweck and colleagues (see Dweck, 1999) distinguish between *performance* (such as ego-involved goals) and *learning* goals (such as task-involved goals). A **performance goal orientation** is characterized by self-questions such as “Will I look smart?” and/or “Can I out- perform others?” which reflect a concern for personal ability, a normative social comparison with others, preoccupation with the perception of others, a desire for public recognition for performance, a need to avoid looking incompetent, and “outperforming others as a means to aggrandize one’s ability status at the expense of peers”(Covington, 2000, p. 174). In contrast, a student with a **learning goal orientation** would more likely ask the questions “How can I do this task?” and “What will I learn?” The learning goal orientation reflects a focus on task completion and understanding, learning, mastery, solving problems, developing new skills, and an appreciation for what one learns (Covington, 2000; Eccles & Wigfield, 2002; Linnenbrink & Pintrich, 2002b; Skaalvik & Skaalvik, 2002). With no intention to alienate or overlook the importance of performance goals objective, setting clear cut achievable learning goals objective goes a long way towards helping learners to visualize and provides perspective for learning. Research have shown that instructors who are in the know of the importance of setting a learning environment where every student is intrinsically motivated and enthused by the clarity of learning goals, are bound to have academically buoyant learners. Furthermore, instructors who have been blessed with the know-how(natural flair) to create and foster the “flourishment” of learning oriented classroom will have successful students and this is mostly evident in the grades of the students.

Research has also shown that teachers adapt an important role in the academic trajectory of students all through the schooling experience. They (instructors) have the unique opportunity to support students’ academic and social development at all levels of schooling (Baker et al., 2008; Bronfenbrenner, 1979; Bronfenbrenner & Morris, 1998; McCormick, Cappella, O’Connor, & McClowry, in press). Aligned with attachment theory (Ainsworth, 1982; Bowlby, 1969), positive teacher-student relationships allows students to feel safe and secure in their learning environments. Such an environment further provides scaffolding for important social and academic skills. Teachers who support students in the learning environment can positively impact their social and academic outcomes. When teachers form positive bonds with students, classrooms become supportive spaces in which students can engage in academically and socially productive ways (Hamre & Pianta, 2001). Positive teacher-student relationships are classified as having the presence of closeness, warmth, and positivity (Hamre & Pianta, 2001). Students who have positive relationships with their teachers use them as a secure base from which they can explore the classroom and school setting both academically and socially, to take on academic challenges and work on social-emotional development (Hamre & Pianta, 2001). Research has proven that teachers who allow themselves to be seen as or are approachable by students have the tendency to motivate and inspire their learners. Approachable teachers are bound to establish a very positive teacher-student relationships. In line with the attachment theory, students who have a close relationship with their teacher(s) feel emotionally and psychology attached to the teacher, hence, over time, a sense of trust and self-esteem is formed. And, with such feelings in action, students have been proven to strive even harder at achieving higher academic performance for the purpose of not disappointing their teachers. Establishing and fostering a strong positive teacher-student relationship ensures a learning environment where all the learners concerned feel responsible for their academic performance and strive to maintain or reach a recommendable level.

## THE METHOD

The type of research that was used in this study is qualitative and quantitative research. In this study, a total of 20 ELT teachers were observed in the classroom based on the criteria as indicated on the “staff in-class evaluation sheet”. Each teacher had the title of an “advisor teacher”. As an advisor teachers, instructor had more that 18 contact hour per week with the students all through one academic year spanning 8 months. The teacher observation period spanned 4 months.

The total number of students that were in this research was 285 students. The number of students per class for each teacher varied and fell between 25 students and 28 students. After an observation period that spanned 4 months, 10 of the 20 teachers were marked as very active, possessing and displaying enthusiasm, had established strong bonds (close teacher-student relationship) with their students and finally, had created an environment where students were well aware of the expectation of their teacher. The other 10 teachers were noticed to appear not motivated in class, had little or no bond with their students and was far from coming to agreement with the students as regards their academic expectations for the students.

DIAGRAM 1

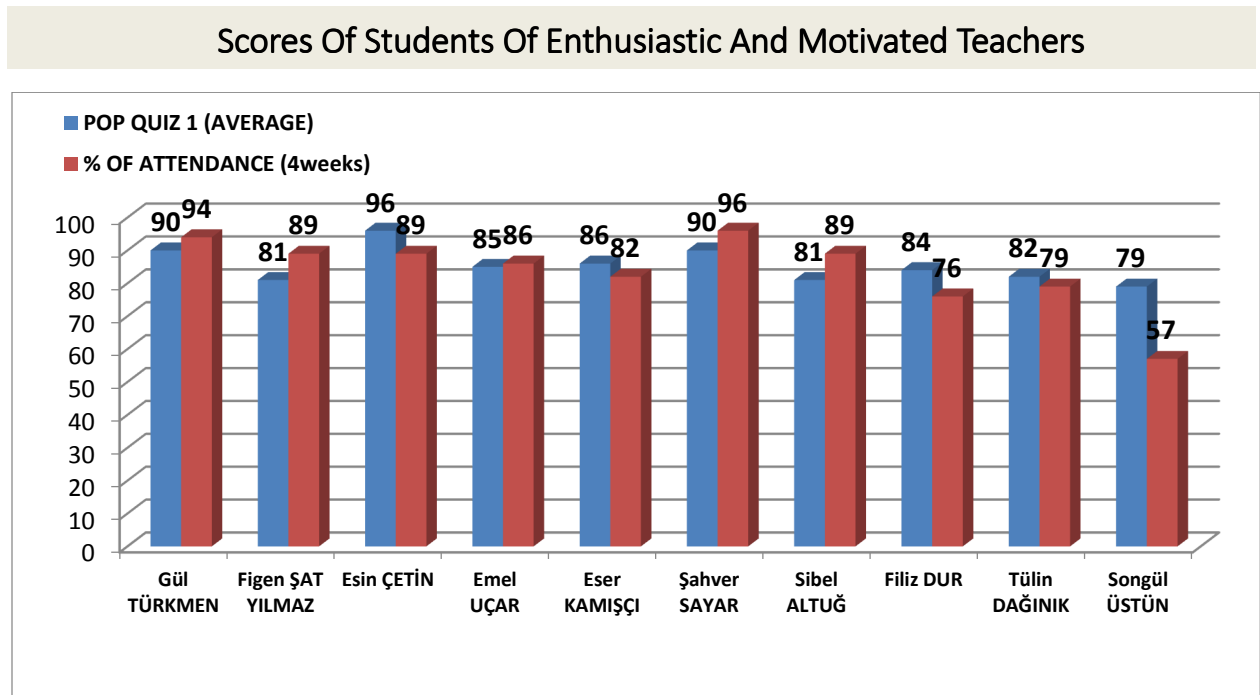
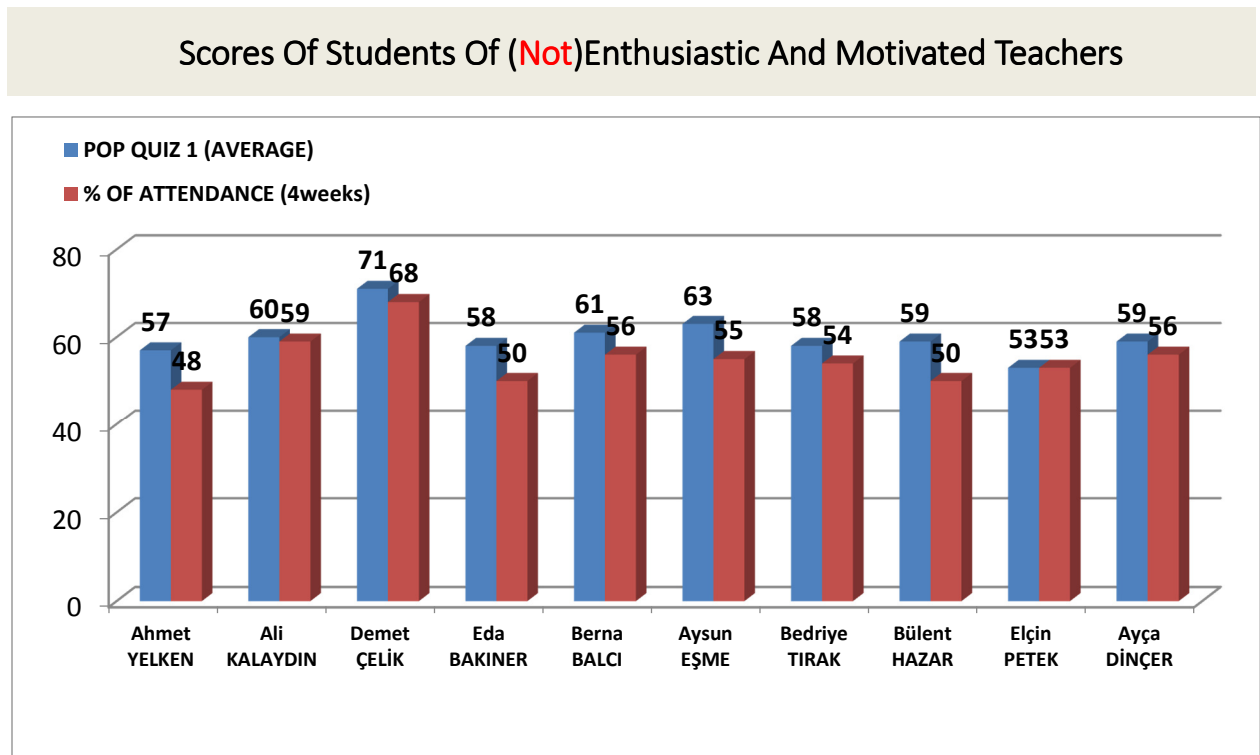


DIAGRAM 2



## FINDINGS

Following diagram 1, the table show the academic success level of students of teachers who possessed and/or established a close bond with their student, communicated clear cut expectations to the students and taught with enthusiasm. It can clearly be seen that the percentage averages of the students in these 10 classes is quite high, roaming in the 85% range. The over-all attendance of the students can be seen to have been considerable high.



Following diagram 2, the table show the academic success level of students of teachers who failed to possessed and/or established a close bond with their student, neither communicated clear cut expectations to the students nor taught with enthusiasm. It can clearly be seen that the percentage averages of the students in these 10 classes is lower, roaming in the 50% range. The over-all attendance of the students can be seen to have been considerable low as well.

## CONCLUSION

It can be concluded from the result of this research that in order to create a powerful, achievement oriented and motivationally self-sustaining classroom culture, instructors need to possess or establish the three core ingredients which are possessing and displaying enthusiasm, setting achievable expectation for learners and creating a close teacher-student relationship with learners.

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## Croatian School Teachers' Familiarity With The European Dimension In Education

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### ABSTRACT

This paper presents the results of a qualitative research that examined school teachers' familiarity with the concept of the European dimension in education. The research examined how teachers assess the need for changes in the national educational system in relation to the standards of the European union, the level of their familiarity with educational policies, initiatives and activities of the European Union in the field of education, and how they assess national educational policies in relation to the policies of the European Union. The results show that the teachers are only vaguely familiar with the European frameworks for cooperation in the field of education, and even less familiar with national educational policies. The question raised in this paper is whether the changes in education are able to occur when the teachers, who are beyond doubt the most important stakeholders in a school and therefore influence the outcomes of students' learning, are not familiar with the objectives of the European and national educational policies.

### INTRODUCTION

The discussions on the concept of European dimension in education have been present in European education policy and professional and scientific discourse for more decades. Developmental course of European dimension in education was moving parallel to the development of European education policies. From an idea that in the beginning had mostly economic and political characteristics of the development of the European Union transformed into the field of education, through the deepening of the European integration processes (Zidarić, 1995) to the concept that eventually became one of the main directions of development of European education policies and school practices (Turk and Ledić, 2013). In this context, European dimension in education can be seen as an educational project of the European Union or as a process of growth and maturation of educational ideas in the wider European area.

Because of its complexity and multidimensionality, it is very difficult to clearly define the concept of European dimension in education. Most authors who, from research perspective, deal with the broader context of European education (Ilišin and Mendeš, 2005; Lukšić and Babor, 2007; Domović et al., 2011; Tišma, Samardžija and Jurlin, 2012) as well as those who specifically explore the concept of European dimension in education (Shennan 1991; Tulasiewicz and Brock, 1994; Zidarić, 1996; Angeles, 2003; Phillippou, 2005; Savvides, 2006, 2008; Ledić and Turk, 2012; Turk and Ledić, 2013; Turk et al., 2015) define and determine it differently. However, they all agree about several basic guidelines and indicators of European dimension in education, which they emphasize in their discussions or research results. Thus, the authors point out (European) values, European citizenship, European identity, multilingualism and mobility as well as the knowledge, skills and attitudes on Europe, in Europe and for Europe as five basic groups of indicators of European dimension in education. **European values** are contextually determined through the topics of interculturalism and multiculturalism, advocating for human rights, freedom, tolerance and democracy and the promotion of pacifism, the prevention of war and the fight against crime (Ledić and Turk, 2012). Then, **European citizenship**, which implies the sense of belonging to the European Union and the rights of each person as a citizen of the community while being aware of supranational identity and common European consciousness (Tišma, Samardžija and Jurlin, 2012). In addition to that, there is the need to raise the awareness of **European identity** through raising the awareness of local, national and European identity and their correlation, respect for different cultural and ethnic identities and the development of political, social and cultural sense of belonging to Europe (Angeles, 2003). Also, Angeles (2003) emphasizes learning (European) languages in the context of the development of linguistic and intercultural competences, the development of the ability to learn and work in a multinational environment, encouraging mobility of students and teachers and providing opportunities for international interaction, which are recognized as an indicator of **multilingualism and mobility**. The **knowledge, skills and attitudes on Europe, in Europe and for Europe** is the fifth group of the indicators of European dimension in education, which opens a new and broad range of teaching to be implemented interdisciplinary within all school subjects (Ledić and Turk, 2012).

The knowledge, skills and attitudes are material, functional and educational aspect of educational work, which points to its integrity. Therefore, they represent one of the key indicators of European dimension in education and an essential element in analyzing and researching this concept. Tulasiewicz and Brock (1994) point out that, in the

context of the knowledge, students should be better informed on the European continent, they should have language, communication, social and negotiation skills while their attitudes would imply commitment to Europe as a common homeland of all nations and the European Union as a supranational community within which a common European identity and awareness will be developed.

Besides the presented indicators of European dimension in education, the conducted researches on European dimension in education in their results highlight a number of challenges faced by those who advocate for the implementation of this concept in educational organizations and contents. In this context, international research and debates are, of course, more numerous (Shennan 1991; Tulasiewicz and Brock, 1994; Field, 1997; Angeles, 2003; Phillippou, 2005; Convery and Kerr, 2005-6; Savvides, 2006 2008; Rebensteiner and Ropo, 2013) and bring different range of challenges and recommendations that should be taken into account when implementing European dimension in education in (daily) educational situations.

Thus, for example, Convery and Kerr (2006) studied the understanding of students - future teachers and employed teachers, about notions such as European identity, European cooperation and European integration in the context of a wider concept of European dimension in education. The study results indicate that the students - future teachers are more inclined to articulate their thoughts on European dimension in education from a broader, general context or taking into account their own experience. Although the results of the study indicate that students perceive Europe as something that directs them to "something higher" (Convery and Kerr, 2006) such as developing a global identity, they also express concern about the possible exclusion of this concept and the inability of developing a global perspective if all teaching contents are adjusted only to European dimension in education. Other than emphasizing the potentially dual interpretation of this concept, such results point to the necessity of its critical thinking when implementing it into educational contents and everyday educational practice. In the context of the debate on multilingualism and mobility as one of the basic groups of indicators of European dimension in education, research has shown that students - as future teachers who speak several foreign languages, and who had the opportunity to travel through Europe or participate in exchange programs, perceive more positively the importance of European cooperation. Students have said that their visiting, living and studying in another country especially helped in the understanding of other cultures and developing intercultural and multicultural competence. Also, they particularly pointed out the importance of the "practical" level of European dimension in education. Within the aforementioned term - "practical" European dimension in education, the students think of mobility, international cooperation and information connections, which they consider to be significant predictors of the development of this concept in everyday (school) practice. Although they mostly have affirmative attitudes towards European dimension in education, future teachers point out that it is difficult to identify and understand how, for example, international cooperation and mobility can help students develop their European identity. This result is particularly indicative in the context of the debate on the definition of European identity and identity issues in general, and it points to the need of its meaningful empowerment and defining in order to avoid possible confusions and ambiguities.

In addition to students - future teachers, Convery and Kerr (2006) conducted the same study on employed teachers as well. They connected their thoughts on European dimension in education with the circumstances in which students learn and practical everyday situations. The concept of Europe and European dimension in education is perceived by the teachers as exclusive and incomprehensible, and they point out that it lacks the ability of everyday practical application in a variety of school situations. Thus, for example, they analyzed the issues of identity through the ways and possibilities in which their students can develop it while noting, similarly to the responses of students, that the students have a lot of difficulties in understanding it and consequently behaving as European citizens, since the students do not develop nor understand their own local identities in an appropriate manner.

In a study *Becoming European*, which dealt with the position of European dimension in education in educational curricula, Hinderliter Ortloff (2006) analyzed a number of different educational curricula of different European countries, starting with the following research questions - *Is the image of European citizen separated from the identity of national citizenship or are they intertwined?* and *Is the curricular aim primarily to acquire knowledge, i.e. to know about Europe, or is the goal to be a European?*. The study was conducted on a selected sample of educational curricula of Austria, Denmark and Germany, given their conceptual similarities and the possibility of comparison. In this study, it was assumed that the education on civil rights and European dimension in education can reveal important differences in how countries maintain balance between European identity and national identity through education.

The Austrian curriculum, declaratively, is the ideal if we are talking about ways to implement European context favored by the theorists involved in education. However, empirical evidence was not determined proving that this model is the one that really contributes to the creation of an integrated European identity. The study found that

there is no unified approach to European citizenship education nor are the assumptions of curriculum development comparable. The study thus concludes that each national policy continues to set different priorities in terms of building national, European and global identities and, given the selected priorities, the success of these approaches is assumed. Of course, one should not thus forget the necessity of contextualization of lower levels of identity (local or national) inside broader, supranational community such as the European Union or Europe or the global world as a whole.

Adaškevičiene and Janiunaite (2004) investigate the problem of European identity in the context of a broader concept of European dimension in education. The authors perceive European identity as an integral part of the concept of European dimension in education and an important research problem. Adaškevičiene and Janiunaite (2004) point out that in studying European identity the problem is in insufficiently developed methodology and the absence of indicators of implementation of European identity and European dimension in education in school contents. The research contribution of their work is particularly evident in the part of the proposals for the implementation of European identity in educational organizations and contents. Thus the authors point out that there are two possible ways of implementation - direct and indirect. Direct implementation of the concept of European identity is linked to the students and teachers and their involvement in programs of mobility, exchange and various project activities on international level. On the other hand, indirect implementation is achieved through the inclusion of this concept in educational content (student books) of compulsory and optional subjects. The proposals for implementation of European identity and European dimension in education resulting from this research open the possibility of creating new research, especially in the part of direct implementation - related to the teachers, their attitudes and thoughts on this concept, as well as indirect implementation related to the contents of school textbooks.

It is clear that the international research touched various segments of educational environment associated with the concept of European dimension in education and involved different research patterns - students, teachers and educational curricula. Based on the results of presented research, the recommendations for future research were given as well as the suggestions for the implementation of this concept into educational content and everyday practice. In this context, from scientific research and practical point of view, the concept of European dimension in education is significantly strengthened and improved, and the foundation for its further development and continuous implementation have been set.

On the other hand, in Croatian educational environment the beginnings of debates on European dimension in education can be found in the mid nineties (e.g., Zidarić, 1995) followed by a period when this concept remained almost ignored and unexplored. Its more intensive study, particularly from the perspective of scientific research, started in the last few years (Ledić and Turk, 2012; Ledić, Staničić and Turk, 2013, Turk and Ledić, 2013, Turk et al., 2015). Studies of European dimension in education were mostly carried out in the framework of broader research on the attitudes of educational experts-practitioners and students - future pedagogues and future teachers. For example, Ledić, Staničić and Turk (2013) in their study of the competencies of school pedagogues introduce a new group of competences of the European dimension in education, among which they point out - *Knowledge of the application process to the European Union programs, Knowledge of the structure and functioning of key bodies of the European Union (the Council of Europe, the Council of Ministers, the European Parliament...), Knowledge of European trends in education, Knowledge of at least one foreign language, Knowledge of the area of democratic citizenship and human rights, Ability to work in intercultural and multicultural environment, Ability to give guidance to students and teachers towards social responsibility*. The results of this study showed that the pedagogues think that the competences related to European dimension in education are the least important competences for their successful and daily work. Also, the same respondents estimate that higher education (study program of Pedagogy) and professional training programs in Croatia do not contribute to the development of competences of school pedagogues (Ledić, Staničić and Turk, 2013). Similarly, the students of Pedagogy - future (school) pedagogues think that the listed competences are least important for their future professional engagement while in estimating the contribution of higher education they consider that it partially contributes to the development of competences of European dimension in education for future pedagogues (Turk and Ledić, 2013). Also, the students of teachers' studies being educated for teaching profession and the future work in schools, show insufficient knowledge of the basic concepts of the European Union as well as a low level of (European) political literacy (Turk et al., 2015). In addition to suggesting a low level of awareness of (future) educational experts in Croatia on current issues and problems of European education policies, these results may be indicative in the context of necessary changes in national education system in relation to the EU standards. In this context, from a national perspective, one may problematize the effectiveness and feasibility of the implementation of European educational objectives set and defined in some of the main European educational policy documents (such as Europe 2020 or the *Education and Training 2020*), which are referred to by the recent national education policy (for example, in the Strategy of Education, Science and Technology of the Republic of Croatia from 2013).

Although the conducted researches in Croatia included a part of educational practitioners, as well as those who are to become ones, in the context of changes in European education policies and the implementation and application of European dimension in education, there were no researches on the population of teachers working in primary and secondary schools, who are indisputably the most important factor in school which affects the learning outcomes of students - future independent European citizens.

## RESEARCH METHODOLOGY

Seeing the importance of the role of teachers in promoting the active implementation of European education policies and objectives, as well as their knowledge of the concept of the European dimension in education, a research was carried out in which the starting point were the three main research questions - *How do teachers evaluate the needs for changes in their education system in relation to the standards of the European Union?*, *To what extent are teachers familiar with educational policies, initiatives and activities of the European Union in the field of education?* and *To what extent are teachers familiar with and how do they evaluate the national education policies in relation to the policies of the European Union?*.

The research was approached from a qualitative research paradigm and the research data was collected through interviews and the application of interview protocol. The interviews were recorded and then transcribed. The study included 51 teachers employed in primary and secondary schools in the Republic of Croatia. The collected data was analyzed using constant comparison method, which includes data search with the aim of defining and categorizing responses and topics related to the defined research questions (Merriam, 1998). In the part of qualitative research analysis, after the citation from the collected empirical material, the number of the research participant from the database, sex, age, years of work experience and the type of school in which they are employed (primary or secondary school) will be shown in parenthesis.

The analysis of the research results was carried out on the basis of the set research questions and the responses of the research participants and the corresponding conclusions will be accordingly presented.

Through the analysis of the responses to the question - *Do you think that Croatia, as a member of the European Union, needs to change teaching content and approach or do you think that it is not necessary, i.e. that the membership should not have any repercussions on the national education system?*, the research participants can be grouped into three categories. The first group consists of those who believe that the **changes are necessary regardless of the membership in the European Union**. Second group are the research participants who believe that the **changes should be connected with the membership in the European Union**, while the third group consists of those research participants who give vague answers that cannot be connected with either of the previous two categories of responses.

The research participants who believe that changes are needed, regardless of the membership in the European Union point out - *"I think we should not change anything according to European standards. Our education system needs some modifications and changes, but nothing what is being promoted at European level. Well, Bologna system failed long ago, why are they then still forcing such a system in Croatia?"* (22, M, 28, 1 year of work experience, secondary school); *"Well, I can certainly say that the contents should be changed by all means, whether we go to Europe or not. I think that one of the biggest problems is that since 2009 we have not had subject curricula. Maybe it is even more urgent for high schools. And, as far as the approaches to teaching goes, ...um ...well, we went through so many trainings and it seems to me that we are very successful in the application of different types of teaching. I say this based on the experience in our school, we are quite... like... we are quite involved. And if I look at the wider perspective, at the national level, we have a lot of problems in the education system which need to be addressed, and this however does not depend too much on our joining the European Union."* (26, F, 44, 15 years of work experience, primary school). The second group of the participants - those who believe that changes need to be connected with the membership in the European Union, state this in their answers - *"It is necessary that the education system is changed when entering the EU and I believe that the entry into the EU is a great start and an incentive for the introduction of drastic changes."* (20, M, 31, 3 years of work experience, secondary school); *"We need to change the contents in the sense that we have to adapt, because when we are a part of the European Union, we will have to somehow enable the children who want to study abroad or to continue their education abroad, to actually continue in the same system and for it to be known to them, so we will definitely need to adjust things."* (35, F, 33, 5 years of work experience, secondary school); *"There should be some repercussions on the national education system. Same as with any entry into a membership, there is a voluntary departure from freedom and autonomy. You cannot be a member of a club and still say what you want. That is why I'm not in any political party. You cannot expect, as a part of a club, to act in accordance with your own freedom. You need to sacrifice a part of your freedom for the sake of joining a club or a membership."* (40, M, 30, 4 years of work experience, primary school). The research participants who gave vague answers are placed in the third group, and one example stands out - *"I think that our national education system is relatively well*



*conceived regardless of how classic it is in many respects. I have to consider that our educational system had been created over many years built in such a way it was built. All our reforms of that education system were unfortunately made ad hoc and unplanned. Probably if we had to do something about it... it would not lead anywhere. Whether to change the approach? Well, the approach depends on the subject teachers. Each of us can, within the existing national educational curriculum and looking at our own subject, change the approach on our own. It does not say anywhere what methods we should use and how our school period should look like. We can use modern methods, different approaches so that ultimately we come to the results and that the children know something. And... it does not need to be prescribed. It is difficult ... Even if prescribed, how is it going to be implemented by a person who is about to retire, or someone who wandered into this profession." (09, M, 28, 3 years of work experience, primary school).*

Based on the analysis of the responses of the research participants, it can be pointed out that the teachers believe that changes in the educational system are necessary, but that it is not necessary to connect them with Croatian accession to the European Union. In this context, it is possible to assume that Croatian teachers have relatively poor perception of the integration processes in education, which are unavoidable if we want to, not only in words, take our place in the educational map of the European Union. At the same time, connecting with the results of previously presented research (Ledić, Staničić and Turk, 2013), their stands do not differ from the attitudes of school pedagogues and their perceptions of the competences of European dimension in education. Likewise, these findings may also indicate the possibility of isolationism in the beliefs and perceptions of the teachers towards the European Union or the processes taking place in its educational policies, which inevitably have to do with national education policies as well. Such detected teachers' perceptions confirm already highlighted concern about the effectiveness and feasibility of the implementation of European education objectives in the context of national education policies.

Another question the research participants were asked was - *Do you think that the changes in the system are necessary independent of the Croatian accession to the European Union? Please, elaborate your stand. If you consider that changes are needed, what should they consist of?* The analysis of the responses to this question expressed a very clear attitude of the research participants about the need for changes. The research participants can therefore be grouped into two categories - 1) those who **believe that the changes are necessary** and 2) those who believe that the changes are not necessary.

In the first group of the research participants' responses, of those who believe that the changes are necessary, it is possible to detect the stakeholders or contents in the context of the education system to which the proposed changes mostly refer to. Based on the analysis of the responses, it is possible to point out what, in the opinion of the research participants, needs to be changed, i.e. what the proposed changes refer to. As the thing that requires a change in the system, the participants mostly emphasized the curriculum and working conditions, and somewhat less the teachers and the students. In the context of the necessary changes in the curriculum, they also emphasize the need for the change in the plan and program in schools, the reduction and modernization of the content, the introduction of new approaches and work methods in education and the reduction of the students' load with the classes. Thus, for example, it is pointed out - *"Changes are necessary, from the way of teaching to the programs being realized. Some programs are terribly outdated, they certainly need to be changed and amended further in accordance with the present times."* (19, M, 47, 21 years of work experience, secondary school). Working conditions are the next element of the system which, in the opinion of the research participants, need to be changed. The research participants here specifically refer to the need to extract more money for education, the need to improve material working conditions in schools, enabling working in one shift, and reducing the number of students in each class. The third set of proposals for changes is directed towards the teachers, where it is interesting to highlight the opinions concerning the role and position of the teachers, with references to everyday situations that the teachers face in school and thoughts about their own position in society - *"Of course that changes are more than necessary. I think that we should reduce subject content and modernize it. And perhaps even to give more power to the teachers. We are no longer allowed to send students out from the classroom, regardless of the fact that they disturb other students while they work."* (34, F, 31, 6 years of work experience, primary school); *"But, it is not all the teachers' fault. Schools give too much liberalism, students have too many rights, hardly anyone asks about their obligations. The parents come to school whenever they want. They harass the teachers who are blamed for everything, and their poor little children for nothing. It made me sick when a mother came and told me that she didn't understand how her child got a bad grade when he knows everything because she had questioned him earlier. And the mother finished elementary school only! Parents should be prohibited to come to school, except when they are called. Repeating classes should be introduced in primary schools, teachers need to be appreciated and respected citizens of this society, and not as it is today that the students practically mock you to your face and you cannot do anything to them. But, who will appreciate you when the teachers are the worst paid category in the society, and the state does everything to make the teaching profession even more degraded."* (48, M, 54, 30



years of work experience, primary school). The fourth group of proposals refers to the students in particular (although, of course, in all the preceding groups there is a connection with the position of students). The least number of the teachers gave suggestions which can be classified in this group of proposals, whereby, in the context of the analyzed subject, the teachers' stands referring to the process of mobility of the population and the need for students from different countries to be given adequate attention should be pointed out.

Although to a lesser extent, there are also those research participants who believe that the changes in the system are not needed. Since this is a qualitative research in which numeric element does not indicate the importance of certain research findings, the responses of the research participants from this group will also be given. These research participants stand out - *"I believe that the current education system is good and that there shouldn't be any changes."* (13, M, 31, 5 years of work experience, primary school); *"As I have already stated, I believe that there shouldn't be any major changes, although any novelty, if positive, is welcome. Only recently did they introduce the state graduation, and this year the e-enrolling, so it takes time to see what is going to be achieved with what has already been done."* (07, F, 26, 1 year of work experience, primary school – junior school).

These findings suggest that the teachers in defining their responses expectedly primarily follow their experience and the challenges they face every day. When trying to define the direction and the width of the changes, there is partly the fact of insufficient information on the objectives of education policies and current trends in education. In this context, it can be concluded that the teachers perceive well the challenges of their practice, but they need help in articulating the directions and mechanisms for achieving the changes in their environment.

The next question was intended to determine the extent to which the research participants are familiar with the education policies in the European Union, whereby they were given sub-questions which directed them to use their responses to refer to the knowledge of the objectives and mechanisms for their achievement. The question was - *Do you have any knowledge of education policies in the European Union? What are the objectives of European education policies? What is the European Union trying to promote through its educational system? Are you familiar with the mechanisms through which the European Union is trying to implement its objectives?.* "Desirable" answers to this question can be deduced from the document *Education and Training 2020*, which represents the strategic framework for European cooperation in education and training. The document also lists four strategic objectives that member states should achieve by 2020: to actualize lifelong learning and mobility, to improve the quality and efficiency of education and training, to promote equity, social cohesion and active citizenship, and to encourage creativity and innovation, including entrepreneurship at all levels of education and training. Based on the analysis of the responses to this question, the research participants can be grouped into two groups. The first group includes those participants who **are familiar with the objectives and mechanisms** of European education policy while the second group is comprised of those who **do not know the objectives and mechanisms**, i.e. they **give vague answers**.

The analysis of responses in which the research participants expressed their understanding of the objectives and mechanisms of educational policies in the EU shows that lifelong learning is most frequently noted as one of the major objectives. In addition, it emphasizes mobility, competence development, interconnection, tolerance and respect for the horizontal and vertical mobility. It should be noted that there are the examples of the research participants whose knowledge is greater than the knowledge of others and it suggests a higher level of awareness and knowledge of the objectives and mechanisms of European education policies.

For example, they point out - *"It all began with the Lisbon Declaration of the Council of Europe in 2000, where in fact the whole European economy is based on knowledge. So, from the Lisbon Declaration started the Bologna system and the whole European system is based on lifelong learning. This is a special educational strategy, which actually creates competitiveness. All these European member states believe that the man should be constantly upgraded and learn through the whole life. Everything should be based on key competences which Croatia also introduces little by little into the regular school system. The European Union actually wants to be competitive, I would say. It wants the flow of knowledge and human potential because Europe will need some staff from the southeastern part, so to speak, which does not appreciate sufficiently the staff of a trained man. Maybe the mechanisms of evaluation, it depends... There will probably be some difference, changing, and perhaps the language. Language competences are very important."* (43, F, 53, 26 years of work experience, primary school); *"Yes, some of these objectives are actually those programs for lifelong learning. Well, now I know some of these programs, what I heard or read - Leonardo Da Vinci, Erasmus, Comenius, Grundtvig, which deal with vocational training, mobility of students... I think that European education policy mostly relates to lifelong learning, which is a key element of European space. I also read something about the Peace Education, which also contains programs for lifelong learning, then the Youth in Action, (professional training, acquisition of new knowledge, learning foreign languages, exchanges...)"* (41, F, 35, 6 years of work experience, primary school).

The category of the (complete) lack of knowledge of the objectives and mechanisms of educational policies in the

European Union includes the responses of those who mostly presented vague answers, since they cannot be used for concluding anything on the knowledge of the objectives and mechanisms of educational policy of the EU. It should be noted that the research participants did not explicitly point out their lack of knowledge of the objectives and mechanisms of educational policies of the EU. However, from their responses, it is possible to deduce such conclusions. For example – *"Well, I know that Finnish education system is very successful, i.e. I went through the PISA survey, according to which it is the most successful in Europe."* (47, M, 35, 7 years of work experience, primary school) or *"Oh yes, I have information related to Germany and Austria, and the communication with teachers even from Switzerland and certain people who work on the ecology. There are different projects."* (45, M, 53, 30 years of work experience, secondary school). It should be noted that the relatively poor understanding of the objectives of the framework for European cooperation in education and training can be seen as the failure of the national education policy. Other than lifelong learning and mobility, not even one research participant talks about improving the quality and efficiency of education and training, promoting equity, social cohesion and active citizenship, as well as encouraging creativity, innovation and entrepreneurship at all levels of education and training. This indicates a possible conclusion that Croatia could have serious challenges in the future in cooperation in the field of education and training.

In the next question the research participants were asked to demonstrate their knowledge of the national policy objectives and their compliance with European objectives. The research participants were asked - *"Do you know what objectives are proclaimed by the national policy? Do you think that the national education policy objectives are aligned with those of the European Union? Explain your answer."*

Based on this question, the research participants can be grouped into three categories - 1) those who are **on the trail of recognizing the objectives** of national education policy, 2) those who **give vague answers** from which one cannot conclude about their (lack of) knowledge of the objectives, and 3) those who **do not know the objectives** of the national education policy.

Although rare, some research participants still partly recognize the objectives of national education policy. In their responses they stand out - *"I believe that they are harmonized to some extent because the national policy and the National Curriculum proclaim lifelong learning and the strengthening of language competence, which could be somewhat compared."* (07, F, 26, 1 year of work experience, primary school); *"I am familiar with the objectives defined in the National Curriculum. There are some kind of... some interdisciplinary... some aspects of some personal development and some language competences and communicative competence and so. Now, how much this has to do with European dimension "* (08, F, 29, 4 years of work experience, primary and secondary school); *"Yes, but these are again very generalized objectives; to raise awareness about this and that, to educate for lifelong learning and so on. All of these are generally good objectives, but there is generally not enough emphasis on upbringing in relation to education, a growing problem in school system is upbringing not education; and in fact it seems to me that the European Union, and consequently Croatia as well, emphasizes education, which really, if we go to a lifelong learning, is something that you can always make up for in a manner of speaking. And you cannot raise a person the same if you are 50 or 20 years old and this is the key problem for me in school system in general, not only with us"* (37, F, 51, 29 years of work experience, primary school). The second group of the research participants gives vague answers to the question, and it can be assumed that they also do not have a clear picture of the objectives of national education policy. Their answers are presented in the following way - *"Well, some knowledge learning, learning information by heart, cramming, without looking at the students as persons, only of less age and smaller than us, means they have some of their problems, i.e. they have problems in their age which should not be perceived as minor."* (15, M, 30, 2 years of work experience, primary school); *"For now, I am not familiar with any of that. One always looks for the tolerance and for the richness of diversity. I primarily believe that that is the foundation of everything."* (16, F, 28, 5 years of work experience, primary school); *"In any case, I think that our education is good. Every now and then we have some changes, some kind of compensation, we have something. You educate a child to be educated, to be good, to be polite, to learn the necessary contents, to respect all the things and something special"* (25, F, 55, 33 years of work experience, primary school); *"National education policy changes each year, so we cannot make progress if we do not do what is needed. We have school Framework Curriculum, the 'framework' means that it is not done yet, it has not been done for several years now. Until we do it, until the curricula are made that will be for the entire country, or for all the programs and all the schools, then the objectives of the national education policies will be harmonized with those of the European Union "* (39, M, 34, 7 years of work experience, primary school). The third set of responses are those who show complete ignorance of the objectives of national education policy, and these are in this context particularly concerning. The research participants who indicate the lack of stated objectives thus point out - *"No, I'm not familiar with them. Since I do not know these, I do not know whether they are coordinated."* (02, F, 45, 22 years of work experience, primary school); *"Actually I do not know. No. I have to say no."* (11, F, 25, 1 year of work experience, primary school); *"No, I'm not familiar with it."* (21, F, 50, 28 years of work experience, primary school); *"I'm just not too familiar with it."* (13, M, 31, 5 years of work experience, primary school); *"I think it is not clear to me what the*

*objective of our educational policy is, so I think that we are not coordinated. We do not have very defined objectives."* (30, F, 50, 25 years of work experience, secondary school).

Considering the results of the analysis of the previous question, which showed that the teachers are poorly acquainted with the objectives of European education policy, it was not expected for the coordination of European and national objectives to be analyzed. However, it was expected for their knowledge of national objectives in education to be more complete than the knowledge of European objectives. Unfortunately, this assumption was not realized. Judging by their statements, the teachers have very poor knowledge of the objectives of the national education policy, which is worrying. The teachers could have informed themselves about the objectives of national policy, for example, in the documents which were available for the professional public, which were discussed about and on the basis of which they should have, for example, defined the subject curricula. One of these documents is, for example, the National Education Curriculum for Pre-school Education and General Compulsory and Secondary Education (2010). It clearly states that the development of students' competences is one of the main directions of curriculum policy in European and other countries, whereby the key competences for lifelong learning are stated, and it points out that *"...the educational policy of Croatia adopted the same key competences."* (2010, 12). The document points out that for the Republic of Croatia, the accession into the European Union is one of the basic strategic objectives, and that - in addition to its own educational traditions and needs - an important determinant in the creation of educational policy and the development of the national curriculum are the European educational documents. Also, the Strategy of Science, Education and Technology of the Republic of Croatia from 2013, in its summary clearly states the introduction of lifelong learning as a principle underlying the entire education. Although the previous question, which analyzed the knowledge of the objectives of European education policy, concluded on their relatively poor knowledge, from the responses of the research participants on the knowledge of the national policy objectives, it is evident that the knowledge of European objectives is on a better level of knowledge than the knowledge of national objectives. This, unfortunately, is to be considered an even greater failure of the national education policy because it is clear that the knowledge of the general objectives to be operationalized in the daily work with students is *conditio sine qua non* of their realization. It is obvious that in this area one should take serious and concrete measures at all levels. These results indicate that Croatia has very serious challenges in the fields of upbringing, education and training, where there is obviously a lack not only of the knowledge of general principles but of their operationalization and implementation.

## CONCLUSION

The presented results of the conducted research suggest several possible conclusions. From the analysis of the responses of the research participants, one can see that the teachers consider it necessary to change certain segments in the education system, but that it is not necessary to connect them with Croatian accession to the European Union. Also, in their detecting and defining of the necessary changes, the teachers primarily follow their practice and the challenges they face every day. From this one can conclude that the teachers perceive the challenges of their practice well. However, they need additional help in articulating the directions and mechanisms for achieving the changes in their environment. In the context of the debate on the objectives and mechanisms of European education policy, the teachers show relatively poor understanding of the objectives of the framework for European cooperation in the area of education and training, which can be considered the failure of the national education policy. Similarly, the responses of the research participants on the knowledge of national policy objectives show that the knowledge of European objectives is at a better level than the knowledge of the national objectives, which is particularly worrying for the national educational context.

It seems that the teachers are relatively successful in perceiving the challenges of their practice, but it is much more difficult to systematically, reasonably and argumentatively think about possible solutions. Is the lack of knowledge on the wider context in which they live and work, the fundamental objectives of education at European or national level one of the possible reasons for the teachers in Croatia being relatively hard to find ways to improve their practices?

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## Design And Evaluation Of Web Based Science Learning Environments

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### ABSTRACT

Web based learning has found its place in educational methods with the development of internet and internet technologies. The materials, that used with web based learning environments, should have some properties like visualization, pedagogic acceptance and convenience for students level. The purpose of this study is to construct two web based science environments for 9<sup>th</sup> grade students with using two different educational methods: inquiry with 5E learning cycle and expository with expository texts. These web environments are named as Web Based Inquiry Learning Environment (WILE) and Web Based Expository Learning Environment (WELE). Both environments are prepared for "conservation of energy" subject in 9<sup>th</sup> grade physics lesson. In evaluation part of this study, WILE is tested in two classrooms with 27 students and WELE is tested with 15 students. Students wrote their opinions to WILE and WELE, then 4 students interviewed for WILE and 2 students for WELE. Interview results and general opinions of students, a physics teacher and two physics education experts are represented in evaluation part.

**Keywords:** Web Based Learning Environment, Internet, Inquiry Teaching Method, Expository Teaching Method

### INTRODUCTION

Reaching ways to knowledge are differed with the development of technology in all over the world. Educational programs were redesigned, the investment ratio of governments for education is increased, and also education policies are reconstructed (Çetin & Günay, 2011). This change mainly effected distance education system in a concrete. Distance education process includes (1) written sources are turning into printed materials, (2) multiplication, distribution and accessibility of these printed materials (Al & Madran, 2004). In the past, individuals was using post service, radio, television for distribution and accessibility, but now internet got popular among people.

In human history, there is no any other technology that facilitates communication than internet (Karasar, 1999). Education system mainly contains communication skills and it directly is affected by internet. There are different names used for internet in education, such as web based learning, distance education, online learning, e-learning, internet based learning. The advantages using internet in education are creating a learning environment that highlights interactivity, individuality (Dabbagh & Bannan-Ritland, 2005; Gunawardena & McIsaac, 2003; Khan, 1997) independent of time and place (Gunawardena & McIsaac, 2003; Boisvert, 2000; Moore & Kearsley, 1996).

These advantages of internet are supplied by web based learning environments (WBLE). WBLE presents new and attractive material to the students and provides interactivity. During design process of WBLE, instructional system design (Dick & Carey, 1996), cognitive flexibility theory (Spiro, Feltovich, Jacobson, & Coulson, 1991), and constructivist learning environment (Jonassen, 1999) strategies can be used. There are several instructional system design models but the most popular one is ADDIE (Analysis, Design, Development, Implementation, Evaluation) model and this model can be used for the base of many different instructional material (Selvi, 2008). According to cognitive flexibility theory principles; learning activities must provide multiple representations of content, materials should avoid oversimplifying the content domain, instruction should be case-based, and knowledge sources should be highly interconnected rather than compartmentalized (Culatta, 2013). Constructivist learning environments are constructed by using constructivism approach. This approach includes mainly two things 1) learning is an active process of constructing rather than acquiring knowledge and 2) Instruction is a process of supporting that construction rather than communicating knowledge (Lefoe, 1998). Due to Nam and Jackson (2007), there are some other points ,that do not mentioned in these models. First of all environments should not force users while reaching the knowledge, accessing should be easy and environments should not include distracted objects. Secondly, environments should provide regular feedback from users.

In the studies, WBLE positively affect students cognitive and affective domains (Çetin & Günay, 2011). Nummenmaa and Nummenmaa (2008) states that when students actively participate in WBLE cooperatively and individually, their affective behaviors are changed positively. In another study, Baki and Güveli (2008) prepare a WBLE for 9<sup>th</sup> grade students' mathematics subject. They interview with teachers about the usage of this environment. At the end of the study, there is no difference between experimental and control groups on achievement but teachers got positive attitudes towards WBLE. Similarly Kert and Tekdal (2008) prepare a WBLE for physics lesson and try to investigate the effects of WBLE on academic achievement and permanence. They found that in group that uses WBLE have higher academic achievements and permanence levels than that does not use it.

These learning environments try to find out the effects of itself on some dependent variables and do not directly mention the teaching method used in it. Yelon (2006) states that ineffective classroom training transformed to internet is still ineffective and effective learning environments can be produced by using teaching methods well. In science education, Inquiry and expository teaching methods are two of the mostly compared methods (Yager & Akcay, 2010; Nwagbo, 2006). These methods are selected for this study and how they are adapted to web based learning environments are presented in method section of this paper.

### **PURPOSE AND IMPORTANCE OF STUDY**

The purpose of the study is to design web based inquiry and expository physics learning environments and evaluate them by using students, teachers and experts' opinions. The environments are prepared for 9th grade "Conservation of Energy" subject of physics lesson.

While the number of studies related to web based learning environments are increasing in the world, this number is limited in Turkey. So teachers cannot find web based materials for physics lessons. This study is important because they prepared for Turkish students. Secondly, this study is also important because teaching methods are used while preparing WBLEs like inquiry and expository.

### **METHOD**

There are two phase of the study. In the first phase web based learning inquiry and expository environments are prepared and in the second phase these environments are evaluated by using students, teachers and physics experts' opinions.

### **DESIGN OF WEB BASED EXPOSITORY LEARNING ENVIRONMENT**

Web based expository science learning environment (WELE) is constructed by using the definitions of expository teaching method. The procedure while constructing WELE is listed below:

1. Literature Search for expository teaching method: Expository teaching method is a teacher centered method, teacher explains all information and teacher is responsible for students' learning (Bruner, 1961). In this teaching strategy, teacher presents the subject matter rules, provides examples and these examples includes pictorial relationship, application of rules and prerequisite information (Maheshwari, 2013).
2. Subject selection; "conservation of energy" subject is an important subject in physics because it has sociological dimension and it is a difficult subject for students to understand (Paliç ve Akdeniz, 2012). Conservation of energy subject is selected for both learning environments.
3. Determine the aims and objectives of "conservation of energy" subject; according to ministry of education (2013) program, energy subject is a 9<sup>th</sup> grade subject and contains 6 aims and 15 objectives. Two aims are selected for WELE and presented below.
  - determine mechanical energy, potential energy and mechanical energy concepts.
  - explain conservation of energy and understand one kind of energy can turn to another one.
4. Preparation of definitions, explanations and examples: "Oran Publishing 9<sup>th</sup> Grade Physics book" is used for definitions, explanations and examples.
5. Collect photos and make solutions of example problems. related photos of conservation of energy are collected by using internet sources and examples are solved by researchers.
6. Construct web based learning environment: WELE is constructed by a computer engineer. The [www.dersfizik.net/expo](http://www.dersfizik.net/expo) is used internet address of WELE.

Parts of WELE are presented below:

1. User ID and Password: Students log-in the system by using user ID and password. How much time students spend, which parts are completed and how many homework is done by themselves are recorded. Additionally, while students write their opinions and comments, user names are seen at the beginning.



2. Introduction Page: The overall aim of the web-site and the study and the links in the web site are described in introduction page.
3. Conservation of energy 1: Definitions of potential and kinetic energy were provided by using the real life examples. This page is shown in Figure 1.
4. Conservation of energy 2: Conservation of energy was provided by using the equation that initial energy is equal to the final energy in closed systems.
5. Conservation of energy 3: Conservation of energy was applied on an example of a closed system.
6. Exercises: Four exercise problems were presented in an order. Students first saw the problem and then the solution.
7. Problems: Five problems are given to the students. But students only saw the problems, the solution of the problems were not presented.

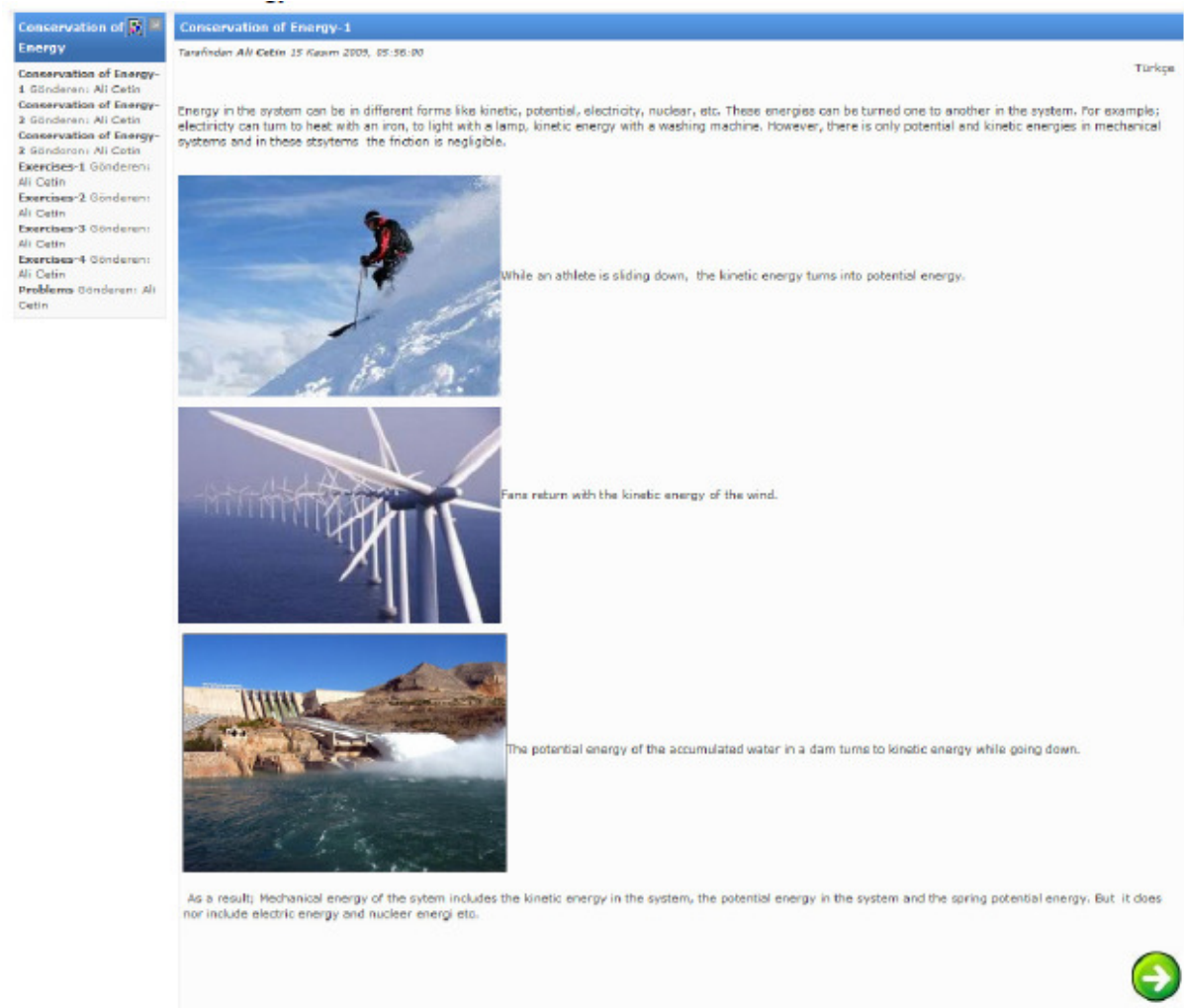


Figure 1: Conservation of Energy-1 page of Web Based Expository Learning Environment

## DESIGN OF WEB BASED INQUIRY LEARNING ENVIRONMENT

Web based inquiry science learning environment (WILE) is constructed by using the definitions of inquiry teaching method. The procedure while constructing WILE is listed below:

1. Literature Search for inquiry teaching method: inquiry is a multifaceted activity that involves making observations, posing questions, planning investigations, reviewing what is already known, using tools to gather, analyze and interpret data, proposing answers, explanations, and predictions (National Research Council, 1996). 5E learning cycle is a classroom setting way of inquiry learning (Campbell, 2000).

2. Subject selection; and Determine the aims and objectives of "energy" subject; these are the same with WELE.

3. Preparation of 5E activities:

Engage Phase: To supply the curiosity of the students, simple pendulum activity was used.

A man stands in front of the pendulum. When he releases the pendulum, whether it hits him was asked to the students. Then the video about the simple pendulum was shown in the same page. After the video, several question were asked and the opinions of the students were sent by using message board.

Explore Phase: the simple pendulum applet which is designed by Walter Fendth was used in the explore phase. Some variables in the pendulum could be changed in the applet such as length, gravitational acceleration, mass and amplitude. Students adjusted these variables and applet calculated kinetic and potential energy values. They filled the table related to kinetic and potential energies of the pendulum. Finally, students send their opinions by using message board.

**Simple Pendulum Experiment**  
Tarihinden Ali Çetin 27 Ağustos 2009

Apply the procedure:  
1. Click on "energy" button in the simulation

Simulation parameters:  
Length: 0.600 m  
Gravitational Acceleration: 9.81 m/s<sup>2</sup>  
Mass: 5.000 kg  
Amplitude: 10.0°

Simulation results:  
Oscillation period: 1.49 s  
Displacement (Maximum): 0.673 m  
0.673 m/s

2. Fill in the tables below

Adjust:  
Length: 0.60m  
Gravitational Acceleration: 9.81 m/s<sup>2</sup>  
Amplitude: 10.0°

Change mass value in the table:  
Start the simulation and then pause in any time  
and note the potential, kinetic and total energy values in that time.

mass	Potential Energy	Kinetic Energy	Total Energy
2,500			
5,000			
7,500			

length	Potential Energy	Kinetic Energy	Total Energy
2,50			
5,00			
7,50			

Gravitational Acceleration	Potential Energy	Kinetic Energy	Total Energy
5,00			
10,00			
15,00			

You can use below chat-box for your opinions about this part.

For: Ali Çetin  
Subject: (Simple Pendulum Experiment)

Click this button to send your findings

Send

Figure 2: Engage Phase Of Web Based Inquiry Learning Environment

Explain Phase: A discussion forum is used in this phase. The following questions were asked to stimulate the discussion.

1. How do the potential and kinetic energy change during the motion of simple pendulum?
2. How do the potential, kinetic and total energy change with mass, length, gravitational acceleration, and amplitude?

Elaborate Phase: The details of energy conservation were presented. The energy skate park simulation was used for this purpose. In the simulation, a skater skies on the path and the program calculate his potential and kinetic energies in each time.

Evaluation phase: A test related to conservation of energy was constructed. Students answered this test and sent them to the researcher.

### EVALUATION OF WEB BASED LEARNING ENVIRONMENTS

Evaluation is done in three ways. First three classes from a private school participated in the study. WILE and WELE are used by students in their schools' computer laboratory. Two 9<sup>th</sup> grade classrooms with 27 students used WILE and one 9<sup>th</sup> grade classroom with 15 students used WELE. Students participated into the system by using their user ID and passwords.

Three questions were asked to all users,

1. What is your general opinion about using these kinds of web based learning environments?
2. What is the best way of this web-site for you?
3. Do you face with any problem while using this web-site?

WILE and WELE students' answers are listed in the table below.

Table 1: Students' General Opinions for Web Based Learning Environments		
	WELE Students	WILE Students
Q1	Negative (f=5) Neutral (f=7) Positive (f=3)	Negative (f=3) Neutral (f=2)Positive (f=22)
Q2	Independence of time Independence of place Solved exercises	Simulations Video Independence of time Engagement
Q3	No problem Log in the system	Video download is too slow JAVA was not downloaded in computer lab Log-in the system

Second interviews were done with 4 WILE and 2 WELE students. Interview questions were constructed by researchers and redesigned by a physics education expert. 27 questions were asked during interviews. Then the answers are listed.

1. Which do you prefer to learn "conservation of energy" subject in classroom environment or in web based learning environment?

One expository student selected classroom environment and the other one said both is the same. One inquiry student selected web based learning environment and three of them said both is the same.

2. Do you think whether the other physics subjects can be thought by using web or not?

All students said, all physics subjects can be thought by using web.

3. What can be done to develop this web-site?

Expository students claimed that videos and games should be added to WELE, inquiry students said that the number of videos and simulations should be increased.

4. Did you get fun to be participated in this study?

All students said yes. They are enjoyed and said that using web is better than classic lecture.

5. Do you think, which kinds of discussion are more effective, in classroom or in web based learning environment?

Expository students said classroom discussions. One inquiry students said there is no difference, one claimed in class discussions and two inquiry students preferred web based learning environments.

One physics teacher and two physics education experts (a research assistant and a associated professor in physics education) filled expert judgment form (EJF). This form is prepared to to get the opinions of experts related to the web sites. One is related to expository teaching and one is inquiry teaching. EJT includes mainly three parts. The first part is related to the general characteristics of the expert and includes 14 questions related to the experts'

experiences, education levels, and their expertise related to science and mathematics materials. The second part was related to the properties of W-INQU web site. This web site was constructed according to 5E learning cycle. It includes 5 parts for each phase of the cycle. Twenty-seven Likert scale and four essay type questions related to each phase were asked to the experts. The final part of EJT was related to the properties of W-EXPO group web site. This web site mainly included texts, problems and solutions related to electricity. Twenty-six Likert scale and four essay type questions related to each page were asked to the experts. At the end of the web-site evaluation, some general questions about the usability of the web sites were asked. Likert scale items have four alternatives as “very good”, “good”, “medium”, “bad” and “very bad”. Alternatives were coded as “5” for very good, “4” for good, “3” for medium, “2” for bad, and “1” for very bad. Descriptive statistics of EJT for WILE and WELE are presented in Table 2.

Table 2: Descriptive Statistics For Web Based Learning Environments Due To EJT

WELE		
	Mean	Sd
Technical And Visual Evaluation	4.56	0.53
Conservation of energy 1	4.20	0.48
Conservation of energy 2	4.20	0.52
Conservation of energy 3	4.20	0.45
Exercises	4.50	0.57
Problems	3.75	0.95
WILE		
Technical And Visual Evaluation	4.10	0.78
Engage Phase: Simple Pendulum Effect	4.00	0.00
Explore Phase: Simple Pendulum Experiment	4.67	0.57
Explain Phase: Discussion	4.25	0.50
Elaborate Phase: Energy Skate Park	4.75	0.50
Evaluation Phase: Questions	4.75	0.50

Expert judgment form results show that both site are good in technical and visual aspects. Explore, elaborate and Evaluation phases of inquiry learning environment are the mostly admirable parts. Finally, it seems that all parts of WILE and WELE are appropriate for students according to experts.

## CONCLUSION AND DISCUSSION

There are two aims of this study, design and evaluation of web based learning environment. For design aim, three main things are considered: technical properties, visual properties and teaching methods. In technical properties, accessing should be easy, videos, photos and simulations should be downloaded fast, learning environment should not include heavy documents to make slower the usage. In visual properties, the distracted objects should not be used, color contrast should be appropriate and the main property of the object should be seen first. For teaching methods, inquiry and expository teaching methods can be used as in the study. For expository teaching method, expository texts, photos, exercises and solutions can be used. For example; a book format can be transformed to web environment, however the content and the interaction effect of the web based learning environments should not be forgotten. For inquiry teaching method, 5E learning cycles' phases can be used. Related activities can be designed for each phase of learning cycle. For example, in engage phase, students curiosity can be supplied by a question, voice, videos. In explore phase, as in the study, simulations can be preferred or students comments can be designed in a list. In explain phase, direct explanations, definitions and determinations can be done or students can explain their findings in explore phase. In elaborate phase, new applications can be developed like new simulations, or new data list. In evaluation phase, Sample problems can be solved by students.

For evaluation aim of this study, three different ways were used.

- First, all students wrote their general opinions to comment section and answered three questions. According to first question, while most of the students who use web based inquiry learning environment (WILE students) are positive for web based learning, most of the students who use web based expository learning environment (WELE students) are neutral. Due to second question, WELE students believe that the main advantages of web based learning are independence of time and place and exercise solutions. Boisvert (2000) states the same advantage as the main advantage of web based learning as that learning

can take place in anytime and anywhere. Additionally, WILE students think the same opinion and also they believe that simulations, video and engagement are also good ways of web based learning.

- Second, interviews were organized with 2 WILE and 4 WELE students. According to these interviews, most of the students think that classroom environment and web based environment can be used for "conservation of energy" subject. All students think that all physics subjects can be transformed to web environments. Students want to see more videos and simulations and this shows students get enjoyed from these activities. Students also prefer web sections to classic lectures.
- Third, one physics teacher and two physics experts filled "expert judgment form". Experts graded each pages of WELE and WILE. Finally the grades are presented as mean and standard deviation values. They show that each pages of WELE and WILE are appropriate for students levels and subject matter.

At the end of the evaluation part of the study, we can conclude that inquiry and expository teaching methods can be used while designing web based learning environments and students can use web based learning environments for physics lessons

### SUGGESTIONS

- The number of learning environments should be increased by using different subjects and lessons
- Web based learning environments should be developed by using at least one teaching method.
- The number of the studies that investigate the effects of web based learning environments on some variables like achievement, attitudes etc. should be increased.

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## Different Approaches To Solve Problems Involving Boundary And Initial Conditions Using Free Software

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### ABSTRACT

In this paper the solution of problems involving partial differential equations are found both in analytical and approximate ways. The ones considered here are the Laplace and the diffusion equations.

First the analytical solution is obtained with Fourier series. The software GeoGebra is used to show the representation of a function by a Fourier series, considering different expansions. Then, the solution is approximated by finite differences methods. For this purpose, Scilab is the selected software. Different apps were developed to show the results. Finally, the different approaches are discussed and compared.

The mentioned tools were designed for different courses of the Facultad Regional San Nicolás from the Universidad Tecnológica Nacional of Argentina.

### INTRODUCTION

Most physical processes are governed by partial differential equations (PDEs). A PDE is an equation that relates a function of several independent variables with their partial derivatives with respect to these variables. The dependent variable depends on the physical problem being modeled. In most physical problems, the independent variables are spatial (x, y, z) or space and time (x, y, z, t) coordinates. The solution of a PDE is a particular function that satisfies both the equation in the domain of interest and the conditions imposed.

Numerical methods are mathematical techniques which allow to obtain approximate solutions of problems. “Numerical solution” is a complete different concept from “exact solution”: while the latter is generally an expression that satisfies the problem, the first is a set of numbers or a function that approximates the exact solution. Let’s consider the behavior of a physical system. This kind of systems satisfies general laws of mathematics, called government equations. The analytical solution is a mathematical expression that gives all data about the system’s behavior, for any variable or parameter included in the government equations. Instead, the numerical solution expresses the system’s behavior based on numbers obtained solving the government equations for particular values of the variables and parameters of the system (Oñate, 2000a). Of course, from an analytical solution it is possible to obtain numerical values, but it is impossible to reach the analytical solution of a problem from the numerical one.

Every problem, so as to be solved in a numerical or analytical way, must be posed in a mathematical way. Thanks to Newton and Leibnitz, among other mathematics, not only the behavior of any physical system was possible to be described by differential or integral equations, but also solving techniques were discovered, although for simplified problems.

The scientific community’s optimism from the first achievements of infinitesimal calculus, was overshadowed by the evidence that even if every problem could be stated in a mathematical way by differential equations, the analytical solution of those equations was only possible for some particular cases, which were in general gross oversimplifications of reality. Difficulties that arose when finding universal formulas to obtain the solution of practical problems of science, gave place to the finding of alternative ways for solving differential equations. Therefore, at the beginning of the last century, many scientists observed that if differential equations from a particular problem were discretized, numerical values for the unknowns could be obtained: the numerical methods were born (Oñate, 2000b). The common strategy of the numerical methods for solving differential equations is the transformation of the differential equations governing the problem in a system of algebraic equations that depend

on a finite number of unknowns. As this number is generally significant, the final system can only be solved with the help of a computer. This fact explains why, despite of numerical methods were known from XIX century, their development and popularity happened parallel to the rise of computers.

This paper is intended to show the tools designed for different courses of the Facultad Regional San Nicolás from the Universidad Tecnológica Nacional of Argentina: an app designed with GeoGebra to obtain the different expansions of a function by Fourier series and two different personalized windows designed in Scilab to approximate the solution of Laplace equation and the diffusion equation with finite differences. The tools, presented in this work, were developed in Spanish and were translated into English.

### PROPOSED PROBLEMS

Two problems involving differential partial equations will be analyzed, showing both analytical and numerical solutions. These problems are:

- A square plate of side  $L$  and unit thickness is insulated in both faces so that no heat flows in the direction of the thickness. The right and left edges are also insulated. The temperature on the bottom edge of the plate is held at  $T = 0^\circ\text{C}$  and the temperature at the top edge is held at  $T = x(L - x)$ . The temperature distribution in the plate is required.
- An aluminum rod of length  $L$ , is laterally insulated so the heat flows in the  $x$ -direction only. The ends of the rod are held at  $T = 0^\circ\text{C}$ , and the initial temperature is  $T(x, 0) = x(L - x)$ . The temperature distribution in the rod is required.

The PDEs to be solved are, respectively, the Laplace equation and the diffusion equation, with the corresponding conditions:

$$\frac{\partial^2 T(x, y)}{\partial x^2} + \frac{\partial^2 T(x, y)}{\partial y^2} = 0, \text{ with } \begin{cases} T(x, 0) = 0, T(x, L) = f(x) = x(L - x) \\ T_x(0, y) = T_x(L, y) = 0 \end{cases} \quad (1)$$

and

$$\frac{\partial T(x, t)}{\partial t} = 0.86 \frac{\partial^2 T(x, t)}{\partial x^2}, \text{ with } \begin{cases} T(0, t) = 0, T(L, t) = 0 & t > 0 \\ T(x, 0) = f(x) = x(L - x) & 0 \leq x \leq L \end{cases} \quad (2)$$

### EXISTING TOOLS

Wolfram Demonstrations Project (<http://demonstrations.wolfram.com>) is an open-code resource that uses dynamic computation to display, among other things, concepts usually very abstract. These tools are CDF files created using MATHEMATICA that can be run in any computer. It is only needed the CDF player, which is freely available on Internet. Different tools analyze problems like the ones proposed in this work, using Fourier series. For example:

- <http://demonstrations.wolfram.com/GibbsPhenomenonInLaplacesEquationForHeatTransfer/>  
Here the solution to Laplace's equation for a square plate is obtained. In this demonstration only the temperature along the left edge can be varied; the other edges are held at  $T = 0$  (Wilkerson).
- <http://demonstrations.wolfram.com/LaplacesEquationOnASquare/>  
Given Dirichlet boundary conditions on the perimeter of a square, Laplace's equation can be solved to give the surface height over the entire square as a series solution (von Seggern).
- <http://demonstrations.wolfram.com/SteadyStateTemperatureDistributionInConductingSquare/>  
Laplace PDE is solved in a square region. Uniform and controllable boundary conditions along the edges (excepting the corners) are considered, in a temperature range of  $-300^\circ\text{C}$  to  $300^\circ\text{C}$ . The resulting isotherms are plotted (Vivas).
- <http://demonstrations.wolfram.com/HeatTransferAlongARod/>  
The solution to the heat equation for a one-dimensional rod is shown here. The rod is initially submerged in a bath at  $100^\circ\text{C}$  and is perfectly insulated except at the ends, which are then held at  $0^\circ\text{C}$ . This is a Sturm–Liouville boundary value problem for the one-dimensional heat equation (Wilkerson).

- <http://demonstrations.wolfram.com/HeatConductionInARod/>

This demonstration considers the problem of unsteady-state heat conduction in a rod. This demonstration compares the numerical solution obtained using Chebyshev orthogonal collocation and the analytical solution (Binous & Higgins, 2013).

Each of the links above was last visited on June 2015. None of these examples uses the condition on the derivative of the function at the boundaries, which is needed in problem (1) shown here.

### FOURIER SERIES

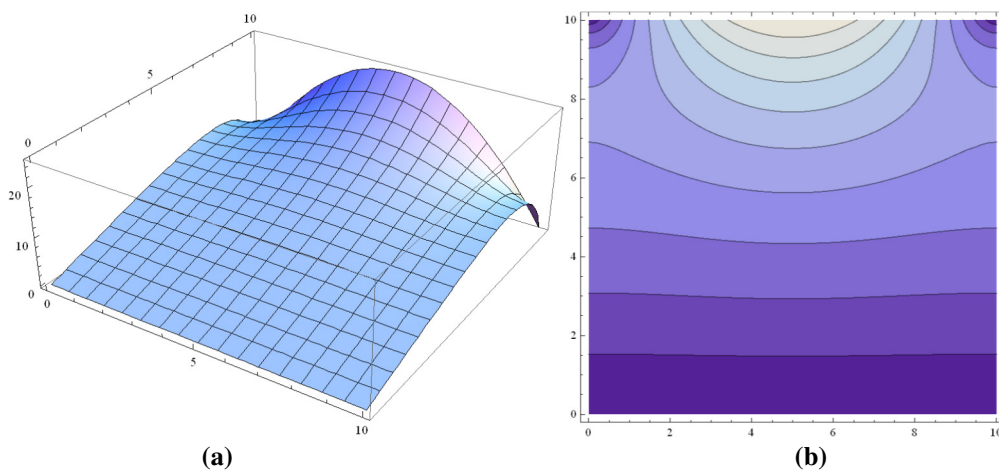
Fourier series arise from the practical task of representing a given periodic function  $f(x)$  in terms of cosine and sine functions. Fourier series have important applications in differential equations. They will be used here to solve the proposed problems. The solution of the first problem is:

$$T(x, y) = \frac{1}{L^2} \int_0^L f(x) dx y + \sum_{n=1}^{\infty} A_n \sinh \frac{n \pi y}{L} \cos \frac{n \pi x}{L} \quad (3)$$

with:

$$A_n = \frac{2}{L \sinh(n \pi)} \int_0^L f(x) \cos \frac{n \pi x}{L} dx \quad (4)$$

Figure 1(a) shows the function  $T(x, y)$  given in (3) and Figure 1(b) the corresponding contour plot, as is usual to display the solution of problems like this one: graphing the plate.



**Figure 1.** The solution of the first problem using Fourier series

The solution of the second problem is:

$$T(x, t) = \sum_{n=1}^{\infty} B_n e^{-\alpha \frac{n^2 \pi^2}{L^2} t} \sin \frac{n \pi x}{L} \quad (5)$$

with  $\alpha = 0.86$  and:

$$B_n = \frac{2}{L} \int_0^L f(x) \sin \frac{n \pi x}{L} dx \quad (6)$$

Figure 2(a) shows the function  $T(x, t)$  given in (5) and Figure 2(b) the solution of the problem for determined values in time.

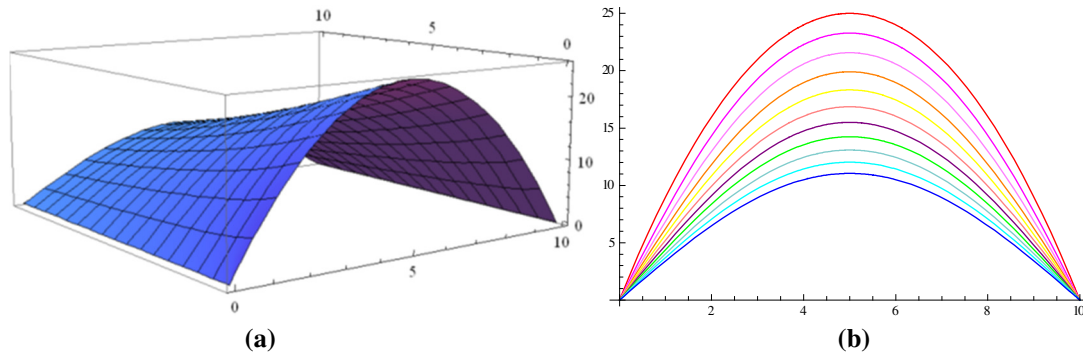


Figure 2. The solution of the second problem using Fourier series

Further details are not presented because these are typical problems for the topic (Churchill, 1941; Kreyszig, 1993; Zill & Cullen, 2009).

When solving these problems, half range expansions of  $f(x) = x(L - x)$  were needed. For the first problem a cosine series was obtained first expanding  $f(x)$  from  $0 \leq x \leq L$  as an even function on the interval  $-L \leq x \leq L$  and then extending this new function as a periodic function of period  $2L$ . For the second problem a sine series was obtained first expanding  $f(x)$  from  $0 \leq x \leq L$  as an odd function on the interval  $-L \leq x \leq L$  and then extending this new function as a periodic function of period  $2L$ .

Considering  $L = 10$ , half range expansions are, respectively:

$$f(x) = x(10 - x) = \frac{50}{3} - 100 \sum_{n=1}^{\infty} \frac{1}{n^2 \pi^2} \cos\left(\frac{2n\pi}{10}x\right) \quad (7)$$

$$f(x) = x(10 - x) = \frac{800}{\pi^3} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^3} \sin\left(\frac{(2n-1)\pi}{10}x\right) \quad (8)$$

Figure 3 presents the app designed with GeoGebra to obtain the three possible expansions of a function in a Fourier series: even expansion, odd expansion and periodic expansion. To enter a piecewise function, in the boxes  $r(x)$  and  $s(x)$  users should change only the ends of the intervals and laws, preserving the conditional structure. Then, the upper ends of the ranges must be written in the boxes on the right. If the function is given by a single law,  $s(x)$  should be written as the null function and the upper end of  $r(x)$  must be considered in all ends.

In the app, the number of terms to be drawn can be selected with the slider on the right. In Figure 3, the odd expansion of  $f(x) = x(10 - x)$  defined in  $0 \leq x \leq 10$  is shown.

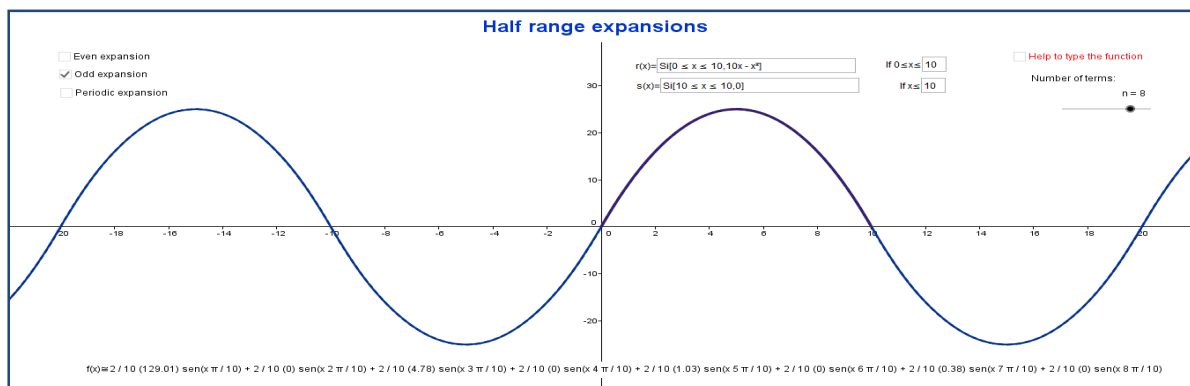


Figure 3. App designed in GeoGebra to obtain different expansions of a function.

## FINITE DIFFERENCES METHODS

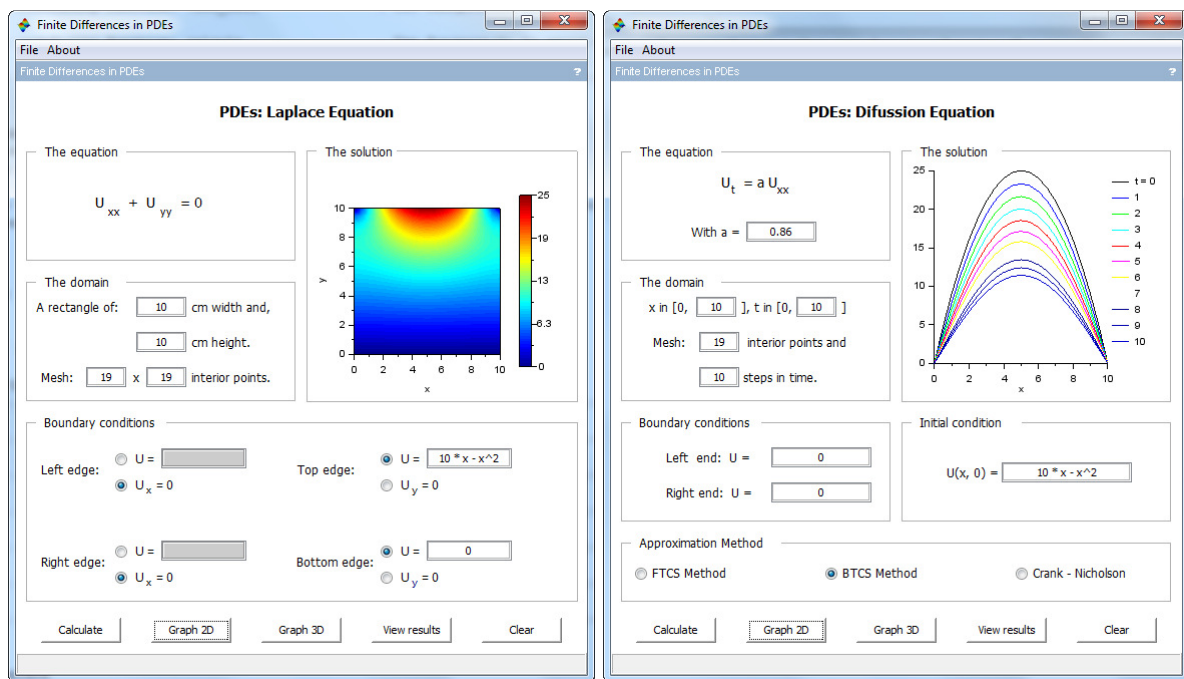
Finite difference methods are very popular due to its simplicity, and are widely used within the numerical methods for PDEs. The application of these methods is carried out in three stages: first, the discretization of the continuous solution domain by the construction of a mesh in a structured way where the nodes, in an  $n$ -dimensional space, are

located at the intersections of  $n$  families of straight lines; then the replacement of the derivatives appearing in the differential equation by algebraic finite differences, and finally the solution of the obtained system of equations. One of the biggest disadvantages of these methods is their inability to deal effectively with problems on irregular shapes (Hoffman, 1992).

To solve problems such as those proposed in this work in a numerical way using finite differences methods, different personalized windows were designed in Scilab. In Figure 4(a) the app that allows solving problems described by the Laplace equation in a rectangular domain is shown. To use it, the size of the domain under study, the number of interior points to be taken in each direction and the boundary conditions, whether Dirichlet or Neumann, must be loaded. Then the **Calculate** button must be clicked and then the type of graphical output, two or three dimensional graphics, must be selected. It is also possible to obtain a table of numerical values calculated at different points of the spatial domain. For this it is necessary to press the button **View results**.

Figure 4(b) shows the app that approximates the solution of the diffusion equation (Caligaris, Rodriguez & Laugero, 2011). In this case, the equation's coefficient and the domain data and its discretization must be loaded. This tool provides three of the finite difference methods that can be used to solve the diffusion equation: forward-time centered-space method (FTCS), backward-time centered-space method (BTCS) and Crank-Nicholson method. One of them must be selected to get the corresponding approximation, and then do calculations.

As in the app of the Laplace equation, it is possible to plot the numerical solution obtained in two or three dimensions, and to show the solution in tabular form. In both cases continuous functions were displayed despite the solutions obtained by finite differences are always discrete.



(a) (b)  
**Figure 4.** Apps designed in Scilab to approximate solutions of PDEs.

The numerical solution can be compared with the analytical one, because it was possible to find the latter. The graphs were obtained with different methods. The analytical solutions (Figures 1 and 2) were plotted from the Fourier series expressions while the numerical solutions (Figure 4) were obtained and plotted with Scilab.

## CONCLUSIONS

Solving problems involving differential equations is not a simple task, both in numerical or analytical way. When teaching methods for solving this issue, in particular, practical exercises must be solved to fix learning, and generally too much time is wasted making boring operations. The tools developed with Scilab help students to visualize what is meant to be obtained, and let them analyze the solution obtained, so as to develop the abilities to recognize when a numerical solution is a good one or a bad one.

On the other side, finding Fourier expansion of functions is a mechanical task, and by simple obtaining the

formulas students cannot imagine properly their graphical representation. Here is where the tools developed with GeoGebra take a relevant place, so as students can change between different representations of the same object, in order to understand the concept.

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## Discipline Of An International Training Course Proposal To Printmaking: Sample Of Karabuk University

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### ABSTRACT

This paper is a report on the findings of a study conducted on a graduate level virtual conference summer school course. Discourse analysis techniques were used to examine the resulting transcript of texts for evidence of a democratic discourse within a community of learners. Findings indicate that gender is not masked in the text driven discussions on the Internet. Distinctive discursive styles are often sex class linked. Like face to face or classroom contexts, status is accorded unequally within discourse communities. Participants are not equal and are not equally attended or responded to. Educators need to take a serious and wary approach to accepting claims of ensured democratic participation in computer mediated communication formatted classe The pictures are called the original print images directly with a variety of tools and materials or through dies paper or on similar material. These are graphical images. The print image provides the artists with the creativity and ability and rich composition. In this context, The assets can not be maintained only within the boundaries of art. The graphical reproduction has many uses by a method.

The Design of Industrial Products have been made in EUT 266 Program by II. Grade students of the The Faculty of Fine Arts and Design in Karabuk Üniversitesi Safranbolu Fethi Toker during the spring semester of 2014-2015 and the Printmaking in the course of the creativity-enhancing curriculum practices were created. In these applications, at the same time the concept of a particular giftware, decorative items and different decoration items have been presented not just as a picture presentation with the Styrofoam pressure of the original printing techniques; and a new proposal has made to the field.

In this article, the importance and diversity of the new proposals presented has been mentioned with creative applications made in the public courses in the discipline in the close proximity.

**Keywords:** Printmaking, Styrofoam, Decorative Items, Creative, Practical

### INTRODUCTION

Printmaking is the process of making artworks by printing on materials such paper. The opposite surface lines by painting since Paleolithic man who perhaps hard materials such as horn and bone of rock art printing with sharp instruments has also created the first examples (Gabrowski & Fick, 2011:75). Invented the art of printing paper gained importance. In approximately the 15th century began to be used in some countries in Europe. Our country has benefited from the high pressure in the printing of images in the book for the first time in 1830 by İbrahim Müteferrika who founded printing press. In Turkey After 1936, also it has been used in all the painter and art teacher training institutions. The term of Printmaking which was introduced by Mustafa Aslier in 1972 became popular within short time (Özer, 1995). In the World, that can be shown Andy Warhol and Serigraphic painting art. Andy Warhol, had been working for a long time who benefited from the advertising and printing techniques using the icon again (Fineberg, 2014:244) Arguing that they were produced in famous works of plastic worth taking advantage of the opportunity to replicate the ease of printing techniques. In Karabuk University has an academic who makes printmaking art in different samples. Assistant Proffesor Anıl Ertok Atmaca who worked illustrative and printmaking art. Since 2000s artist has been working on printmaking in digital print. You can see in her print art not like Andy Warhol's but they are special with colors, under digital print discipline and pop art. She touches upon the Eastern of Turkey women violence and marriage in early ages of daughters. In this painting you can also see and understand the violence to women (Figure 1.)



Figure 1. Anıl Ertok Atmaca, Untitled, Acrylic and Digital Print On canvas, 2014



Figure 2. Andy Warhol, Gold Marilyn Monroe, Printmaking and Oil-Acrylic On Canvas, 1962, The Museum Of Modern Art, USA.

Additionally, since printmaking enables the reproduction of a painting, it is an affordable method which makes it easier for people from all ages to produce authentic works of art. Andy Warhol explains why he loves the printmaking: “With little difference in the same picture every time you can renew it.” (Farthing, 2010:489) (Figure 2.).

The printmaking technique which offers various different opportunities is generally divided into the following five basic types: (Chapman, 1994)

1-Monotype Printing

- 2-Relief Printing
- 3-Intaglio Printing
- 4-Serigraph

The research suggests that just one type of printmaking that should be made use of is relief printing due to the students in fourth term of licence degree in Industrial Product Design in Karabuk University.

### RELIEF PRINTING

Used high- pressure section of the high non- carved mold carved with various carving tools watercolor gouache acrylic ink and water-based paints are not part of the engraved printing process is performed by driving the paint. This can be achieved by printing more than one study. Obtaining point to note is inverted onto the mold of the desired image. So that the image is transferred onto a flat material. It has three types of relief printing: (Figure 3.)

- a- Linolium Printing
- b- Wood Printing
- c- Template Printing

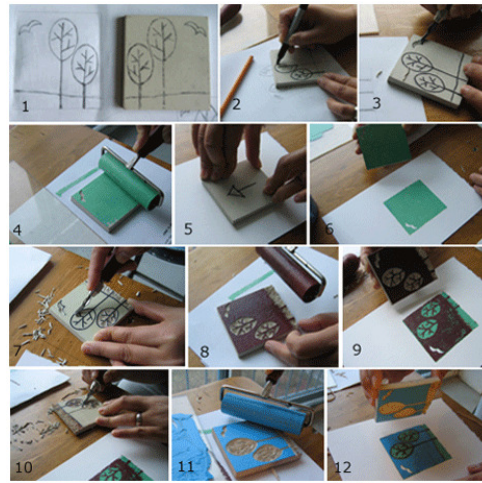


Figure 3. Relief Printing

Template printing technique it is shown in the training program addressed in the article. Template printing , such as paper or cardboard cartons Styrofoam is a high print image processing techniques applied to templates made with suitable plastic based materials. This printing technique can be found in the nature of technical -compatible materials can also be used in different tissues. The appropriate template to design an image to be made in the technical structure of the carved or cut. The design selected should not be too finely detailed. Designed to be used in paper picture pattern is drawn on cardboard or styrofoam. After drawing, It is engraved with knife, spoon etc. The mold should be in just one piece. This technique can be used both negative and positive. The paint is applied to the high part of the place carved outside. Paint can be applied after printing paper and cloth bags to cardboard (Figure 4.)



Figure 4. Styrofoam Printing



In printmaking course is applied in the training programs conducted at the same time stamp application. Stamp means printing in Latin language. In history, after the caves and rocks carvings are seen as relief printing form of stamp design. This first prints consist entirely of paper recording. In the 7th and 8th centuries of printmaking is beginning to include pictorial features.

### INDUSTRIAL DESIGN EDUCATION

At the beginning of the industrial design training covers basic design education. This course is an introduction to the design. Two- and three-dimensional design and composition, color, texture, line work, Exercises such as the conversion is made to the visual composition of the various concepts. Industrial production form the backbone of design education 'project' or 'product design', also called courses however, it is up to the course credit hours and classes. In this course students of different scales, You will be asked to design projects of products from various fields. Students are given based on the project description by making sketches, creating alternatives, detailing, preparing presentation layouts, designs go through steps such as making the model. During these phases, the course instructors, students are evaluated step by making comments about their work. The students, projects After sheets are delivered in the face of a jury consisting of lecturers they do can enter the presentation of the design. Fewer hours outside the course of this course, less credit, theoretical or practical; designs, technical drawings, ergonomics, mechanical computer-aided design, structure, materials, production methods, model building, the historical process of design, product marketing, such as the economy, courses in industrial product design is one of the cornerstones of part of undergraduate education.

### TERM INFORMATION

Unlike the fine arts department of industrial design which depends on the applied visual arts department faculty must be people-oriented product design. Bachelor's degree in the article consists of second classes students. Printmaking course is a mandatory course electives. It plays an important role in the interdisciplinary training course. Human -centered design department is able to express himself freely in design and spirit with this course. In this term students who newly concentrate their design culture and find themselves in thier social arena. So in interdisciplinary education, it is important that you should be indirect art samples. You can't paint or make printmaking such as painting studied students. So in this article subject is interdisciplinary printmaking. Under the basic art discipline and printmaking colors levels there can be studied step by step on the book of *"Basic Design by Anil Ertok Atmaca."*

### PROJECT PROCESS

In term Project, it is given to students the concept of their drawing sketch for printmaking. This should be all in one piece and not just so large because this makes it hard to engrave. And the students draw their sketch copy its drawing to the styrafoam and start to engrave by helping spoon, finger, knife and etc. equipments. So it is getting to prepare for dying it. After dyed the styrafoam, it is printed to equipments: paper, fabric, cartoon and the other paper based materials (Figure 5.).



Figure 5. Styrafoam Printmaking Steps

### PROJECT SAMPLES

That can be seen in the below project samples belonged to students ( Figure



Figure 6. One of Student Concept is Christmas



Figure 7. One of the Other Student Concept is Spain



Figure 8. Industrial Product Design Semester Expo Stand

## CONCLUSIONS

In this article it can be referred that all people under interdisciplinary or the other can make his art expression. And in the art education, concept, technique templates and teaching has a very big influence.

In art education in Karabuk University is upon the other art department disciplines and all together teaching courses has it in. In all over the world which is accepted style of printmaking style has been changing with this article because printmaking does not only have the classical equipments and process but also it has the new horizons in producing and including the art education.

Printmaking art is not just only engraving and later printing the materials it is also that basic art education discipline in arts and design faculty.

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## Educational And Behavioural Impact On Caring For Feet

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### ABSTRACT

Diabetes mellitus (DM) is a chronic disease responsible for complications, which not only limit individuals' lives, but also contribute to a high level of morbidity and mortality. The high prevalence of DM with amputations justifies educating people with DM about foot care. Thus, it is important to enable people to manage their therapeutic regimen appropriately.

A descriptive study with 82 people with DM with mean age of 56.89 years, 54.88% of whom are men.

We applied the Foot Examination Protocol; Epidemiological, Educational and Behavioural Diagnosis (Rocha, 2005).

Only 50% were found to have correct knowledge about foot care, which is insufficient to change behaviours because 50% were negligent; only 35.37% had adopted appropriate foot care behaviours.

It is, therefore, necessary to invest in therapeutic education and monitoring of self-foot care for people with DM as well as to audit professionals' actions.

### INTRODUCTION

The World Health Organization (WHO, 2015) documents that there are about 347 million people worldwide who have been diagnosed with diabetes mellitus (DM). The estimated prevalence of DM in the Portuguese population aged 20-79 years (7.8 million individuals) was 13%, i.e. one million of these individuals have DM. Portugal, Ministry of Health, Directorate General of Health (DGH) (Portugal, MS, DGS, 2014, p.8).

Several databases such as Pubmed, Scielo and B-on were used to prepare the theoretical framework for this study. We also resorted to Google Scholar and existing bibliographic documents in the ESSV library. In addition to accepted and included studies, DGH regulations, information from the WHO, the Health Portal and the Portuguese Society of Diabetology were also cited. The descriptors used to locate articles/studies were as follows: Education, Diabetic Foot, Diabetes Mellitus and Behaviour. The following research strategy adopted was:

#1DeCs descriptor "Educação"; #2DeCs descriptor "DM"; #3DeCs descriptor "Comportamento"; #4DeCs descriptor "Pé diabético"; #5 [(#1 AND #2 AND #3)] (Free full text); #6 [(#1 AND #2 AND #3 AND #4)] (Full text); #1MeSH descriptor "Education"; #2 MeSH descriptor "DM"; #3 MeSH descriptor "Behavior"; #4 MeSH descriptor "Diabetic foot"; #5 [(#1 AND #2 AND #3)] (Free full text); #6 [(#1 AND #2 AND #3 AND #4)] (Full text).

The requirements for the analysis were publication from 2013 to the present day; Language: Portuguese and English; Revisions- RCT and clinical trials; Free full text; Mesh terms. The first inclusion and exclusion criteria to select studies were also defined as: Participants with DM type I and type II aged 18 years or older; Interventions: foot care; Outcomes: education and behaviours in foot care, Design: primary and secondary studies.

From the revision of the literature we found that diabetes mellitus is a chronic disease characterized by increased glucose levels in the blood and the body's inability to transform all the glucose derived from food. Portugal, Ministry of Health, Health Portal (Portugal, MS, PS, 2013).

DM is categorised as type I and type II among others. Type 1 DM results from the destruction of beta cells of the islets of Langerhans of the pancreas, with absolute insulinopenia, making insulin therapy indispensable for survival. In most cases, the destruction of the cells occurs due to an auto-immune mechanism called type 1 DM autoimmune (Portugal, MS, DGS, 2011, p.2). Type II DM results from the organism's ineffective use of insulin. A major concern related to this type of DM is the risk of hyperglycaemia in patients with high glucose levels in the blood (WHO, 2015).

DM is a condition which implies the need for changes in lifestyle and daily activities to maintain a good quality of life (Mumu, Saleh Ara, Afnan & Ali, 2014), which implies consequences for physiological and psychosocial level. Diabetic foot is one of the most serious complications of DM, resulting in approximately 70% of the amputations performed with non-traumatic causes according to the Portuguese Ministry of Health. The Directorate General of Health (Portugal, MS, DGS, 2011a). Diabetic foot is a disorder that is characterised “as an infection, ulceration and/or deep tissue destruction associated with neurological disorders, different degrees of peripheral vascular disease and osteoarticular deformities.” (Silva, Pereira, Almeida & Venâncio, 2014).

Strategies to prevent diabetic foot and complications associated with DM are described as follows: adherence to treatment, monitoring of signs and symptoms (Huang, Zhao, Li & Jiang, 2014) monitoring capillary blood glucose, the adoption of healthy eating habits and regular physical exercise combined with motivation, social support and the management of stressful situations in order to promote a better quality of life (Engler, Rambsey, & Smith, 2013).

Therapeutic education works in conjunction with conventional therapeutic measures and requires people to assume their responsibilities in order to define therapeutic goals so as to adopt the most appropriate strategies (Boavida, 2013). Non-adherence to the teachings and recommendations is reflected in partial or complete deviation from behaviour/lifestyle changes known to improve health in people with DM (Mumu, Saleh, Ara, Afnan & Ali, 2014). In diabetic foot care it is relevant to defer to qualified health professionals to invest in treating the triggering factors, among which the problems of calluses, nails and skin are highlighted. In the presence of ulcers, it is necessary to note the type and characteristics of the injury, such as the location, depth and multiple signs of infection (Silva, Pereira, Almeida & Venancio, 2014).

Professionals should seek to integrate the patient as well and his family, in achieving the necessary care and screening for warning signs in order to prevent further recurrences of ulcers. The earlier the treatment starts, the better the results (Silva Pereira, Adams & Venancio, 2014); however, evidence shows that less than half of people fully carry out prescriptions. It has also been proven that despite DM patients having knowledge about necessary precautions, it is not enough to change habits and behaviours (Boavida, 2013).

Educating for effective management of DM, involves integrating tiny bits of everyday life in the clinical consultation as a guide for making integrated decisions, i.e. the sociology of experiencing DM is considered, because despite DM being and remaining for life, life happens and superimposes itself.

For this reason the DM consultation implies a concentrated interaction between the person with diabetes and a proactive health professional. The person with DM has to be motivated, informed and have the confidence and ability to decide and effectively manage their health, while the professional besides being motivated to inform the patient must have the necessary resources to provide quality care.

Nicolucci, Menino, Eva et al (2006) cit in Cunha & Teixeira (2015) stress that on the one hand, we have evidence of the complications of DM, which significantly reduce the quality and duration of life and are also responsible for enormous health care costs; on the other hand, they identify a large body of evidence has shown existence of effective and practical approaches that can substantially reduce this burden. Thus, Melo et al. (2011) cit in Cunha & Teixeira (2015) say that the provider should fulfil the role of educator in the necessary orientation in monitoring feet. The importance of adherence to healthy lifestyle habits, negotiating the care plan with the patient and planning specific interventions should also be emphasized.

For the successful implementation of a complex treatment which has great impact on the day-to-day life of diabetes patients, it is very important to have a method of education in diabetes, and is therefore considered the process of promoting knowledge, skills and the necessary techniques for self-control to the individual. Its aim is for better glycemic control, prevention of chronic complications and above all, improvement in quality of life (Butler & Kirk, 2007).

It is important that adults benefit from education programmes, with techniques where they observe and practice. Simulation of insulin delivery techniques, carbohydrate counting and blood glucose research should be applied during the group education courses (George, Valdovinos & Russel, 2007).

In this context, Silva, Clinton, Appleton, & Flanagan (2011) advocate that education programmes for self-management seek to help people to become aware that they are the engine of self-care and the key managers/caregivers and that health professionals are consultants who support them in this role.

As guidelines for practice Cunha, Gaspar, Fonseca Almeida, Silva & Nunes (2014) stress the investment in the training of health professionals with regard to strategies that promote literacy for health. They also suggest integrating the less literate patients, the elderly and socially vulnerable in education programmes and action research to support active lifestyles.

The evidence is clear: most of the time people know how to do what should be done and want to do it, but simply do not (Boavida, 2013). Thus, we sought to produce knowledge in order to support people with diabetes in resolving issues that are important and relevant to their empowerment.

The aim of this study, therefore, is to answer the following central question: What are the determinants of the educational and behavioural impact on caring for people with diabetes?

Purpose of the Study: To analyse the relationship of the educational and behavioural impact on caring for fee in people with diabetes.

## THE STUDY

Diabetes Mellitus is responsible for complications that not only limit the individual's life, but also contribute to a high rate of morbidity and mortality. Thus, adherence to the therapeutic regimen through empowerment, i.e. acquiring more knowledge/skills that influence therapeutic behaviour, is important. Because managing any chronic disease requires the participation of patients, it is necessary to monitor its impact, particularly in psychosocial functioning and behaviour. Thus, all efforts must be made to collaborate in determining the health gains obtained from the treatments and from the perspective of the citizen, Ferreira, (2012).

For these reasons the need to “educate about diabetes management” has emerged in order to develop knowledge, attitudes and the required skills for individuals to act appropriately and control the disease themselves (Ribeiro, 2010).

Thus, health teams should provide tools for citizens so they can freely become empowered, developing in the person with diabetes greater autonomy and health gains (Pereira, Fernandes, Tavares and Fernandes, 2011).

Adherence to the therapeutic regimen is a type of adherence, defined as “self-initiated action to promote wellness, recovery and rehabilitation, following the guidelines without deviation, engaged in a set of actions or behaviours” (CIPE, 2011, p.38).

Adherence exists when a person's behaviour, in taking the medication, in complying with a diet, and/or lifestyle changes, coincide with the recommendations of a health care provider (WHO, 2003 cited in Dias et al., 2011).

“The term adherence should avoid judgment, so as not to make the patient guilty, the prescriber or the therapeutic regimen and involves an agreement, negotiated over establishing treatment and the care to follow, between the person and the caregiver” (Pinto & José, 2012, p.1639).

The descriptive study with a cross-sectional focus was carried out with a non-probabilistic sample of 82 people with DM drawn from all of the patients attending the DM Unit at a hospital center in the central region of Portugal. Of these, 54.88% were male and 45.12% female, aged between 21 and 84 years ( $\bar{x}$ =56.89; SD=17.516). The results of the Student t test for independent samples show that the differences are not statistically significant, that is, the average of the ages of the groups is equivalent. It was found that 64.63% of diabetics are married, 69.51% live in rural areas and 34.49% in urban areas. As for education level, 62.20% have basic education and 7.32% have higher education. The following data collection tools were used: the Foot Examination Protocol; Epidemiological, Behavioural and Educational Diagnosis (Rocha, 2005).

*The Foot Examination Protocol – Epidemiological Diagnosis (Rocha, 2005).* It consists of eight closed questions. It evaluates ischemic, dermatological, neuropathic, autonomic and motor changes, joint mobility limitations, subjective sensory neuropathic changes, as well as the reaction to the 10g Monofilament Test and 128 Hz diapasos (pallesthesia bone-transmission vibration sensitivity) and also the presence or absence of the Achilles reflex. Each item has two or more possible options, while no change corresponds to zero (0) and the presence change corresponds to (1) or more. Thus, it is considered that the higher the score, the greater the number of changes.

*The Foot Examination Protocol – Behavioural diagnosis (Rocha, 2005).* Its aim is to analyse the behaviour of people with diabetes concerning foot care. This consists of twenty-four closed questions allowing participants' behaviour to be evaluated with regards to the following foot care issues: essential hygiene care in general relative to shoes and socks. Each item has two possible answers (correct, incorrect). A value from 0 to 1 is assigned to each item so that the scores relating to behavioural diagnosis vary between 0 and 24, and the higher the score, the better the behaviour.

Finally, *the Foot Examination Protocol – Educational Diagnosis (Rocha, 2005)* is a questionnaire that assesses the knowledge of the essential foot care. The educational diagnosis identifies behaviours that are related to the health status or quality of life. This consists of twenty-four closed questions, whose aim is to assess the level of knowledge of the sample on the following foot care issues: essential hygiene care, general, with shoes and socks. Each item has two possible answers (correct, incorrect) assigned a value from 0 to 1. The scores therefore, relating to the educational diagnosis, vary between 0 and 24, the higher scores corresponding to better knowledge.

Those who met the following inclusion criteria were participants: having been diagnosed with diabetes for over a year; being over 18 years of age; willingness to participate in the study. Exclusion criteria were as follows: pregnancy; having acute intellectual disability.

Statistical treatment of the data was performed using the Statistical Package Program for Social Sciences for Copyright © The Turkish Online Journal of Educational Technology

Windows (SPSS for Windows).

## FINDINGS

The clinical characteristics of the participants reflected that type 2 DM predominates with 59.76%, with 40.24% of the participants with type 1. The average time from diagnosis of the disease was 13.96 years ( $SD=8.614$ ). Most people with diabetes are carriers of the disease for less than 15 years (54.88%), followed by those who have had the disease for between 15 and 30 years (41.46%). The average BMI was 27.519 ( $SD=4.568$ ). Applying WHO (s.d.) cit in DGS (2005) the classification, it was found that 42.31% were pre-obese, 30.77% had a normal BMI and 19.23% were obese class I. The majority (53.25%) showed no hyperglycaemia in the last three weeks and 46.75% have experienced hypoglycaemic crises. A hyperglycaemia episode was reported by 75.32%. The average glycated hemoglobin was 8.845% ( $SD=1.895$ ). The classification of Portugal, SPD (s.d.) 12.12% had a normal glycosylated hemoglobin value and 87.88% had high levels.

The behavioural diagnosis of the behaviours related to proper foot care, was established through a cohort group from the average of  $13.890 \pm SD=3.087$ . Appropriate behaviours have an average of  $\leq 13.118$ , reasonably appropriate an average of  $>13.118$  and  $<14.661$  and inadequate behaviours, an average of  $\geq 14.661$ . Negligent care was performed by 50.00% and 39.02% chose proper care. Both genders showed a predominance of inadequate behaviour.

In the educational diagnosis regarding the correct knowledge regarding proper foot care cohort groups were established from the average  $16.14 \pm SD=3.107$ . Individuals with average knowledge had an average of  $\leq 15.369$ , (40.24%), reasonable knowledge, an average of  $\geq 15.369$  and  $<16.922$  (9.76%) and a high level of knowledge,  $\geq 16.922$ , (50.00%).

In the epidemiology and behavioural diagnosis, the median value for the score was 13.378 ( $SD=3.199$ ) and cohort groups were subsequently established. Low levels of correct knowledge and simultaneously appropriate behaviours had an average of  $\leq 12.579$  (39.02%), a reasonable level of correct knowledge and appropriate behaviour,  $\geq 12.579$  average and  $<14.177$  (25.61%) and a high level of correct knowledge also expressing appropriate behaviour,  $\geq 14.177$  average (35.37%).

Correct knowledge and appropriate behaviours related to hygiene care: correct foot washing was known by 91.46%, but only 78.05% performed it. As for neutral soap, 75.61% had correct knowledge; of these, 69.51% used it and only 65.85% did so correctly. Rubbing feet with a soft sponge, was a behaviour found in 21.95%, despite 39.02% having knowledge about the practice. Using a soft towel to dry feet was known by 56.10%, but only 45.12% did it. Drying between the toes was known by 97.56% and was a concern manifested by 91.46%. Daily moisturizing of the feet was known by 70.73% of the respondents but only 31.71% chose to carry out this appropriate behaviour and only 29.27% both had the knowledge and performed the correct behaviour. As for where the feet were to be moisturised, 15.85% demonstrated an appropriate behaviour and only 15.85% showed adequate knowledge; 14.63% correctly moisturised their feet. The removal of calluses was not performed by 50.00%. Of the 50.00% which had correct knowledge, 42.68% performed it. Proper behaviour of cuticle removal was accomplished by 73.17% of the participants. Of the 79.27% which had correct knowledge, 69.51% reported not removing them. Clipping toenails squarely, as an appropriate behaviour was adopted by only 40.24%, while 54.88% had this knowledge. Among those who had the knowledge, 39.02% carried it out in their everyday care.

Correct knowledge and appropriate behaviour with regard to general foot care: the daily examination of the feet, of the 86.59% who demonstrated knowledge of this care, 71.95% performed it daily. Not using a hot water bottle was known by 90.24%; however, 86.59% did not comply with that measure. The use of compression stockings was known by 97.56% and 96.34% held correct knowledge on this; of these, 93.90% demonstrated a consistent behaviour. The garter belt was used by 96.34%, correct knowledge was expressed by 93.90%, of whom 92.68% used it only under direct medical advice.

Correct knowledge and behaviour with regard to appropriate care with shoes and socks: in the respondents, 26.83% used closed footwear, 31.71% had correct knowledge; however, only 21.95% put it into practice. Footwear should be soft and comfortable – 51.22% adopted it, 54.88% had the correct knowledge; however, 47.66% had both appropriate knowledge and behaviours.

In selecting the material, 63.41% recognized leather as the most suitable material, of whom 53.66% had a consistent behaviour and 59.76% chose it. Seamless footwear was worn by 79.27% and of the 93.90% who had a correct knowledge, 80.49% wore it. As for the time of purchase, only 12.20% bought the shoes in the late afternoon and of the 28.05% who had correct knowledge only, 10.98% had both correct knowledge and behaviour. Of the respondents, 74.39% inspected the shoes before wearing them and of the 84.15% who had this knowledge, only 74.39% had a congruent behaviour. In terms of wearing closed footwear, 36.59% prefer to use insoles, of the 35.37% who had this knowledge, 32.93% applied it correctly. People with diabetes should not walk about barefoot,



85.57% were found to know this guideline, 71.95% adopted appropriate behaviour, and 70.73% revealed this concern. The use of brightly-coloured, seamless socks was adopted by 36.59% and 56.10% revealed this knowledge, but only 34.15% both knew and applied it. The type of sock worn should be cotton and 70.73% wore them, 84.15% manifested having this knowledge, of whom 69.51% both had this knowledge and wore them.

## CONCLUSIONS

Type 2 DM was predominant (59.76%), the average time of diagnosis was 13.962 years, it was also found that only 39.02% of the sample chose appropriate foot care and it was observed that half of the sample had good knowledge on that subject. On the relationship between correct knowledge and behaviour. It was found that 35.37% had a high level in terms both of knowledge and behaviour. Similarly, Cunha & Teixeira (2015), after implementing the “*Insulin+*” *Therapeutic Education Programme*, found that this intervention developed positive results, since there was an improvement in individuals’ knowledge and behavioural in managing their DM treatment.

Insufficient education hinders access to information and understanding of the disease and its treatment, generating deficits in self-care and quality of life of people with DM. In this sample, it was found that 50.00% had high knowledge; however, of these, only 35.37% applied it. Nemcová and Hlinková (2013), after reinforcing education on foot care, found that people questioned were more highly motivated to carry out prevention activities with regards to DM complications. These recommend education as an important intervention strategy to improve knowledge and change behaviours in diabetic foot care.

With regard to the correct knowledge and appropriate behaviours in foot care, it was found that the majority washed their feet with mild soap, drying between the toes, did not remove cuticles, examined their feet daily, did not use a hot water bottle and wore compression stockings and garter belts. A minority of the participants rubbed their feet with soft sponge and dried them with a soft towel, moisturised their feet daily, removing calluses and clipping their toenails squarely. With regard to correct knowledge and behaviours concerning shoes and socks, the majority opted for seamless shoes made of leather, inspecting them before use and did not walk about barefoot. The minority wore closed, soft and comfortable shoes, purchasing them in the late afternoon, using insoles, wearing brightly-coloured, seamless cotton socks.

These results are in agreement with the conclusions of the studies conducted by Barbui & Cocco, et al, (2002) and Rocha, et al, (2009). These authors also inferred that when analysing appropriate behaviours in relation to essential foot care, they found that more than 50% of the subjects performed the drying of the interdigital spaces, did not use hot water bottles, wore soft and comfortable footwear which they inspected before using. They concluded that people with DM knew about the need for proper foot care, but their self-care behaviour was inadequate, although more than 60% wore closed footwear and 85% referred to washing their feet with soap and water and drying them properly.

Consequently, it is important to plan instruction and train self-care and about proper foot care. Despite the importance of the educational factor, Cunha, André, Granado, Albuquerque & Madureira (2015) state that it is not a sufficient condition to promote changes in patient habits and behaviour, due to other variables, as well as the attitude that must be changed to reduce harmful behaviours. This dimension must be cared for by health professionals.

The acquisition of knowledge by people with diabetes has an impact on their behaviour. In this study, similarly to Rocha (2005) and Rocha and Santos (2009), the level of knowledge of those with DM was not congruent with their behaviour on essential foot care feet, but despite having knowledge, they do not always put it into practice. It was concluded that 50% of individuals who hold correct knowledge only 35.37% also adopt appropriate behaviours. Most of the sample has a low level of education, making it necessary to adapt the educational interventions to the uniqueness of each person, using active methods centred on demonstrating appropriate self-care, encouraging active DM management. Thus, it is essential to educate people with DM, through teaching strategies that motivate towards empowerment and promote adherence to treatment, motivating preventive behaviours related to foot care, raising awareness to their actual health status. As facilitating strategies to understanding of information on DM, new knowledge should be acquired, what is already known should be reformulated, false beliefs deconstructed, and the way of dealing with the disease changed, opting for healthier life styles. In this way, it will be necessary for the health care professional to adopt a leadership attitude and consultancy with regards to the person with DM in order to identify the most appropriate measures capable of being carried out, implementing interventions centred on people with DM.

The implementation of the “*Insulin+*” *Therapeutic Education Programme* allowed us to ascertain positive results which is strategic for the health institution and the people, since as a rule the study subjects improved their disease treatment activities. It was also expressed that there are external entities willing and able to support people with diabetes and interested in sharing knowledge, with the person with diabetes at the centre of care. Cunha & Teixeira (2015).

With experience/learning/information that diabetic patients acquire over the period of the disease, adherence to the therapeutic regimen will have greater impact, the longer the duration of diabetes in the individual (Santos,



2010). Intervention should be centred on the person and empowerment should become the main focus of the new paradigm, where activities of health professionals are supported, in addition to the role developed by these professionals in providing direct care to patients coping with their disease. Strategies that enhance these patients' abilities to manage themselves better and to adhere better to the therapeutic regimen should be adopted. Consequently, monitoring and the respective use of the Diabetic Guide becomes a necessary practice, thereby contributing to the patient's knowledge about the disease, directly influencing compliance with therapeutic regimen. Thus, the development of multidisciplinary partnerships between educational and health institutions emerge as a potential source of synergy and sharing of knowledge and practical experience in promoting education and health gains. There is also need for more rigorous research into the knowledge – behaviours dyad, for which we propose longitudinal studies and action research with the implementation and evaluation of training programmes to clarify the strength of the relationship between the variables analysed.

### Acknowledgements

CI&DETS, Superior School of Health of the Polytechnic Institute of Viseu

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## Educational Meaning Of Imagination In Dewey's Philosophy

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### ABSTRACT

The purpose of this study is to define imagination in Dewey's philosophy and to investigate its significance. The rapid change of society makes it difficult to evaluate about which factual knowledge has to be provided in the future school. These facts suggest that school has to move eyes on teaching not to provide fixed information but to help students think by themselves. One of the training courses required to build their capacity to self-think in school education is the imagination. Depending on how you look at the imagination, Imaginative education methods and its contents, and the following results, the appearance of the learner will significantly change as well. Therefore, first, it is necessary to clearly define the meaning of the desirable imagination. To this end, first, it is necessary to arrange the view on the imagination of the influential philosophers in history. Next, explore the imagination of Dewey who defines the imagination as one stage in thinking process, and present meaning to education today. Through this, it is expected to raise the need for imagination as part of imaginative education and to clarify the directionality of it.

### INTRODUCTION

Creative talent is one of the key educational objectives of modern school education. Because modern school education had a burden to foster a variety of human resources in order to support and maintain and develop the differentiated and segmented complex society. Given that imagination is one of the abilities needed for the cultivation of creativity, imagination education is absolutely necessary to nurture creative talent. But its contents and methods of imagination education may vary depending on how it is viewed and appearance of the learner changed through it may also vary. Therefore, in order to propose imagination education, clarifying the meaning of imagination should be preceded.

Discussion on imagination starts from Plato. For him, imagination is a concept contradictory to reason of phenomenon, imitation etc. and is understood as the lowest stage of awareness not providing true knowledge to any target. Aristotle regarded imagination as the ability to form reason by the mediation of perception and sensation and clearly distinguished it from knowledge or intelligence always considered right. Given that education is the process of acquiring knowledge that is useful and meaningful to humans, ancient imagination is considered a thing that makes it impossible to acquire knowledge or should be separated from the knowledge.

In the modern world, imagination has been discussed mainly in conjunction with cognitive abilities by philosophers such as Descartes, Hume, Kant. Descartes considered imagination to be the ability to mediate one image with understanding (verstand) by combining sensory materials passively and by accepting such Descartes's opinion, Hume also regarded imagination as the ability to combine ideas. Kant defines imagination as the ability to integrate the diversity of emotional intuition (Kant, 1956). The status of modern imagination summarized as Descartes, Hume, Kant has been further enhanced as a tool required for cognition but there are limits that it may stay in the dualistic mindset thoroughly distinguished from reason on one hand and be regarded as a tool of reason-centered education on the other hand.

In modern times, imagination is remarkably characterized by being viewed from the perspective of free configuration or analysis, understanding beyond the cognitive ability to form an image by Dewey, Peirce, Heidegger, Husserl, Sartre etc. and is moved to one part of high-order thinking. In particular, Dewey assumes imagination as the ability of reflective thought and qualitative thought working actively within integrated thinking and considers that thought is required to make a meaningful experience. In his view of considering that 'education is the growth itself of the learner's life' or 'the business of education is to realize the meaning of life', experience, all of thinking and imagination working in thinking can be said to be closely related. Since Dewey's experience is the learner's life itself in which theory and practice, reason and emotion are integrated and can not be separated, imagination in education becomes a key and active mechanism to enhance the quality of experience by activating thinking. In particular, from the Dewey's perspective, theory and practice, reason and emotion are present in an integrated manner in thinking through imagination. Thus, imagination, which was under the influence of traditional dualistic epistemology, can be freed from the notion dependent on reason.

Recently, the awareness of the importance of imagination is increasing in the education field but there is regret that application and utilization based on the meaning of imagination or education association have not been fully discussed. At this time, it is necessary to newly understand imagination as the essence of free and active thinking. And if imagination should be educationally spotlighted as both the essence of active thinking and ability to have the form of clear thinking required for the life of a complex modern society, this would be nice to start from the Dewey's imagination concept. Because unlike ontological, epistemological discussion on existing imagination, imagination means the ability to think of a variety of possibilities to Dewey and is treated as active thinking itself breaking the habitual and mechanical relation. In particular, emotions or feelings regarded as meanings contradictory to reality or reason started to be widely recognized as important tools of awareness after the late 20th century (Kim, 2012) and Dewey, who thought that knowledge cultivation and emotion cultivation cannot be separated dichotomously in education, discussed the thinking of qualitative area related to emotions·feelings as an important factor of thinking. In light of his philosophy, such qualitative thought is constituted as knowledge through imagination.

Dewey defines imagination as operation of the intellect which embodies an idea in a particular form or image (Dewey, 1887). For Dewey, imagination plays a role of translating and integrating a symbol that exists in the learning activity as appreciative realizations and then expanding and enriching the meaning of the activity (Dewey, 1916). That is, imagination can be described as a type or means of thinking constantly connecting the current state and activity purpose (ideal form).

Considering that the goal realization of school education to nurture creative talent appropriate for the modern society can start from nurturing the learner's imagination, this study is to derive what the meaning implies in modern education by examining imagination working in the thinking process based on Dewey's philosophy. Tenuous though it may be, such discussion related to the educational meaning is expected to be helpful to provide a clue to the practical discussion later.

## MEANING OF IMAGINATION IN DEWEY'S PHILOSOPHY

In Dewey's philosophy, the process of life can be described as a series of thought because life is the process of self-renewal acting on the environment (Dewey, 1916: ch.1) and purposeful activities acting with the mind for self-renewal (Dewey, 1916: ch.8). Therefore, this chapter is to explore the meaning of imagination through the thought concept of Dewey.

### 1. DEWEY'S CONCEPT OF THOUGHT

Dewey largely classifies the meaning of thought into three. The first is everything that comes to mind and indicates that humans are conscious of it in any way. The second is a thing not undergoing direct sensory experiences such as seeing or listening and tasting etc. and the third is belief dependent on any evidence or testimony (Dewey, 1910). Dewey classifies the meaning of the third thought again into two of belief as unconditional acceptance and belief as acceptance by examining the causes and results i.e. through introspection. Eventually, classifying thought into four, Dewey presents the final concept as the most desirable concept among them and refers to this as reflective thought.

Reflective thought refers to active, continuous and careful consideration on the form of any belief or so-called knowledge in light of supporting grounds and future consequences (Dewey, 1910). In other words, reflective thought is the conscious and voluntary effort to firm up what you believe based on clear grounds. Thought is associated with something that is assumed by a perceived fact, although not perceived and comes to mind and examining the possibility and nature of the relationship between the perceived fact and something that newly comes to mind is a key element of reflective thought of Dewey (Dewey, 1910). In fact, Dewey's classification of thought types is just classification for convenience and it is difficult to clearly classify the types of human thought. This means that imagination is working in all types of thought processes from simply imaging a particular thing to everything coming from and going to the relationship between the visible target and assumed target. The concept understanding of imagination varies from scholar to scholar of all ages but they commonly regard it as the ability required to image invisible things and predict particular results based on a number of sensational facts.

Dewey considered reflective thought to be the most desirable thought operation among thought operations made in various forms and this reflective thought, in turn, can be described as thought for the purpose of exploration. If thinking in order to obtain more preferable and good results when faced with the problem situation of life, we define the questions that need to be answered or purpose of issues and control the flow of ideas in a certain direction at this time (Dewey, 1910). We should verify the assumed conclusion while carefully examining if it is consistent with the current problem and purpose. In short, if any problem is given in the situation of life, humans will assume the solution of the problem and a series of exploration activities to determine the suitability of these assumptions will occur. Reflective thought includes all of these processes

But exploration behavior is made based on it only when 'assuming' a certain fact. Because the behavior aiming to find facts to contribute to purpose (assumption) is the reflection or exploration behavior. Therefore, reflective thought is like suspending judgement while exploring more (Dewey, 1910). Suspending judgement means to keep

various possibilities for predicted results in mind. It is also a resolution of trying as many assumptions as possible and going through the process of verifying them. An assumption is a result(solution) predicted for a purpose(problem) and judgement is bound to be suspended as there are more assumptions because there are more matters that should be reflected and explored. Eventually, various assumptions increase the probability to bring about more thorough and accurate results or better solutions. That is why reflective thought may be also encouraged as thought consistent with the purpose of education to enhance the quality of human life.

Various assumptions to find new results or other solutions are made based on the resources of past experience and existing knowledge (Dewey, 1910). It is imagination that creates an assumption in the thought operation based on the resources of past experience and existing knowledge. In particular, imagination made in reflective thought plays a very important role of suspending judgement by combining each process and resources each other within the overall process of establishing a hypothesis and experimenting, conducting and verifying based on it.

The most important factor in the training of good mental habits consists in acquiring the attitude of suspended conclusion, and in mastering the various methods of searching for new materials to corroborate or to refuse the first suggestions that occur. To maintain the state of doubt and to carry on systematic and protracted inquiry-these are the essential of thinking.(Dewey, 1910: 191).

## 2. IMAGINATION IN DEWEY'S

Defining imagination is a problem as subjective and difficult as answering to the question 'what is education?'. As the first clue to access the solution to the world of imagination, Lucien Boia(1998) points out that we must transcend the dichotomy of the real world and the world of imagination. On the other hand, recent several education scholars add more interest and support to utilizing imagination as a learning tool in education (Claxton, 1999; Egan, 2005; 2008; Kim, 2013; 2015) and especially Egan(2005; 2008) argues that imagination education will play a key role in the future education. In modern society, the amount of information as well as its dimension is rising rapidly and information regarded as knowledge depends on a variety of media and senses such as music and pictures other than text, visual and auditory and tactile sensation etc. The common thought of many scholars is that high-dimensional cognitive ability is required to acquire such various and complex information (knowledge) of the modern society and the key is imagination. Dewey's imagination concept will further strengthen the claim of Boia and recent education scholars.

Dewey opposes the traditional philosophy's perspective that imagination is mental operation interfering with the process for intelligence to recognize the truth on the basis of dualistic metaphysics and rather considers that imagination becomes the medium of appreciative realization for reactions and meanings in all ranges that cannot be perceived by organisms (Dewey, 1916). Also like previously mentioned definition of imagination, Dewey defines imagination as intellectual operation itself not a thing distinguished from intellectual operation.

On the other hand, defining education as 'continuous growth of experience,' Dewey argues that experience becomes a true experience only when giving special meaning and enlightenment to the experience subject and leading cumulative growth. Just as experience should have specific conditions as a true experience, Dewey thinks that imagination should also have particular conditions to be defined as the high-dimensional cognitive ability acting in the thought process (Dewey, 1887).

The proper function of imagination is vision of realities that cannot be exhibited under existing conditions of sense-perception. Clear insight into the remote, the absent, the obscure is its aim. .... Imagination supplements and deepens observation.(Dewey, 1910: 355-356).

Imagination is not defined separately from perception. Being directly involved in perception(Dewey, 1887; 1910; 1916), imagination fills vacuous or chaotic sensations (Dewey, 1887: 168-169). For example, let's say there is a blue cup in front of our eyes. In fact, this cup can be described as a cylindrical object with a hole at the top about 15cm in height with a ring to make it easier to catch by hand. The moment of seeing this object (cup), we think we recognized it as a 'cup' or 'blue cup'. But in order for us to recognize it as a cup, our experience that used it before becomes the foundation. The moment we see an object with a round handle, we 'recognize' it as 'a cup' while conjuring up our image of pouring water to quench our thirst at the same time. Although simply accepting only visual information on any object, we perceive the object through the process of elaborating the information. Imagination acts as being involved in the elaboration process and helping the cognitive subject to better understand the target. And understanding means that thoughts or feelings, values caused through the cognitive subject's various experiences related to the cognitive target are collectively reflected on the cognitive target and come to the cognitive subject as another, new 'meaning'. After all, Dewey seems to have identified imagination as a tool required to expand and develop the meaning that a cognitive target brings to the cognitive subject. In psychology, Dewey(1887) emphasizes the importance of imagination as the ability to identify and reveal the new meaning of a target. Imagination as such ability to expand the meaning has a special value in creating a new target by looking at the cognitive target from a new perspective.



When Dewey says that imagination is operation of the intellect which embodies an idea in a particular form or image, the idea includes both temporally-spatially actual things and spiritual things. Imagination as the ability to identify and discern the meaning of a target idealizes such idea the best and is indeed imagination of the highest form among the steps of imagination classified by Dewey. Dewey explains imagination by classifying it into three steps of mechanical imagination, fancy, creative imagination depending on the degree of the meaning expansion. Mechanical imagination deals with things that exist in the reality. It is the ability to recombine what you did not experience or do not experience by separating or adding actual things. Mechanical imagination is the imagination working when we generally ‘imagine something’. For example, let’s suppose that a woman deep in love imagine a future honeymoon house. The woman imagines a house built in a peaceful and luxurious area by separating each image to constitute the honeymoon house from memories to lovely spouse, beautiful furniture and ornaments, latest home appliances and carefully served food and adding them again. The house full of several images taken from the memories of the woman is not a house not experienced in the past nor actually present in the reality. By separating each of shapes perceived through past experience and simply adding them, the woman created things that did not occur, i.e. abstract notion.

For Dewey, fancy is regarded as a higher step than mechanical imagination. Fancy can be said to be romantic because it is formed exceedingly vivacious and receptive emotional disposition (Dewey, 1887: 170) and is characterized by simile, metaphor, imaging considered as a poetic sense. The examples of fancy are children’s dreaming of flying in the sky with wings and imagining talking to animals or plants. This fancy has a feature of being somewhat different from creating a new meaning because images that come to mind are difficult to be actually embodied and fancy cannot be regarded as the activity revealing the target or nature of imagination.

Dewey calls imagination as the ability to reveal a new meaning of the cognitive target as creative imagination. But, although creative imagination can be said to be imagination of a higher step than mechanical imagination and fancy, it is imagination that can be developed from the steps of mechanical imagination and fancy and hence, it is indeed the classification just to help understanding. Creative imagination is to directly perceive the hidden meaning of the target or spontaneously discover sensuous forms (Dewey, 1887: 171). If creative imagination is working, the idea is separated and combined to give a new meaning away from facts or meanings already known about the target. The new meaning of a target can be obtained as a result of reflection by considering and referring all emotional aspects of visible and invisible reality of the cognitive target. Perception of a new meaning is not limited to separation or combination of the theory or reality of the target already experienced or revealed nor limited to happening under the influence of feelings or emotions. Conversely, if referring only one side of these two areas, a new meaning as the ideal value of the target cannot be discovered.

But creative imagination should not be misunderstood as the ability to simply combine mechanical imagination and fancy. The feature that distinguishes creative imagination from these imaginations is to conceptualize-generalize the idea of cognitive subject. Only the type of new ideas by mechanical imagination was renewed through separation and combination of the target and new target by fancy is a purposeless spontaneous product or emotion. On the other hand, if creative imagination sheds new light on the target, the idea reflecting the property can be generalized an universalized (Dewey, 1887: 171-172). For example, consider the case that developed the vaccine for large-scale vaccination through the fact that people affected with cowpox among those raising livestock as occupation do not suffer from smallpox. Discovering a fact that a breeder did not suffer from smallpox after paralyzed due to cowpox and recovered, he vaccinated cowpox to his family to avoid smallpox. After that, a doctor paid attention to the value of cowpox-ideal value preventing smallpox- and imagined vaccine that enables large-scale vaccination by combining the value with treatment technology of current medical science. The idea of vaccine is not the result that the actual target or notions such as cowpox, smallpox, livestock, paralysis are simply separated and added again and combined. It is not fancy ends up with unrealistic delusion or fiction, simple fun and interest, either. The idea that a doctor came up with actually created vaccine by adding his passion and interest. In short, this doctor created the new target of vaccine with the idea obtained by shedding new light on the property contained in the fact that those affected with cowpox do not suffer from smallpox-by enabling large-scale vaccination, vaccine has the value helping protect the health and life of more people- and this fact can be understood and gain the sympathy by anyone. In this regard, exercising creative imagination can be said to be the conceptualization-generalization activity.

People encounter embarrassment, confusion in the situations of life and the struggling results of past people to solve and conclude these problems of life were recorded as the history of mankind. Current historical records including the example of vaccine development are traces that filled the mind while pending a premature conclusion and imagining something to be spread or visualized in the future at that time of past. According to Dewey, reflective thought means judgment suspended during further inquiry and this attitude is one of the most important elements to train good mental habits (Dewey, 1910: 191). In this sense, creative imagination is a powerful tool helping (reflective) thought to occur as the source of exploration activities.

More exploration means to keep more cases in mind and more predict the results to happen while examining the possibilities for the result you want to achieve. The intervention of imagination makes these possible. According to Dewey, only systematic regulation of the conditions under which observations are made and severe discipline

of the habits of entertaining suggestions can secure a decision that one type of belief is vicious and the other sound (Dewey, 1910: 197-198). The action by an immediate reaction to changes in the nature such as movement of birds or direction of the wind can be said to be superstitious habits of inference and Dewey says that such superstitious habits of inference is changed to scientific habits of inference by controlling conditions under which observations and inference are made. If a farmer decided to sow any seeds, the belief for the results will be ensured as much as controlling sufficient conditions in observations and inference to judge whether the belief for the benefits to be obtained when sowing the seeds is correct or not. Imagination enable the thought process of controlling sufficient conditions and securing the belief.

### **EDUCATIONAL MEANING: IMAGINATION AS PSYCHOLOGY OF THE SUBJECT**

Dewey says a subject as ‘capitalization’ that summarized the results of past experience in a form that can be used best in the future (Dewey, 1902: 284). In other words, a subject can be said to be used in order to give a new meaning to the learner’s life. In this chapter, we are to emphasize the importance of imagination by showing that making good use these capitalization-subject allows the learner to realize its meaning to the learner’s life through the subject and grow his/her life through it.

In order for the contents of a subject we learn, i.e. knowledge to be meaningful at present, the process of re-interpreting and readjusting the content of the subject from the perspective of the subject currently experiencing is required (Park, 2004: 8). The concept of thought used by us every day is bound to intervene in the process of the experience subject, i.e. learner re-interpreting and readjusting the content of the subject and imagination is included in the intervening thought. Strictly speaking, imagination at this time is creative imagination but should not necessarily exclude mechanical imagination or fancy or be distinguished from them. This can be understood through the fact that qualitative characteristics thought to be noncognitive are included in the experience Dewey says.

Qualitative characteristics are the characteristics of the target accepted by direct experience from the experience target and can be described as unique characteristics of the situation in the strict meaning (Park, 1999; 2011; Lee, 1993). Since qualitative characteristics are made by the situation itself as interaction, they cannot be standardized or generalized in any way. Because it is not possible to express all of individual special nature made by the situation itself in language and experience situations can be established indefinitely our perception and imaginative manipulation (Lee, 1993: 94). In this regard, qualitative characteristics can be referred to as emotional force that when faced with any problem situation, the experience subject identifies the situation comprehensively and drives in a fixed direction.

For Dewey, experience is the interaction itself between humans and environment and thought also can be considered as one experience. If traditional philosophy divided objectivity and subjectivity, subject and object and placed only reason corresponding to the objective area in the area of thought, thought can be described as the situation where rational thought and qualitative thought associated with qualitative characteristics are not separated and occur in an integrated way for Dewey. What Dewey wanted to emphasize when saying that experience is not primarily cognitive (Dewey, 1916: 140) but peculiar combination of an active and passive element (Dewey, 1916: ch.11; 146) is that experience should not be classified into something completely intellectual or behavioral and defined only as nature of one side and be understood as interaction itself and the whole in which all the elements are intertwined and indistinguishable. Qualitative thought dealing with the qualitative characteristics can be also said to be the important aspect of thought to understand the world of life as much as rational thought and be rather applied to human life more broadly and associated with the meaning of life more deeply than rational thought (Park, 2003).

In this context, subject matter are abstracted from direct experiences including qualitative characteristics and the learner can derive ‘meaning’ when interpreting such subject in connection with his/her concrete and direct experience. That is, Dewey argues that the subject can have a correct meaning only when reinstated to the current experience of the learner and it needs to be psychologized (Dewey, 1902).

The abstractions, generalizations, and classifications which it introduces all have prospective meaning.....In the largest sense the logical standpoint is itself psychological; it has its meaning as a point in the development of experience, and its justification is in its functioning in the future growth which it insures. (Dewey, 1902: 284-285).

If we deal with issues related to education, they are finally concluded to the contents of the subject, i.e. a matter of knowledge. In terms of the discussion so far, however, knowledge is a new ‘meaning’ occurring when bringing previously accumulated knowledge to the current problem situation and interacting. If applying this logic to school education again, knowledge as the result of education presents previously accumulated experiences as the subject matter and becomes the meaning newly constructed by the learner in the individual’s life of a learner through free imagination.

Such experience as meaning is remarkable when education activities lead to the artistic aspect. Regarding complete interpenetration and alert commerce between self and world of objects and events as the best experience, Dewey

takes “esthetic experience” as the example of this experience (Dewey, 1934: 25). The reason can be guessed if thinking a feature that the impression and beauty given are given by art to us when all of the elements involved or participating in the work of art are completely harmonized. Dewey takes the following as the example that the experience of the appreciator appreciating works of art leads to this esthetic experience.

For to perceive, a beholder must create his own experience. And his creation must include relations comparable to those which the original producer underwent. They are not the same in any literal sense. But with the perceiver, as with the artist, there must be an ordering of the elements of the whole that is in form, although not in details, the same as the process of organization the creator of the work consciously experienced (Dewey, 1934: 60).

At this time, recurrence is made by imagination. The act of appreciation replayed by imagination can be seen as the process of creative experience in which the appreciator reconstructs his accumulated knowledge, meaning, value system and in the same sense, learning is the activity of combining doing, knowing and appreciating (Park, 2003: 180). Eventually, learning is that a learner actively reconstructs the meaning of subject matter and the subjective elements of the learner cannot but intervene at this time. That is, learning is a process of understanding statements made or discovered by previous explorers but the process is that a learner acquires the meaning of his life by taking full advantage of his mind around the context of life and experience situations of the experience subject (Park, 2003: 180-181). Therefore, thinking ‘the mind at every stage of development has its own logic’, Dewey said that learning will be able to avoid identifying a ready-made organization of subject-matter with logicity when understanding the learner’s thought style working in experience (Dewey, 1910: 228).

An experience is a means of supplying subject matter required for understanding instruction involving signs and of evoking attitudes of open-mindedness and concern as to the material symbolically. (Dewey, 1916: 242). In particular, such instrumental value and importance are given a lot to realistic direct experiences. Therefore, it is important to ensure that education through the subject can be direct experience. Because education made through signs or symbols becomes direct experiences which are realistic to a learner so the learner can better recognize the meaning of education contents to be conveyed. So Dewey says as follows:

Were it not for the accompanying play of imagination, there would be no road from a direct activity to representative knowledge; for it is by imagination that symbols are translated over into a direct meaning and integrated with a narrower activity so as to expand and enrich it. (Dewey, 1916: 245-246).

The biggest role of imagination examined through the discussion so far is to psychologize the subject so that text can be direct experience to learners in education activities of learners. By connecting activities and symbols and giving meaning to the symbols, imagination psychologizes the subject matter to the learner. Given that imagination is voluntary power to switch everyday experience to educational experience, education activities will be able to stimulate imagination.

In light of the principle of creative imagination, rational thought and emotional qualitative thought are just the classification for convenience and cannot be distinguished in real thought. If applying it to school education, education activities presented in school education cannot be presented apart from education contents and education contents cannot also have any meaning apart from education activities. Therefore, in order to guarantee the effectiveness of education activities for which we strive, the most important thing is to convey education contents by considering the psychology of the learner.

Given that (creative) imagination plays a role of a medium that allows us to recognize the invisible meaning of a subject, education activities that become experiences as capitalization of imagination should be presented as many as possible. That is, widening the opportunities and scope of interaction to continuously reconstitute experiences will be a shortcut to foster the ability to imagine creatively. But widening the opportunities and scope of interaction is possible when social relationships are evenly balanced. That is, what is important is the atmosphere where social members and groups share and recognize a variety of interests freely. Dewey thinks that democracy is characterized by expansion of common interests and full exertion of many other capacities (Dewey, 1916: ch.7). Through the discussion so far, it was found that imagination plays a role of psychologizing the subject in the learner’s learning activity and capitalization of imagination exertion is rich experience. Having a wealth of experiences is eventually secured from free interaction and therefore, it can be seen that creative talent to exert imagination well can be fostered from a democratic society.

## CONCLUSIONS

The purpose of this study is to reveal the meaning of imagination Dewey says and find out the implications in our education by examining the concept of thought based on Dewey’s philosophy and exploring imagination working in the thought.

In the traditional view, imagination is the concept which is contrary to reason and considered to be abstract meaning or meaning of fantasy thinking as one pleases. That is why it is regarded as a target that should be to be

excluded and removed in the process of education. In the modern times, this imagination comes into the category of the recognition process by combining the perceived notions as a medium of sense and reason by Descartes, Hume, Kant etc. Today, Dewey, Peirce, Sartre, Heidegger, Husserl etc. try to evaluate imagination in view of free configuration or analysis, understanding beyond the epistemic ability. In particular, Dewey criticizes the trends that imagination is dualistically divided and understood into mental and substance or reason and emotion and furthermore, enhances and releases the concept of imagination subordinated to reason to active and creative mental power.

Dewey thought that the process of human life, continuation of problem situations succeeds through thought and the subject of life solves the problem situation as imagination is working in the process of thought. In other words, the subject of life realizes the meaning of experience through imagination. As shown above, imagination is important as the ability to reveal a new meaning of cognitive target in Dewey's philosophy.

One of the big topics in modern society may be wellbeing. Belief and expectations that can be closer to wellbeing through education recognized as teaching and learning subject matter are the fact universally accepted. In the light of Dewey's philosophy, knowledge forming subject matter is the meaning obtained as a result of human experience and the purpose of education in this case is to allow the learner to recognize the meaning of his own life from the subject of this meaning. Therefore, true wellbeing is to enable learners to do things really interesting and meaningful. This can be realized when subject-matter of studies and the learner's state of mind can be closely related (Dewey, 1902). Although a lot of changes are tried and improved in the front lines of education, school education does not indeed escape from evaluation-oriented teaching by rote yet. At this time, the biggest problem is that learners do not feel the value and meaning in learning situations or life. In Dewey's philosophy, imagination is understood as a tool to help learners to recognize the hidden meaning beyond that they recognize the subject delivered by signs and symbols as it looks in the learning situation. The foundation where learners can freely raise and exercise imagination is to allow them to do much more experiences. That is, as there are more experiences that can come to learners as meaning, the assets of imagination become rich and this, in turn, gives power to reconstruct and continue experience.

To this end, it is necessary to present activities so that learners can experience the subject well in the education field. If a teacher well observes a learner with warm and sincere interest and presents suitable education activities suitable for his psychology, the learner will exercise imagination and accept the symbolic meaning of the subject as the meaning of his life. However, it is not possible only by the efforts of individual teachers. Working environment and conditions should be improved so that teachers can focus on learners and both education institutions and administration should be supported so that the autonomous atmosphere of a classroom can be created. All these things are possible in the society of democratic atmosphere of respecting and recognizing the various interests of social members living together. It is necessary to meditate on Dewey's thinking considering that education can maintain and develop this democratic society and this democratic society, in turn, can accomplish true education.

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## Elements Of Human Capital Development According To Hasan Al-Banna

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### ABSTRACT

The process of human capital development is very much emphasized in Islam. It is clearly seen in the purpose of the Prophet's (pbuh) apostleship in this world, which is to enhance human morality. The history of Prophet's (pbuh) success in implementing the process of human capital development is a lesson for the Muslim that human capital development is the main agenda in human existence. Al-Banna as a renowned preacher had expressed his own views on deeds which develop human capital. One of al-Banna's views being applied concerns the ten elements of human capital development, which this article attempts to discuss.

**Keywords:** Human capital development; Hasan al-Banna.

### INTRODUCTION

The word "development" means "regarding developing, the act or process of developing, (achieve progress, growth)." The second meaning of the word "development" is "effort or activity of developing (to advance, grow)" (Hajah Noresah, B., 2005). Thus human capital development means effort or activity of developing (advancing and growing) man's own self. According to al-Ghazali (2005), human capital development begins from human formation in two main aspects, the physical and the spiritual. In the process of human development, both aspects require good and proper management so that the end result is a human with high morals. However, the spiritual aspect plays the main role in forming an individual with a consistently moral high ground through his body. Miskawayh (1961) explained that human capital development is a development effort focused on three elements of strength found in each man, the elements of strength of mind, strength of desire and strength of anger. Strength of mind or mental strength is the capacity of a person to do a rationalisation process through his mind, which requires to be filled with knowledge from time to time. The strength of desire is the strength which demands fulfilment of various desires such as desire to eat, drink, delights, beauty and so on. And the strength of anger has the inclination to dishonourable traits such as anger, envy, greed, vengefulness, miserliness and so on. Thus, strength of mind needs to guide and educate the other two strengths, to subdue the strengths of desire and anger in order for the person to develop into a good and proper human being. Sayyid Sabiq (1963) has the view that human capital development is a process of developing a human being involving six elements of strength in each individual. It requires strength of belief (*aqidah*), moral character, knowledge, economy, social unity and striving (*jihad*) to defend peace. All these strengths are basic elements in the process of human capital development, such that if these elements in a person are weak, it will cause weakness in him so that he will not develop. Hence these elements need to be comprehensively dealt with until he surely and steadily possesses these elements. Al-Qardawi (2004) has the opinion that human capital development begins with the basis of faith to Allah SWT, and plays the role of

the main motivator or key driver of all of a person's actions. With this basis of belief, he proposes that the primary focus of human capital development be on four dimensions of the human self in equilibrium, namely human mind or mental, spiritual, physical and behaviour. The human mind needs to be filled with knowledge, the spirit with devotion to Allah or proper worship, the physical with recreation and human behaviour with goodness or moral fibre. From the above description, it can be inferred that man is the implementer of development effort and at the same time the object or material to be developed. In addition, the effort of human capital development must be comprehensive and balanced between physical and spiritual aspects of human nature. Hence, human capital development may be defined as a holistic development effort by man towards his own self to change to a much better condition while maintaining a certain good condition. Thus developed, man may become capital to function properly as administrator of nature.

### DISCUSSION: AL-BANNA'S ELEMENTS OF HUMAN CAPITAL DEVELOPMENT

Al-Banna (1992) had submitted his view on the elements of human capital development by outlining ten domains of the elements. These are good health, good morals or honourable character, highly knowledgeable, self-reliance, possess authentic faith (*aqidah*), performing proper worship (*ibadah*), self-control, smart time management, discipline in conduct of affairs and contribution to society. Therefore, each individual who undergoes the process of development is required to have all these ten elements of human capital development.

First element is good health, The Prophet Muhammad (pbuh) once said: Meaning: "Mukmin who are strong are better and more loved by Allah than those who are weak" (Muslim, 2006). The hadith teaches that each mukmin is required to be strong and far from weaknesses, and to be strong one must first be healthy. One must not only have a healthy body, but must maintain and improve good health from time to time. The starting point in the effort for human capital development is sound health, after which other matters may be implemented. To ensure good health, one must be physically fit, by doing activities which build up and maintain the organ systems of the anatomy such as the digestive system, circulation system, lymphatic system, respiratory system, body heat regulation system and so on. The activities one does will make one more robust, able to resist diseases and maintain good health. Not doing these activities will make one weaker by the day (Vasudevan, T. A., 1989). Miskawayh (1961) suggested that one who wishes to maintain good health needs to obtain basic energy from daily foods selected for the nutrition required for the body and not purely for good taste. Ruain Mustari (1994) added that good diet includes permissible (*halal*), clean, easily digestible, sufficiently nutritious, fresh, proper and suitable for the individual concerned. Other than food, in order to maintain physical health, one also has to abandon activities which physically harm the body. This refers to a strict regimen of keeping away from substances which harm the body such as by not smoking, drinking alcohol or taking drugs, avoiding instant food or excessive sugar and so on (Hatta, S. *et al.*, 2003). It can be inferred from the above explanation, that the element of good health is the first step towards shaping and developing an individual. With good health, it becomes possible to properly perform responsibilities and trust obligations which an unhealthy person would find difficulty to do. Thus, physical health is the first prerequisite for human capital development activity.

Good morals is second element, as explained by Miqdad Yaljin (1973), good moral is a model constructed from revelation to organize human life to be the most proper in form. It functions as a guide for man to implement in his behaviour in every aspect of life. In the effort to have good morals, 'Afif 'Abd al-Fattah Tabbarah (n.d.) stated that a person must have the character and behave in the manner as outlined by al-Quran and illustrated by the example of the Prophet (pbuh), consistently and unwaveringly without being mixed with bad behaviour. This is embodied in the Words of Allah SWT: Meaning: "And surely, you have a sublime character" (al-Quran, al-Qalam: 4). Good morals includes two aspects, the external physical self and inner or internal human self. The internal human self is the main focus in the process to achieve good morals. The external physical self requires the individual to act with good morals in every aspect of his life such as speaking the truth, keeping promises, combing the hair and so on (Miqdad Yaljin, 1973). And the internal human self is behaviour which is not acted out by the physical body and is intangible to the senses, such as being patient, not being arrogant, good intention (*ujub*), pride (*riyak*), consistently sincere in every act and so on (Abdul Jalil, B., 2008). 'Abd al-Karim Zaydan (1993) holds the opinion that reform is possible if a three-pronged or integrated training is carried out. First, strive as best as possible to reduce bad traits which need to be changed as well as matters related to the bad traits. Second, cleanse and eliminate dishonourable traits while at the same time direct the self to good morals. And third, replace bad traits and behaviour with good traits such as telling lies with saying truth, cruelty with justice, betrayal with trustworthiness and so on. It can be inferred that good morals are a much needed element by every individual to develop himself. The moral values as shown through the examples of al-Quran and Sunnah of the Prophet (pbuh) constitute a superior model towards developing excellent human capital. With such a model, a good and harmonious relationship will always exist between man and his Creator, Allah S.W.T, between man and man and between man and the whole world.

Third element is highly knowledgeable, being knowledgeable and constantly improving one's knowledge is the foundation to man's maturation, with knowledge, man becomes developed and successful. In contrast, the absence of knowledge is a factor which makes a man weak, lowly and dishonourable (Wan Mohd Nor, W. D., 1989). The level of one's knowledge distinguishes him from others, the higher the knowledge the higher his rank. In fact, a highly knowledgeable person gains more benefits in the process of developing himself and his society (Mohd Yusof, O., 1998). The position of a knowledgeable person is higher than one without knowledge in the eyes of Allah S.W.T. as He says: Meaning: "Allah will raise to high ranks those who have faith and those who have been granted knowledge among you. And Allah is well-acquainted with all that you do" (al-Quran, al-Mujadalah: 11). Mohd. Kamal Hassan (1988) explained that the prime purpose of acquiring high knowledge is to be a pious, righteous and devout slave who obeys all Allah's commands and does not contravene divine laws, not for the sake of merely enriching one with knowledge and information. This is explained by Allah S.W.T.: Meaning: "Verily from among His servants, it is the learned who fear (to go against the command) of Allah. Allah is the Almighty and Most Forgiving" (al-Quran, Fatir: 28). The effect of acquiring high knowledge with appreciation for the main objective of acquiring knowledge to be a righteous slave of Allah is to produce a man rich in knowledge and capable of using the knowledge to govern the world in a proper, fair and completely civilized manner (Syed Muhammad Naquib al-Attas 2007). The method of acquiring high knowledge may be done through the process of observing, using the human senses to obtain information whether through hearing, sight, or touch in addition to thinking, to generate knowledge. The efforts required to improve knowledge are reading, attending knowledge sessions, teaching and learning (Mohd Yusof, O., 1998). From the above explanation it can be inferred that a high mastery of knowledge is the trigger to human capital development towards producing a man capable of properly governing his own self and the world in the manner acceptable to Allah SWT. Without the element of knowledge, it is difficult to improve one's personal status to a higher level and this will adversely affect man's function as the administrator of nature.

Self-reliance is the fourth element of human capital development. Za'ba (1982) explained that the person who has the element of independence or self-reliance is one with the characteristic of depending on his own self in every task and responsibility entrusted to him, and who will plan and determine on his own how he does things, and is ready to bear the consequences, good or bad, of his actions. The lesson in al-Quran on self-reliance may be taken from the explanation in the following verse: Meaning: "It is He Who created death as well as life, so that He may test you to bring out which of you is best in conduct (*amal*). And He is the All-Mighty (in rewarding your deeds), the Most Forgiving for those who repent" (al-Quran, al-Mulk: 2). 'Abdullah Yusuf 'Ali (2001) explained the above verse that life in this world is for us to strive persistently and earnestly to do all the good works or deeds for the purpose of achieving an honourable station in the sight of Allah SWT. Za'ba (1982) adds that the word (*amal*) in the above verse clearly shows that deeds which should be properly implemented are deeds which ought to be done by one's own self, not by others or by hoping that others would do. The prerequisite characteristics of an independent person are that he has a Muslim identity without imitating anyone, he has the knowledge so that he does not have to always depend on others in matters he does not know of, the skill to ensure the task is properly executed, the capacity to do and he makes the effort persistently without giving up in carrying out the task and responsibility (Unit Kajian dan Penyelidikan Pusat Da'wah Islamiah 2005). Fadzli Adam (2010) explained that the impact of an independent or self-reliance is a person with a high fighting spirit, is competitive and does not easily give in, will carry on against all odds until the task is properly completed. Further, Jawiah Dakir (2008) added that he is also not easily satisfied and will only stop on completion of a task. Further, he will continue being diligent and hardworking doing other necessary tasks. Za'ba (1982) explained that efforts made independently are not only focused on works for success in this world, but also include works or worship (*ibadah*) for success in the hereafter. Success in this world and the hereafter will be achieved with excellence by independent or self-reliance persons. It can be inferred here that efforts to develop the self, require the element of self-reliance in the implementation of all affairs. One cannot hope for others to develop themselves, they themselves must independently develop their own selves. Likewise in every aspect of life, one has to rely on oneself to properly implement a matter until its completion. With the element of independence or self-reliance, one is able to develop not only oneself, but even the society and the environment as well.

Next element is authentic *aqidah* (faith or belief). The word *aqidah* originates from the Arabic language which means "knot in a rope" or "pledge of loyalty or allegiance". Thus it connotes a matter beyond doubt and suspicion, strong, stable and will not change (al-Razi, M. A. B., n.d.). In practice, *aqidah* is belief and confidence of a person, in other words, faith in a matter one adheres to (Sayyid Sabiq, 2000). The desire to believe in a religion is a natural disposition (*fitrah*) of humans. However, man is responsible to ensure that the faith he has is really genuine or truly from man's own Creator. This responsibility is explained by Allah SWT Himself: Meaning: "(When their infidelity was made obvious) (O Muhammad and your followers) set your face in devotion to the true faith. (Be Steadfast) in the "religion of Allah", that is the religion which Allah created for mankind (who was prepared from the beginning) to accept it. There is no change in (the laws of) the creation of Allah. That is the true religion,

although most men do not know it” (al-Quran, al-Rum: 30). In explaining the authenticity of *aqidah*, Al-Qaradawi (1973) states that there is genuine *aqidah* in a person if it has the four essences: first, *aqidah* is based on the truth of revelation from Allah SWT; second, *aqidah* must be really strong, confident and firmly established, without any doubt or suspicion whatsoever, and it will not change under any circumstances and will remain strong; third, confidence towards *aqidah* must be followed up by obedience, acceptance and implementation of all the commands and avoidance of all that are prohibited by Allah SWT without any objection; and fourth, *aqidah* must be capable of becoming the prime motivator of its owner to implement all actions or behaviour, earnestly and whole-heartedly and be willing to sacrifice body and soul and property to implement everything contained in his *aqidah*. Muhammad al-Khatib (1996) explained that authentic *aqidah* consists of three basic matters which every Muslim must believe in. The first is related to faith in the Divine Unity of Allah SWT through His Divine Attributes, Names and all that is associated with the Essence (*Zat*) of Allah SWT; secondly, belief in all the prophets and apostles of Allah, angels and scriptures of Allah SWT; and third, belief in the celestial (*sam'iyat*) and unseen (*ghaybiyyat*) such as heaven, hell, sin, reward, day of resurrection, Divine Will and Decree (*qada'* and *qadar*) and so on. It may be inferred from the above explanation that having an authentic *aqidah* is the key condition and trigger in human development, the mould in which effort in human capital development is shaped based on authentic *aqidah*. Without it, one is unable to develop oneself. Only with authentic *aqidah* can a person be properly and truly developed, and guaranteed of security and well-being in this world and the hereafter.

The sixth element of human capital development is proper performance of worship (*Ibadah*). Worship (*ibadah*) is the main responsibility which is required of mankind, because Allah created man to worship Him. This is asserted by Allah SWT: Meaning: “And (remember) I created the jinn and mankind that they might worship and pay their devotions to Me” (al-Quran, al-Dhariyat: 56). ‘Ali ‘Abd al-Latif Mansur (1991) explained what is meant by proper worship, it consists of three basic elements: first, the element of submission and obedience of the worshipper must be tied to the whole of Allah’s *shariah* and the teachings of the Prophet (pbuh) in terms of commands and prohibitions as well as the permissible (halal) and forbidden (haram); the second element is that the obedience of the worshipper must be from his heart, full of love for Allah SWT; and third, the element of fear of committing sins and bad and fear of neglecting what is enjoined by Allah SWT. Al-Qaradawi (1971) divides worship into two parts: first, obligatory worship which is prescribed in Islam as to time, rate and method of implementation, which cannot be changed or amended, namely prayers (*solah*), payment of tithe (*zakah*), fasting (*sawm*) and pilgrimage (haj); second, worship which is not specified as to time, rate and method of implementation, this worship covers all charitable deeds which accord with Islamic teachings. Thus, Ibn Taymiyyah (1969) explained that the scope of worship (*ibadah*) in Islam covers any matter which is consistent with acceptance and love of Allah SWT, whether in the form of words and deeds or in some other form whether noticeable by the human senses or otherwise. Further, Al-Qaradawi (1971) states that worship (*ibadah*) includes all human charitable acts or deeds throughout his life including the category of worship proper so long as the act or deed has the five following characteristics: first, it must be consistent with and not contradict to Islamic *shariah*; second, it must be with righteous or pious (*salih*) intention; third, it must be properly and thoroughly done; fourth, it must not transgress the limits set by Allah such as causing injustice and taking of others’ rights; and the fifth, worldly charitable acts or deeds must not cause others to neglect and forget Allah and their religious obligations. From the above explanation, it can be inferred that every slave of Allah SWT who wishes to develop himself has to constantly ensure that all his acts and deeds in his daily life are included in the category of worship (*ibadah*) to Allah, thus directly including the process of human capital development within the framework of worship (*ibadah*) proper blessed by Allah SWT, otherwise the act or deed will be in vain in His sight.

Next element is self-control element. Man was created with intelligence and desire, thus he needs to control himself in order to be always obedient to Allah. This is in contrast to angels who are by nature created without desire and thus are by natural disposition obedient to Allah, while vegetation and animals are not given responsibility because they are created without intellect (al-Qaradawi, 2009). Allah SWT has given reminders for man to control himself in daily life, as mentioned: Meaning: “But as for those who feared to stand before their Lord (to be judged), and curbed the lower desires of their soul, - Truly, Paradise will be their abode”. (al-Quran, al-Naziat: 40-41). Ibn Qayyim al-Jawziyyah (1961) had classified the human self into three levels: the first level is known as the lowest level, *al-nafs al-ammarah*, the level where man has the tendency to commit evil; the second level is the middle level, *al-nafs al-lawwamah*, the level where man regrets his past actions, this regret is the result of a reflection process (*muhasabah*) in oneself; the highest process is *al-nafs al-mutma'innah*, the level where man is always tranquil with faith and confidence towards Allah SWT, always acting in piety and keeping from sin. In order to control and improve the self to reach the level of *al-nafs al-mutma'innah*, Ibn Qayyim (1999) suggested four methods of self-control, to be implemented in an integrated manner. First, one has to endeavour to learn and understand religious knowledge; second, one has to seriously practise all that is learnt in a conscientious, good and proper way; third, one has to earnestly and wisely spread the knowledge learnt to others; and fourthly, one has to exercise patience and perseverance when faced with trials and tribulations in implementing the above three



methods. From the above explanation, it may be inferred that the element of self-control is very much required by every human who wishes to develop himself, because each man has the tendency to do bad and mistakes since he is created with inherent desires by Allah. However, man is also endowed with intelligence which functions to evaluate between good and bad, hence one need to consistently control and guide oneself. Successful self-control and self-guidance will transform one into a developed state accepted by Allah.

Smart Time Management is one of the elements of human capital development. Allah said: Meaning: “By time! Indeed! Man is in loss, except those who believe and do good deeds, and exhort one another to the truth, and exhort one another to patience.” (al-Quran, al-Asr: 1-3). In order to know what is really meant by time for living man to utilise, al-Qaradawi (1991) gives three characteristics of time: first, time passes too quickly and cannot be stopped by man; second, past time cannot be replaced or turned back; and third, because time is irreplaceable, it is the most valuable resource of man. As time is most precious to man, Reha Mustafa (1999) in his master’s research suggested three ways of interacting with time: first, always take benefit by using time available to do good and be obedient to Allah; second, to take care of opportunities and advantages available; and third, take heed of past examples and models. Lester R. Bittel (1991) suggested some guidelines for doing something according to good time management. Matters more important are to be identified and given priority over less important matters. The first priority is to do the more important matters which must be implemented immediately or according to prescribed time. The second priority is to implement the matters which should be done. The third priority is to implement matters which are good to be implemented and completed. And the fourth priority is to do the less important matters. After ensuring the four priorities above, Marion E. Haynes (1987) explained that the third and fourth priorities may change according to the time period prescribed to complete the work, such as the second may change to become third priority if the time prescribed to complete the work is earlier than the second priority which takes longer and vice versa. In order to ensure full implementation of the planned time management, Ab. Fatah Hasan suggested keeping a daily written or printed record of the whole plan of action according to the categories determined, including records of all activities whether professionally related or not. These records will serve as a guide in implementing an affair according to its proper time (Ab. Fattah, H., 1991). It can be inferred from the above explanation that the process of human capital development needs to involve smart time management, because time is the most precious resource of man which he would lose if not properly utilised. Thus, each man needs to constantly look after his time from being wasted in vain and must never once waste any time. Therefore, each man who wishes to develop himself must be wise or smart in managing time, utilise the time available in doing good and plan all activities which should always be done as scheduled.

Ninth element is discipline in conduct of affairs. Mustafa Haji Daud (1994) defines discipline as striving with determination, dedication, conscientiousness and diligence in fulfilling tasks and responsibilities. Such discipline will give a good effect on schedule compliance, rules, time and so on. Discipline also is a process which controls one’s behaviour, through an order given in the form of rules of behaviour and certain specified regulations to achieve a certain level or objective. Only through compliance with the order and its implementation as planned, will a person be known as disciplined (Grant, C. A., 1982). The characteristics of a disciplined person are stated in a 1979 Report of the Cabinet Committee to Study the Implementation of Education Policy as follows: a) Respects and complies with stipulated laws; b) Works or implements an affair with sufficient orderliness; c) Respects the rights of other individuals; d) Practices good behaviour and does not disturb others’ interests; e) Mutually respect one another with a helping spirit; f) Constantly improves existing condition and willing to serve society (Laporan Jawatankuasa Kabinet Mengkaji Pelaksanaan Dasar Pelajaran 1979). The discipline element is very closely associated with planning. A disciplined person will act in accordance and exactly as prescribed in the planning of an affair, while at the same time, all affairs will be done within the time frame prescribed and in a good and proper manner until the objective is achieved as planned (Azinal Abidin, M. S., 1991). Abdul Razak Sulaiman (1991) explained that before planning action steps for an affair, the objective has to be first determined followed by planning and prescribing the action steps necessary to be implemented with full discipline to achieve the objective of the affair. Wan Azmi Ramli (1981) added that at the time of implementing an affair, a disciplined person needs to go through the process of control and assessment for the implementation of the planned task. This process is conducted so that the task does not deviate from the prescribed guidelines and rules and the desired objective or level is achieved. It can be inferred that the element of discipline is very necessary to ensure that each affair is implemented as planned and the objective is properly achieved. The path of an affair implemented without discipline may easily become chaotic and the planned objective may be difficult to achieve. Thus, one who wishes to develop himself needs to possess the element of discipline.

And the tenth element of human capital development is contributing to society. Helping each other is the basis to contributing to society. A society where people mutually help each other illustrates that consensus and harmony exist in the community. Allah SWT gives guidance that mankind needs to practice a culture of helping each other in society. However, helping each other must only be in the framework of goodness, as Allah says in al-Quran:



Meaning: “Help one another in furthering virtue and God-consciousness, and not in what is wicked and sinful” (al-Quran, al-Maidah: 2). Contributing to society, as explained by Abdul Rahman Abdul Aziz, is a process of helping humans to overcome difficulties in life, whether at the level of individual, group, community or organization, with the objective of effectively overcoming all problems (Abdul Rahman, A. A., 2002). Al-Qaradawi (1971) explained that the advantage of reward for charitable deeds will cease when one dies, but however this is not the case when one contributes to society. The reward for contribution to society will endure even after one dies, so long as one’s contribution continues to benefit others. Al-Qaradawi (1971) also explained that works of contribution to society may be implemented in various ways from small to big scale affairs, such as being good to others, helping others, giving advice, fulfilling someone’s wishes, service to the destitute and indigent or orphans, and so on. Before one contributes to others, one must first ascertain the target level so that the contribution may be effectively and well planned. The target is classified by Sabitha Marican (2008) into four levels: first, the contribution to the individual, second to the family, third to a small group of individuals, and fourth to the community. In addition, Iran Herman (2002) asserted that before one gives contribution to a member of society, it is necessary to know and to properly examine the background of the target so that the objective of one’s contribution is really achieved, only then may the contribution be given to them in the manner appropriate with their needs and current priority of the target. Hepworth (1990) divided the forms of contribution to society into several types: first, in the form of direct service to individuals or a social group whether in physical or financial form and so on; second, as a link between members of society and a certain organization which gives service to members of society; third, as a builder, maintainer and reinforce of a system of organizations which give service to members of society and fourth, in the form of research done for the welfare of society. Sabitha Marican (2008) states that contribution to society may be done by two ways: individually and through a particular organized system. Individual contribution is direct contribution of certain persons to members of society such as charity to the indigent and orphans, teaching knowledge to others and so on, whereas through an organization is contribution by a group with an orderly plan and system such as welfare and voluntary bodies, mosques, schools, Islamic movement, *baitulmal* (treasury) and so on. It may be inferred from the above explanation, that the element of contribution to society is an important requirement in the development of human capital. The result of this element will secure the continuity and ongoing sustainability of the effort for human capital development. In addition, the resulting development will not be limited for the enjoyment of only certain individuals but will be felt by the whole society every time, thus this element will make the effort to develop human capital balanced and comprehensive.

## CONCLUSION

From the above discussion, it can be concluded that the ten elements of human capital development as submitted by Hasan al-Banna are holistic, encompassing physical, emotional, spiritual and intellectual aspects. The elements coincide with the personal traits required of a good Muslim by Islam, and are built from the framework of Islamic tenets based on al-Quran and as-Sunnah. Therefore, the elements of human capital development by al-Banna should be the main objective to be targeted by each Muslim in order to achieve self-development.

## ACKNOWLEDGEMENT

The writers wishes to express appreciation and acknowledgement to the Ministry of Education of Malaysia (KPM) and Universiti Kebangsaan Malaysia (UKM) for funding the conduct of this research, its presentation and publication of this article under the research project “Fundamental Research Grant Scheme” (FRGS), research code: FRGS/2/2013/SSI03/UKM//1.

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## Embodiment: A New Perspective For The Teaching And Learning

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### ABSTRACT

Purpose of this study is to investigate and analyze the Embodiment potential for teaching and learning. Embodiment is a interesting and innovative topic that new pedagogical models, as Enactivism, Neurodidactic, Bio-education assume. These models, born from the contribution of neuroscientific research to education science, look at learning from a new perspective and believe that all knowledge, including those that involve a higher degree of abstraction, is embodied and derived from the processing of body experiences. According to theory of Embodiment there is no split between mind and body; the body in action is the main device through which, realizing experiences, we develop and produce learning; all learning is embodied in actions located in a given environment and sensory and motor processes are fundamentally inseparable. This means that in classroom practice abstraction and generalizations can produce effective learning only if they were built from the experience of the world body. The action, that becomes a real learning experience, can be directly accomplished by the learner but can also be observed by the teacher. The discovery of mirror neurons, adjacent to motor neurons, showed that areas of the brain responsible for movement already begin to take action when we see someone make a certain gesture.

Embodiment can help revolutionize teaching and learning suggesting a new methodology for the transmission of knowledge directed to make learning more effective and based on the testimony from the teacher of concrete and direct experience what must be learned.

### INTRUDUCTION

The increasing complexity of contemporary society imposes to the figures in the educational agencies to identify tools to capture the attention of children and young people, to get them involved in school life through a new kind of school. In the school practice, we realize that they are facing a real educational emergency for the difficulties that the school meets in the effective transmission of the culture and education of the new generations. It highlights the growing need to overcome the traditional teaching building new learning environments designed to ensure the development of skills needed to integrate into society. This objective can be effectively achieved through the active involvement of young people in forms of learning that act specifically on motivation and emotions. Neurobiological research and the phenomena of learning can provide important answers to the need for a new teaching.

Research into the functioning of the human brain, particularly during the past decade, has greatly enhanced our understanding of cognitive behaviours which are fundamental to education: learning, memory, intelligence, emotion (Byrnes, J.P., & Fox, N.A.,1998)

The most recent neurological studies have shown how mental processes are the product of the organization and function of the nervous system. This organization and functionality are built within the exchange relations that the nervous system has with the environment. This emphasizes the role of the contributions of cultural diversification and differentiation biological identity and mental health of each individual subject. The brain structures and mental processes, in fact, occur characterized by an extreme variety and changeability, a variety and changeability that individuals differ not only among themselves, but also the individual at different times of their lives. The variety of brain organization from one subject to another, and modifiability of the cerebral structures of the individual subject is closely linked to the learning process.

The brain has been shaped by evolution to adapt and re-adapt to an ever-changing world. In other words, the brain exists to learn, remember, and apply what has been learned. Learning and memory are dependent upon modifications of the brain's chemistry and architecture in a process called "neural plasticity." Neural plasticity reflects the ability of neurons to change both their structure and relationships to one another in reaction to experience (Buonomano & Merzenich, 1998; Trojan & Pokorny, 1999). We know that animals raised in enriched and more challenging environments have larger brains, longer neurons, and more synapses (Diamond et al., 1964; Guzowski et al., 2001; Kempermann et al., 1998; Kolb & Whishaw, 1998). We also know that when adult humans engage in exploration, education, and challenging jobs, their brains become more complex, robust, and resistant to age-related diseases (Kessler et al., 2003; Scarneas et al., 2006). Teachers use their personalities, interpersonal skills, and teaching methods to create enriched physical, conceptual, and social environments that stimulate neural plasticity, enhance brain development, and optimize learning.

Brains grow best in the context of supportive relationships, low levels of stress, and through the creative use of stories. While teachers may focus on what they are teaching, evolutionary history and current neuroscience suggest that it is who they are and the emotional environment in the classroom they are able to create that are the fundamental regulators of neuroplasticity. Secure relationships not only trigger brain growth, but also serve

emotional regulation that enhances learning. A low level of stress and arousal—where the learner is attentive and motivated to learn—maximizes the biochemical processes that drive neuroplasticity. The activation of both emotional and cognitive circuits allows executive brain systems to coordinate both right and left hemispheres in support of learning, affect regulation, and emotional intelligence (Ahissar, 1992).

It is becoming increasingly evident that facial expressions, physical contact, and eye gaze connect us in constant communication exchanges with those around us. It is within this interpersonal matrix that our brains are built, rebuilt, and regulated. A teacher's supportive encouragement properly balanced with an appropriate level of challenge activates dopamine, serotonin, norepinephrine, and endorphin production at levels conducive to learning (Cazolino, 2013). Through these and other biochemical processes, teacher-student attunement creates states of mind and brain that make students better able to incorporate, recall, and use new information.

## NEUROSCIENCE AND PEDAGOGY IN ITALIAN PANORAMA

In the Italian pedagogy and didactic panorama some lines of research based on neuroscientific knowledge learning are born.

Eliana Frauenfelder introduced the issue of Bio-education in the final decades of the last century. It highlights the need for studies in education to have a reference to the biological processes that have an impact on the learning mode, and on the results of it (Frauenfelder, 1994). Bio-educational research, originated from Eliana Frauenfelder's studies on learning as "the multiplicative converging centre, to which the contributions of all those disciplines whose competence is always intertwined with a specifically pedagogical one can be brought back" (Frauenfelder, Santoianni, 2002). Specifically, bio-education paved the way to the scientific establishment of the principle educability, creating "an alliance" between biology and pedagogy "as a result of sharing some degrees of epistemological compatibility and of partial reflection" (de Mennato, 2006).

The research team of the University of Salerno, led by Maurizio Sibilio, is investigating, analogically and biologically, the possible didactical use of simplicity's properties and principles shown by the physiologist of perception, Alain Berthoz.. Simplicity is a property of living organisms: "life has found solutions to simplify complexity. Nor does it evoke the utterly remarkable ability of living creatures to create borders delimiting closed spaces, such as the cell and the body itself. These solutions are indeed simplifying principles that reduce the number or the complexity of processes. They make it possible to rapidly analyze information or situations, taking into account past experience and anticipating the future—which helps to grasp intention—all the while respecting the complexity of reality" (Berthoz, 2011, X-XI).

Pier Cesare Rivoltella and his research team (2012) at CREMIT, University of Milan, showed the importance of picking the effects of cognitive neurosciences in the educational context to develop innovative and sustainable didactics on the learning. He speaks of Neurodidactic to point out the contribution in the analysis of the processes that governs learning production and the strategies that they require.

Very close to this line is the Enactivism that starting from Varela's studies, it analyses complex systems, showing the circularity of action and knowledge and the brain-body-artifact-world sequence. Pier Giuseppe Rossi research team (2011) is analysing the fall out of Varela's systemic method in the didactic field.

These researches have many elements of tangency including the approach based on action and the important tenet that cognition is embodied. In this vision, they argue that all aspects of cognition are shaped by aspects of the body. The aspects of cognition include high level mental constructs (such as concepts and categories) and human performance on various cognitive tasks (such as reasoning or judgment). The aspects of the body include the motor system, the perceptual system, the body's interactions with the environment (situatedness) and the ontological assumptions about the world that are built into the body and the brain.

## THE EMBODIED COGNITION THEORY

Barsalou (2008) proposed the theory of embodied cognition, indicating that the nature of the human mind can be largely determined by the form of the human body. Barsalou argued that embodied cognition is all aspects of cognition that are shaped by surroundings, simulation, situated action, and aspects of the body. Embodied cognition is an essential research topic in social and cognitive psychology, covering issues such as social interaction and decision-making (Borghi and Cimatti, 2010). The aspects of the body include the motor system, the perceptual system, the body's interactions with the environment and the ontological assumptions about the world that are built into the body and the brain (Wilson, 2002). Much research concerning embodied cognition emphasizes the importance of body interactions with the environment. For example, Macedonia, Muller, and Friederici (2011) demonstrated that gestures accompanying speech have an impact on memory for verbal information in the speakers' mother tongue and foreign language learning. That is, meaningful and iconic gestures could help learners retain the verbal learning material.

The embodied cognition perspective encompasses a diverse set of theories that are based on the idea that human cognitive and linguistic processes are rooted in perceptual and physical interactions of the human body with the world (Barsalou, 2008; Wilson, 2002). According to this perspective, cognitive and linguistic structures and processes—including basic ways of thinking, representations of knowledge, and methods of organizing and



expressing information—are influenced and constrained by the particularities of human perceptual systems and human bodies. Put simply, cognition is shaped by the possibilities and limitations of the human body.

By using the term embodied we mean to highlight two points: first that cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological and cultural context (Varela, 1992).

### **MIRROR NEURONS AND LEARNING**

The action, that becomes a real learning experience, can be directly accomplished by the learner but can also be observed by the teacher. The discovery of mirror neurons, adjacent to motor neurons, showed that areas of the brain responsible for movement already begin to take action when we see someone make a certain gesture.

In the early 1990s, mirror neurons were discovered by a group of scientists from the University of Parma in Italy, lead by Giacomo Rizzolatti. First observed in a monkey's ventral premotor cortex, they were soon found to be present in human brains as well. Mirror neurons' defining functional characteristic is that they are activated when a motor act is performed and also when it is witnessed. Mirror neurons enable us to understand, interpret and imitate observed actions and to predict their results intuitively. They inform us about other peoples' mental and physical condition and can change our own by mirroring our counterpart's (Bauer 2009). Mirror neurons are responsible for imitation, empathy, and the development of language in humans. Connected directly to both the visual and auditory cortex, they translate observed (external) behavior into experienced (internal) neural firings in the premotor cortex. In other words, for the mirror neurons, there is no difference between observation and execution.

From birth, mirror neurons enable children to communicate with their environment by imitating actions they witness. Although imitation is not an essential part of communication anymore when speech is acquired, mirror neurons allow us to keep imitating facial expressions, sentiments and postures subconsciously throughout life, thus facilitating interpersonal relationships (Bauer 2009:54). Nevertheless, mirror neurons have so far received little attention in educational theory. As teaching always involves interpersonal dealings, however, they play an important role in teacher-student-relations and students' behavior in classroom.

Mirror neurons may cause humans to experience internal representations of the body states they observe as if they were doing similar actions or experiencing similar emotions or sensations as another human they observe (Buccino et al., 2004).

### **CONCLUSIONS**

The claim about embodiment in cognition represents a crucial step toward the development of a new trend of research in cognitive sciences, where the cognitive process is investigated without abstracting from the conditions in which it takes place.

Much of Western education is distinctly disembodied with students being asked to sit still and the teacher is often rooted behind a lectern or glued to the keyboard to move the PowerPoint presentation forward. The body/mind distinction is clearly expressed in what we expect from schools and universities in that they appeal to minds but often disregard bodies. The "embodied experiences of being and doing" (Matthews, 1998, p.327) are so far still a fairly under-researched area in educational research. The field of teaching and learning seems to be dominated by cognitive theories that ignore or at least neglect the bodily experiences of teaching and learning.

The statement that "the body matters" for cognition brings forth relevant consequences for the conception of the body and the mind and contains indications for research on the loop between perception, cognition, and action.

The statement that "the body matters" for cognition is indeed quite widespread in circles that oppose the classical computationalist-representationalist approach to cognition.

This claim can be understood as a statement relative to the role played by the physical structure of the body in cognitive, perceptual, and motor performances and acquisitions. However, the conception of the body as simply a physical entity is only one step toward a theory of the co-determination of the organism and the world that is proposed by Varela. As a medium of the interaction with the world, Varela conceives the body as a structured set of behavioral repertoires, of motor and perceptual capabilities and activities. Embodiment goes beyond the physical structure of the organism since it is principally characterized by the sensorimotor structure.

Nemirovsky (2009) claims that the processes of thinking and understanding are constituted by perceptuo-motor activities, e.g. bodily actions, gestures, manipulation of materials or artefacts, acts of drawing, even eye motions, gazes, tones of voice, and facial expressions.

Researchers who work within the embodied cognition perspective make a variety of specific claims (see Barsalou, 2008, and Wilson, 2002, for reviews). Chief among them is the claim that cognition is based in perception and action. This holds true even for offline cognition—the cognitive activities that occur in the absence of relevant environmental input. Many cognitive tasks are accomplished by bringing sensory and motor resources to bear, even when the task referents themselves are far removed in space and time (Wilson, 2002). Examples include the use of mental imagery (Shepard & Metzler, 1971), the simulation of actions during language comprehension

(Glenberg & Kaschak, 2002), and the construction of mental models during reasoning (Johnson-Laird, 1983) and reading comprehension (Glenberg, 1999).

A related set of claims is that cognition occurs in real-world environments, is used for practical ends, and exploits the possibility of interacting with and manipulating external props (Nathan, 2008). These connections to the physical environment can serve to ground novel or abstract ideas or information in the physical world. Grounding describes a mapping between an abstraction and a more concrete, familiar referent, such as an object or event, that facilitates meaning making (Nathan, 2010).

Findings in the cognitive neurosciences can be interpreted to suggest possible implications for learning, cognitive development and pedagogy in educational settings. As cognitive neuroscience advances our understanding of the very basics of learning, so there is need for educationists to appropriate this research with regards to implications and applications for teaching in educational settings, especially school classrooms (Geake, 2000)

In fact, the most important innovation comes in a better understanding of how the brains of students and teachers function, the process through which they learn and become engaged. Only by increasing our knowledge of this process can we really keep improving the way we teach. That means taking in new insights in psychology, behavioral economics, cognitive sciences and neuroscience to tailor both the content and the format of what is taught.

A student who is not motivated and will not engage in any successful learning process is likely to miss a lot. And the same goes with teachers. Recent work in the neuroscience of motivated cognition and its interplay with skills inform us on how we can more effectively motivate teachers and students.

Our knowledge of how the brain memorizes new information is crucial in the design of lessons. Investigating the mechanisms of memory consolidation is an exciting topic of research in cognitive neuroscience that should be fully integrated in designing teaching content and strategies.

But training the brain without thinking about the rest of the body would be a big mistake. Embodied cognition, the idea that the mind is not only connected to the body but that the body influences the mind, must be central to designing teaching content.

The way our entire body reacts in the classroom, and the effect that has on how our brain learns is key. For instance, posture, movements and gestures matter a lot more than most people think in the learning of a foreign language, as they do on the dynamics of bonding between students and the teacher.

we are just at the beginning of attempting to apply neuroscience to education, it is hard to deny that the evolution and development of the brain is a potential treasure trove of information about where we have come from, what we are capable of, and how we learn. However, this knowledge must be well understood, integrated with what we know about social and emotional development, and made culturally relevant.

The knowledge of the processes that are activated with learning can be important for those who work a training action to ensure educational projects that consider learners as individuals who, in their individuality and specificity, requiring understanding and integrating affective and relational.

From a neurobiological perspective, the position of the teacher is very similar to that of the parent in building a child's brain. Both can enhance a child's emotional regulation by providing a safe haven that supports the learning process. This "holding environment" optimizes neuroplasticity, allowing for new learning (Kegan, 2000). Among the many possible implications of this finding for the classroom is the fact that teacher-student attunement isn't a "nice addition" to the learning experience, but a core requirement.

Keep in mind these findings and their neuro-psycho-physiological bases of notevole may be important for an educator to direct, manage, analyze the different situations of learning and teaching.

The pedagogy can and should benefit from the neuobiological discoveries, assuming the task of understanding and enhancing the developmental ability of the brain - mind in this way you can plan a training strategy that uses the environment to allow for maximum development potential and better mental health.

The embodiment theory can help revolutionize teaching and learning suggesting a new methodology for the transmission of knowledge directed to make learning more effective and based on the testimony from the teacher of concrete and direct experience what must be learned.

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## Enabling Inter-Cultural Competence Within Double Degree Program

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### ABSTRACT

In our increasingly globalized world, joint double degree programs have become increasingly popular towards internationalization of higher education around the world. The main reason for their rise is the growing awareness that higher education needs to prepare students to live and work in today's global networked world. Within this context, the development of students' intercultural competence plays an important role and is often taken for granted that stay abroad would automatically contribute towards developing inter-cultural sensitivity. Research on intercultural competence development shows, however, that it is not as simple as that. Development of inter-cultural competence needs "ad hoc" systematic support.

In this paper, we use MAIB - Master in International Business Development as a case in point to understand and demonstrate the holistic approach towards building intercultural sensitivity among the students. MAIB is a joint double credential Master Program between University of Milano-Bicocca, Italy, Alliance University, India and Centennial College, Canada, where students study and live across 3 different campuses in 3 global dynamic cities in the world – Milan, Bangalore, and Toronto over a 14 months period. Since the MAIB Master 1<sup>st</sup> edition has been launched in 2014, this paper attempts to share first learning outcomes based on semi-structured interviews with students and faculty. The focus of the paper is more on qualitative aspects to gain insight into the development of intercultural sensitivity among the students. The authors apply Milton Bennett's Model of intercultural competence sensitivity as a theoretical framework.

**Keywords:** Intercultural competence; master dual degree Program; internationalization; study abroad

### 1. INTRODUCTION

Globalization of the world's economic, political, technological, and environmental systems has resulted in the need for academic institutions to prepare graduates with the knowledge, skills, and abilities to work effectively in the global arena. Faced with very rapid increases in students' international mobility<sup>1</sup> Since 2008 (Santiago, Tremblay, Basri and Arnal, 2008 and Altbach, Reisberg, Rumbley, 2009), OECD has stressed the need for national tertiary education systems to approach internationalization as one of the key priorities; furthermore, it has identified "growing globalization" as one of the main trends which will affect financing to higher education. Within a few years, students international mobility will interest 5 million individuals across the globe: a trend which brings universities to agree that the development of intercultural competence or the "ability to communicate effectively and appropriately in intercultural situations", is a key priority in preparing graduates for the global workforce. Higher education institutions around the world have been stimulated to establish international partnerships, aiming at preparing their students to work in a diverse society (e.g. Knight 2004, de Wit 2011). The economic crisis and the budget restrictions are forcing international companies to be more efficient in their professional and personnel

Looking at study abroad programs, generally speaking "every program, no matter at what level, format, or focus continues to claim that educational cross-cultural contact contributes to intercultural competence and thus to global citizenship" (Bennett 2009). The most numerically relevant international training activities are generated from "cross-border" activities, including student mobility in foreign countries, through specific study periods (Erasmus, summer schools); offering of double or triple degrees, through agreements between institutions of different Countries, as well as through opening of new branch campuses abroad (Trivellato, 2015).

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<sup>1</sup> According to OECD (Education at a Glance, 2013), the number of international students at world level has increased from 0.8 million (1975) to 3 million (2005), to 4.3 million (2011). Such figure should exceed 5 million students within a few years.



Although the development of intercultural competences is continuously emphasized and claimed, it is, however, questionable how these study abroad programs actually contribute to students' intercultural sensitivity development and how the development of intercultural sensitivity can be fostered. One of the longitudinal research studies, conducted by Vande Berg, Connor-Linton, and Paige (2009) has provided significant evidence on the positive effects of teachers' / trainers' pro-active interventions on intercultural learning. Taking these findings into account, it is consequently desirable to identify and apply specifically designed intervention techniques and strategies which facilitate the development of intercultural sensitivity (Anderson et al. 2006). This paper contributes to this aim by presenting MAIB - Master in International Business Development as a case in point to understand and demonstrate the holistic approach towards building intercultural sensitivity among the students. MAIB is a joint double credential Master Program between University of Milano-Bicocca, Italy, Alliance University, India and Centennial College, Canada, where students study and live across 3 different campuses in 3 global dynamic cities in the world – Milan, Bangalore, and Toronto, which can well be included in the “idea capital” definition<sup>2</sup>.

Since the MAIB Master 1st edition has been launched in 2014, this paper attempts to share first learning outcomes based on semi-structured interviews and group discussion with students. The focus of the paper is on qualitative aspects, in order to gain insight into the development of intercultural sensitivity among the students. The authors apply Milton Bennett's Developmental Model of intercultural sensitivity (DMIS) as a theoretical framework.

## 2. DEFINITIONS

The importance of effective intercultural relations in both global and domestic contexts is well recognized (Brislin, Cushner, Cherie, & Yong, 1986; Hammer, 1989, 1999a; Kealey, 1989). As Bhawuk and Brislin (1992) suggested, “To be effective in another culture, people must be interested in other cultures, be sensitive enough to notice cultural differences, and then also be willing to modify their behavior as an indication of respect for the people of other cultures”.

In this paper we use the term “intercultural sensitivity” to refer to the ability to discriminate and experience relevant cultural differences, and we use the term “intercultural competence” to mean the ability to think and act in inter-culturally appropriate ways. We argue that greater intercultural sensitivity is associated with greater potential for exercising intercultural competence.

## 3. THEORETICAL FRAMEWORK

Research studies in such diverse areas as overseas effectiveness (e.g., Brislin, 1981; Cleveland, Mangone, & Adams, 1960; Kealey & Ruben, 1983; Landis & Brislin, 1983a-c; Landis & Bhaget, 1996), international management (e.g., Adler, 1991; Black, 1990; Black, Gregersen, & Mendenhall, 1992; Black & Mendenhall, 1990), international study abroad (e.g., Klineberg & Hull, 1979), and international transfer of technology and information (e.g., Hawes & Kealey, 1979, 1981; Kealey, 1996) have identified intercultural competence as central in increasing understanding and improving relations across cultures (Bennett, 1993a, b; Hammer, 1999b). Additional research on domestic intercultural relations (contact across forms of ethnicity, gender, age, sexual orientation, etc.) has found a similar key role for intercultural competence (e.g., Gardenswartz & Rowe, 1993).

While cross-cultural research has posited the importance of intercultural competence in both global and domestic contexts, work by Bennett (1986, 1993b) has additionally suggested the Developmental Model of Intercultural Sensitivity (DMIS), an underlying theoretical framework, useful for conceptualizing intercultural sensitivity and competence.

The DMIS model (Bennett 1986, 1993) of inter-cultural sensitivity proposes that individuals can be positioned along a continuum, characterized by different stages or orientations, ranging from ethnocentric perspectives towards more ethnorelative perspectives.

<sup>2</sup>Blanco, Frascaroli, Pasolini (2015) use the term “idea capitals” in order to identify those towns spread all over the world which are characterized by a concentration of universities and world-class research institutions, with high rates of students coming from all over the world: knowledge-based cities with high multi-culturality rates,

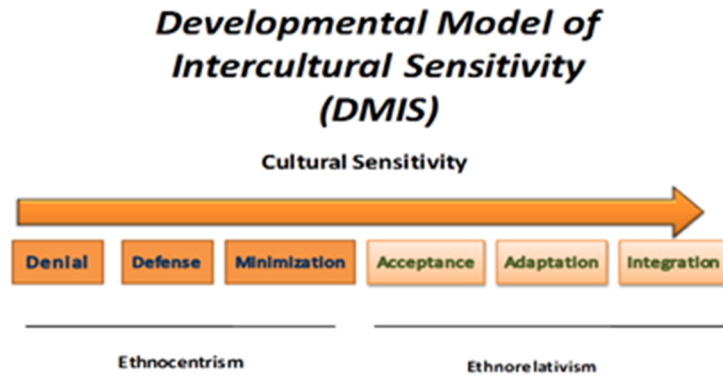


Fig. 1

As figure 1 indicates, the DMIS includes six stages, ranging from an ethnocentric orientation - that views the world through one's own cultural experience - towards an ethnorelative orientation, which takes into account multiple perspectives, adding to one's own views of the world also others' cultural perspectives. Three stages are identified for both orientations: for Ethnocentrism: Denial, Defense, and Minimization. Individuals in the Denial stage are unable to discriminate between various cultural differences and often miss cultural cues that suggest an underlying cultural relevance to different behaviors and communication patterns. The three stages within Ethnorelativism are Acceptance, Adaptation, and Integration of difference.

We chose DMIS as theoretical framework for several reasons. First, it is a theoretically based measure sought to assess the impact of the study abroad experience on the intercultural sensitivity of students. Second, it has undergone extensive psychometric testing and is a reliable and valid measure (Hammer, Bennett, and Wiseman, 2003). Third, an established research literature base has developed over time, illustrating its use (Paige, 2003). On the basis of its grounding in theory, its empirical reliability and validity, and the fit with our program goals, DMIS deemed a good choice for measuring students' intercultural sensitivity.

This theoretical framework has provided us the conceptual guidance in program planning for the **MAIB Master Course** in order to explore the cultural journey of our students living and studying in Milan (Italy, Europe), Bangalore (India, Asia), and Toronto (Canada, North America). **Our objective** is to assess the development of our students along the intercultural sensitivity continuum.

#### 4. MAIB – MASTER IN INTERNATIONAL BUSINESS DEVELOPMENT

##### 4.1 MAIB program – A brief Introduction

Internationalization has recently become one of the key focus areas at the University of Milano-Bicocca, a 15 years old public university, which has rapidly gained (21st in the "THE 100 under 50" international ranking published recently by Times Higher Education). Over the last few years, the University has decided to invest in developing an International profile by enhancing teaching and research cooperation with foreign universities all over the world. The vision is to sensitize and equip students for living and working in the globalized world.

One such endeavor has been the launch of the MAIB Program in 2014. Designed by University of Milano-Bicocca, **MAIB - Master in International Business Development** is a Triple Credential Joint Master program in International Business Development, in partnership with Centennial College (Toronto, Canada) and Alliance University (Bangalore, India), two private institutions which have gained in their respective countries a good reputation for innovation, internationalization, and excellence in higher education. Launched in 2014, it is a full time Program that takes students through the journey of living and studying across 3 different campuses in Milan, Bangalore, and Toronto.

MAIB's goal is to prepare future business leaders to tackle today's complex business environment. It is designed to provide companies with graduates who have both international business and management skills, with "hands-on" approach and cross-cultural competencies. The program provides a truly international and multicultural learning environment which makes its graduates very attractive to potential employers worldwide.

#### 4.2. The Structure&Design of the MAIB Program

The Program lays the foundation for learning broad management skills and building inter-cultural competencies to live and work in today's highly Global World. The program is structured on an Integrated Approach. The Triple Credential Joint Program is the result of a thoughtful work, aimed at integrating different relevant aspects: from a unified application and selection procedure to balanced academic course work and student life across the campuses of University of Milano-Bicocca, Centennial College and Alliance University.

The program offers:

- Master Degree in International Business Development - MAIB (Master I Livello from University of Milano-Bicocca)
- Canadian Ontario College IBM (Graduate Certificate in International Business Management)
- Indian MBA (Master in Business Administration) – MBA (additional study quarter - optional)
- The opportunity to pursue internship in Canada in order to be eligible for 1 year Canadian work visa.

The basic program of 14 months duration is a double credential, rigorous, full-time program (including Internship), with a total of 90 credits.

The students spend the first three quarters in the above-mentioned locations, thus gaining a broad international perspective. Furthermore, they can select the country in which they will spend the fourth and last quarter, which is dedicated to a corporate internship.

The program integrates rigorous academic theory and real-world practice through broad engagement with the business community. In doing so, it endeavors to foster in students an entrepreneurial mindset for recognizing and capturing opportunities — critical attributes for global business leaders.

After completion of 14 months, the students have some optional choices: if they have completed their Internship in Canada, they have become eligible for getting the 1 year work permit for Canada; furthermore, within three years from graduation, they can get an MBA Degree from Alliance Business School, Bangalore, India with an additional study period of 4 months.

#### 4.3. Developing intercultural sensitivity in the MAIB program: An innovative pedagogical approach

Although some researchers (e.g. Hammer / Martin 1992, Pruegger /Rogers 1994) have highlighted that short-term intercultural trainings are effective in building up cultural awareness and in changing individual attitudes towards other cultures, intercultural education, intercultural competence and intercultural sensitivity development has to be conceived as a long-lasting and continuous learning process that should ideally be designed over a prolonged period (Graf 2004).

Therefore, as part of the MAIB program we have designed a comprehensive program to support the development of intercultural sensitivity among the students, including: an intensive orientation program at the start of the course in Italy, ; a 40 hour course on Cross-cultural communication during the first term, in Italy, followed by a 10 hour pre-departure preparation before leaving for India term; 3

intensive coaching sessions with a personal coach during the first 3 months of the program, followed by two on-line coaching sessions in each of the two remaining terms.

Elaborating on the 40 hour Course on Cross –cultural Competencies – the course covers an introduction to a constructivist approach to intercultural communication in business contexts – management of multicultural workforces, mergers and acquisitions, and global operations. Communication as the “mutual creation of meaning” is explored as both a tactical issue of improving understanding and as a strategic issue of creating value from cultural diversity. The Developmental Model of Intercultural Sensitivity is presented as a guide to resolving issues of ethnocentrism and developing the ethnorelative capabilities of recognizing cultural complexity in others and using an expanded repertoire of behavior for cross-cultural adaptation. Some attention is also given to how intercultural communication competence can be sustained at an organizational level in global organizations.

The pre-departure program aims at sensitizing students to Indian and Asian culture and specific characteristics (e.g. as regards history, social, politics or economics). Lectures and seminars are organized held by experts on India. The faculty of the course on Cross-cultural skills once again focused on the need for cultural learning with the objective to raise among the students a general awareness and understanding of cultural diversity in typical intercultural interactions.

During the 2<sup>nd</sup> Term of the MAIB program, the students study and live at the campus of Alliance University, Bangalore, India, and experiencing *real-life* in the host country

At the start of such term, MAIB students go through a seminar on *Socio-cultural environment in India – Understanding & appreciating differences*. They are put in touch with their Indian buddies to explore campus life and connect with the Indian students. Visits are organized to Non-government/NGOs to understand the social reality. Bangalore site seeing trips and other useful historic and cultural events are also planned, in order to foster students' awareness and understanding of Indian social and cultural traditions.

As part of the courses the students take in India, direct interface with industry is planned, in order to help them understand the work environment and get an opportunity to participate in small projects, putting theory to practice. The students are encouraged to write personal reflections on the blog.

Faculty has been selected based on its competence, as well as on its sensitivity, and ability to encourage and support students in their academic and social life at the campus.

As already mentioned, the students continue their interaction with their Coach through skype meetings. The Course Director, Coordinator and the Cross-Cultural Skills Course faculty also maintain a constant interaction with the students.

The India term closes with exams, results and feedback from the students and faculty. The students thereafter move to Canada for their 3rd Term at Centennial College in Toronto.

In Canada, the students study at the Centennial College campus in Toronto and follow courses offered within the IBM program. Here too an initial detailed Orientation Program is organized by the International Department of the Centennial College and seminars are organized to give an insight into the socio-economic, cultural and political environment in Canada, particularly focused on the Ontario State. Being immersed into the IBM class, the students get to interact with Centennial students (coming from a very international background) and the International department staff helps them to settle in.

All along the 14 months period the students are constantly supported by the MAIB Course Director and the Coordinator.

Thus, we see that the development of intercultural competence and thereby inter-cultural sensitivity is a challenging aim that calls for innovative approaches of teaching and learning. Therefore, as shared above an innovative, learner-centered pedagogical design based on Bennett's DMIS model that combines individual and co-operative learning and applies experiential and reflective learning methods has been developed and implemented in the MAIB program. These methods have been chosen based on an intensive engagement with relevant literature, among them for example Graf (2004), whose research findings suggest that an experiential orientation supports the development of intercultural competence. At the same time DMIS model of inter-cultural sensitivity (Bennet 1993) helps us in analyzing and measuring the development of intercultural sensitivity along the continuum.

## 5. ASSUMPTION

MAIB program is based on the assumption that immersing students in a culturally diverse experience will not suffice in enhancing their intercultural skills. Intercultural competence can be taught and learnt only if interventions are appropriately designed based on the developmental mindset of the students.

## 6. AREA OF FOCUS & FIRST DATA COLLECTION

Since the MAIB Program was launched in Oct 2014 and is very recent, for this paper our focus is on sharing the first findings of inter-cultural sensitivity as revealed through our interaction with MAIB 1<sup>st</sup> batch students (total no. 9) , having completed their India term at Alliance University, Bangalore.

Nationality of the students: Italian, Brazilian, Mexican, Chinese, Indian, half American-Italian The period of India term: 10th Jan – 15<sup>th</sup> April 2015.

Semi-structured interviews and group discussions were conducted with MAIB students prior to the departure from Italy, during their period of stay in India and after their completion of the first two terms in order to get a broad picture of the development process.

The semi structured interviews and group discussions were focused on investigating intercultural competence and sensitivity development across 4 different levels: the administrative level (the curriculum, campus services), the didactic level (seminars, lectures, projects), the social level (connecting with peers, adjusting to food, participating in cultural events) and at an individual level. All Interviews and group discussions were conducted in English.

## 7. ANALYZING & INTERPRETING DATA

The semi-structured interviews as well as the group discussions were analyzed keeping in mind the DMIS model of inter-cultural sensitivity. The analysis showed certain similarities of most of the students that were interviewed.

While conducting semi-structured interviews as well group discussions, we tried to gather qualitative data from students specifically focused on the ways in which they were engaging cultural differences and commonalities during their study abroad experience. We asked them to provide accounts of specific situations or critical incidents that they encountered in India and to explain what the cultural differences were that “made a difference” in each situation; what strategies they used to navigate these identified differences; and, finally, what they perceive the outcomes to have been.

For the semi-structured interviews we tried to use open-ended questions, giving the students the opportunity to visualize and narrate the circumstances, which were often filled with strong emotions. Whalen (2009) identifies this important characteristic of study abroad as a distinct experience that is emotionally more explicit. Upon arrival in India, most students expressed traffic disorder, chaos, smell, vivid colors and sights, and combination of sounds. These feelings were vivid, real and quite impactful.

As the interviews and group discussion analysis reveals, we observed most student began their experience in India with a sense of naïve optimism at the start, but found it difficult to cope with the level of basic services like cleanliness of rooms, quality of canteen food, internet not working and the need to repeatedly request for fixing the problems. At the beginning of the India term, most students were in the Denial and Defense mindset indicating their being mono-cultural in their orientation and reflecting the view that “one’s own culture is central to reality” (Bennett, 1993). While these students seemed overwhelmed at their arrival in India, they were found more optimistic before departing from Italy. We gathered that these students with Denial orientation had limited experience with other cultural groups and therefore tended to operate with broad stereotypes and generalizations about the cultural “other.” They were also maintaining a distance from other cultural groups and expressed little desire to interact with their peers in India. In the first interview they reflected misunderstandings, confusion and increasing frustration.

After the intervention of the Coach, Program Director, Coordinator and the buddy assigned to them they slowly began to perceive and understand cultural differences in more observable areas of human behavior (e.g., clothing, food, music, art, dance), and then to move to more subtle arenas (e.g., nonverbal behavior, customs, dos and taboos).

By the 2<sup>nd</sup> month of their stay in India, they were slowing seen to be more at the Minimization stage, reflecting transitional in their orientation from denial and defense. Minimization is not monocultural in its capability, yet it is also not fully intercultural in its recognition of deeper patterns of cultural difference and the ability to appropriately respond to these differences (Bennett, 2004; Hammer, 2009; Hammer 2011).

Mexican and Brazilian students started from the point of Minimization and experienced a certain degree of success in trying to relate with peers in India and navigating their way through unfamiliar cultural practices. These students were able to identify commonalities, which helped to align better with the host country. At the same time they were very conscious of cultural differences. With support and inputs from the Coach, Program Director and the Coordinator they were better able to appreciate diversity and were drawn upon to bridge different cultural practices.

Towards the end of the 3<sup>rd</sup> month, most students reflected a more Acceptance mindset; they made local friends and reflected a strong sense of curiosity about the different culture. However, they were still not clear about how to appropriately adapt to cultural differences and faced challenges in relating to their peers and their life in general.

It is pertinent to highlight that female students not used to living outside of their family had been most hit by the intercultural problems they faced in India.

To sum up, the changes, albeit small, indicate that all the students in the group reduced their ethnocentric tendencies. It is not unusual that student perspectives progress within or moving past-the stage in which they began. This is due, in part, to the developmental nature of intercultural competence, where significant experience with cultural difference, often over an extended period of time, is typically needed before a substantial shift in worldview can occur.



## 8. DISCUSSION & IMPLICATIONS FOR RESEARCH

Given the global environment of the twenty-first century, there is a heightened need for Universities to foster opportunities to students that promote intercultural competence, irrespective of whether these students travel outside their home city, region, or country (Levin, 2002; Otten, 2003; Raby, 1996). Of particular note are increasing demographic changes in the world that make international and intercultural competence essential for our students.

One of the desired outcomes of MAIB, as an international Master program, is to foster an intercultural mind-set amongst the students. Intercultural competence is a key goal of internationalization because it indicates awareness and understanding of culturally diverse others and situations, as well as the presence of behaviors that promote productive and effective communication among and across cultures.

This paper has explored how the MAIB – joint Master program has enhanced the efforts towards internationalization of education, focusing on development of intercultural competence amongst the MAIB students.

Through our experience with the MAIB program, working with students and faculty, we would like to expand the scope of our research by administering the Intercultural Development Inventory (IDI), which has its theoretical basis in DMIS. It is a fifty-item instrument that measures an individual's worldview toward cultural difference. The same shall render the measurement of intercultural competence more scientific and accurate. Since the research is focused on the intercultural learnings' across the India term, we shall be sharing the final findings at the end of the Master program after the students have experienced also the Canada term.

Nonetheless, current research has shown that MAIB Master program has positively affected student learning and development of students' intercultural competence.

The paper provides a scope for understanding and envisioning the need and scope for the study abroad programs. First, the assessment of student learning that result from the MAIB program provides useful insights for the Universities. Second, the same could enhance awareness of the educational value of study abroad with the aim of showing how it promotes acquisition of intercultural competence in students.

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## Establishing Value Oriented Social And Cultural Policies

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### ABSTRACT

As the prominent aspects of globalization, uncertainty and degradation has gradually been increasing. Such a degradation emerging with respect to individuals, institutions and managements, eventually leads to the collapse of social institutions. In order to prevent it, meaning production should primarily be carried out through the formation of ‘value consciousness.’ It is vital that sustainable policies pertaining to reaching internal and external publics be pursued and strategic management be achieved accordingly. Thus, being value oriented and considering the interests of public also mean to be open, transparent and governance-based. As the fundamental aspects put forth by Raymond Williams within the context of meaning production; consumption, identity and representation concepts shed light on how discourse is generated. Developing realistic and solution-oriented approaches to social problems can only be achieved by adopting value oriented and symmetric approaches. This study focuses on how value-oriented social and cultural policies are formed through discourse. Hence, the contents of the Internet sites of the Norwegian and Turkish ministries related to social and cultural policies will be examined with discourse analysis method.

**Keywords:** social policy, cultural policy, citizenship, fundamental rights

### INTRODUCTION

It is generally observed that being some of the consequences of globalization, uncertainty and degradation are gradually increasing. Such a degradation that is rising with respect to individuals, institutions and administrations, eventually leads to the loss of confidence in social institutions along with the corruption in these institutions. In order to prevent this, a sort of meaning creation pertaining to the formation of “value formation” is necessitated. “The development of public policies that can unify individuals and groups to provide their support depends upon the existence of core social values and shared social norms to realize those values” (Perucci & Perucci, 2014: 245). In this regard, formulations of sustainable policies to reach internal and external target groups, as well as the realization of strategic management are highly required. Thus, being value-oriented means considering the interests of the public while being open, transparent and focused on governance.

The concepts of production, consumption, identity and representation constituting the meaning production process of Raymond Williams, are quite explanatory for the creation of discourse. A realistic and solution oriented approach to social problems necessitates just a value oriented and symmetric perspective. In this study, whether the social and cultural policies in Turkey are value oriented is studied with discourse analysis.

For the development of social policies, socio-economic rights should initially be recognized. As for the socio-economic rights, first and foremost, education and health should be mentioned. Then, right to labor along with forming labour unions, to bargain collectively and to strike as well as social security rights comprise the main body these rights. In the same way, the rights related to the protection of mothers and children as well as the disabled are within the context of such rights.

It is quite obvious that these rights regard individuals as socio-economic entities and aim to ameliorate the socio-economic conditions surrounding individuals. Realization of such rights imposes some obligations to governments. Briefly, having positive aspects, these rights give clear and heavy responsibilities to governments. For instance, realization of the right to labor depends on the existence of various institutions and assurances from educational opportunities to unemployment insurance.

It should be pointed out that here economic policies play a significant as all these are closely related to economic growth in the first place. On the other hand, the rights and freedoms are important not only on their own, but also for the exercise of all rights and freedoms by individuals (Tanör, 1978: 105 qtd in Koray, 2012: 70)

Furthermore, “social citizenship” dimension is also important. In the societies where social welfare has developed, citizenship cannot be defined with only basic and political rights. Citizenship has also the right to

receive a share form economic welfare and security even at a minimum level. Garlinton (2014) considers welfare state as an “umbrella term” referring to a set of policies in a country to deal with social problems which are inclusive of the division of wealth.

The welfare states in Europe may differentiate, to a great extent, according to the institutionalization degree as well as the type of socio-economic rights and social citizenship (Koray, 2012: 71) In Young's view, all oppressed people have something in common: They all suffer some inhibition of their ability to develop and exercise their capacities and express their needs, thoughts, and feelings. However, no one set of criteria can be used to describe the condition of all those who are oppressed. Rather, oppression takes multiple forms: exploitation, marginalization, powerlessness, cultural imperialism, and systematic violence. In Young's view, the presence of even one of these five conditions is sufficient for calling a group oppressed (Young, 200: 355). Abeyance of social policies in a society brings about oppression which consists of several problems, such as the exploitation with respect to race, women, labour and children, and also marginalization as the most dangerous form of oppression along with powerlessness, cultural imperialism and violence.

## METHOD

Based on the relationships between social power and discourse (van Dijk 1980; Van Dijk, 1989).

The primary purpose of this study is to analyze how value-oriented social and cultural policies are formed through the discourses on the Internet sites of Norwegian and Turkish ministries. As Norway is the first in the UN Human Development Report of 2015, it is taken as a benchmark in this comparison. In this regard, five ministries from each country have been chosen according to the formation of value oriented cultural and social policies. Thus, the Norwegian ministries of Labour and Social Affairs; Children, Equality and Social Inclusion; Health and Care Services; Education and Research; Local Government and Modernisation and the Turkish ministries of Family and Social Policy; Health; Labour and Social Security; National Education; Youth and Sports form the corpus of this study.

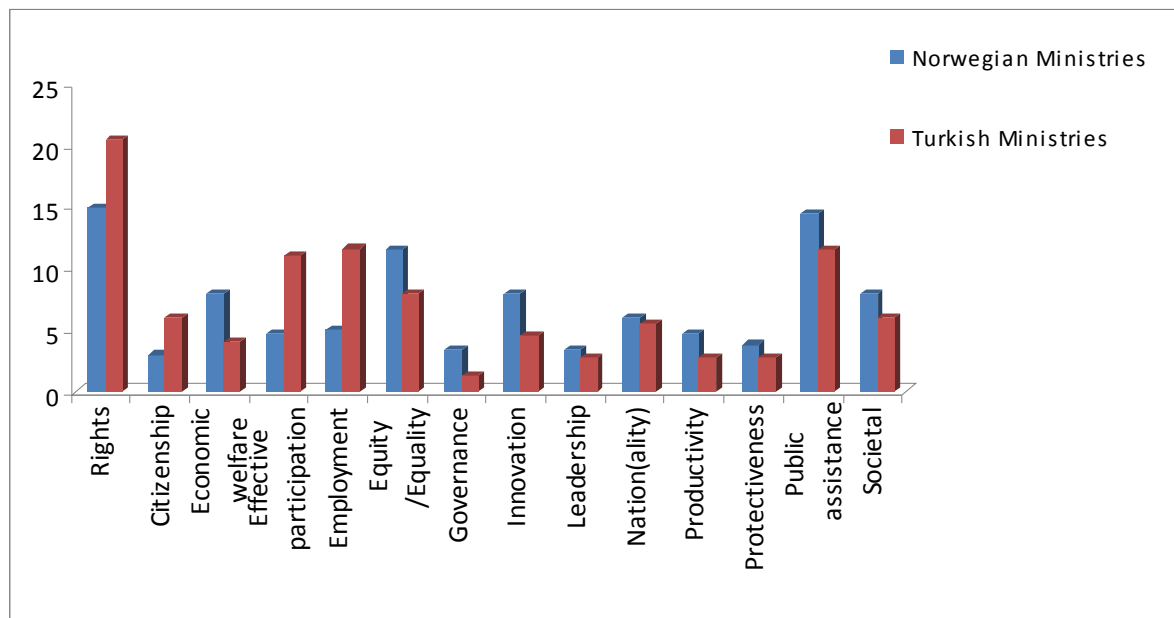
The analysis has been conducted according to the semantic categories determined in accordance with the implementation of social and cultural policies:

- Rights
- Citizenship
- Economic welfare
- Effective participation
- Employment
- Equity / Equality
- Governance
- Innovation
- Leadership
- Nation(al)
- Productivity
- Protectiveness
- Public assistance
- Societal

Then, the ratio of the topics, concept and issues has been calculated according to the degree of references within these contexts. Following that, these findings have been tabulated.

## Findings

Referred issues / concepts	Ratio of Referred Issues (%)	
	Norwegian Ministries	Turkish Ministries
Rights	15	20,4
Citizenship	3	6
Economic welfare	8	4
Effective participation	4,7	11
Employment	5	11,6
Equity / Equality	11,5	7,9
Governance	3,4	1,3
Innovation	8	4,6
Leadership	3,4	2,7
Nation(al)	6	5,5
Productivity	4,7	2,8
Protectiveness	3,8	2,8
Public assistance	14,5	11,5
Societal	8	6



Brief evaluations for each referred issue or concept are as follows:

### RIGHTS

In the texts of Norwegian Ministries, both the variety and the frequency of the references to rights are relatively higher. That is, labour and social security, basic human rights, improvements for democratic rights and freedoms are the most frequently mentioned rights with the ratio of 15 %. It should be noted that practically there seems to be no references to gay and children rights in the discourse of Turkish Ministries.

On the other hand, the discourses related to providing education to help individuals understand social problems and learn their individual and social rights and the right to open a workplace of his/her own are higher in the text of the Turkish Ministries (20,4 %).

### CITIZENSHIP

The significant point in social policy is the social rights. The way of using socioeconomic rights indicate the level of social citizenship in a country. Complete and conscious uses of socioeconomic rights as well as the recognition of them as “rights for real” are exercised in developed countries. As for the discourses of the Turkish ministries, it can be inferred that they pertain to the development and improvement of social citizenship rather than the acquisition of it.



While providing good standard of health for all citizens is 71,4 % in the discourses of Norwegian ministries, this ratio is 23 % in Turkish ministries. Moreover, ownership in the various companies worldwide is 28.5 % in Norway, yet it is not mentioned in the discourses Turkish ministries.

### **COLLECTIVE AGREEMENT AND ECONOMIC WELFARE**

Other important factors as the indicators of development social policies are collective agreement and economic welfare. The ratios of collective labour agreement along with collective, effective and productive utilization of training personnel are 55 % in Norwegian and 45 % in the discourses of the Turkish ministries. Furthermore, the activities associated with labour rights in Norwegian government are quite more with respect to the ones mentioned Turkish ministries.

Guaranteeing the social rights in democratic welfare states depends on the deregulation of national economies. Hence, the relationship between globalization and welfare states in the future will depend on the decisions on nation states. In this respect, again in Norway, the ratio of the references towards promoting the welfare and happiness of citizens to support and accelerate economic, cultural and social development in national unity and cohesion is rather higher in the discourses.

### **EFFECTIVE PARTICIPATION**

While the ratio of increasing social awareness for the involvement of the groups of special interest and prevention of segregation is 63.6 % in Norwegian ministries, it is 16.6 % in the discourses of the Turkish ministries. Likewise, managing public contribution to the issues regarding healthcare services is 36.3 % in Norway. Nevertheless, the ratio of participation in the respective issues is only 8.3 % in the texts of Turkish ministries.

While there are no references to encouraging participation in national and international educational activities as well as strengthening participation in the arenas through the EEA agreement in the discourses of the Norwegian ministries, these issues are highlighted in the pages of Turkish ministries. It may have resulted from the fact that Turkey still needs participation in international education activities and recognition in the international arenas.

### **EMPLOYMENT**

Depending on the high rate of unemployment, there is a need to regulating and inspecting the work life in Turkey. The difference between the rates of full employment in Norway (50 %) and Turkey (17 %) supports this idea. Nevertheless, the ratios of developing projects for the employment of the groups requiring special policies are almost the same in Norway (33 %) and Turkey (37.5). It is the same for the employment of the disabled.

### **EQUALITY / EQUITY**

High rate of emphasis of equality appears to be quite higher in Turkey, which may have resulted from an acute need for that. Admittedly, the ratio of equality in labour opportunities is quite higher in Norway.

The ratios of Justice and equality as basic values are almost the same. Although gender equality seems to be stressed much in Turkey, it is hard to say that it is in fact exercised effectively. For instance, increasing rate of femicide in Turkey indicates the urgent necessity of education that should be provided as one of the preventive actions with regard to this serious problem. In the same way, it has recently been observed that more campaigns to prevent violence against women are launched and the mass media is used extensively to inform the public. Moreover, such efforts are supported with various law amendments. Moreover, kid brides is a tragic problem particularly in Eastern Anatolia.

### **GOVERNANCE**

The references to the restructuring public administration and the organization of state institutions and organizations as an objective are a great deal higher in Norway. Unlike Norway, Turkey is like a mosaic shaped by different religious and ethnic groups. Therefore, governance is a good administrative approach to enable such societies to form a solid basis. However, governance necessitates a particular democratic and participatory consciousness along with the existence of citizens who are aware of their responsibilities as well as problems and provide solutions accordingly. Consequently, in order to enhance the consciousness towards governance, organization of various conferences and seminars in Turkey are needed more in Turkey.

### **INNOVATION**

Fundamental innovations in the field of education are especially required in Turkey. As for encouraging self-development and following the innovations young business people, women entrepreneurs, small and medium-sized businesses and farmers are supported.

Economic openness leading to productivity growth through specialisation technology transfer and innovation is precisely higher in Norway. Moreover, innovation, modernisation and growth of the public sector seem to be attached importance in Norway.

Although the development of public sector is given importance, privatization is given virtually more weight in Turkey.

### **LEADERSHIP**

Providing education in leadership and advanced managing techniques is given great importance in Turkey as a developing country with the ratio of 67 %.

Although there is no reference to active leadership engagement in gender balance in Turkish ministries, the ratio of the discourses on this issue is rather high (50 %) in Norway. Likewise, while leadership responsibility to encourage active use of search committees in recruiting processes is not mentioned in the discourses of Turkish ministries, the ratio of the respective issue is 12,5 % in Norwegian ministries.

However, the ratios of leadership responsibility to ensure working conditions that make both men and women become successful, strong, healthy are quite close to each other Norway (25 % ) and Turkey (33 % )

### **NATION(AL)**

Developing countries are influenced most by the negative aspects of globalization particularly in economic and social sense. As a result of the fact that global policies are gaining power in social, political and cultural areas against national policies, the ratio of arranging and encouraging scientific meetings related to public administration in Turkey is rather higher than Norway. In the same way, implementation of new education strategies and policies for teaching and learning at national and provincial level is slightly higher in Turkey. Nonetheless, being influenced relatively less by globalization and having an advanced economy, references to fund and investment strategies are considerably high (78.5 %) while there are no references to this issue in Turkish ministries.

### **PRODUCTION**

While administering a strong, open, rules based international trading system is observed in the discourses of the Norwegian ministries, there are relatively no contextual references in the Turkish ministries. Nonetheless, giving importance to production based education as well as providing applied agricultural education is particularly highlighted in the discourses of the Turkish ministries, which again can be interpreted as an indicator of the need for education. Administering a strong, open, rules based international trading system is frequently referred within the context of Norwegian ministries, it is not mentioned in the discourses of Turkish ministries.

### **PROTECTIVENESS**

The ratio of the references to protecting mother and child healthcare, and family planning is slightly higher in Norway. While the ratios of assuring protection measures and providing a secure working environment for civil personnel are quite close to each other in the discourses of Norwegian and Turkish ministries, the ratio of privacy, actual and moral existence, principle rights and independencies of individuals for the protection and storage of individual data is somewhat higher in Norway.

### **PUBLIC ASSISTANCE**

Public administration both for citizens and businesses as well as having technology-savvy citizens and a public “plain language” project leading to significant reduction of time spent both by citizens and public administrations appear to be given importance in the texts of Norwegian ministries. On the other hand, in the discourses of the Turkish ministries the need for education is precisely highlighted.

### **SOCIETAL**

The discourses related to social security is precisely higher in Norway (89,4 %), social interaction appears to be given considerably more importance in the texts of the Turkish ministries. Furthermore, while social media is referred with the ratio of 10.5 % in the discourses of Norwegian ministries, there are practically no references in the texts of Turkish ministries.

### **DISCUSSION**

Lack of qualified personnel who can handle the operation, maintenance and repair of the equipment and apparatus that have been imported particularly in the field of medical science have necessitated the performance of such activities by foreign firms and thus Turkey has suffered currency loss. As a result of developing technology, those equipment have quickly become outdated and heaps of apparatus have emerged.

One of the fundamental reason why Norway is the first in recent United Nations Human Development Index might be the fact that a deep-rooted system has already been established, which enables individuals not only to understand the social problems, but also claim their social rights. Similarly, this system has been internalized in child and education. However, the majority of the population in Turkey, particularly those having a low socio-economic status, seriously needs to be aware of their social rights and also claim them. In the same way, these people constitute the fraction that is easily manipulated and influenced most profoundly by the media. Especially the TV serials play a noticeable role in this. Thus, the high ratio of the discourses relating to such issues stems from the necessity to raise awareness of the Turkish people.

In the discourses of the Turkish ministries raising awareness of contemporary understandings of citizenship through educational activities and also increasing the efficiency, quality and quantity of the services provided via e-State within the frame of citizen-oriented service transformation are pointed more. As seen, educational activities aiming to raise contemporary citizenship consciousness are in the foreground in the respective discourses. As social citizenship consciousness has already been acquired in Norway, there are rather less references to the respective issue.

It is an obvious fact that globalization has a considerable impact on social policies. Social policies pursued in different countries adapt globalization with respect to their levels of welfare. As globalization is structured around national institutions, the influence of it differentiates according to the country it is practiced. In addition, developed countries are influenced by the negative consequences of globalization particularly in socioeconomic dimension less than developing countries. For instance, privatization and the problems of workers have been solved within the frame of social state in developed countries; nevertheless, these problems are not held effectively in developing countries.

## CONCLUSION

A welfare state gives revenue assurance to individuals and families, protects them against social risks providing social security opportunities for them and also establishes standards for all citizens in the areas of education, health and social security no matter what their social status is (Flora and Alber, 1990: 29). Overall, in such a structure, government plays a significant role for the promotion and protection of the socio-economic welfare of citizens. As it is seen, all these are the important execution areas of social policies. The fight against poverty and unemployment, provision of minimum subsistence level, social security system and social reliefs, the practices of education, health and housing policies are the fundamental practice areas of social policies. The level of such practices and the security they provide clearly indicate the level of development as a social state.

As Koray (2012) suggests the social policy we exercise today, to a large extent, is a concept of the 20th century, which substantially depends on the developments in democracy and the “social citizenship” rights of the members of a society. Thus, even in the end of the 20th century, in many parts of the world where democracy and citizenship rights have not developed yet, it is hard to expect the establishment of inclusive and relevant social policies as it is hard to talk about democracy (Koray, 2012: 26-27).

Development of industrialization disregarding the environmental dimension, not considering applicable technologies together with the real conditions of Turkey, urban sprawl without considering the self-renewal capabilities of ecological basin, excessive and intensive use of natural sources have unavoidably caused air and water pollution. In other words, negative consequences of industrial projects have seriously been disregarded. Moreover, wrong urban settlement decisions have been made without seriously considering topographic and meteorological conditions.

With respect to the discourse analysis pertaining to the discourses of the Norwegian and Turkish ministries, it has been found out that there are practically more references to social citizenship and welfare state in the texts of Norwegian ministires and virtually more references to the educational activities aiming to raise awareness towrads governance, innovation, rights, effective participation

It should be noted that four factors are presented as critical for the creation of a successful e-government infrastructure: an educated citizenry; adequate technical infrastructures; offering e services that citizens need; and commitment from top government officials to support the necessary changes with financial resources and leadership. As mentioned in the discussion section, all these issues are stressed somewhat more in the discourses of the Norwegian ministries.

In developed countries where the practices pertaining to social policies and globalization are observed, most of the social responsibility campaigns that used to be carried out by the state have been transferred to private companies along with their brands. Most of these practices are conducted in the fields of environment and the disabled.

However, the areas needed in Turkey are education, health, unemployment, production and innovation. Therefore, it is noticed that the companies launching social responsibility campaigns do not act in accordance with the real needs of society. Although it is not directly their responsibility, these issues should be under the governance of the state. Therefore, value oriented social policies should be exercised on the basis of both the state and corporations. In the welfare states where social policies are firmly launched, strengthening the public institutions is given importance; however in Turkey, privatization seems to be given weight particularly with respect to the recent practices.

Not only the dimensions but also the aspects as well as objectives of the social policies exercised in each country are important and these aspects display differentiating characteristics with respect to the state perspective. Value oriented social policies should be exercised on the basis of both the state and corporations.

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## Evaluating The Psychometric Properties Of Turkish Version Of The Science Motivation Questionnaire

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### ABSTRACT

The aim of this research is to examine the validity and reliability of the Turkish Version of the Science Motivation Questionnaire (SMQ; Glynn, Taasooobshirazi and Brickman, 2008). Participants were 302 university students. The results of confirmatory factor analysis demonstrated that the 30 items loaded on five factors and the five-dimensional model was well fit ( $\chi^2=1353.45, df=390, RMSEA=.0091, NFI=.95, NNFI=.96, CFI=.96, IFI=.96, RFI=.94$ , and  $SRMR=.034$ ). The internal consistency coefficients were .94 for intrinsic motivation and personal relevance subscale, .75 for self-efficacy and assessment anxiety subscale, .92 for self-determination subscale, .84 for career motivation subscale, .87 for grade motivation subscale and .95 for the overall scale. The corrected item-total correlations of SMQ ranged from .21 to .77. Overall findings demonstrated that this scale is a valid and reliable instrument for measurement of individuals' science motivation.

**Keywords:** Science, motivation, validity, reliability, confirmatory factor analysis

### INTRODUCTION

Science education aims to provide students to stir sense of wonder about the scientific and technological developments, comprehend natural world, develop their information, experience and interests about jobs based on science, utilize scientific procedure and principles effectively and properly while making decisions, decide explicitly and definitively upon scientific subjects (MEB, 2005; YOK/World Bank, 1997). Motivation -one of the emotional components- is a process of acting in particular manners so as to meet their needs (Lefrançois, 1995; Sabuncuoğlu and Tüz, 1998). Students' interests and grades of subjects, sense of task, attitude and condition in the process of acquiring scientific knowledge, purposes are the components effecting the motivation of students (Tuan, Chin & Sheh, 2005). The most essential element influencing learning deeply is motivation (Ryan & Deci, 2000). Researches in the scope of motivation and learning demonstrated that personal goal inclination, meaning of a task, sense of self-efficacy, test anxiety, learning environment and purposes have an effect upon learning motivation (Barlia and Beth, 1999; Brophy, 1998; Garcia 1995; Pintrich and Schunk, 1996; Tuan and Chin ve Shieh, 2005). Motivation effects highly both learning and achievement. Students with high motivation make more effort on the tasks and activities in the classroom than any others (Wolters and Rosenthal, 2000). In addition, motivation has an influence on the frequency of the students' learning process and duration of an activity (Schunk, 1991; Barlia, 1999). According to Schiefele and Rheinberg (1997), motivation has an impact on three dimension of learning. These are sustainability of learning activities, form of performed learning activities and functional role of the student during learning process (Vollmeyer & Rheinberg, 2000). Science motivation of students is a multi dimensional notion which is influenced by individual properties of students and teachers, methods and techniques used in teaching process and the environment of learning activity. According to Lee ve Brophy (1996), providing students' motivation for a better understanding of science, and applying active methods and strategies to manage this motivation are the two properties to be based on while explaining students' science motivation (Barlia, 1999). In terms of constructivist teaching theory, students are the individuals who carry out permanent and meaningful learning process by combining the new knowledge with the existing knowledge (Palmer, 2005). When students understand concept and activities of science as important for themselves, the newly learned subjects are being more persistent. While learning a new term, students comment better on this term from the point of their prior knowledge, aim, interest and beliefs (Palmer, 2005). In this study, the adaptation of the Science Motivation Questionnaire to Turkish and the investigation of its psychometric properties are aimed.



## METHOD

### 2.1 Participants

The sample of this study consisted of 302 university students from Sakarya University, Turkey. Of the participants 202 were female, 100 were male. Their ages ranged between 18-36 ( $M=20.25$ ,  $Sd=2.07$ ) .

### 2.2. Procedure

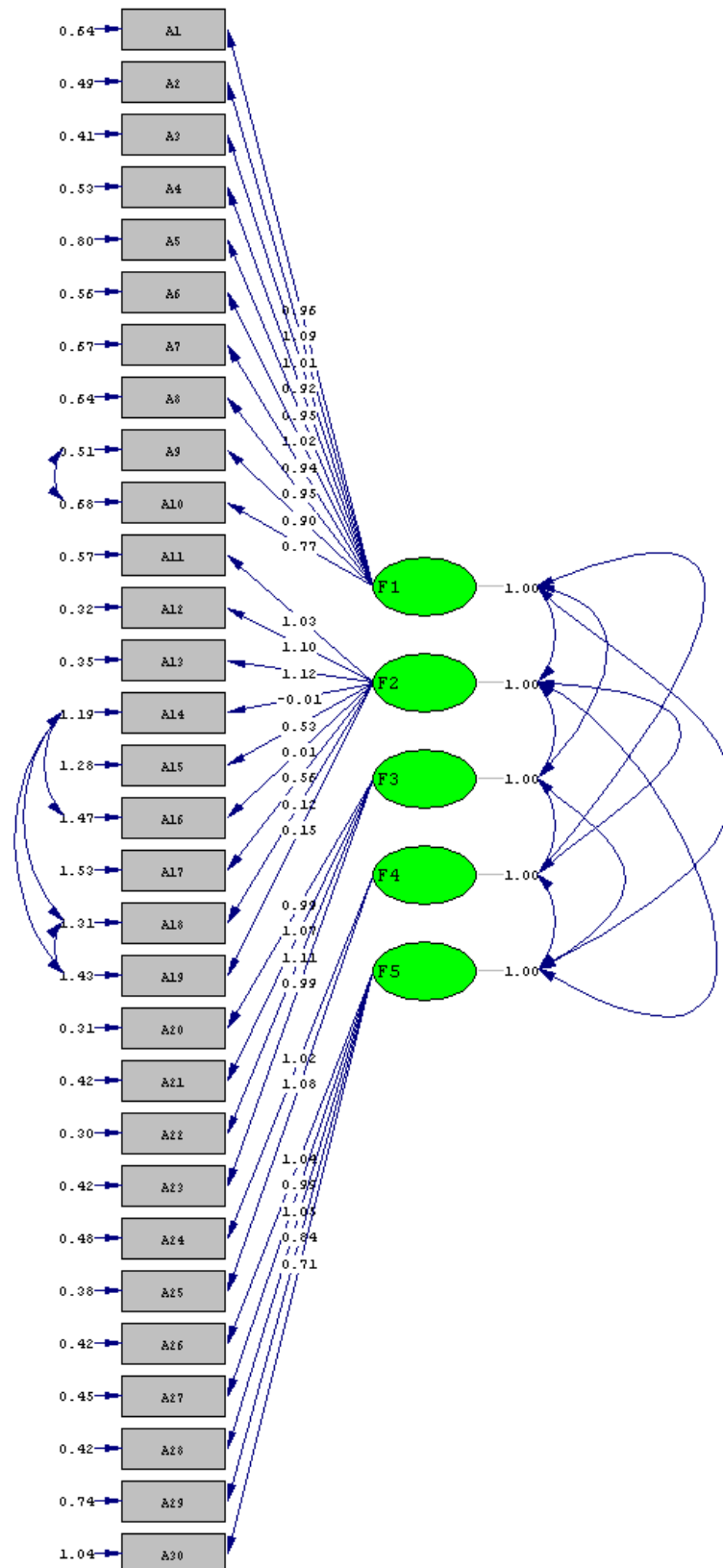
Following steps were taken for the adaptation of the scale. First of all, a permission was received to adapt the scale by the use of electronic mail. Firstly, English form of the scale was translated into Turkish by 4 English speaking instructors then the Turkish forms were translated into English again and language consistency and grammatical revision of the two forms were checked, and a trial form of Turkish scale was obtained. Secondly, the Turkish form of the scale was negotiated by 3 instructors who work in the departments of educational sciences and assessment, evaluation and the scale were prepared for the application with the final revision. In order to examine construct validity of the scale, confirmatory factor analyses (CFA) was applied. Reliability of the scale was examined with Cronbach's alpha internal consistency method and item analyses were investigated with corrected item total correlation. SPSS 22.0 and LISREL 8.54 (Joreskog ve Sorbom, 1996) were used for item and reliability and validity analyses respectively.

## RESULTS

### 3.1. Construct Validity

When investigators have clear or competing hypotheses about a scale – the number of factors or dimensions underlying its items, the relation between specific items and specific factors, and the association between factors, confirmatory Factor Analysis (CFA) is functional. In other words, CFA provides researchers to assess the degree to which their measurement hypotheses are consistent with actual data developed by respondents using the scale (Furr & Bacharach 2008). The results of confirmatory factor analysis demonstrated that the five-dimensional model was well fit.

( $\chi^2=1353.45, df=390, RMSEA=.0091, NFI=.95, NNFI=.96, CFI=.96, IFI=.96, RFI=.94$ , and  $SRMR=.034$ ). Factor loadings and path diagram of Turkish version of SMQ are presented in Figure 1.1



Chi-Square=1353.45, df=390, P-value=0.00000, RMSEA=0.091

**Figure 1.1** Factor Loadings and Path Diagram for the SMQ (F1= intrinsic motivation and personal relevance , F2= self-efficacy and assessment anxiety ,F3= self-determination, F4= career motivation ,F5= grade motivation )

### 3.2. Reliability

The Cronbach's Alpha internal consistency reliability coefficients of the scale were found as .94 for intrinsic motivation and personal relevance subscale, .75 for self-efficacy and assessment anxiety subscale, .92 for self-determination subscale, .84 for career motivation subscale, .87 for grade motivation subscale and .95 for the overall scale. The corrected item-total correlations of SMQ ranged from .21 to .77.

## DISCUSSION

The adaptation of the SMQ into Turkish and the investigation of its psychometric properties were aimed with this research. The fact that the factor structure was harmonized with the factor structure of the original scale, was indicated by CFA. Hence, it can be said that the structural model of the SMQ which comprises of five factors was well fit to the Turkish culture (Bentler & Bonett, 1980; Hu & Bentler, 1999; Schermelleh-Engel & Moosbrugger, 2003). The internal consistency reliability coefficients of the scale were high (Büyüköztürk, 2010; Kline, 2000). Taking into consideration that item total correlations having a value of .30 (Büyüköztürk, 2010). The results of confirmatory factor analysis demonstrated that the 30 items loaded on five factors and the five-dimensional model was well fit

( $\chi^2=1353.45$ ,  $df=390$ ,  $RMSEA=.0091$ ,  $NFI=.95$ ,  $NNFI=.96$ ,  $CFI=.96$ ,  $IFI=.96$ ,  $RFI=.94$ , and

$SRMR=.034$ ). Motivation is one of the primary components to construct knowledge in mind. After reviewing the research, unsuccessful students can be said to have low motivation. Motivation of learning science has a positive influence on academic success as well. Following the searches, a linear relationship was found between students' science learning and their motivation. Motivation variable can not be observed directly. It is the most crucial component which should be in purposive activities to receive a successful result in education activities. Students should be provided to be active in the learning process to raise their motivation. The students should be allowed to go through trial-and-error and learning by experience. This study can be developed to examine the relationships with different variables as well. For instance, it can be investigated how gender, education of parents, grades, learning strategies can effect motivation of learning science. Validity of science motivation scale can be increased by applying the scale to students of primary and high schools except from undergraduate students. The current research has some limitations. Sample size of the present study is an important limitation. Stated in other words, following studies should examine the same research questions with a wider sample size. A wider sample size may explain some correlations and so increase the validity of the results. If these results could be generalized to a larger population, applying this research in different rural areas of Turkey may represent. Another limitation of the present survey is that the sample consists of university students which limited the generalizability of the results. Therefore, it could be essential to survey the relationship of these variables in other sample groups. The fact that this scale had high validity and reliability scores were indicated by overall findings.

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## Evaluation Of Life Sciences Curricula In Turkish Elementary Education Regarding Outdoor Education

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### ABSTRACT

Outdoor education, supports students interpret their society, nature and the world via experiences, learning by doing. The purpose of this study is to evaluate the Life Sciences Curricula in Turkey from 1st to 3rd grade in elementary school education in terms of objectives, contents, teaching-learning processes and evaluation. Adding that, it is aimed at developing recommendations in covering afore mentioned aspects. The study was based on qualitative research which is consisting of teachers' perceptions and document analysis for life sciences curricula. Thus, data were collected by document analysis and semi-structured interviews made with 8 teachers working in the city center and towns of Kirsehir, Turkey. Critical case sampling was used for choosing participants. The content analysis which is from qualitative research method was used in this study. Data source of the study is all the gains in life sciences curricula of Turkey (grades 1-3). These courses are more relevant with life and experiences so that they were discussed in details in terms of outdoor education. Outdoor education activities in curricula are quite important for children's discovering, exploring, establishing cause-effect relation, observing and problem solving. Therefore, applying different approaches and techniques and improving education environment with different materials during outdoor educational activities play a significant role in reaching aimed targets in children. In this manner, the importance of outdoor education in early years, the basic features of outdoor education activities, process and concepts, the role of teacher has been included in this research.

**Keywords:** outdoor education, curricula, elementary education, teachers' opinions, Turkey

### INTRODUCTION

The most important characteristic of modern education is building a bridge between theory and practice. Practice in education can be supported with outdoor education as it is based on experience and learning by doing. The founding father of active education is John Dewey with his *Learning by Doing* concept, which underpins the basic theoretical assumptions of outdoor education as well (Bortoletti & Crudeli & Ritscher, 2014). All activities are done outside the classroom in order to enrich the curriculum (Lappin, 1997). Education outside the classroom is a term used to describe curriculum-based learning that extends beyond the four walls of the classroom (Stewart, 2005). It is based on the discovery approach to learning and it appeals to the use of the senses – audio, visual, taste, touch and smell for observation and perception (Lewis, 1975, p. 9). The relationship between the natural environment and human requires experiential learning, use of all senses, and focusing on interdisciplinary subjects (Priest, 1986).

Learning experiences which are conducted in class, have even the same content and same technic as outdoor learnings experiences. It is clear that they are different from each other owing to changing the atmosphere (Demirel, 2005, p.115). When it comes to types of outdoor activities, these are presented as follows: Field trips, performance tasks, going to cinema or theater, interviews with professionals or related people for specific area, archaeological excavations, museum education, using compass, mapping, creating projects for environment and society (Demirel, 2005).

Outdoor education aims to consider learning as an action-oriented process, emphasizing both development and knowledge of an active subject; anyway, a clear understanding of the term outdoor education is more than an exercise in semantic: a proper definition "it can help uncover some of the deepest and most longstanding problems with education itself" (Quay, Seaman, 2013, p. 1).

Quay and Selman (2013) states that outdoor education is based on two main approaches:

1. Learning methods that take place as the interface between experience and reflection, based on actual experiences in real-life situations;
2. An interdisciplinary conceptualization which implies, among other things:
  - a. learning spaces extended beyond the classroom and including natural environment and cultural heritage;
  - b. emphasis on the relationship between sensory experience and knowledge, giving great importance to where they take place.



The topic of outdoor education, however, is not limited to a scientific study of the natural environment. Studying about the out-of-doors also involves examining many cultural, aesthetic, and recreational aspects of the natural environment. Studying about the out-of-doors also includes an investigation into the interrelationship of the human being and the natural resources upon which societies depend, with the goal of stewardship in mind (Wilson, 1994). Outdoor learning programs may contain subjects such as knowing and protecting historical, cultural, and natural heritage, and ecological systems, using natural resources in a right and balanced way (Altın & Oruç, 2008).

Human; biological, psychological, social and cultural in all parts and as the change of both subject and object was discussed in 2009 life sciences curricula. From this point of view; “individual”, “society” and “nature” were determined as learning domains, “the change” accepted to include all learning domains as a general dimension. The contents of these learning domains and the change are one within the other in the real life and they only dissociate on the purpose of education and instruction. Three themes which contain all these learning domains were identified, especially as a purpose of mass instruction approach for life sciences courses. The names of these themes were agreed on “My School Excitement”, “My Unique Home”, “Yesterday, Today, Tomorrow” in the life sciences curricula (MONE, 2009). As specified, it can be said that life sciences course is related to experiences, society, community and as a matter of course human considerably. It has to be planned for society-based education by teachers, instructors. Society-based education creates the need of “out of class” experience. As it is, outdoor education is a must for life sciences course in elementary education. Thus, the purpose of this study is to evaluate the life sciences curricula from 1<sup>st</sup> to 3<sup>rd</sup> grade elementary school education in terms of objectives, contents, teaching-learning processes and evaluation and to identify views of elementary school teachers about outdoor practices in life sciences curricula.

## **METHOD**

### **Research Model**

This study is aiming to define the inclusion levels of outdoor education in Turkey life sciences elementary education curricula (grades 1-3) and to gather views of elementary school teachers about outdoor practices in life sciences curricula. It is a qualitative study which is conducted as a document analysis and semi-structured interviews. Document analysis includes the analysis of written materials containing the targeted facts. Elementary school teachers’ views on learning outside the classroom were explored by semi-structured interviews in this study.

### **Participants**

The study group included 8 elementary school teachers from primary schools in the city center of Kirşehir. Sampling critical case was used to select teachers who would be willing to participate in the study. Critical cases are those that can make a point quite dramatically or are, for some reason, particularly important in the scheme of things (Yıldırım & Şimşek, 2006).

### **Data Collection**

For the purposes of this study, the latest editions of elementary (1-3) life studies curricula were analyzed. In this study, Turkish life sciences curriculum that was approved with Head Council of Education and Instruction decision numbered 116 and dated 28.12.2010 and revised and updated by Department of Publications, Ministry of National Education in 2014 (MONE, 2009).

The other research data were collected via semi-structured interviews. An interview form was prepared by the researcher. One the interview form was examined by field experts, their corrections and additions were also considered. After the review of the form, a pilot interview was conducted with an elementary school teacher. Questions were redesigned after the pilot interview. Participants were required to exemplify their views to get data in detail. Interviews were conducted in the spring term of 2014-2015 academic years.

### **Data Analysis**

We used document analysis and content analysis for the data analysis of this study. Main activity in the content analysis is to gather similar data around certain concepts and themes, and to organize and interpret them in a style the readers can understand. Briefly, it is to reveal the concepts and relations to explain the gathered data. It is essential in a study to define the analysis unit to be used (Baş & Akturan, 2008).

### **Reliability and Validity**

Reliability in qualitative studies means whether the same results will be obtained in similar environments and whether other researchers are able to get the same results with the same set of data. Researchers compared the two sets of separate analysis results and controlled consistency. Yıldırım and Şimşek (2006) state that at least a 70% agreement between coders is required for reliability in qualitative studies. In this reliability study, a 90% agreement

between the researchers/coders is achieved. Validity in qualitative studies means observing the researched phenomenon as it is and through an impartial lens. In order to provide the validity of this research, we studied all gains in elementary life sciences curricula.

## FINDINGS

### Analysis of Turkish Life Sciences Curricula

Turkish life sciences curricula consist of three themes in 1st, 2nd and 3rd grades. The elementary life science learning themes include: “my school excitement”, “my unique home”, “yesterday, today and tomorrow” (MONE, 2009). Curricula were based on spiral construction when they were examined their rules and principles.

**Table 1. Gains of Outdoor Education in Life Sciences Curricula**

Life Science Curricula		Gains of Outdoor Activities	
		f	%
Early Grades	Grade 1	15	17,44
	Grade 2	17	17,89
	Grade 3	19	17,11
	Early Grade Total (1-2-3)	51	17,4

There are 86 gains in the first grade of life sciences curricula. 15 of 86 gains are related to outdoor education. There are 95 gains in the second grade of life sciences curricula. 17 of 95 gains are related to outdoor education. In the third grade of life sciences curricula there are 111 gains. 19 of 111 gains are related to outdoor education. Related gains have outdoor activity symbol in the curricula. Proportionally, the lowest level of outdoor education is in 3rd grade. However, in Turkish life sciences curricula, gains of outdoor have the highest inclusion level in 3rd grade (%17.11, n=19) among the grades learning social studies classes. This is followed by 2nd, (% 17.89, n=17), 1<sup>st</sup> (%17.44, n=15). The below gains statements quoted from Turkish social studies curricula can be given as examples for *the outdoor activities*.

- *Students observe freezing, boiling, vaporization while adults are cooking* (Early Grades, 1st grade).
- *Students recognize individuals in their family and introduce them.* (Early Grades, 1st grade).
- *Students observe transportation vehicles and categorize them. Their needs with available resources* (Early Grades, 2nd grade).
- *Students benefit from museums as an educational environment, they compare the old and new version of objects and they realize the change* (Early Grades, 3rd grade).

**Table 2. Types of outdoor activities in Life Sciences Curricula**

Types of outdoor activities	Grade 1 f	Grade 2 f	Grade 3 f	Total f
Trip	2	5	1	8
Observation	2	5	4	11
Diary	--	--	--	--
Questionnaire Study	--	--	1	1
Interview	2	1	2	5
Project	1	1	5	7
Performance Task	2	2	1	5
Research	4	2	3	9
Teamwork	--	1	3	4
Misconceptions-In door activity	2	1	1	4
Total	15	17	21	54

Table 2 explains types of outdoor activities for each grade level. Research has the highest inclusion level in 1<sup>st</sup> grade (n=4) and this is followed by trip, observation, interview, performance task (n=2). Trip and observation have the highest inclusion level in 2<sup>nd</sup> grade (n=5) equally and these are followed by research, performance task (n=2). Project has the highest inclusion level in 3<sup>rd</sup> grade (n=5) and this is followed by trip, observation (n=4), interview (n=3), performance task (n=3).

Totally, in life sciences curricula, observation has the highest inclusion level (n=11) among the grades life sciences classes. This is followed by research (n=9), trip (n=8), and project (n=7). Gains which are stated misconceptions have outdoor activity symbols in the curricula. Gains can be available in order to conduct outdoor activity. Nevertheless, when we examined these gains, they were indoor activity or there is not enough clearance of meaning about instruction whether outdoor or not.

The below activity statements quoted form life sciences curricula can be given as examples for *the* misconceptions sub-category.

*Our Values: This activity is based on observation but students just explain the importance of values in their family by giving examples from their own experiences (Early Grades, 1st grade).*

*Watch out! Fragile Objects: Students only bring some fragile objects from their homes and they classify objects according to what it is made of (Early Grades, 3rd grade).*

**Table 3.** Classification of Outdoor activities In Life Science Curricula

Classification of Outdoor activities	Individual Outdoor Activities	Group Outdoor Activities		Misconception	Total
		Small Group	Whole Class		
Grade 1	10	--	3	2	15
Grade 2	11	1	5	1	18
Grade 3	12	6	1	---	19

Some gains have two or more classification. For instance a gain which is related “outdoor” is stated “individual” or a “group study”. Individual outdoor activities have the highest level inclusion of curricula in all grades.

**Table 4.** Definitions and Descriptions of Teachers about Outdoor Education

Definitions and Descriptions of Teachers about Outdoor Education	f
Learning by doing, exploring	8
Learning with having fun	5
Permanent learning	3
All activities which are done out of school.	3
Implicit learning	1
Total	20

Teachers were asked about “How do you describe outdoor education?” A majority of teachers defined outdoor education as *learning by doing, exploring and learning with having fun*. Few teachers expressed that *permanent learning, all activities which are done out of school, implicit learning* could be defined as an outdoor education. Some teacher quotations are as below:

*“Outdoor education provides unconscious learning in other words implicit learning.”*

*“I can tell all activities out of school... Projects, research, interview etc.”*

*“Learning for life is a life-long process. All things out of class are related life. As the name implies, outdoor activity is a must for life science courses ...”*

**Table 5. Teachers' activities and practices about outdoor learning in life sciences curricula**

<b>Teachers' activities and practices about outdoor learning in life sciences curricula</b>	<b>f</b>
Field trips (factory, governor hall, park, museums, professional orientation etc.)	3
Homework, performance task	2
Project (group study)	2
Oral history, Interview	1
Outdoor activity for entertainments (funfair, party, zoo, circus etc.)	2
No outdoor activity for life sciences course	2
Total	12

Teachers were asked "What kind of activities and practices do you conduct for the life sciences courses?" A majority of teachers pointed out that field trips, homework, performance tasks, projects (group study) were conducted by teachers. Two teachers stated that they planned outdoor activities for amusement which were not related to life sciences curricula whereas other two teachers expressed that they did not conduct activities regarding life science courses. Some teacher quotations are as below:

*"I do not prefer outdoor activities in life sciences course even individual activities like interview, research, home-task etc... They take so much time."*

*"I usually prefer to organize outdoor activities for whole class to have fun."*

**Table 6. Teachers' views how to plan outdoor activities in life science curricula**

<b>Teachers' views how to plan outdoor activities in life sciences curricula</b>	<b>f</b>
Searching outdoor activity for the life course gain	7
Identifying physical conditions	7
Attaching importance to individual difference among students	4
Considering socio-economic factors	3
Official permissions	3
Having back up plan for outdoor activity	2
Asking for support from parents and school management	2
Total	28

Teachers were asked "How do you plan and organize the outdoor activity for the life science courses? Can you tell about the process?". When it comes to teachers' planning and organizing outdoor activities, firstly a vast majority of teachers stated that *searching outdoor activity for the life sciences course gain, identifying physical conditions* were most important factors and principles in life sciences course. Secondly, they pointed out that they attached extra importance to individual differences among students, considered socioeconomic factors and paid attention to official processes for outdoor activities.

**Table 7. Teachers' Views about Gains of Outdoor Education for Students**

<b>Gains of Outdoor Education for Students</b>	<b>f</b>
Permanent learning	9
Supporting learning by doing and having fun	8
Improving problem solving skills	4
Strengthening self-control, motivation	1
Gaining responsibility, self-confidence	1
Having tangible information	1
Support peer learning	1
Total	25

<b>Gains of Outdoor Education for Teachers</b>	<b>f</b>
Enriching teaching-learning process	5
Making easy learning process	5
Enhancing teaching skills	4
Saving time	3
Total	17

**Table 8.** Teachers' Views about Gains of Outdoor Education for Teachers

Teachers were asked "What kind of gains do your students/ you have when you conduct outdoor activity in life sciences course?". Clear majority of teachers stated that *permanent learning, supporting learning by doing and having fun, improving problem solving skills were gains for students* in tables 7 and 8. In terms of teachers; *enriching teaching-learning process, making easy learning process, enhancing teaching skills were most stressed statements by teachers*. Some teacher quotations are as below:

*"Students accept outdoor activity as an joyful activity. If the activity is well organized, they will not see it as a class."*

*"Fields trips, projects, research motivate students. They have permanent learning."*

*"If I organize an outdoor activity, I will make an extra effort, spend time. But no doubt that I strengthen my teaching skills and teaching-learning process."*

**Table 9.** Problems of Teachers tackled with for outdoor education in life sciences course

<b>Problems of Teachers tackled with for outdoor education</b>	<b>f</b>
Official permission, bureaucratic obstacles	11
Requirement of long preparation and practices period	9
Lack of teacher knowledge about outdoor education	5
Lack of parent support (economic)	4
Lack of school management support	4
Total	28

Table 9 shows that official permission, bureaucratic obstacles, requirement of long preparation and practices period are some important problems of encountered by teachers. Following problems were expressed by teachers' *lack of teacher knowledge about outdoor education, lack of parent support (economic), lack of school management support*. Some teacher quotations are as below:

*"Planning an outdoor activity for whole class is very exhausting process. We receive no support from school managers in terms of planning."*

*"Organizing a trip or a group study like a project is not an easy thing due to economic reasons. Parents' economic support is not possible especially in disadvantaged groups."*

*"I don't know how to plan and organize an outdoor activity."*

*"Life sciences curricula are not a viable guide for these kinds of activities. Besides, it is not enough to apply an outdoor activity."*



**Table 10. Suggestions of Teachers for outdoor education in life sciences course**

<b>Suggestions of Teachers for outdoor education in life sciences</b>	<b>f</b>
Outdoor education modules for teachers	5
Revising and enriching curriculum	4
In-service training for teachers	3
Special school budget for outdoor activities	1
Companies, non-profit organizations, non-governmental organizations must perform social responsibility projects about organizing well-qualified outdoor activities for schools	1
<b>Total</b>	<b>14</b>

Teacher made some suggestions about how to improve and strengthen outdoor learning for students. The greater part of teachers suggestions were *outdoor education modules for teachers, revising and enriching curriculum, in service training*. Few teachers suggested the need for a *special school budget for outdoor activities, social responsibility projects*. Some teacher quotations are as below:

*“Life sciences curricula are not enough to apply outdoor activities. Authorities on instruction and education enrich content of curricula.”*

*“Teachers should participate teacher training program about this issue. Planning this kind of activities worries me. I do not have enough knowledge and background about it.”*

*“Some companies, institutions can organize field trips, projects for children’s outdoor learning. It is also community service for companies.”*

## RESULTS and DISCUSSION

To sum up, gains of outdoor education have the lowest (n=51, 17.4%) level inclusion of life science curricula. Related gains have outdoor activity symbol in the curricula. Proportionally, the lowest level of outdoor education is in 3rd grade. However, in Turkish life sciences curricula, gains of outdoor have the highest inclusion level in 3rd grade (17.11%, n=19) among the grades learning social studies classes.

When analyzed types of outdoor education; observation and research were generally used in the life sciences curricula. It is showed that field trips, education in the nature (forest schools) which are defined the best active learning had the lowest level in the curricula. Yet; direct experiences in nature, a socio-critical understanding of human to nature relationships and teaching students how to manage risk, together with personal and social development work, remains a cornerstone of Outdoor Education (Gray&Martin, 2012). Similarly, main problems about field trips in the social studies course are defined as economic problems and bureaucratic obstacles in some studies. Outdoor activities were determined according to level of grade, seniority of teachers, type of school and size of class. Encouraging teachers and enhancement of the trip has been proposed to eliminate various obstacles (Demir, 2007). It is a well-known fact that permission process for students and procedures for trips are always time-consuming and tiresome. Nevertheless, teachers have to believe the importance of outdoor trips (Özür, 2010).

Results of the research also revealed that individual outdoor activities have the highest level inclusion of curricula in all grades. Individual activities are preferred more and widespread compared with small group activities. Because, ease of using, common-used, not requiring extra organization and effort. Best-known and commonly used one is homework (Gözütok, 2006). Additionally, small group study or whole class activity need to be planned comprehensively and conducted as an extra-curricular activity by teachers.

Teachers defined that learning by doing, exploring, and learning while having fun. Few teachers expressed that permanent learning, all activities which are done out of school, implicit learning could be defined as an outdoor education. It can be said that their expressions contain components of active learning theory. According to Malkoç (2014)’s research, teachers stated that outdoor education supported permanent learning, learning by doing, socializing for students, presenting visual elements. The other research; teachers from low socio-economic status schools defined learning outside classroom as learning in the family and social environment. It can be said that this is a result of lack of outside activity opportunities in these schools (Çengelci, 2013). When it considered from this point these researches have shown similarities with this research findings.

It can be said that field trips, homework, performance task, project (group study) were conducted by a majority of teachers in planning practice. Few of the teachers stated that they planned outdoor activities for amusement which were not related to life sciences curricula whereas the other two of the teachers expressed that they did not conduct activities regarding life sciences course.

Results of the study also revealed that teachers understand learning outside the classroom as learning through field trips and observations. Life sciences studies curricula needs to have multi-dimensional analysis and construct in comprehensively. That is to say; outdoor education which fails to account adequately for the development of particular programs, ignores important social, cultural, geographical and historical differences and as a basis on which to build outdoor education theory. Outdoor education must be understood not only in broad national contexts, but also in local and regional contexts, and that outdoor education programs must be understood as particular contributions to existing relationships between particular communities and particular regions. This requires a critical reappraisal of how experience is comprehended and geographical location accounted for in curriculum studies (Brookes, 2002).

When it comes to teachers' planning and organizing of outdoor activities, a vast majority of teachers first stated that searching outdoor activity for the life sciences course gain, identifying physical conditions were most important factors and principles in life sciences course. Secondly, they pointed out that they paid attention to individual difference among students, considering socioeconomic factors, official permissions for an outdoor activity. According to Polat (2006) and Malkoç (2014), physical conditions and equipment of schools are not sufficient level, in addition to class size is much more than usual and period of course is not enough to conduct outdoor activity. This finding is consistent with the research findings about problems which teacher tackled with relatively in outdoor practices.

From this point, teachers change took place at three levels: philosophy, values and understandings, programming and resource use, and finally, teaching and learning strategies. It is at the nexus of these three levels where the most effective shifts in pedagogy were achieved. As the social, economic, and environmental issues that now loom so large in our collective consciousness become increasingly prevalent in the 21st century, teachers will need to re-consider the purposes of their educational endeavors. Specific examples of sustainability initiatives that teachers can implement in their outdoor education programs and practice may also be useful for educators (Hill, 2012).

It is understood that a clear majority of teachers stated that permanent learning, supporting learning by doing and having fun, improving problem solving skills were gains for students in terms of teachers' views about gains of outdoor education for teachers and student. From teacher's part; enriching teaching-learning process, making easy learning process, enhancing teaching skills were most stressed statements by teachers. Learning outside the classroom can be defined as learning about the world by seeing places and processes to acquire knowledge, skills, and attitudes (Çengelci, 2013). According to Thorburn and Allison (2010), outdoor education also helps and supports students in order to express their values and needs. From the teacher's part; the new overarching "Curriculum for Excellence" (CfE) guidelines encourage teachers to make full use of their increased professional autonomy and decision-making responsibilities to review the curriculum planning and pedagogical possibilities of implementing high quality teaching interventions which can inspire learners. Specific CfE through Outdoor Learning (CfEtOL) guidelines provide a rationale and support advice for increasing schools (Tholburn & Allison, 2010).

Teachers faced with problems regarding official permission, bureaucratic obstacles, needing so much time are some important problems encountered by teachers. This finding resonates with Çengelci's (2013) research. Teachers experienced problems about time and students' behaviors as well as economic problems, and bureaucratic obstacles regarding outdoor learning.

In the study, it is also understood that the great part of teachers offered outdoor education modules for teachers, revising and enriching curriculum, in service training. Few teachers suggested special school budget for outdoor activities, social responsibility projects. Seminars regarding the purpose, scope, planning, practice, and assessment of learning outside the classroom can be organized for teachers. As outdoor practices result in positive and effective, that is suggested to be generalized. The most effective way to educate teachers about this topic is to train them in regular basis (Gözütok, 2006). Families also have an active role in conducting outdoor activities. Hence, families should support such endeavors financially and emotionally. They may need to be gained education of awareness about outdoor teaching and learning process (Özür, 2010). To sum up, life science studies have to have the highest level of inclusion as the course is life itself and it is suitable for learning outside the classroom in order to make children active members of a democratic society.

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## Evaluation Of Selection Criteria Of Schools Principal In Turkey: A Qualitative Study In Order To Define Appropriateness Of Selection Criteria Of School Principal From The Point Of View Of Participants

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### ABSTRACT

The purpose of this study is to evaluate the criteria utilized to select school principals from the point of view of participants who participated in principal selection process in Turkey. In this study, the criteria utilized in the selection process of school principal were evaluated by participants who appointed or not appointed at the end of the process as a school principals. A semi-structured interview form was used for data collection and the descriptive analysis was used for analysis of data. The interviews were conducted with 24 participants in the province of Istanbul and Canakkale. They were found that General and Specific Features were found appropriate and sufficient from most participants. Even though, there were slight disagreements among participants regarding appropriateness of criteria of personal features being evaluated, most of the participants thought they were sufficient. The most controversial criteria were award types owned by participants and the points assigned to the awards. Almost all of the participants do not agree upon both the type of the awards and the points assigned to the awards. Another topic of discussion is influence of the interview on result and its content. More than half of the participants emphasized that both impact of the interview on overall result and its content neither fair nor objective.

**Key words:** criteria evaluation, evaluation of criteria, principal selection criteria in Turkey.

### INTRODUCTION

In Turkey, as in many other countries, one of the important factors that influence the success of an educational institution is the qualifications of principals of the institution. In general, the success of an educational institution has positive correlation with the qualifications of the principals of educational institutions, and even the success of educational institutions cannot exceed the success of the administrator department is a fact that widely accepted. Nevertheless, selection of competent principals who deserve position is hotly debated for many years in Turkey. Every government that has ruled has different criteria for selecting principals who are capable of those positions. Main issue while selecting talented principals who deserve the position is which set of criteria is more suitable in order make right decision. It is necessary that before evaluating qualifications of prospective principals, criteria that judgments are based on for evaluation must be determined.

Evaluation is to determine worth and merit of whatever evaluated (programs, products, quality, etc.) by comparing identified and clarified criteria (Scriven, 1991, p.139; Fitzpatrick, Sanders and Worthen, 2004, p.5; Stufflebeam and Coryn, 2014, p.9). As seen from the definition, selection of criteria is main determinant for relevant evaluation. In other words, without identified and clarified criteria, it is not possible to conduct rewarding evaluations that serve its objectives. It could be concluded that defining appropriate criteria for evaluation are starting point for evaluation and have vital importance in evaluation process. It is a well-known fact that while defining criteria for evaluation, getting opinions of participants who are affected from evaluation process more humanistic and democratic. As Posavac (2011) stated that criteria for a specific evaluation are selected in close cooperation with stakeholder would yield more fruitful results. For this reason, evaluation criteria could be evaluated in terms of appropriateness and suitability by participants whose qualifications are subject to evaluation in order to succeed aim of evaluation. If criteria developed or selected neither appropriate nor suitable for the purpose of the evaluation, failure of the evaluation is inevitable.

Turkish Ministry of National Education (MoNE) published a regulation regarding Appointment of Managerial Staff (principal, vice-principal) on 14<sup>th</sup> June 2014 in Official Journal and changed most of the criteria which were

in practice until that date. New principals were selected in November-2014 according to criteria published in Official Journal and this selection process called “November 2014”. Main problem for the study is that criteria utilized for selection process of school principals have not been evaluated yet from the point of view of participants. Therefore, aim of the study is to evaluate criteria utilized selection process of school principals for helping to select more competent principals deserved. Evaluation of criteria is a process for determining the validity of the criteria utilized in the evaluation and appropriateness for purpose.

## THE STUDY

In this study, general survey model was used since it aims to describe current situation, what participants thought about selection criteria, as it is. Because the survey aims to describe without affecting the effort of participants or result, validity and appropriateness of selection criteria have been tried to be determined from the perspective of the participants. Moreover, some of the criteria are compared with other countries’ criteria at the the end of the study.

A semi-structured interview form was used in order to collect research data. A Semi-structured interview was planned carefully before the interview was carried out. Researcher could change the order of questions, omit questions, or vary the wording of the questions depending on what happened in the interview. The researcher might also add other questions during the interview to probe unexpected issues that emerge (Lodico, Spaulding&Voegtler, 2010, p.124). Semi-structured interview form was created based on official documents that include rules and principles of selection process published by Ministry of National Education on 14<sup>th</sup> June 2014. Summarizing all of the official documents regarding selection process of the principals, there are three groups of criteria as it is shown table1.

Table 1: Groups of criteria, main criteria, sub-criteria, point of each criteria/performance and decision rule.

Group	Main Criteria	Sub-Criteria	Status of criteria
Group A-Pre-requisite Criteria	General Features	-Having higher education degree -At least to be a teacher -There should be branch -No judicial or administrative investigation in last 4 years	These criteria are <b>compulsory</b> to be able to apply. Without complying any of those criteria, it is not possible to apply for being principal.
	Specific Features	Having served as a; *principal at any time any duration or *vice-principal (head) 2 years or *founding principal, vice-principal and teacher with principal authority 3 years or *branch manager at a local educational authority or higher duties at any time any duration or *teacher 8 years	
Group B	Education and Training	*Associate & Bachelor (up to 4 years): 1 point/each year	If an applicant obtains/provides some of these qualifications s/he would get points assigned to the qualifications. More education and training, more experiences etc. mean more points. Group B criteria show performance of an applicant.
		*Graduate degree } 5 point in management field	
		*PhD Degree } 10 point in management field	
	Experiences	*Teacher point/each year :0,36	
	Serving as a;	*Founding principal, vice-principal and teacher with principal authority :0,38 *vice-principal (head) point/each year :0,60 *Principal, branch manager at MoNE or/LEO* :0,72 LEO: Local Educational Authority	

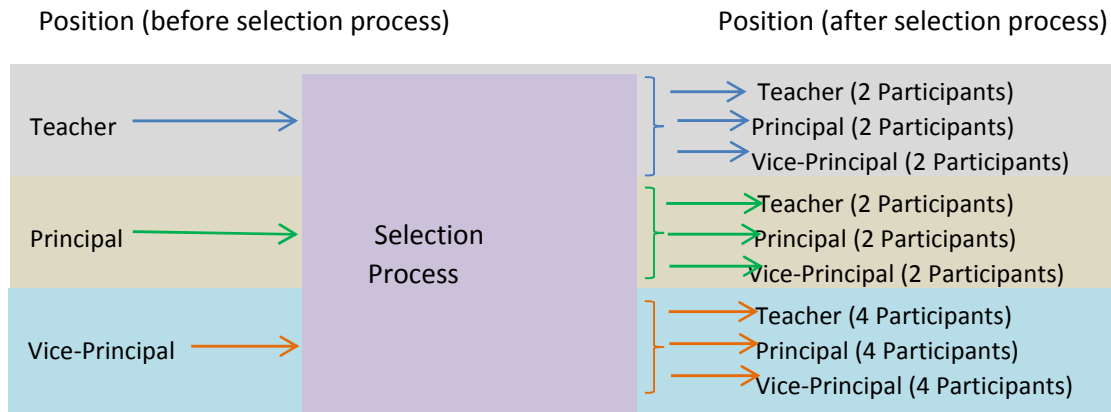


	Awards	*Certificate of success : 1 point each one (only one is acceptable) *Certificate of high success : 2 point each one (only one is acceptable) *Award with salary : 3 point each one (only one is acceptable) *Award for international success : 5 point each one (only one is acceptable)	
	Punishments	*Condemnation (Except those pardoned) : -1/each time *Stopping Salary (Except those pardoned) : -3/ each time *Stopping degree improvement (Except those pardoned) : -5/ each time	
Group-C	Interview	Subjects for interview; knowledge on general and educational laws (657, 1739 etc.), analytical thinking and analyzing ability, represents ability and level of merit, reasoning and comprehension level, communication skills, confidence and the ability to persuade, general culture. Interview committee consists of five members. Total point is calculated based on mean of each member's point.	This is final criteria and it is <b>compulsory</b> to get 70/100 points from interview for being candidate in order to be appointed as a principal. Under 70 point, it is not eligible.
Decision: An applicant must provide Group A Features and get minimum 70 point from interview. 50% of interview point and 50% of Group B total point provide applicant an application point. E.g if an applicant gets 80 point from interview (50% of 80 equals to 40) and total 40 point (50% of 40 equals to 20) from Group B, his/her total point would be 60 (40+20) for application. After getting application point, absolute evaluation is applied for appointment.			

In the semi-structured interview form, all of the criteria and sub-criteria are included for determining their appropriateness and validity for the aim of the selection process. For content validity, six field experts' opinions were taken into consideration and form was revised based on feedback of experts. After piloting done, final version was ready to be used. There are 14 open-ended questions in the final version of semi-structured interview form.

The interviews were conducted with 24 participants in the province of Istanbul and Canakkale. Purposeful sampling was used to select participants. The goal of purposeful sampling is to select persons, places, or things that can provide the richest and most detailed information to help us answer our research questions (Lodico, Spaulding&Voegtler, 2010, p.134). In order to apply purposeful sampling, participants were selected according to (1) whether they go through selection process, (2) their status of before and end of the selection process. Figure 1 shows, participants' positions before and after selection process and number of participants from each position. For vice-principal position, there were 4 participants at each category since this category consists of both vice-principal and chief vice-principal (müdür başyardımcısı) level.

**Figure 1:** Positions of participants before and after selection process and number of participants from each position



Each interview takes 25-35 minutes. After getting permission of participants, interview was recorded by audio recording. First, demographic features of participants were recorded, then, interview was initiated.

For analyzing collected data;

1. All of the audio records were transcribed without any changes made.
2. Codes were assigned based on the themes created in semi-structured interview form.
3. In accordance with thematic framework created in the form, frequencies of each theme were defined.
4. Findings were supported by direct quotations and interpreted.

According to Yıldırım and Şimşek (2005) direct quotations made descriptive analysis more clear and dramatic. (p.224). P letter is assigned for each participant and numbers are given from 1 to 24.

## FINDINGS

After analyzing data, findings presented criterion by criterion evaluated by participants. First criterion is pre-requisite and about General Features. Content (sub-criteria) of first criteria are shown above Table 1. Table 2 summarizes appropriateness of first criteria from point of view participants.

Table 2: participants' opinions regarding appropriateness of first criterion, General Features.

Is the first criterion is appropriate as a prerequisite General Feature?	f	Is there any article to these Features that you want to add or remove?	f
Appropriate and Sufficient	15	No	10
Inappropriate	7	Yes	11
No opinion/answer	2	No opinion/answer	3
Total	24	Total	24

As seen from table 2, more than half of the applicants (15 participants) agree that General Features required before application are appropriate and sufficient. But some of applicants think it could be different. Comment(s) were excerpted regarding first criterion as examples;

*For me, general Features are appropriate and sufficient. There is no need for more details. There was no need for any article(s) to be added or removed (P8). Good enough (P15). General Features are short and enough as it should be. There should not be tight restriction (P19). There should be 4 years BA degree instead of higher education degree since there are some principal in the educational system who hold 2 years*

As seen from Table 1, second criterion is prerequisite and about Specific Features. Participants' opinions regarding appropriateness of second criterion are summarized in Table 3.

Table 3: Opinions of participants regarding appropriateness of second criterion, Specific Features

Is second criterion appropriate as a prerequisite Specific Feature?	f	Is there any article that you want to add or remove to these Specific Features?	f
Appropriate and Sufficient	13	No	13
Inappropriate	8	Yes	8
No opinion/answer	3	No opinion/answer	3
Total	24	Total	24

Table 3 shows that a bit more than half of the applicants (13 Participants) agree that Specific Features are enough to select competent principals who were worth and merit to execute their duties. Some comments regarding Specific Features are as exemplified in the following excerpts.

*There should be some experience at vice-principal level. It is not true to be principal from teacher position (P3). ..... It would be good having an expertise in a field like graduate degree in administration either education or general (P13). ..... Principals should have leader potential and real leader. Should behave objective, clear, and explicit. Should not exclude anyone because of his/her political and religious choice (P20).*

Table 4 shown below summarized the opinions of participants regarding appropriateness of third criterion about Education. Details of education are in above Table 1.

Table 4: Opinions of participants regarding appropriateness of third criterion, Education.

Is third criterion appropriate for choosing worthy of principal?	f	Is there any article that you want to add or remove to this criterion?	f
Appropriate and Sufficient	17	No	9
Inappropriate	5	Yes	13
No opinion/answer	2	No opinion/answer	2
Total	24	Total	24

As seen from above table 4, more than half of the applicants (17 participants) think that criteria regarding Education appropriate and sufficient. Comments are as exemplified in the following excerpts on third criterion;

*This criterion about Education and points assigned them are appropriate and right. (P16, P18). ...In-service training should be included (P23). To graduate and doctorate degrees at educational administration could be given more point. It could be encouragement for teacher to get these degree and there should be clear difference (P12, P14) ...there should be exception for candidates who have PhD degree in educational administration level. They could be able to be principal without any selection process (P2)...there should be difference between graduate degree with or without thesis (P24).*

Fourth criterion related to Experiences is summarized in below Table 5. It could be seen appropriateness of the criteria from the point of view of participants.

Table 5: Opinions of participants regarding appropriateness of fourth criterion, Experiences.

Is fourth criterion appropriate for choosing a good principal who has merit?	f	Is there any article that you want to add or remove to this criterion?	f
Appropriate and Sufficient	9	No	14
Inappropriate	7	Yes	9
No opinion/answer	8	No opinion/answer	1
Total	24	Total	24

As seen from above table 5, less than half of the applicants (9 participants) agree that Experiences and points given to them appropriate and sufficient. However, most of the applicants who don't agree concerning appropriateness think only points aren't suitable to type of experiences. The following excerpts are examples on fourth criterion concerning Experiences.

*Types of experiences (as a teacher, vice-principal, principal) and points are assigned to these experiences normal and reasonable (P21) ...teachers' point could be increased... (P8, P9) ....more points could be given to duration of administration positions (principal, vice-principal) (P4, P5, P11) ...different points for different region(s) more appropriate (P12).*

For selection of principals, fifth criterion is related to Awards given to educational staffs for of high performance. The extent to which Awards and points assigned to them appropriate are shown in below Table 6 from viewpoint of participants.

Table 6: Opinions of participants regarding appropriateness of fifth criterion, Awards.

Is fifth criterion appropriate for choosing a talented principal who has merit?	f	Is there any article that you want to add or remove to this criterion?	f
Appropriate and Sufficient	13	No	1
Inappropriate	8	Yes	20
No opinion/answer	3	No opinion/answer	3
Total	24	Total	24

As seen from above table 6, more than half of the applicants (13 participants) presented their opinions that criteria concerning to Awards appropriate and sufficient. Participants expressed their opinions as follows;

*Points given to each category of awards are suitable but reasons why those awards given to those person is unclear (15 participants), ....there is no fair standard when awards are given to person (10 participants), ...it is better to omit award section from criteria (P2, P3, P8), .....before giving award to someone, everyone's opinions at school should be considered in a school (P15), .....awards should be given based on objective criteria (P19).*

Sixth criteria are concerned to Punishments that are given to inappropriate behaviors of educational staff. Opinions of the participants regarding appropriateness of Punishments criteria and points assigned to them are summarized below Table 7.

Table 7: Opinions of participants regarding appropriateness of sixth criterion, Punishments.

Is sixth criterion appropriate for choosing a competent principal who has worth and merit?	f	Is there any article that you want to add or remove to this criterion	f
Appropriate and Sufficient	16	No	13
Inappropriate	4	Yes	3
No opinion/answer	4	No opinion/answer	8
Total	24	Total	24

As seen from Table 7, more than half of the applicants (16 participants) stated their opinions that Punishment criteria and points assigned them are appropriate but main concerns are how Punishments were given to those staff. Some of excerpts as an example as follow;

*Types and cutting points for punishment are normal but it is crucial how they were punished, reason. There should be clear evidence for punishment (P24), if a candidate has a punishment of stopping degree improvement, s/he cannot become a principal. This should be prerequisite (P2). ... For me, it should be omitted from selection criteria as most of the Punishments are given unfair way (P12).*

Last and most important criterion is Interview since an applicant get less than 70/100 point, s/he is unable to be evaluated. For this, interview is final criterion that has direct influence on the result.

Table 8: Opinions of participants regarding appropriateness of seventh criterion, Interview.

Do you think interview is appropriate for choosing a good principal who has worth and of merit?	f	What do you think about content of the Interview and 70/100 point barrage in the interview? Are they fair?	f
Appropriate and Sufficient	18	No	18
Inappropriate	4	Yes	3
No opinion/answer	2	No opinion/answer	3
Total	24	Total	24

As seen from Table 8, most of the applicants (18 participants) agree that Interview is reasonable and appropriate in order to select better principals. However, most of the participants, who agree that this criterion is normal, think there should be barrage (quota) in order to select better ones but content and barrage of the Interview are not relevant to purpose. Some of participants' opinions are as exemplified in the following excerpts.

*There should be a barrage (P3) in order to select better one. Otherwise, it is not possible to appoint every candidate as a principal (P19) ....barrage is normal (P8, P11), and ideal (P9).....barrage is just for formality (P10) ... I think 70/100 barrage from interview is well-planned strategy in order to prevent candidates who are member of different trade union from authorized one (P20).*

## CONCLUSIONS AND SUGGESTIONS

Results of the study revealed that most of the criteria utilized for principals' selection process are appropriate and valid. However, some of the criteria are considered reasonable but hotly debated like 70/100 barrage in Interview, Awards and Punishments. It could be better to examine criterion by criterion.

Findings show us that participants in the selection process of school principal agree that; General and Specific Features are accepted appropriate as prerequisite criteria by participants. Nonetheless, most of the participants emphasized that there should be an item as a prerequisite under specific condition: before become principal, there should be, at least, vice-principal position but it is in common practice, e.g in Finland (Halasz & Pont, 2007, p.21; Alava, 2007, p.29) case, in the world to be principal from teacher position (Tipale, 2012, p.19; Lohmar & Eckhardt, 2013, P.213). Hence, this General and Specific Features can continue as a prerequisite criteria as it is.



Concerning third criteria, Education, in Turkey it is advantageous to have graduate degree or doctorate degree either educational administration department or teacher's subject matter. If you have one of these degrees it provides to you more points that means more chance to be appointed. However, having a graduate degree is essential in order to be school principals in some countries (Recepoğlu&Kılınç, 2014, p.1829). In addition, many of the countries prefer (not prerequisite) candidates who hold graduate degree to be appointed as a principal or having a certificate in educational administration (not graduate degree) gives more chance to be appointed (Tipale, 2012, p.20). As a result based on research finding and world perspective, Education criterion could remain the same in Turkey. Graduate and doctorate degrees should provide more chance but should not be prerequisite criterion. Nevertheless, as Şimşek (2004, p.6) stated graduate programs in educational administration in Turkey are more theoretical and it is better to change content to case study, problem-based, clinical applications in schools approaches (Anderson, 1991, p.13).

Regarding Experiences, most of the participants satisfied criteria and points assigned them but some of the participants from different positions (teacher, vice-principal, principal) have distinct recommendation for points assigned to positions Hence, it seems enough and it is better to remain the same.

Most discussed criteria are Awards and Punishments. Different from Punishments, Awards are more subjective and if a principal request from authorized offices it is more or less given to educational staff. This situation makes it queried. Based on finding, like other criteria, they are sufficient but it is hotly debated how they are given. It could be more objective if they are given based on more clear and objective measures. Otherwise, Awards section could be omitted from criteria list.

Interview is the most widely used and most influential selection technique among the others. Sometimes, it is used complementary tools with written exam in some countries (Taipale, 2012). If it is used correctly, it could help decision maker to select talented principals but if used incorrectly, it is neither valid nor reliable (Anderson, 1991, 41). In Turkey's case, interview is used with other criteria but still it is essential to be principal to get 70/100 and it makes it controversial. Most of the participants think that there should be interview but content of the interview should be changed towards more realistic approaches like case study, problem-based and simulation etc.

Additional criteria recommended by participants that foreign language knowledge could be able to considered. It could be given extra points not as a prerequisite.

To sum up; Criteria for selecting principals should be revised and redefined based on opinions of all stakeholders and broader research results in order to select more talented principals for positions. Before deciding on criteria exactly, opinions from below stakeholders should be considered;

- related person from Ministry of National Education
- person from all trade unions for teachers
- teachers and principals.

In addition, Interview could remain as a criterion in selection process but commission (board) should be consisting of not only person of MoNE but also other governmental organizations like universities and trade unions (multi-member committee). And, content of it must be revised. Moreover, Awards may remain if there are objective standards to which they were given.

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## Evaluation Of The Use Of A Course Management System (CMS) In A Business School

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### ABSTRACT

The main goal of this research project was to measure the efficacy of a Course Management System (CMS) in a business school at a university located in central Mexico based on its objectives. The study attempted to establish the CMS functionality, strengths and weaknesses. Additionally, it intended to determine whether the system responded to the technological demands of teachers and students in order to support the educational processes. Two strategies were used to answer these research questions. The first strategy was to hold interactive sessions with focal groups which included system administrators and school authorities. The second strategy was to conduct a survey with teachers and students. Results show that the personnel responsible for providing CMS services are its main strength, together with the technological infrastructure which supports this system. The survey also reveals that teachers and students have a positive opinion of the CMS. In broad terms, results demonstrated that the CMS is working properly.

### INTRODUCTION

The business school which carried out this project is part of a public Mexican university, whose program for the years 2013-2017 proposed different lines of action that contribute to the improvement of quality education. According to the National Association of Universities and Higher Education Institutions (ANUIES in Spanish), quality education means that “*processes are efficient, results are accurate and both processes and results are in line with social expectations and demands*” (ANUIES, 2006).

This project sought one specific line of action: to consolidate the use of new approaches to education and the use of Information and Communication Technologies (ICTs) in teaching and learning processes (Villar, 2012). In this context, the school started by working towards a new curriculum in 2004 by evaluating internal and external congruence of its undergraduate programs. (Facultad de Contaduría y Administración, 2006). As a result, during the school period August-December 2006, the new Curricular Model was adopted (Facultad de Contaduría y Administración, 2006). At present, this business school offers five undergraduate programs under a face-to-face modality: Bachelor in Public Accounting, Bachelor in Management, Bachelor in Public Administration, Bachelor in Agribusiness and Bachelor in Marketing. The student population is made up of 3750 students, who are catered by a faculty of 262 professors (Villar, 2014). One of the most important actions to enhance quality education at this school was to adopt a second version of a CMS in the year 2012. Ever since the system was installed, however, it had never been evaluated, making it difficult to predict whether it was working appropriately, its strengths and weaknesses, or teachers’ and students’ demands from the system.

### THE STUDY

According to literature, evaluating an educational program or the services offered by it must rely on the need to make the appropriate decisions to apply strategies that support a good administration, or the adoption of new policies which enable effective service or product delivery with good quality. More specifically, the purpose of these evaluations is to gather information in order to make such decisions (Gall, Gall y Borg. 2002).

In this light, the evidence that suggested the need to evaluate the CMS at this business school, was a resolution by the Technical Advisory Committee-TAC (Comité Técnico Consultivo in Spanish). The TAC is an institutional advisory body, made up of different members who represent all the community at this school including students, teachers and researchers. The aforementioned resolution stated the need to evaluate the programs and services offered at the school, including the use of the CMS, in order to find the degree of quality education at this institution (J. M. Buenrostro, personal comment, April 14, 2013).

Bearing this in mind, the problem stated for this research project was the need to evaluate the CMS in order to establish its efficacy in terms of the following objective: to offer a good quality service through the internet, with several tools to help teacher and student development and training at this business school (Facultad de Contaduría y Administración, 2008). Moreover, CMS strengths or weaknesses had not been established, neither had students’ and teachers’ opinions towards the services offered by the system been determined. There was not any evidence either of how the CMS was responding to the technological needs of teachers and students to support the educational processes.

### *General objective of the Study*

To evaluate the use of the Course Management System (CMS) in a business school at a university located in central Mexico, in order to measure its efficacy based on its objectives. The study focused on the identification of strengths and weaknesses to establish the CMS functionality and quality, as well as the way in which this course has been responding to the teachers' and students' technological demands to support their educational processes.

### *Literature review related to the research problem*

Some of the conceptualizations revised were: Program Evaluation; Program or Educational Services Evaluation; and Course Management System (CMS) and their relationship with the research problem. Each of these concepts is described below.

*Program Evaluation:* According to Stufflebeam y Shinkfield (1987) *Program Evaluation* is a process of identifying, obtaining, reporting and providing useful and descriptive information about the value and merit of the goals, planning, implementation and impact of a given object (p.183).

These authors also pointed out that there are three objectives of the Evaluations: a) to guide decision making, b) to solve responsibility problems, and c) to promote the understanding of the phenomena involved with the evaluated object. As for the evaluation of the use of the CMS, the purpose was the decision making for the design of strategies or policies that contribute to the improvement of the education quality at the institution.

*Program or Educational Services Evaluation.* Fitzpatrick, Sanders, and Worthen (2004), defined program or educational services evaluation as the identification, clarification and application of criteria which can be used to determine the value of the object being evaluated. The evaluation criteria must be created with the help of all parties involved and each criterion should be discussed. For this particular project, the criteria were formulated with the help of CMS administrators, school authorities, teachers and students.

*Course Management System (CMS).* According to Graft y Albright (2007), a CMS is a technological platform which can be found as part of a learning management system or as a single and independent system. The authors defined a CMS as a program that builds the structure which allows teachers to create and manage courses, mainly based on the web. Among the actions a CMS allows are: a) synchronous communication through chat, an electronic board and video links; b) asynchronous communication through forums, notices, email, and an activity calendar; c) interaction among all the participants in the educational process from any place at any time; d) electronic data transfer; e) evaluation of activities with immediate feedback; and f) access to general information and session updates (Cuevas-Salazar, 2007).

### *Research Questions*

There were four questions formulated for this project:

1. Which are the strengths and weaknesses of the CMS used in a business school at a university in central Mexico?
2. How is the quality of services offered by the CMS evaluated by teachers and students in a business school at a university in central Mexico?
3. What do students and teachers demand from the CMS in order to help educational processes in a business school at a university in central Mexico?
4. How does a CMS work in a business school at a university in central Mexico?

### *Methodology*

*Research Design.* Non-experimental, mixed type. Quantitative and qualitative data was obtained (Creswell, 2012).

*Participants.* Participants in this study were from four specific populations from this business school: a) students, b) teachers, c) authorities, and d) CMS administrators. From the first two groups, probabilistic samples were determined at random. More specifically, the samples were referred to as proportional. The first sample aimed at a larger population was established among students ( $N=3750$ ), and the second, for smaller populations was taken from the teachers universe ( $N_p=262$ ). The samples were 349 students and 168 teachers. In regards to the third intended population group, made up of school authorities at the business school, information was taken from the five undergraduate program coordinators. The fourth group of participants was integrated by a) two academic coordinators, b) two systems analysts, and c) two programmers, all of whom were managers or responsible for services offered by the CMS.

*Instruments.* As part of a research technique called “*Focus Group*”, two discussion guides were used in order to pinpoint CMS’s strengths, weaknesses and functionality. One of the guides focused on strengths and weaknesses, while the second focused on the functionality. Two more questionnaires were used as part of a technique called “*Surveys*” to find out how students and teachers evaluated the quality of services offered by the CMS, and their technological demands from it to support the educational processes. The design of the first questionnaire was based on the scale E-S-QUAL [E-Service Quality]. It consisted on 18 items distributed in four dimensions (efficiency, system availability, delivery and privacy) and one open question. The design of the second questionnaire was based on the scale E-RecS-QUAL [E-Recovery Service Quality]. It consisted on 8 items arranged in only two of the three dimensions (response and contact) from this scale. The dimension of “*compensation*” which originally appears on this scale was eliminated because it was not considered viable to compensate when a problem derives from CMS use. It is worth mentioning that the original scales were developed by Parasuraman, Zeithaml, and Malhotra (2005), who conceptualized, built, refined and tried them out in an attempt to measure the quality offered by an on-line shopping web site. Nevertheless, Parasuraman et.al. (2005) considered this scale generic to be used to evaluate the quality offered by any electronic service. Finally, instrument validity was determined by a group of experts, as well as through a pilot-test so as to calculate Cronbach alpha for each one. The result for this measure was 0.898 for the first questionnaire and 0.912 for the second one.

*Research Stages.* Table 1 presents the three stages followed during CMS use evaluation. In this table, participants are matched to the research technique they were part of, the instrument used, and the research questions responded during each stage.

**Table 1: Procedure for the evaluation of the use of the CMS use**

Stage	Participants/Information resources	Research Technique	Instruments	Data Analysis
First Stage	CMS Administrators (six people)	Focus Group	Discussion guide to answer the research question number 1.	-Theoretical bases. (Creswell, 2005)
Second Stage	349 students and 168 professors	Survey	First questionnaire with 18 items and an open question. Second questionnaire with 8 items, both instruments were used to answer to the research number 2 and 3.	-Descriptive Statistics -Content analysis (Hernández et al., 2006).
Third stage	Five undergraduate program coordinators and three CMS administrators	Focus Group	Discussion Guide to answer the research question number 4.	-Theoretical basis (Creswell, 2005)

Source: own information

## FINDINGS

Research results were arranged according to the four questions previously stated. Findings are presented below.

### *Research question number one*

For the question “*Which are the strengths and weaknesses of the CMS used in a business school at a university in central Mexico?*” results were obtained from the session “*Focus Group*” carried out with CMS personnel and administrators (two academic coordinators, two systems analysts, and two programmers). The data obtained was arranged according to “*Strengths*” and “*Weaknesses*”, proposed in the first discussion guide. The defined categories for *strengths* were grouped in: (a) CMS personnel, (b) organization, (c) infrastructure and (d) innovation. While the defined categories for *weaknesses* were: (a) CMS personnel DOKEOSFCA, (b) services and (c) organization. A summary of the findings for each category is presented below.

### *Strengths*

*CMS Personnel.* For this category, participants’ replies were related to two aspects: technical personnel and their commitment. From the first aspect, it was pointed out that one of the strengths was having specialists in their area. For the second aspect, it was noted that personnel have a high level of personal commitment to making the system run efficiently.



*Organization.* Replies were grouped in two topics as well for this category: CMS organization and CMS as an institutional reference for educational innovation. For the first topic, participants mentioned duties and responsibilities were clearly identified, and they had well-defined system services and how they are dealt with. In the second topic, they stated that one fundamental strength in educational innovation was that the CMS implementation covers a structural demand from the current Curricular Model at the institution.

*Infrastructure.* One more strength found in the study was that the institution has modern technological infrastructure. Participants highlighted that servers, practice labs, and student lounges are modern areas designed for students to have access to the CMS. Additionally, they defined the CMS as a modern and efficient tool.

*Innovation.* This category surfaced from the participants' comments, stating that the use of a CMS in a public Mexican university such as the one subject of this study was innovative, especially by being the first to use one from any of the schools or faculties at this university.

#### *Weaknesses*

*CMS Personnel.* Replies by participants were related to three aspects: technical personnel for CMS, CMS trainers and job uncertainty. In the first aspect, they stated that technical personnel is insufficient to help all the students and teachers. In the second aspect, the weakness they identified was little training to CMS users. The third issue was job uncertainty. People mentioned that the monetary compensation they receive is not proportional to the work they do or to their commitment to CMS management.

*Services.* For this category notes were arranged in two topics: service and promotion of CMS. In the first topic, they identified a limited schedule to take care of all the users' problems. As for the promotion, they said it was very little.

*Organization.* One of the weaknesses they found for the CMS DOKEOSFCA was its own identity. In more detail, the participants of the Focus Group stated that it was not clear where CMS DOKEOSFCA offices are or the procedure to use their services.

#### *Research question number two*

The second research question was "*How is the quality of services offered by the CMS evaluated by teachers and students in a business school at a university in central Mexico?*" The answer to this question came from the 18 closed items in the first questionnaire, given to 349 students and 168 teachers. It was also possible to have access to 8 items from the second questionnaire which only 133 students and 59 teachers answered. It is important to emphasize that this questionnaire was given only to those users who had reported a problem with the use of the CMS. A summary of the results is shown in Tables 2, 3, 4, 5, 6 and 7.

**Table 2: Central Tendency and Dispersion Measurements of the first questionnaire for students**

Code	Items	Median	Mode	Standard deviation
V01	Ease of use of the services	4.1	4	0.8
V02	Ease of access	4.0	4	0.9
V03	Fast download of the contents	3.8	4	0.9
V04	Organization of tools	3.9	4	0.9
V05	The page is shown quickly	3.8	4	0.9
V06	Simplicity to download contents	3.8	4	0.9
V07	Quick access.	3.8	4	0.9
V08	Availability of the services	3.6	4	1.0
V09	Operation of the services	3.7	4	0.9
V10	Fallibility of the services	3.3	4	1.0
V11	Errors in the delivery and reception information process	3.5	4	1.0
V12	Correct reception of contents	3.9	4	0.9
V13	Simplicity to download contents	3.9	4	0.8
V14	Download speed of the contents	3.8	4	0.9
V15	Correct download of contents	3.9	4	0.8
V16	Information confidentiality guaranty	3.9	4	0.9
V17	Sharing information with other websites	3.8	4	0.9
V18	Adequate protection of their information	3.8	4	0.9

Source: own information

**Table 3: Central Tendency and Dispersion Measurements of the second questionnaire for students**

Code	Items	Median	Mode	Standard Deviation
V01	Options to solve their problems	3.4	4	1.1
V02	Problem-solving	3.4	4	1.2
V03	Problem-solving confidence	3.4	4	1.0
V04	Guidance for the publication and/or contents download	3.4	4	1.1
V05	Problem-solving assistance	3.6	4	1.1
V06	Ease to communicate by phone	3.2	4	1.1
V07	Ease to communicate on-line	3.1	4	1.0
V08	Ease to conduct in-person interviews	3.3	4	1.1

Source: own information

**Table 4: Central Tendency and Dispersion Measurements of the first questionnaire for teachers**

Code	Items	Median	Mode	Standard Deviation
V01	Ease of use of the services	4.3	4	0.6
V02	Ease of access	4.4	4	0.6
V03	Fast download of the contents	4.2	4	0.7
V04	Organization of tools	4.2	4	0.6
V05	The page is shown quickly	4.2	4	0.6
V06	Simplicity to download contents	4.2	4	0.7
V07	Quick access	4.2	4	0.6
V08	Availability of the services	4.1	4	0.7
V09	Operation of the services	4.2	4	0.6
V10	Fallibility of the services	4.0	4	0.8
V11	Errors in the delivery and reception information process	4.1	4	0.8
V12	Correct reception of contents	4.2	4	0.6
V13	Simplicity to download contents	4.3	4	0.6
V14	Download speed of the contents	4.3	4	0.6
V15	Correct download of contents	4.2	4	0.6
V16	Information confidentiality guaranty	4.1	4	0.6
V17	Sharing information with other websites	4.3	4	0.7
V18	Adequate protection of their information	4.0	4	0.7

Source: own information

**Table 5: Central Tendency and Dispersion Measurements of the second questionnaire for teachers**

Code	Items	Median	Mode	Standard Deviation
V01	Options to solve their problems	4.1	4	0.7
V02	Problem-solving	4.4	5	0.8
V03	Problem-solving confidence	4.3	4	0.7
V04	Guidance for the publication and/or contents download	4.3	4	0.6
V05	Problem-solving assistance	4.2	4	0.8
V06	Ease to communicate by phone	4.4	5	0.6
V07	Ease to communicate on-line	4.3	4	0.6
V08	Ease to conduct in-person interviews	4.2	4	0.8

Source: own information

**Table 6: Comparison of the first questionnaire results between students and teachers**

Dimension	Positive answers		Negative answers	
	Students <i>N</i> =349	Teachers <i>N</i> =168	Students <i>N</i> =349	Teachers <i>N</i> =168
Efficiency	1840	1075	215	8
Availability	831	568	217	22
Fulfillment	1047	617	103	5
Privacy	707	425	66	5

Note. *N* = number of participants

Source: own information

**Table 7: Comparison of the second questionnaire results between students and teachers**

Dimension	Positive answers		Negative answers	
	Students N=133	Teachers N=59	Students N=133	Teachers N=59
Answer	353	263	100	5
Contact	168	156	100	0

*Nota.* N = number of participants

Source: own information

#### *Research question number three*

The third research question was: “What do students and teachers demand from the CMS in order to help educational processes in a business school at a university in Central Mexico?” The results to answer this question were recovered from a total of 343 student replies and 120 from teachers’ demands, in the open question from the first questionnaire.

*Students’ needs.* The main needs expressed by students were: (a) a greater number of computers available to use the CMS, (b) training to use the system, (c) extend the service hours for the use of the CMS, and (d) technical support in the use of the CMS.

*Teachers demands.* Similarly, teachers’ needs were: (a) a greater number of computers available with the CMS, (b) system use training and (c) extended hours of services with the CMS. This group, however, specifically stated that there should be more promotion of services and use of the CMS.

#### *Research question number four*

The data regarding the question: “How does a CMS work in a business school at a university in central Mexico?” was obtained from the second “Focus Group” session which included three individuals from the Innovative Education Department (one coordinator, one systems analyst, and one programmer), and the five undergraduate programs coordinators. Data was then arranged under the topic “CMS functionality” in the following groups: (a) inadequate CMS functionality, (b) moderate CMS functionality, and (c) adequate CMS. The results from each category are the following.

*Inadequate CMS functionality.* The answers were related to two aspects: services offered by the CMS are unclear and the program is understaffed. As for the first aspect, it was pointed out that the services offered by the CMS are not clear enough, nor do the users have a clear idea of how they work. Regarding the second aspect, it was clear that personnel’s capacities to respond to users’ needs are insufficient, especially during those hours when there are more students at school and they require technical support or a place to work on their assignments.

*Moderate CMS functionality.* In this category users pointed out that not all the services and tools offered by the CMS are used. In this regard, it was said that they have not made full use of the tools and services because they became program coordinators very recently.

*Adequate CMS functionality.* This category was organized in two groups: (a) supports teachers’ and students’ activities, and b) increase in CMS demand. With regards to the first group, users mentioned that the learning and teaching activities were well supported by the CMS services, as well as students’ and teachers’ training and development. In the second group, participants pointed out that CMS service demand has had a significant increase. In this regard, they mentioned that the requests from new users had increased in the last semester.

## CONCLUSIONS

Firstly, the strengths of the Course Management System (CMS) rely on the people who provide the services for this system, as well as on its modern technological infrastructure. Another strength is its relevance as an innovation in the context of the university where the business school is located. At the same time, the system represents a cornerstone for the Curricular Model at this institution. Therefore, these results contribute to the objectives set by the business school towards innovation in education.

Secondly, in terms of weaknesses, it is evident that the program is understaffed to provide all the CMS services to the entire population at this school and the personnel do not have job security. Additionally, procedures are not standardized and there is a lack of strategies for communication and promotion, rules and identity.

In third place, both students and teachers evaluated the quality of CMS services positively. This conclusion shows that the gap between users' expectations and the services provided is minimal. As for the demands of students and teachers, it was concluded that the business school should: (a) increase the number of computer equipment available at the institution, (b) train CMS users, and c) expand the service hours for the facilities where CMS is accessed. More specifically, students require guidance and technical support to develop their academic projects, and teachers need timely and accurate information related to CMS services. From the conclusions above, it is clear that the authorities responsible for CMS functionality must establish a permanent training program for users, a comprehensive evaluation of the technological infrastructure functionality, and plan to renew ICTs, hardware and software upon demand.

In fourth place, CMS does not have adequate promotion of services and its functionality is only moderate in those hours when there is high demand. On the other hand, CMS functions appropriately in students' and teachers' training and development. Another positive aspect is the modern and functional technological infrastructure. This became clear from the relationship between the quality of services and the technological infrastructure of this system. Consequently, it is possible to say that in the aspects of training, development and technological infrastructure the CMS has good functionality. This allows us to conclude that the system contributes to the objective of this business school, which is: *"to provide the academic staff with training and support in the use of ICTs in order to develop didactic materials to innovate in their practice within the context of the Curricular Model at this institution"*. Lastly, the data obtained from this project will allow those responsible for the system to make decisions that contribute to achieve the full operational level expected from this CMS.

### ACKNOWLEDGEMENTS

We would like to thank MCTE Ricardo Noyola Rivera for all his support in making this proposal, and for his comments and suggestions to enrich the final report.

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## Examining The Media Literacy Levels Of Vocational Technical School Students'

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### ABSTRACT

The aim of this study is to examine media literacy of students of different programme at Vocational Schools. Survey method was used in this study. Participants of study consist of students studying Sakarya University Kaynarca Seyfettin Selim Vocational School and Vocational School of Health Services. "Media Literacy Levels Determination Scale" developed by Karaman and Karataş (2008) was used. The findings demonstrate that students have idea about media literacy, analyze information getting from the media and response them. They also have ability to see the hidden messages and can judge that information in the media. The findings also show that there is no difference in the level of media literacy in terms of gender and type of programme. Another result is that there is no difference between the groups who take a course regarding media and do not take. From this results, some suggestions are given at conclusion part.

**Keywords:** media, media literacy, vocational school.

### INTRODUCTION

Information access is easier nowadays because of technology and communication methods are developing rapidly. One of the information access methods is media with no doubt. The world in 21<sup>st</sup> century exhibits a structure controlled by media, driven life depended on technology and globalized more and more (Kellner and Share, 2007). Nowadays media has an effect on most of our lives and it takes a function to shape our lives. Although communication of individuals with each other, being aware of agenda, obtain information and update information; media, a part of daily life, makes information a part of daily life and effect individuals with various messages in different conditions (Yılmaz and Özkan, 2013). Media has some functions such as giving information, community, education, fun, protecting cultural values, inspection, criticizing, creating public opinion and presentation (Radio Television Supreme Council, RTÜK, 2007).

Media is both passing through the development process with changing and it effects and actually determines the socialization process with changing the type and nature of mass communication (Bilgili, 2006). While media's importance and effect on individual's social process increase, it is going to be a necessity to redefine the educational aims and goals. Especially the effect of media on children increases day by day. Nowadays not only children but also students from all age groups use media to obtain information. As well as media provides some opportunities, variability of media and the power of effecting individuals with this variability created the concept of media literacy (Kurt and Kürüm, 2010).

Media literacy is defined as an ability of accessing the messages take place in mass communication tools (television, internet, radio, newspaper, cinema, video, advertising etc) and analyzing, evaluating and transferring them. Media literacy is required to be accepted by students as not only reading the media product but also being active in media production process (Thoman, 2003).

According to Thoman and Jolls (2008), media literacy should be formed with three steps. In first step, the management ability of how to choose and how to spend time to various media sources should be instructed to the students. In second step, it is required to teach students to analyze the messages, inquire them and construct them with bringing critical thinking to students. In the third and last step, it should be provided to understand how media manages global consumption economy nowadays with analyzing social, political and economical experiences gained from media.

Yılmaz and Özkan (2013) examined the media literacy levels of students from Computer Education and Instructional Technologies and Preschool Education Departments. According to the findings media literacy levels of students from Computer Education and Instructional Technologies Department are higher. At the same time, the frequency of watching TV has an effect on students' media literacy levels too. Aybek and Demir (2013) examined the relationship between the trend of critical thinking and media and television literacy. As a result, they found that the average of students' media and television literacy levels are high and their addiction levels are low.

In addition, they found that there is a low positive relationship between students' general critical thinking trends and media literacy levels. Kartal (2007) got the result that students' behaviors of critical approach to media are in a certain level in his research the effect of media literacy on 10<sup>th</sup> grade students' perceptions of messages in TV series. Som and Kurt (2012) examined the media literacy according to various variables and media literacy levels of students from Computer Education and Instructional Technologies (CEIT). After the analysis, they found that media literacy levels of CEIT students are in an intermediate level. In addition, they found that media literacy levels of students significantly range according to their universities, grades, internet access, internet use, and internet use purposes.

Apak (2008) examined the primary school programs of Turkey, Finland and Ireland in case of Media Literacy Education with document analysis. It is seen that the earlier age for beginning media literacy education is in Ireland. In Turkey, researchers found that there are some missing parts in program and people concentrated to use media products in case of media perception. However, in Finland, they mostly concentrated on understanding and interpreting the media. Programs of countries are similar in case of instructional methods. Elma, Kesten, Dicle, Mercan, Çinkır and Palavan (2009) aimed to determine the attitudes of 7<sup>th</sup> grade students take the course of media literacy about this course. As a result, students specified that media tools do not care about protecting cultural and social values; media do not effectively perform its giving news and information duty. It was seen that materials used in lesson and discussions in classroom are enough but classroom activities and instructional methods are not enough according to the students and they do not like the teaching style of teacher. In addition, it was determined that students share their course experiences with their family and friends and this sharing created a positive effect on them. Quin and McMahon (1993) determined that students are in a high level in case of analyzing the media and basic knowledge and skills of media analysis in their research of determining the effect of media literacy program in West Australia on students' analytic thinking skills. Hobbs and Frost (1999) studied about comparing the 9<sup>th</sup> grade students who take the courses media literacy integrated in and who do not take them. They determined that students taken the linguistic, social, medical and science courses integrated with media literacy are more successful than other students in case of realizing the target audience, economic goals of media messages and motivation strategies. Karaman and Karataş (2009) aimed to determine media literacy levels of 495 teacher candidates. They found that teacher candidates' media literacy levels are high and computer ownership, internet ownership, following newspaper/journal, frequency of watching TV and frequency of using internet have significant effect on media literacy level.

Media literacy skills are essential for students from all age groups. This is because individuals frequently use media to obtain information with the current development of communication technologies. An individual with media literacy can examine whether the presented information is right or wrong and this individual can understand whether the obtained information is beneficial or not for him/her. In this sense, it is important to know about how much students have media literacy skills.

### **Aim of the Study**

Basic aim of this study is to determine the media literacy levels of associate degree students of vocational technical school. Research questions are given below in the scope of basic purpose:

1. What are the media literacy levels of vocational technical school students?
2. Do the media literacy levels of vocational technical school students vary according to their genders?
3. Do the media literacy levels of vocational technical school students vary according to their department?
4. Do the media literacy levels of vocational technical school students vary according to their situations of take any course related with media literacy before?

### **METHOD**

This study aims to examine the media literacy levels of associate degree students of vocational technical school. Survey method was used to collect the data. Survey methods are research approaches aim to describe a situation with its own nature exists in past or now. Subject or individual that is used for the research is tried to be defined with its own conditions (Karasar, 2005).

### **Participants**

Participants are students from Sakarya University, Kaynarca Seyfettin Selim Vocational Technical School and Medical Services Vocational Technical School in 2013-2014 semesters. Digital distributions of departments of students are given in Table 1.

**Table 1. Properties of Participants**

	Değişkenler	f	%
Programmes	Computer Programming	79	28,3
	Child Development	130	46,6
	Business Management	37	13,3
	Finance	33	11,8
Gender	Male	83	29,7
	Female	196	70,3
Take a Course About Media	Yes	65	23,3
	No	214	76,7
Total		279	100

There is no sample in the research scope, instead totally 279 students participated to the study. 79 of them (28.3%) are computer programming, 130 of them (46.6%) are child development, 37 of them (13.3%) are business management and 33 of them (11.8%) are finance program students. 83 of participants (29.7%) are male and 196 of them (70.3%) are female students. In addition, 65 of participants (23.3%) took a course about media but 214 of them (76.7%) did not take any course about media.

### Data Collection Tool

“Media Literacy Level Determination Scale” developed by Karaman and Karataş (2008) is used in this study. Scale consists of 17 items and 3 factors. These factors; “Having Information” consists of 7 items, “Analyzing and Creating Response” consists of 6 items and “Judgment, Seeing the Implicit Messages” consists of 4 items. Choices in scale are arranged and scored in an order of 1 for “Never”, 2 for “Rarely”, 3 for “Sometimes”, 4 for “Usually” and 5 for “Always”. Scale’s Cronbach Alpha value is .084. Subscale Cronbach Alpha reliability coefficients are founded as .721 for “Having Information”, .705 for Analyzing and Creating Response” and .680 for “Judgment, Seeing Implicit Messages”. After application, internal consistency coefficient of scale applied to the vocational technical school students after application in this study is calculated as .916.

### Data Analysis

Data collection tool was applied to the students by researchers. Maximum score is 5 and minimum score is 1 in the scale. Five evaluation intervals and criteria over the average value were defined to evaluate and interpret the media literacy of vocational technical school students (Table 2).

**Table 2. Evaluation Criteria for Media Literacy Opinions**

Evaluation Criteria	Given Ratings	Evaluation Range
Never	1	1,00 – 1,80
Rarely	2	1,81 – 2,60
Sometimes	3	2,61 – 3,40
Often	4	3,41 – 4,20
Always	5	4,21 – 5,00

Descriptive statistics such as arithmetic mean, percentage and frequency are used in data analysis. In addition, independent samples t-test and variance analysis are used in order to determine whether media literacy varies according to students’ genders, departments or any course take situations about media. Significance level is taken as .05 in data analysis. SPSS 16.0 (Statistical Package for the Social Sciences) program is used for statistical analyses.

## FINDINGS

### Media Literacy Levels of Vocational Technical School Students

Media literacy levels of vocational technical school students are examined in three different dimensions; having information, analyzing and creating response and judgment, seeing implicit messages (Table 3).

**Table 3. Media Literacy Levels in Terms of Subscales**

Sub Factor	$\bar{X}$	sd
1 Have Information	4.01	.68
2 Analyzing and Creating Response	3.54	.81
3 Judgment and Seeing Implicit Messages	3.79	.85

It was found from the media literacy levels of vocational technical school students that they frequently have information with a mean of ( $\bar{X} = 4.01$ ), they can analyze and create response frequently with a mean of ( $\bar{X} = 3.54$ ) and they can judge and see implicit messages frequently with a mean of ( $\bar{X} = 3.79$ ). In addition, evaluating the whole scale, it can be said that students have media literacy skill with a mean of ( $\bar{X} = 3.79$ ).

#### Examining the Media Literacy Levels of Vocational Technical School Students According to Their Genders

It is examined whether media literacy levels of vocational technical school students vary according to their genders or not in the study and findings are given in Table 4.

**Table 4. Media Literacy Levels of Vocational Technical School Students According to Their Ages**

Sub Factor	Groups	n	$\bar{X}$	Sd	df	t	p
Have Information	Male	83	3.92	.72	277	-1.560	.120
	Female	196	4.06	.67			
Analyzing and Creating Response	Male	83	3.49	.79	277	-.626	.532
	Female	196	3.56	.82			
Judgment and Seeing Implicit Messages	Male	83	3.83	.82	277	.957	.600
	Female	196	3.76	.88			

There is not a significant difference in terms of gender variable in the having information [ $t_{(277)} = -1.560$ ,  $p > .05$ ], analyzing and creating response [ $t_{(277)} = -.626$ ,  $p > .05$ ], judgment and seeing implicit messages [ $t_{(277)} = .957$ ,  $p > .05$ ] subscales of media literacy scale. According to these findings, media literacy levels of vocational technical school students are similar.

#### Examining the Media Literacy Levels of Vocational Technical School Students According to Their Departments

It is examined whether media literacy levels of vocational technical school students vary according to their departments or not in the study and findings are given in Table 5.

**Table 5. Media Literacy Levels of Vocational Technical School Students According to Their Departments**

Sub Factor	Varyansın Kaynağı	S.S	sd	S.A	F	p	Significant Difference
Have Information	Intergroup	.790	3	.263	.558	.643	Yok
	Local group	129.912	275	.472			
	Total	130.702	278				
Analyzing and Creating Response	Intergroup	3.790	3	1.263	1.963	.120	Yok
	Local group	176.979	275	.644			
	Total	180.768	278				
Judgment and Seeing Implicit Messages	Intergroup	1.549	3	.516	.707	.549	Yok
	Local group	200.934	275	.731			
	Total	202.484	278				

There is not a significant difference in terms of students' departments in having information [ $F(3-275) = .558$ ,  $p > .05$ ], analyzing and creating response [ $F(3-275) = 1.963$ ,  $p > .05$ ], judgment and seeing implicit messages [ $F(3-275) = .707$ ,  $p > .05$ ] subscales of media literacy scale. In other words, media literacy levels of vocational technical schools do not vary significantly according to their departments in all of the subscales of media literacy.

#### Examining the Media Literacy Levels of Vocational Technical School Students According to Their Situations of Previously Taking Any Course about Media

It is examined whether media literacy levels of vocational technical school students vary according to their situations of previously taking any course or not in the study and findings are given in Table 6.

**Table 6. Media Literacy Levels of Vocational Technical School Students According to Their Situations of Previously Taking Any Course about Media**

Sub Factor	Gruops	n	$\bar{X}$	Sd	df	t	p
Have Information	Take A Course	65	4.07	.65	277	.817	.415
	Dont Take A Course	214	3.99	.70			
Analyzing and Creating Response	Take A Course	65	3.62	.72	277	.989	.324
	Dont Take A Course	214	3.51	.83			
Judgment and Seeing Implicit Messages	Take A Course	65	3.86	.77	277	.697	.486
	Dont Take A Course	214	3.77	.88			

There is not a significant difference in terms of students' situations of previously taking any course about media in having information [ $t_{(277)}=-.817$ ,  $p>.05$ ], analyzing and creating response [ $t_{(277)}=.989$ ,  $p>.05$ ], judgment and seeing implicit messages [ $t_{(277)}=.697$ ,  $p>.05$ ] subscales of media literacy scale. According to these findings, media literacy levels of students previously took a course about media and students who did not are similar.

## RESULTS AND RECOMMENDATIONS

It was found that media literacy levels of vocational technical school students are high level in this study of examining the media literacy levels of vocational technical school students. At the same time, students also have a high level of media literacy in having information, analyzing and creating response and judgment, seeing implicit messages subscales of media literacy. Karaman and Karataş (2009) found the result that media literacy levels of teacher candidates are high level. Som and Kurt (2012) found the result that media literacy levels of Computer Education and Instructional Technologies students are intermediate level.

It was found that media literacy levels of vocational technical school students do not vary according to their genders in terms of all subscales of the media literacy. Another result is that media literacy levels of students do not vary according to their departments. This result shows us that independent from their departments, students use media frequently on same level and for same purposes.

Another result in the study is that there is not a significant difference between students previously took a course about media and student did not. Based on this result, it can be said that it is necessary to review the media literacy courses given in vocational technical schools. In addition, according to this result all students follow media more conscious. Students are continuously in contact with media in all stages of education especially with the development of technology and internet. Because of this reason, students from any age group should be instructed about media literacy.

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## Examination Of The Levels Of Acquiring Values To The Students Of High Schools

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### ABSTRACT

The purpose of this study is to examine the levels of acquiring values to students in the scope of guidance service in both values education and other educations in high schools. The sample group of study consisted of 300 students continuing their education in 6 high schools in 3 different districts of İstanbul. The data of this study was conducted by personal information form and questionnaire prepared by the researcher to determine how much the students have acquired the values. Examining the obtained results, it was found that students had high scores on the values as “I do not want people to be lack of justice”, “I always value when someone does me a favour” and “I want everybody to live in peace and at ease”. The obtained results were discussed within the framework of literature and similar studies, and various suggestions were brought forward.

**Key Words:** Value, Values Education, High School

### 1. INTRODUCTION

Many theorists have a common idea that puberty stage, which occurs during the elementary school years, constructs an individual's personality traits. Freud describes this stage as “genital stage” and states that personality development of any individual ends in that stage. According to another personality development theorist, Erikson asserts that a young adult goes between building identity traits and experiencing role confusion and on this stage, the young adult tries to systemize his/her personality traits (Bee, Boyd, 2009; Selçuk, 2007; Senemoğlu, 2009).

During the elementary school education, academic knowledge and skills are aimed to be taught to the students; on the other hand, social values are also included to the education programme. It is expected that schools should provide not only cognitive skills-oriented education system, but also they should make the students develop affective skills such as developing positive attitudes, presenting responsible behaviors in the society and acting responsibly towards other people (Akbaş, 2008). School is considered to be as an effective intermediary institution for being social and building values (Ercan, 2001). Some of the most important duties of schools are to teach values whether they are stated clearly or not in the school programme regarding cultural transmission, discipline students in accordance with the school rules, contribute their moral development and positively affect their characters and sense of self (Akbaş, 2004).

Many researchers describe the concept of values differently. In different resources, values can be described as useful and requirable, desirable or undesirable for the individual or the group itself, internalized and experienced social, ideological or divine based beliefs that are accepted in a society, in a belief and ideology systems, or among people (Çelikkaya, 1998; Fichter, 2011; Güngör, 1993).

Schwartz (1992) defined value as a criterion used by people for evaluating people, including themselves, selecting actions and legitimizing those events. Schwartz explained values under 10 dimensions such as self-direction, harmony, stimulation, hedonism, achievement, power, security, tradition, universalism and benevolence. Allport, Vernon and Lindzey (1960) brought forward an idea that there should be a six sub-dimensions value system as aesthetic, theoretical, religious, political, social and economic. These sub-dimensions can differ from individuals. A value might be more important for an individual, whereas the same value might be less important for another one. An individual's life is founded on and directed according to one or more values. The value dimension which is chosen by the individual's himself or regarded immensely constitutes the individual's purpose in life.

Value is an abstract unit of measurement determining the importance of solid or abstract notions; also is a word defining the importance or the states of living and non-living creatures, events and phenomena (Köknel, 2007). Values are shared thoughts about what is right in the society (Kornblum, 1994). Values have a significant role for explaining and examining human behaviors, and preferring any behavior to the other one. Besides, values are the criteria that people consult to evaluate other people, characteristics, desires and intentions, and behaviors (Dilmaç, 1999; Sarı, 2005).

As a criterion, value has a distinction of “being” and “should be” and it is always considered as something positive or negative (Cevizci, 2002). Values are among the most important criteria that give meanings and values to the socio- cultural elements of the society that we live in. Therefore, individuals in the society and patterns of their behaviors form a basis for sociological studies. Sociologically, the concept of values reflects the importance of things and conscious phenomena in the perspective of human, class and society (Hançerlioğlu, 1986).

In psychology, the importance of value is about the role of being a guide for the human behaviors. Therefore, psychologists regard values as beliefs (Güngör, 1993). Fichter (2001) stated the functions of values as follows:

- a) Values are used as an available tool for judging the social value of individuals or relationships. They allow stratification system. They help the individual to know “where he/she stands for” the others.
- b) Values make the individual focus on desirable, beneficial and important tangible cultural objects. A very valuable object may not be “the best” for the individual or the group all the time. However, it is a truth that the object is worth for endeavoring because of socially seeming quite important.
- c) Values point the ideal ways of thinking and behaving in every society. They draw the scheme of acceptable social behaviors. Thus, individuals can comprehend in what way they should behave as “the best”.
- d) Values guide the individuals to choose and realize their social roles. They create an attention zone and encourage. Therefore, individuals can comprehend that the necessities and expectations of different roles go right with certain valuable purposes.
- e) Values are the tools of social control and pressure. They make individuals obey the morals. Values also prevent unwanted behaviors, points forbidden patterns and enable to be easily understood of shame and guilt stemmed from social violation.
- f) Values function as a tool of solidarity as well. One of the actions of social scientists is that groups are formed on purpose of sharing some high values. Individuals gather into other individuals who share the same values. Common values are one of the most significant factors that can create and sustain social solidarity.

When examining the various explanations about the values, it is seen that values are significant for persistence and health of society and the harmony of human relationships; therefore, schools should dwell on the concept of values (Ümmet, 2012).

### 1.1. Problem Statement

The purpose of this paper is to examine the levels of acquiring values of high schools considering the students’ levels of having values.

## 2. METHOD

### 2.1. Participants

The sample group of study consisted of 300 students who were chosen randomly and voluntarily (age mean: 16.4) continuing their education in Istanbul, Turkey. To accurately interpret the findings of the study, the structure of the sample group is given as follows:

**Table 1.**Demographic features of sample group

Gender	Frequency (f)	Percent (%)
Female	189	63,0
Male	111	37,0
<b>Class attendance</b>		
Less than 20	136	45,3
Between 20 and 30	145	48,3
More than 31	19	6,3
<b>Frequency of organizing events as contests, art, sports etc.</b>		
Often	58	19,3
Sometimes	83	27,7
Hardly	117	39,0
Never	42	14,0
<b>Frequency of attending events as contests, art, sports etc.</b>		
Often	59	19,7
Sometimes	69	23,0
Hardly	86	28,7
Never	86	28,7

### 2.2. Measures

**2.2.1. Personal Information Form:** Developed by the researcher to determine the demographic information of the students and present the general structure, personal information form consisted of four-item (gender, class attendance, frequency of organizing events as contests, art, sports etc, and frequency of attending events as contests, art, sports etc).

*2.2.1. Values Questionnaire:* The questionnaire was prepared by the researcher to determine the present features about the fundamental values of the students. In this context, a question pool was formed by many questions and the pool was sent to three expert academicians for their feedback. Regarding their opinions, some items in the questionnaire were removed, some of them were corrected and some new items were added. Finally, 30-item questionnaire was prepared. Having positive opinions for each of the items in the questionnaire by the students, it was hypothesized that the students had that value and they acquired the value in the school.

### 3. FINDINGS

The distribution of answers in the value questionnaire by students was given below:

**Table 2.** The distribution of answers in the questionnaire given by the students

Items	Never		Hardly		Usually		Always		X	SS
	F	%	f	%	F	%	f	%		
I try to treat equally to everyone around me	22	7,3	32	10,7	81	27,0	165	55,0	3,29	0,92
I value the ideas of my friends in a social circle	7	2,3	13	4,3	133	44,3	147	49,0	3,40	0,68
I can express my thoughts freely in my social circle	8	2,7	34	11,3	84	28,0	174	58,0	3,41	0,79
I can ask what I want in the classroom without refraining from my friends of teachers	12	4,0	47	15,7	93	31,0	148	49,3	3,25	0,86
I try to improve myself to be beneficial to society	8	2,7	17	5,7	89	29,7	186	62,0	3,51	0,72
I try to attend activities that make me enjoy the life	6	2,0	35	11,7	109	36,3	150	50,0	3,34	0,76
I value and love myself	11	3,7	35	11,7	55	18,3	199	66,3	3,47	0,83
I always value when someone does me a favor	5	1,7	0	0	67	22,3	228	76,0	3,72	0,54
I can find creative solutions to the problems I face	15	5,0	27	9,0	110	36,7	148	49,3	3,30	0,83
I want everybody to live in peace and at ease	5	1,7	25	8,3	71	23,7	199	66,3	3,54	0,71
I value the customs of society	34	11,3	30	10,0	92	30,7	144	48,0	3,15	1,00
Though I crave some things, I can stop myself	44	14,7	44	14,7	114	38,0	98	32,7	2,88	1,02
I respect the private lives of others	14	4,7	13	4,3	68	22,7	205	68,3	3,54	0,78
I am a loveable person in my social circle	14	4,7	17	5,7	108	36,0	161	53,7	3,38	0,79
Protecting nature and environment is important for me	20	6,7	27	9,0	103	34,3	150	50,0	3,27	0,88
I adapt ever-changing life conditions by improving myself	21	7,0	30	10,0	126	42,0	123	41,0	3,17	0,87
I encourage my friends to act together in pursuit of common goals	13	4,3	49	16,3	138	46,0	100	33,3	3,08	0,81
I am interested in the activities such as contests and arts organized in school	43	14,3	115	38,3	54	18,0	88	29,3	2,62	1,05
I do not want people to be lack of justice	0	0	8	2,7	65	21,7	227	75,7	3,73	0,50
When I start to do something, I believe I can get through it	5	1,7	25	8,3	121	40,3	149	49,7	3,38	0,70
I choose logic instead of emotions on decision-making	17	5,7	62	20,7	136	45,3	85	28,3	2,96	0,84
I can directly express my thoughts to the other people	17	5,7	46	15,3	115	38,3	122	40,7	3,14	0,87

I do my best to shape my future	22	7,3	38	12,7	91	30,3	149	49,7	3,2	0,9
I always respect my family, my teachers and elder people	18	6,0	41	13,7	59	19,7	182	60,7	3,3	0,9
I set goals in my life	9	3,0	22	7,3	118	39,3	151	50,3	3,3	0,7
I accept the situations that I cannot change	43	14,3	65	21,7	115	38,3	77	25,7	2,7	0,9
I am a person who fulfill his/her duties and responsibilities	0	0	31	10,3	108	36,0	161	53,7	3,4	0,6
I do my best to the people who have hard times in my social circle	12	4,0	9	3,0	93	31,0	186	62,0	3,5	0,7
I am not indifferent to the events around me	17	5,7	21	7,0	110	36,7	152	50,7	3,3	0,8
I become gracious when my friends misbehave	61	20,3	54	18,0	111	37,0	74	24,7	2,6	1,0
<b>GENERAL AVERAGE</b>	<b>3,27</b>									

When Table 2 examined, it was found out that students gave the most positive opinion on the values as “I do not want people to be lack of justice” ( $\bar{x}=3,73$ ), “I always value when someone does me a favour” ( $\bar{x}=3,72$ ) and “I want everybody to live in peace and at ease” ( $\bar{x}=3,73$ ). It was also found that students gave the least positive opinion on the values as “I am interested in the activities such as contests and arts organized in school” ( $\bar{x}=2,62$ ), “I become gracious when my friends misbehave” ( $\bar{x}=2,66$ ) and “I accept the situations that I cannot change” ( $\bar{x}=3,73$ ). The arithmetic mean of answers for all the values found as ( $\bar{x}=3,27$ ).

#### 4. DISCUSSION AND CONCLUSION

On examining the findings of the study, it was seen that the acquired values at the highest level among students were “I do not want people to be lack of justice”, “I always value when someone does me a favour” and “I want everybody to live in peace and at ease”. These are universal values by content. In other words; common values such as equality, being faithful and living in peace are at the highest level among students. It was pointed out that the acquired values at the lowest level among students were I am interested in the activities such as contests and arts organized in school”, “I become gracious when my friends misbehave” and “I accept the situations that I cannot change”. These are personal life values by content. That is to say, rather than universal values, values about their personal lives are at the lowest level among students.

The general result of the study is to present the students who participated in the survey have acquired the values in the questionnaire at the high level. This finding indicates that schools are quite successful to make students acquire the values as stated in the problem statement in this study. It can be said that as within the scope of guidance service, having compulsory sessions about values education in the schools governed by Turkish Ministry of National Education is effective on having these findings. Comprehensive studies are being carried out both in the course contents and in the guidance and counseling sessions to acquire core values to the students in parallel with the instructions. In the studies carried out by various researchers (Özen, Güler, Özgen, 2012; Yeşilyurt, Kuş, 2012; Yiğittir, 2012), it was also found that universal and personal values of the students were at high levels. In a similar study conducted by Çengelci, Hancı and Karaduman (2010), the findings showed that more universal values like honesty than personal values were tried to be acquired to the students in the schools. In their study carried out using the diaries of students, Deveci and Ay (2009) stated that students’ preference and tendency of universal values were more important than the others.

In the light of obtained results, it can be stated that giving more importance to values education is crucial both for personality development of children and, therefore, for the health of society. In this context, it can be recommended that teacher should be trained in a more proper and qualified way. In addition, more academic and scientific study should be conducted to emphasize the importance of this subject.



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## Factors Affecting Social Adaptation Of Physically Disabled Students During Inclusive Education, Rights-Based Approach And School Social Work

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### ABSTRACT

This study aims to determine difficulties in social adaptation of students with disabilities, who are in inclusive education. In this study, it is intended to identify the factors which affect their social adaptation.

While struggling for life with physical disabilities, disabled individuals are trying to integrate themselves to the society. Factors such as inadequacy of social consciousness and physical, cultural, economic and political conditions of their country create obstacles in integration process of disabled individuals to the physical and social environment.

Disabled individuals, like everyone, deserve a life with dignity just because they are human. All human rights are also disability rights and being different cannot be a reliable reason for being treated in a different way.

From the perspective of social integration, it is clearly seen that having equal opportunities for education is an important right and chance to decrease concerns of disabled individuals and their inner circle about the future. However, education is one of the most underemphasized subjects in studies for the social problems of disabled people. That is why we need to focus on the inclusive education, developed for disabled students to enable them having education with other students.

**Key Words:** Disability, social integration, inclusive education, school social work.

### INCLUSIVE EDUCATION AND SOCIAL INTEGRATION OF STUDENTS WITH DISABILITY

Physically disabled children and their families have many economic, social, psychological or physical problems. These problems often cause isolation from the society for the disabled children.

“Thinking about disabilities as absolute categories of difference also causes trouble because it emphasizes students’ common deficits (Tomlinson, Callahan, Tomchin, and Eiss, 1997), rather than their uniqueness and competence” (Broderick, Mehta-Parekh, and Reid, 2005, p. 196).

As Aykara (2011) stated that according to most of the definitions of disability, it is seen that disabled individuals are perceived as they are deprived of meeting the necessities of social life, disadvantaged, indigent individuals having certain needs to be met. Therefore, some resources need to be provided for them in order to have ‘normal’ life conditions and to carry out ‘expected’ roles and duties from them. As these individuals differ from their peers, they could not decently fulfill what is expected from them. Because of these reasons, the term ‘physically disabled individual’ can also be described as an individual who have some special physical needs and can be socially functional and carry out their social roles and responsibilities if only these needs are met by society.

As we can see there are many handicaps for students with disability to integrate into society. One of the most significant handicap is the views of the society. For example, Söder (1990; cited by Veck, 2014) argues that the attitudes against disabled individuals are very complex and non-stable because the society is based on accumulating and consuming. Some attitudes are stated as “disabling attitudes” by Veck (2014, p. 791) which has the intention to condemn and classify individuals. It is also added that positive attitudes such as attentive and caring attitudes can also be disabling. People can be disabled, oppressed, excluded or marginalized because of these attitudes, but it is not only limited by the attitudes. People can also experience a sense of invisibility within a society because of the indifference of the rest of the society. Everyone is potentially disabled within a society without a caring attention, and also adds that some are more likely to be disabled than others.

As we see, the negative views of people about disability may cause exclusion of the disabled children. To avoid this exclusion, the education system should be examined for students with disability.

Beckett (2009, p. 324) states that children’s awareness and understanding of disability is not an issue that has been considered in any great depth. Furthermore, the role of education that could tackle with disability is few and/or absent. As a result of researches, Beckett concludes that there are important gaps in people’s knowledge.

“We know that negative stereotypes and attitudes towards disabled people exist within the adult population – to give just one of many examples, employers have justified not employing a disabled person on the basis that non-disabled customers would not like to be served by a disabled person (Miller, Gillinson, and Huber 2006) – and that these attitudes are a key aspect/characteristic of the ‘disabling society’, but the question is this: what are the origins of these attitudes within childhood?” (Beckett, 2009, p. 325).

When considered from this point of view, it is important to mention about inclusive education. Contrary to special education, in inclusive education disabled students can be together with other peers who are non-disabled.

Inclusive education is education of students which necessitates disabled students to have education and spent as much time as possible with other students in the same environment or to join as many activities as possible with other students (Spodek et al., 1983, p. 61). Separating children with special needs from children without any disability is accepted as incompatible with human rights and that is why children with special needs should get inclusive education instead of separate education (Kırcaali İftar, 1998). As Peters, Johnstone and Ferguson (2005, p. 142) state that inclusive education for all children is based on the concept of social equity and is essentially a social constructivist perspective. All students come to school with diverse needs and abilities; this is to ensure that no student is left different. The general education system is responsible to be responsive to all students. A responsive general education system provides high expectations and standards from all students, while providing them with high quality academic curriculum which is flexible and relevant, with teachers that are well prepared to address the educational need of all students. General education is a process by schools and communities that aim to create citizens into an inclusive society who can fully benefit from it.

In every country, education system is primarily planned and applied for the section of the community that is not disabled. For this reason, the initial education system has a non-inclusive understanding. Later on, various programs are used to integrate disabled students which aims to put these individuals into the system. (Sayar, Özbulut, Küçükcaraca, 2008). This causes some problems such as marginalization of disabled students. The main reason is that their peers, without any disabilities, cannot learn effectively to be empathetic.

Broderick, Mehta-Parekh, and Reid (2005, p. 195) states that many educators perceive inclusive education as having evolved from special education, and therefore as being fundamentally about issues related to disability. It is stated that inclusive education is not only focusing on the integration of disabled students in the classroom with non-disabled peers, but rather to prevent the possible ways students experience marginalization and exclusion in schools. Hence, it is concluded that inclusive education is a system for all students facing various problems, such as poverty, racial and ethnic discrimination and disability.

All of these examples show us the viewpoints of society about disability affects the lives of disabled people and they may not advocate their own rights because of these reasons.

## RIGHTS-BASED APPROACH AND PHYSICALLY DISABLED STUDENTS

In defending the rights of disabled students and integrating them to the society, social workers at schools have crucial roles. Social work carries out all of its functions just because they are rights of people and it is really important that disabled individuals and the society as a whole understand that every human being is precious and has rights from birth that must be claimed and used (Aykara, 2011).

“Some see inclusive education as a fundamental process which defends the view that all children should be educated in mainstream schools, which should be flexible and able to respond to differences without any additional or special provision (Liasidou, 2012). Other perspectives see inclusive education as concerned primarily with providing an optimal education, and as entailing additional or special support in order to meet children’s individual’s needs” (Terzi, 2014, p. 480).

Following statements about inclusive education are very explanatory to understand how inclusive education and its components should be:

“Inclusive Education, as the philosophy and practice behind this system-wide change, refers to the education of children and youth with disabilities in general education classrooms with their non-disabled peers (Peters, 2002). From this perspective, Inclusive Education does not happen on a child-by-child basis. Rather, Inclusive Education is a system wide approach (Miles, 1999b) dedicated to making schools accessible and amenable to the learning of all students. The philosophy of Inclusive Education is based on the right of all individuals to a quality education with equal opportunity - one that develops their potential and respects their human dignity. These supports may include flexible curriculum for some students, adequately prepared teachers, and a welcoming school community culture that goes beyond tolerance to acceptance. Students supported in truly inclusive schools are integrated on multiple levels, including physically, socially and educationally (Lynch, 2001)” (Peters, Johnstone, and Ferguson, p. 142).

There are various studies done about inclusive education. The research findings show that there are some problems to integrate the disabled students to society.

Beckett (2009, p. 324) states that one of the central problems regarding the research done in the children’s understanding of disability has not been from a social model of disability perspective. It is stated that political and academic factors has implications in the research. Research done in this topic provides valuable information about the social relationships between disabled and non-disabled individuals. These include relationships between disabled children, relationships between disabled and non-disabled children and how these relationships differentiate with the level of disability. These researches have been advantageous in the integration of disabled children into the inclusive education system.

Furthermore, Broderick, Mehta-Parekh, and Reid (2005, p. 196) points out that disability does not affect all students in the same way. Disabled students may differ in terms of a race, economic level, sex, sexual orientation, language and age which affect their lives significantly.

Aykara (2011) finds that problems which students face most frequently are related with social relations in inclusive education. Although most of the students state that they are happy with inclusive education and their relations with teachers, it is striking that they express problems related to their social relations. Among the difficulties that students experience, social interactions take the primary position. Relationships with teachers seem to be less of a problem for disabled students, because those kinds of relationships lay on a formal foundation. The mutual respect which both parties show to each other is promoted by the education system, since most teachers see it as their duty to treat the students well. On the other hand, other non-disabled students don't have this obligation to show respect and good treatment to disabled students, which in turn leads to the exclusion of disabled students in the social sphere of the classroom. Hence in inclusive education, disabled students having education with other students feel alienated and excluded.

## CONCLUSION

As we see, according to the findings of the studies about physically disabled students, the most frequently faced problems are emotional and physical difficulties, and social ones take the second place.

As mentioned earlier, one of the main goals of inclusive education is to enable disabled students not only to get education but also to socialize and to feel themselves as a part of society. For this reason, it is necessary for students with no disabilities to increase consciousness about disability, to take support from teachers and school staff on the issue, and thus preventing disabled students to face with problems at school.

Services for physically disabled individuals should be arranged according to the right-based approach and disseminated across the country. It is crucial to inform physically disabled students and their parents about the rights they have.

The adaptation of individuals, whose problems and needs are ignored, will not be an easy and smooth process. Besides, when needed, defending the rights of physically disabled children, social workers should also contribute them to defend their rights by supporting them and their parents' psychologically. Beckett (2009) suggests that it is only by tracing and understanding the starting points of prejudice against disabled people that people can overcome the challenges. Additionally it is stated that it is crucial to understand what non-disabled children know about things such as the presence of disability in the society, achievements of disabled people, and the impact of a disabling society upon the life chances of disabled individuals. It is further suggested that all of the understanding of the issue must be investigated to find educational strategies that promote positive attitudes towards disabled people.

To provide these circumstances, school social workers have roles and functions such as educator, advocator, broker, case manager, and counselor. These roles and functions of school social workers are very crucial for the disabled students lives. For example, when there is a conflict between disabled and non-disabled students because of the negative attitudes of their parents, school social workers should intervene and give information to the parents about disability rights. Similarly, when disabled students fail to advocate their own rights in their schools, school social workers can teach them how to advocate their own rights. School social workers can also organize some trainings for disabled and non-disabled students, their parents and teachers.

Thus, all the people can learn the truth that disability rights are human rights and how to prevent disability discrimination. To realize these practices, the negations and malfunctions in education system and inclusive education should be identified and solutions should be developed for physically disabled students. In this way, physically disabled students could become individuals, who can defend their rights, and find solutions to meet their needs. This is how they will get integrated into the society.

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## From Training To The Continuing Professional Development For Teachers

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### ABSTRACT

The paper aims to describe the experimental project of the adjustment pathway to school that is developed at the Primary Education Degree of the University of Molise. The project starts from the model of the Continuing Professional Development (CPD) typical of the Anglo-Saxon professional culture that does not find in Italy a specific application in schools system of teacher training.

The project aims to develop the students' culture of lifelong learning education, starting from universities education by developing a personal plan of professional development through typical methods of the CPD.

Particularly, students of the fifth year, the final year of the degree course, will start a process of reflection of acquired skills, while those of the second year, the first year of traineeship, will start the process of training and monitoring of their acquisition skills during the course.

### INTRODUCTION

Traditionally the development of the professional identity of teachers is an activity carried out by many scholars concerned with pedagogy and didactics. It does not seem, however, there is no one in Italy, but perhaps also in many other European countries, using model of *Continuing Professional Development* to develop the professional identity in other professional fields. Start the pilot project, still undergoing implementation, with the aim of promoting the professional identity of the teacher importing a typical model generally used in company context. The framework comes from a perspective of lifelong learning, proposing strategies and opportunities for empowerment, through the activation of a professional project in continuous development using the Continuing Professional Development model with students of the Primary Education degree of the University of Molise. The key assumptions of this particular educational path are the learning from experience and reflection on it, trigger a project dimension in a lifelong learning perspective, referring to build professional identity. This perspective highlights the context socio-cultural environment (Engeström, Sannino 2010), and encourages a reflective attitude that leads the students to observe their actions in the school, context of work.

The aim is to support the acquisition of a strong identity as a teacher and learning capacity of the continuous development of their professionalism. The theoretical framework of experimentation lead back to UK studies on CPD and their application in the contest of teachers training and supports the ability to build relationships of trust that can strengthen the sense of organizational citizenship.

### BASIC PRINCIPLES OF CONTINUING PROFESSIONAL DEVELOPMENT

The Institute of Personnel and Development of the United Kingdom defines CPD as a constant keeping up-to-date (*updating*) of the professional knowledge throughout the entire working life through systematic, informal or self-directed learning models.

A further definition, affirmed by the Royal Town Planning Institute and confirmed by the CPD Certification Service of London, indicates CPD as "*the systematic maintenance, improvement and broadening of knowledge and the development of personal qualities necessary for the execution of professional and technical duties throughout the practitioner's working life*" (Peel, 2005). The definition emphasizes CPD as a systematic process within the professional development in order to maintain, increase and develop knowledge, skills and personal qualities throughout one's working life. The key features can be summarized in four expressions: continuity through the whole working life, professional requirements, personal qualities, systematic nature of the process.

The approach to CPD requires:

- the mutual linking between organisational strategies and individual needs;
- the view of human resource management as an investment and not simply as a cost;
- the enhancement of learning on the job, taking care of the effective transfer of learning in the workplace;
- the planning and designing of training activities at different levels of formality (Eraut, 2000) to support learning processes that correspond to the concept of Personal Development Plans (PDPs).

The key features of the definition which distinguish the CPD are represented by the continuity of learning throughout the working life, the maintenance of high-level quality and competence of professionalism, the development of knowledge, skills and personal qualities, the planning that ensures a systematic process. These

characteristics allow CPD to assume a fundamental role to facilitate the accreditation process of professionals and to support the personal professional development and of the group.

### WORKPLACE LEARNING, LEARNING ENVIRONMENT AND LEARNING FROM OTHER

The first requirement is considering the workplace as an opportunity of *Workplace Learning* in continuum with university context. The workplace is not only the place where intellectual or practical activities carried out but also the place site with continuing learning opportunities. This means that the range of activities that take place, daily, in the workplace provide learning opportunities supported by actions that Eraut (2000) lists as follows:

- learning from doing routine work activities;
- learning *on the job* through a learning plan with the involvement of a certain variety of roles connected to the own role;
- informal and occasional learning through meetings with other workers;
- both informal and formal learning through the reflection on artefacts in the workplace.

This means that people, the work activities, the materials and the equipment all become learning resources.

The analysis conducted by A. Fuller, L. Unwin (2004) leads to identify a list of factors that shape the environment according to an *Expansive Learning* approach. This list is based on the antinomy between “*expansive-restrictive*” which, in the opinion of the authors, allows a better understanding of the actions to be adopted to define a learning environment.

The comparison between the two methods emphasizes the different actions that will be needed to create the learning environment. Between these two extremes, actually in the *continuum* are identified the most effective practices for the different organizational contexts. Focusing on the “*expansive*” approach the above mentioned research has identified a certain number of actions that allow the realization of an *Expansive Learning Environment*.

Among them, the most significant are: the participation and commitment to diverse communities of practice in order to favour the exchange of different competencies and skills. The attention is also paid to the realized learning experiences (or to realize) in other organizational contexts, overcoming the insurmountable “fear of being copied”. This mental approach, if related to a genuine professional interest, supports and strengthens the organizational identity.

Evans et al. (2006) also argue that both formal education and informal learning taking place in the immediate workplace community are essential, thus extending the apprenticeship learning advocated by Lave and Wenger. Second, they offered an analytical continuum, acknowledging the context-specific nature of learning in individual classrooms and schools, in a way that Lave and Wenger’s work did not. Third, Evans et al.’s work challenged ideas of a linear journey from novice to expert as being too simplistic.

This framework offered us a way of evaluating workplaces, although in our study from the BTs’ perspectives only. It was not designed however to offer a way of understanding teachers’ responses to such environments.

Another requisite for the start of CPD is given by what Eraut defines *learning from others* through peer learning (peer to peer) as well as learning from experts or significant others (tutoring). In a research conducted by M. Eraut (2007), that evidences some approaches that support *Expansive Learning Environment* (Fuller & Unwin, 2004), the persons interviewed affirm that “learning from others” in the working context represents one of the most significant methods for professional development.

This approach can be placed, according to Eraut, in the *continuum* where on one side there is the individual dimension and on the other the organizational dimension. Referred to the individual one, the fulcrum of “learning from others” is the importance of the tacit knowledge of everyone to share daily with the colleagues while carrying out one’s profession. On the opposite side of the continuum in the organizational dimension the reference point of learning is mainly based on “propositions and written documents” which are progressively more formalized. According to Eraut, “the learning process started by the worker moves within this *continuum* in accordance with some central reference points: the own personal dispositions and the manager’s support” (Ibidem, p. 36). In other words, the effectiveness of a learning environment that gives value to the support and mutual help is fully implemented if it is hold up, on one hand, by the personal motivation and the willingness to a social participation and, on the other hand, by the workplace configuration and the organizational culture that encourages and stimulates co-participation and collaboration.

The vast majority of teacher trust that there is still a lot to be discovered and developed for consistently brilliant teaching. Institute for Learning write that «evidence shows that the CPD most likely to lead to the desired impact is based on learning from others – from shared resources, from peer support and working together and through formal and informal networks. Organisations with a real interest in developing teaching and learning also identified working in teams, mentoring, and engaging in action research as most likely to lead to brilliant teaching and training » (IfL, 2010).

A. D. Ellinger and M. Cseh (2007), who identified a certain number of factors, such as behaviour and communication that facilitate the learning process of the participants, have also investigated the importance of the

personal dimension for the creation of working environments. The authors indicate the listed factors as behaviours that experts can adopt to facilitate the learning, mentioning managers and responsible persons in charge, by improving confronting techniques and forms of co-participation starting from daily experiences.

A recent Irish study (Morgan, 2009), highlighted that life beyond school is important in helping novice professionals to cope with new workplace demands, both in terms of emotional and informational support. It is for these reasons that we have investigated the role of personal networks to help us understand how support is offered and used by Beginner Teachers. (Fox et al., 2010). The study of Fox evidence that the Beginner Teachers found schools as largely expansive learning environments in terms of support planned into their induction or training or as opportunities with which the teachers could engage informally. This represents the strong invitational nature of these schools as learning environments (Billett, 2001). This should not be entirely surprising given that the schools, at least in the pre-service year, were selected by the University as suitable environments into which to place training teachers.

### TEACHER'S PROFESSIONAL DEVELOPMENT THROUGH THE CPD APPROACH

«Brilliant teaching and training does not happen by accident. It is created through careful thinking ahead and preparing teaching or training to meet the needs of each learner; the level and kind of course; and the range of outcomes and progression needed» (Fazaeli T., 2010). Become brilliant teachers requires a process of gradual integration into communities, as referred professional, this is done through a dual path of professionalism: the first relates to specific disciplinary skills, the second path regards teaching methodologies that promotes effective teaching practice.

The application of CPD can have three different approaches (Bonometti, 2013) that represent different levels of formalization of the process.

The first approach, defined "certified", has a "standardized" structure with the designing of the process according to the rules and the culture of a specific profession. In fact, the scientific community and the "professional group" can determine the development-phases and the steps of continuing updating which are essential to ensure a certain level of professionalism. The development of the process and the sharing agreement of the updating according to the rules guarantee public accreditation to the professional (in some cases with legal value). In such a case, the process of professional development (CPD) becomes a sort of obligation while carrying out one's profession and the lack of respect for the operational guidelines may produce sanctions by the "professional group". The risk that may occur with this approach is to confine people exclusively within basic routine activities, asking them to perform a standard of disciplinary skills, rather than producing new ones and going beyond. It becomes a kind of pre-formulated module of development which will give the necessary certification at the end. In the international healthcare sector all professional in medicine and nursing follow a learning program to ensure the maintenance and development of the professional skills, just called CPD. A comparative study, Peck et al. (2000), compares the use of CPD in Canada, United States, Europe and Australia and highlights the common elements and the differences.

A second approach can be defined "organized", in other words it is characterized by the explicit planning of a consistent learning program in line with the indications given by the relevant organizational context or in some cases by the scientific community. Compared to the previous path it is not connected to legal aspects and certifications. In this case, CPD is closely linked to the strategies of the Human Resource Development (HRD) and, converging individual needs and position requirements, a skill development process is defined in line with the strategies and the expectations of the belonging organization. A particular attention is paid to the transfer of knowledge in the *workplace* and at the same time, the workplace must provide continuing learning opportunities to the people. The characteristic of this second approach is given by the close correlation between personal professional expectations and business development prospects. In the organization an effective *people strategy*, a strategic thinking applied to the development of human resources in line with the organizational strategies is put into practice, in which CPD can be considered a tool in supporting management and professional development with an eye to the future.

Finally, the third approach, called "personalized", presents CPD as an opportunity for individual growth which is less bounded to organizational needs but, nevertheless, related to a specific working context. Compared to the previous approaches, this one could seem less systematic and continuing, leaving more possibilities to the participant to design the process and to redefine the objectives to achieve. This method finds more application possibilities during the internship of post-graduate participants, where the practitioner is facing the professional integration and role integration with the support of a project designed by a third party in addition to the company and the employee. This process requires a definition of the own initial competences and the planning of the learning process with a possible redesign of the module in case of need, in order to respond in an appropriate way to the expectations of the participant and the organizational context. The development of a personalized CPD implies as specific characteristic the presence of a third party who is involved in the negotiation between participant and company, in order that the skill development process allows sufficient time for the training and not just the time convenient to the organization. The places with similar characteristics that carry out this function between worker

and organization are the placement services of the universities or colleges, the employment centres of the provinces/districts, the vocational education centres.

As regards the CPD apply to the professional development of teachers, research of Institute of Learning highlights that shows that the key to success is when CPD mirrors the learning of others, including students and trainees, what is good practice for one is good practice for the other. Effective CPD is not an end in itself but fundamental to the sustained, positive teaching and continuous improvement of teachers and trainers, sector organisations and brilliant success for learners.

A project of continuing professional development is considered a learning action during the work placement and a socialization process with the professional context and role when a real and proper apprenticeship is provided that turns knowledge into competencies. During this period, the new entrants, through a continuing internship or during the professional integration, activate their knowledge and skills linking them to the specific working context in order to develop the appropriate skills requested by the daily activities in the workplace. It is a challenging time where the willingness to learn of the employees and the commitment of the company to provide learning opportunities are at the top, aiming at the achievement of the fixed objectives.

In the school context, the process of construction of the professional identity of a teacher has the aim to increase the capacity to reflect on the experience, analyze the practices, and deepen the theoretical models. Specifically, learning how to learn, to make the best decisions in school situations.

To make all this happen some essential pedagogical-didactical approaches are needed to favour the start of the learning/teaching processes. Initiate the CPD from university education can encourage the formation of beliefs, pedagogic and didactic skills centred on the identity teacher.

An important but largely neglected factor is teachers' own beliefs, which are the best indicators of the decisions individuals make throughout their lives. Beliefs are critical guides of thought and behaviour (Borg, 2001), as well as filters through which people screen new knowledge and experiences for meaning. Teachers' beliefs about learning and teaching have often been subjects of research; they relate closely to the instructional decisions that teachers make (de Vries et al., 2012).

#### AN APPLICATION FOR INTERNSHIP OF DEGREE COURSE IN PRIMARY EDUCATION

The steps of a professional development process concerns we take some illustrative indications from the model provided by C. Abrutyn and L. Danielson and used by P.G. Rossi for the definition of portfolio (Rossi, 2005). The model consists of four stages/phases that represent the cycle of development of the portfolio according to a logic that does not limit a one-off application but with a regular procedure and method. The starting point is the model developed by Danielson and Abrutyn that articulates the process in four phases:

- a) *Collection*, defining the criteria to identify artefacts related to the objective and the participant;
- b) *Selection*, selecting the materials, specifying the criteria for the selection of the materials that meet the educational goals fixed for the portfolio;
- c) *Reflection*, including reflections in each section of the portfolio and a global reflection;
- d) *Projection*, revising periodically materials and reflections on learning included in the portfolio to verify the achieved goals and those to achieve.

The model is characterized by the integration of the four phases of the process. During the first phase it is decided how and from which source selecting the material, the second phase involves the selection of the material, in the third phase reflection and self-assessment are activated, as well as in the fourth phase can be identified with the analysis of the achieved goals and the definition of the objectives to achieve.

These phases can be applied during the structuring phase of the CPD, broadening the perspective beyond the evaluation. In particular, the CPD process consists of 4 macro-phases (V. Cross, C. Liles, J. Conduit & J. Price, 2004) and it starts with an initial briefing that includes the period of time where tutor and trainee know each other, the contract agreement and the definition of the competency standards. The initial period is crucial for the prosecution of the process. It's the moment to develop a relationship built on trust and respect and to recognize the roles and the mutual commitments to achieve the goals.

This specific stage/phase provides for the *Educational Agreement* and the *Start* of the process with a look to the standards related to the role and the competences to achieve. These references will become central elements even during the intermediate and final evaluation.

<i>Educational Agreement</i>	Period of time where tutor and participant know each other and sign a learning contract ( <i>Educational Agreement</i> ). It is the moment to develop a relationship built on trust and respect, to recognize the roles and the mutual commitments to achieve the goals.	Briefing phase
<i>Start</i>	Collecting of internal and external material that allows the definition of the <i>standards competency</i> of the role. The material can be placed in a <i>personal folder</i> with all the material that will document the professional development.	

The second macro-phase, *Collection*, highlights the importance of the active role of the participant who has the commitment to record the significant events in his personal diary (log or blog) that may occur after the work placement. Since the CPD scheme is characterized by continuing learning, the following phases can become cyclical and can be proposed after a certain time interval. The evidences recorded in the personal diary will refer to the first professional experiences, in case of newly hired or interns, or will mainly focus on critical events during the following training periods.

<i>Personal log (Blog)</i>	Recording the significant events related to the workplace (both positive and negative) aimed at the increase of practical experience and related to a certain period in the <i>personal diary</i> .	Collection
<i>Inner contradiction and problems</i>	Evidencing problems and contradictions or adopted good practices and connecting a representative object to the event, integrating the material in the personal folder.	

The third macro-phase is defined *Selection* with the purpose of focusing the attention on specific events related to the professional experience which are significant in the sense of acquiring skills. In particular, it is meant to select some (for instance three) events among the ones reported in the personal diary where the trainee has carried out some activities relevant to his professional role. The next step (*Analysis*) requires the analysis of the selected material starting from the competency standards that were defined in the initial phase.

<i>Selection</i>	Selecting three particularly significant events from the list based on personal experiences and the priorities of the role.	Selection
<i>Analysis</i>	Identifying and reporting the facts ( <i>evidences</i> ) for each of the events that practically describe what happened.	

The macro-phase called *debriefing* is the moment where with the support of mediation and analysis tools a *critical reflection* on the performance is made. That moment represents the starting point of the effective learning process. The reflection on the performance, the definition of the analysis methods and the determination of the development goals represent the kick-off of the process that changes the competencies and plans the next phases. In this phase the materials are linked in a network in order to describe the change, a new knowledge, the attention towards the constituent elements of a task or work activity (Rossi e al. 2012).

<i>Critical reflection</i>	Analysing activities with the support of mediation tools, such as concept maps, models of organizational analysis, flow charts and identifying the core problem of the critical issue. Searching for solutions, formulating the work activities to achieve and identifying areas to improve related to skills development.	Debriefing
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Subsequently the critical reflection aims to identify areas of improvement, the problematic issues, the involved professional issues, the priorities and emergencies, converging towards a shared definition of the core problem. Through problem solving techniques, that help to perceive the discomfort and the symptoms, the real problem can be focused and the participant is invited to reflect upon the critical situations and the committed mistakes. Once identified the problem, the required working practices and the skills to achieve must be investigated. According to the method of *scaffolding*, the tutor (as well as the participant and his peer) supports the reflection with appropriate stimulus that help the understanding from another point of view, with more distance and a different knowledge not known to the participant up until that moment.

The process continues with the definition of the goal that focuses on the work activities to achieve and to become good practices in the workplace. At that point, it is necessary to assess the required skills for the application of the new practices by identifying the sources, the offer and the activities that allow the evolution of knowledge.

The phase at the end of the process starts off the cyclical process of *project work*. This tool allows the planning of learning activities, starting from the working activities to achieve and the skills that are considered necessary. The articulation of project work highlights the correlation between the detected problem and new expected working activities in terms of monitoring systems.

<i>Project work</i>	<p>Defining the project's objective and goals in terms of learning and planning of the <i>project work</i>.</p> <p>Assessing the resources in terms of skills, sources, social <i>network</i>.</p> <p>Planning the schedule and the rate of efficiency.</p>	Planning
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The phases are the result of the interlacing of the methods of reflective practice, of the learning from and through experience and of the planning of changes in the working context. In CPD these factors are well documented with the help of many tools that support the learning process.

The monitoring of the learning projects becomes an opportunity to verify the steps taken during the execution of the project, to modify the schedule in case of insuperable problems and to set new goals in the continuing professional development.

In order to find a different way of working on the development of the skills of teachers we decided to experiment in the process of training of the degree in primary education model of CPD applied to school.

This will follow two different approaches: the first will involve students who for the first time will do the traineeship and they will build an educational agreement starting according to the more traditional approach of the CPD. The goal of this planning is to define a personal project work that will be useful for their professional life. With this approach we aim to form immediately in students the aptitude to reflect on the knowledge and skills for each year acquire in their degree course and that will be needed to teach.

The second approach will be done with the final year students to develop an *educational agreement* starting from *competency standards* gained in degree course and starting a critical reflection during the *debriefing* for planning the most effective and useful project work with any objectives to be achieved. In the latter case, the aim is to allow students to reflect on the critical aspects of their professionalism, their professional weaknesses to plan training courses and self-training to fill up any professional gaps.

This double work will be carried out through times of classroom teaching but also through the use of an online platform that students have available for networked working with each other and with the tutors.

## CONCLUSIONS

Introduce at school a model of training staff in the perspective of life long learning in other contexts seem to have success stems from the belief of the authors that this different approach the teaching profession may help to improve the approach to updating and continuing education that in Italian schools it is not developed.

Educate from the beginning the usefulness of a teacher form throughout the life allows you to learn about the society in which you live, the young student that need to be trained and potential practices used for their training. It will be possible achieve this only by developing in the teachers the knowledge to be professionals and growing the competence to reflect on their experience and the capacity, to analyse the practices used by other teachers and learn the ability to deepen theoretical models of these practices. That means to learn how to learn from the experience; only through these capabilities, it will be able to take appropriate decisions to problematic situations that can be found in school.

The belief of the authors is that as for professionals in general for a teacher is necessary to acquire skills critical-reflective about its own being a teacher through a training process that enables them to acquire the ability to reflect critically on their educational action and teaching, both on the positive elements that characterize it but also about what is not, they represent, therefore, the need for training during their lifetime.

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## Generating Higher-Order Thinking Skills In Islamic Education Through Information Communication Technology (ICT)

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### ABSTRACT

Technological advancement leaves a great impact on today's education system. The impact of the development in information communication technology (ICT) has brought changes in teaching and learning. This transformation sees the change from the use of conventional method of using chalk and board to the use of ICT like computers and the Internet. Teaching approach based on the latest technology is applied in order to increase the nation's level of education to be not only on the same level as the developed nations but is also world class. This library research is meant to find out whether teaching and learning (T&L) using ICT can give an impact on the students that is in increasing their higher-order thinking skills in Islamic Education. Active learning environment using ICT enables the students to access information more widely, to be more motivated to explore and collaborate with the real-life situations in addition to sharing ideas and creativity. Findings of past researches indicate that by using ICT in T&L it can generate critical and creative thinking, problem solving and communication skills. A careful preparation, complete facilities and access as well as ICT skills can lead to a more effective use of ICT in T&L.

### INTRODUCTION

The rapid development in information communication technology (ICT) brings changes in teaching and learning (T&L). The advancement of technology has helped teachers in their teaching and learning process in the classroom. Compared to the conventional methods, this method of using the latest technology is found to be more interesting. ICT-integrated teaching encourages students to think actively in order to build understanding. This approach increases students' interest and motivation in giving response in the learning process.

ICT is made up of diverse forms of technology used to store, disseminate, build, broadcast and exchange information. Instruments like computers, laptops, mobile phones and various software normally used in T&L help transfer teaching content and achieve the intended objectives. The technology that is used in teaching facilitates the teaching and learning process and expedites students' understanding and generates students' thinking ability.

Higher-order thinking skills (HOTS) are also given the emphasis in the education system shift besides the use of ICT. HOTS is the continuation of critical and creative thinking skills (CCTS) that focuses on values, analysis, exploration and innovation. The implementation of HOTS in the classroom is carried out using various T&L strategies and methods like thinking instruments, high level thinking and enquiries. This will help students generate their thinking in order to make decisions, solve problems, be creative, to innovate and also to create. The use of ICT in T&L is seen as one of the ways that is capable of helping students enhance their thinking ability.

Activities of recalling information, performing tasks and solving simple problems are low level thinking that do not fulfill the needs of the generation that lives in this era of globalization. To realize the objective of increasing students' level of thinking to achieve higher-order thinking, T&L strategies of using ICT have to be made diverse and the scope widen. In addition, the critical skills needed, going into the 21<sup>st</sup> century, are identified among others as skills that involve communication, collaboration, problem solving, information communication technology literacy as well as creativity and innovation. Realizing this fact, integrating ICT in T&L is seen as an effort to deal with future challenges. Besides it can also be used to persuade the students to be actively involved in the learning activities.

In relation to that, the present T&L approach has to be fresh and exciting in order to ensure we can produce the generation of khalifah of the future. Islamic education is the core subject that can produce servants dan caliphs

who possess great character and are able to carry the responsibility to improve him/herself, the society, religion and the country. Students do not use HOTS in Islamic Education just for answering exam questions but also to solve problems faced by Muslims in their daily life. This skill encourages students to conquer knowledge, gain understanding, apply religious practices in daily life and also disseminate knowledge in order to fulfill the responsibility as a Muslim.

### ICT-BASED LEARNING IN ISLAMIC EDUCATION

The use of ICT is utilized fully in order to increase the quality of learning and now it becomes one of the main focus in Malaysia Education Blueprint (MEB) 2013-2025 in its 7<sup>th</sup> shift. ICT use has to be maximize in order to broaden the access and provide high quality teaching for all students irrespective of geographical areas (MOE, 2013) on par with the developed nations and is also world class. The integration of technology in education has the potential to optimize the effectiveness of T&L process by shifting from the conventional methods to the modern ones (Karimah, 2004). According to Norasmahani, Khadijah & Shahlan (2014), T&L transformation using technology has grown from conventional teaching to e-learning, d-learning and now m-learning in line with the rapid technological development and the world without borders.

T&L in Islamic Education trains the students to think and encourages them acquire vast knowledge, possess exemplary character, be ethical and intelligent, and are able to use ICT effectively (Islamic Education Curriculum Section, 2002). This is in line with Zuliana (2001) who supports Al-Qtaibi's (1997) view that says Muslim teachers should be encouraged to carry out T&L using creative and innovative approaches which are suitable with the needs and situations of the society. However, according to Siti Fatimah & Ab. Halim (2010) Islamic Education teachers are still not skillful in using ICT in the T&L process. Islamic Education teachers should grab the opportunity to master the latest technology so that their T&L will become more innovative, interactive and effective, and eventually generate higher-order thinking among their students.

The learning outcomes of using ICT have indicated improvements in students' intellectual skills, cognitive strategies, problem solving, oral information, motor skills and attitude. ICT-based T&L includes a wide spectrum of teaching objectives and utilizes interactive approaches to ensure that teaching is conducted by the teacher and this enables the teacher to get immediate response from the students. Teacher's role is only as a facilitator and not the main source of reference (Aliff et. al, 2014). In addition to that, self-learning in the T&L of Islamic Education makes it possible for the students to access and obtain the information on their own by utilizing search engines like *Google* and *Yahoo*. Students can surf website that offer Islamic knowledge contents and among the popular ones are for example Al-Islam.com, IslamiCity, Islamweb. Net, e-zakat dan Talk Islam (Md. Yusuf & Maimun, 2009).

There are several computer applications for Islamic Education available which are meant for tutorials, exercises and practice, simulations, problem solving, games and tools using various types of software for learning about akhlaq, du'as (supplications) and daily practices, al-Quran, Islamic values, Islamic Education (KAFA), stories about the prophets and solah (Md. Ishak, 2010). Furthermore, learning strategies which are active, flexible, reflective and independent are carried out along side collaborative and cooperative approach through discussions in electronic groups (*e-group*), *blog*, *facebook* dan *WebQuest* (Md. Yusuf & Maimun, 2009).

In addition to that, T&L of Islamic Education using computers as research and administration tools, media dan sources for T&L (Zaradi & Rozita, 2003) and also as the supporting material can encourage the students to respond actively while T&L process is taking place. According to Baharudin & Nik Rahimi (2008) the use of multimedia will give a positive impact on T&L activities through multimedia and 3D presentations. This agrees with the the research findings of the study conducted by Mohd Jasmy et.al (2014) that finds out even Islamic education teacher themselves see the importance of the use of ICT in ensuring the effectiveness of their T&L.

However, it cannot be denied that ICT too has its disadvantages like the proliferation of cyber crimes, negative influence, porn site, time wasting and even as a threat to peace and harmony. Nevertheless, Hassan Langgulong (1991) is of the opinion that the use of ICT in Islamic Education has to be looked at from a positive perspective that is in the context of the relationship as individuals and as an ummah. In relation to that, Ab Ghani and Nor Hashimi (1997) recommends Islamic education teacher to make full use of the advantages of ICT in education and this includes input ability, projection, copying, retrieving, connection, simulation and animation in order to achieve maximum effectiveness of T&L.

The use of ICT plays its role as part of the effort to achieve the objective of Islamic Education system that is to educate and develop individuals who have faith and taqwa in Allah swt (Wan Khairudin & Ab. Halim, 2008). Furthermore, according to Tajul Ariffin (1993) the use if ICT will influence the development of Islamic Education

in broadening the scope of knowledge paradigm and creating the unity between Islamic dan modern knowledge. Islamic knowledge can be used to form World Islamic education network in order to spread the concept of tawhid in the effort to further develop Islamic Education. Thus, T&L in Islamic Education will become more effective especially in increasing students' understanding and skills (Latifah et.al, 2010) besides increasing their interest and motivation to be more responsive in the learning process.

### **HIGHER-ORDER THINKING SKILLS IN THE 21 CENTURY**

The present education aspiration is to produce students who possess ability in all aspects including leadership, spiritual, physical, intellectual, emotional dan sosial. Leadership skills, multilingualism, national identity, ethics and spirituality as well as the ability to use high thinking skills can mould the type of students who can attain self-wellbeing, fulfill the needs of the society and the country, and also capable of competing globally.

Higher-order thinking that is expected is the type of thinking that can produce students who are capable of thinking creatively, critically and who are also innovative, able to solve problems and can make wise decisions. Therefore, the Ministry of Education Malaysia (MOE) (2013) defines HOTS as the ability to apply knowledge, understanding, skills and values in reasoning and reflecting in addition to solving problems, making decisions and producing innovations and other new things.

HOTS is an interpretation of the cognitive domain of Bloom's taxonomy which was revised by Anderson (2001). Four out of the six cognitive levels are HOTS levels which include application, analysis, evaluation and innovation (Anderson & Krathwohl, 2001). Innovation is the highest level in high level of thinking while knowledge and understanding belong to the low level of thinking. Application meanwhile represents both high and low levels of thinking (Curriculum Development Section, 2014).

HOTS in the context of T&L is a type of critical thinking that analyzes and interprets something from the real-life situations and is out of the teaching content. This kind of thinking activities refers to something that is going to be implemented according to the Islamic principles based on the necessity that is related to the teaching content discussed in the T&L of Islamic Education. The need to think continuously is emphasized in the Quran and Hadith. Only with the sharpness of mind that one has the advantage to solve any issue (Shahrin & Azman, 2003). This is because the mind is the greatest gift that Allah has given to mankind and it enables man to think, reflect, understand and learn about Allah's creations and also to make distinctions between what is good and what is bad.

The ability of the mind to understand knowledge, study and solve problems as well as to make decisions is in itself a thinking process (Shahrin & Azman, 2003). This process is formed in order to increase students' thinking ability to achieve a higher level where they are able to apply knowledge, skills and values and also to analyze information in order to make considerations and decisions. Besides that, students are able to generate ideas, products and methods that are creative and innovative in fulfilling the more complex needs of life in the 21<sup>st</sup> century.

### **IMPLEMENTATION OF HOTS THROUGH ICT-BASED LEARNING**

The application of suitable theories, strategies and approaches of T&L based on ICT can ensure the learning objectives are met besides honing the HOTS. Unesco (2002) has outlined the importance of ICT as influencing the competency of individuals in terms of critical thinking, decision making, working in a team, dynamic management and effective communication. Technology-integrated T&L can assist students develop higher-order thinking (Siti Noridah, 2012; Rosseni et.al, 2010; McMohon, 2007).

In addition to that, according to Churhes (2008), Lorin Anderson, who is the student of Bloom, has adjusted the learning of the 21<sup>st</sup> century students with the implementation of the use of ICT. The knowledge aspect is identified when students do their tasks by searching for information using the search engine. Students understand the information when they do the Boolean search. The level of application is achieved when students can use the computer application. Meanwhile the level of analysis can be performed by the students who make document link or obtain references and supporting material. The students evaluate when they voice their opinions in the social media like *blog, facebook, twitter, telegram* and *whatsapp*. The students will reach high level when they produce programs or documents using ICT.

Teachers also recognize the viability of technological applications as the means to apply HOTS. The utilization of these applications makes it necessary for teachers to change the techniques of preparing questions, make activities and tasks more challenging and challenge the mind of the students in order to increase their potential and the thinking ability. Teachers will help students to think creatively, solve problems and make decisions by teaching them cognitive strategies to make them competitive and capable of mastering the skills. Studies indicate that



problem solving activities, brainstorming and discussions of questions can generate students' HOTS in T&L (Siti Noridah, 2012).

Based on the constructivism theory, active learning encourages students to build new concepts or knowledge and solve problems using the existing knowledge and the knowledge they have just acquired (Curriculum Development Center, 2001). This theory clearly supports the use of ICT in T&L as part of student-centered learning that allows active response to happen when students are given the freedom to carry out learning activities. Aliff et.al (2014) also explains that students will use higher-order thinking to interpret and integrate new information with the existing one in order to produce innovation and to solve problems.

Teachers always use technology as part of their teaching aids for instance radio, television, projector, compact disc/DVD, computer and the Internet. The use of multimedia, CD, the Internet, e-mail, web page, all sorts of software and prototypes that can stimulate the mind are used by teachers in their T&L. Strategies of using these materials assist students' mental growth and intellectual capability in line with the Curriculum Development Section (CDS) (2014) suggestion that teachers should use ICT to help students increase understanding, generate ideas and perform high level thinking. Besides that, students' motivation and interest will increase too because they can access, analyze, sort and share information, and also they can complete assignments on their own. This can enhance their creative and innovative thinking capability, problem solving and communication skills.

### **Creative and Innovative Thinking Skills**

Thinking skills are a skill set that is developed in line with the knowledge aspect as well as values in all subjects. Creative thinking is the ability to create something new. This type of thinking will grow and become what is called out-of-the-box thinking that heads toward a much wider prospect and it involves various elements that often times will lead to great ideas and creative decisions. The involvement of students and computers refers to the three elements which are subject content, thinking skills and computer savviness. Siti Noridah (2012) supports Muir's (1994) view that says technology is a tool that helps students think creatively and critically.

Md. Ishak (2010) agrees with Edward de Bono who contends that thinking is a skill to operate intelligence potential. Thinking is a mental activity to solve problems using the existing knowledge in order to understand, make decisions, plan, act on and solve problems and all these have the potential to be communicated. The elements of creative and critical thinking can be included during information presentation and learning activities in the software that has been developed. This skill can encourage students make innovations by blending the analyzed findings and then share them with others.

In addition to that, the use of J-QAF module software called Bestari Solat (Smart Solah) model that integrates several dynamic elements like pictures, animation and sounds increase students' interest and help them understand what they learn (Md. Ishak, 2010). The combination of several media in learning can motivate students use the 'preferred' senses to absorb knowledge and eventually generate thinking skills. Students are able to appreciate religious practices through the combined elements and from this they can relate it to the reality of the day-to-day life of a Muslim.

According to Siti Fatimah & Saemah (2008) the choice of materials taken from the website to be used in T&L needs to be analyzed using critical thinking in order to ensure clarity, accuracy, detail adequacy, relevancy, content-depth and in addition to that it should also be logic, all-encompassing, significant and fair. Besides that, online learning activities require students to use high-order cognitive skills in order to search for information, solve problems and find rational answers. Furthermore, the students can put together the information and the solution and apply it in the real-life situation.

Web-based T&L also helps students build confidence and develop certain skills. According to Kosakowski (1998), web-based learning can produce students who are critical and analytical. This skill develops from self-exploration for information through the web and from this the students will form their understanding from their own findings that they discovered in the web about a certain topic that they have learned (Norliza et.al, 2013). The students' minds will be more open and the knowledge they obtain is more meaningful when they are able to create and build knowledge on their own (Asniza and Zaidatun, 2010). Creative thinking that has been developed encourages students to create and produce innovations for the benefit of the society.

### **Problem Solving Skills**

Problem solving is defined as skills in critical thinking and/ or logic that enables an individual to achieve solution to a personal conflict which the individual has never been able to achieve before. This agrees with the CDS (2014) that explains Stein & Lane's (1996) view which states that thinking ability, reasoning and problem solving must

start from performing complex, high-order cognitive tasks, learning that cut across curriculum dan finding solutions to real-life problems.

Problem solving skills can be acquired by utilizing problem solving applications, simulation of real-life situations and fun, entertaining games. ICT applications can give students the opportunity to solve an assortment of problems that the students might have not come across before which are related to the real-life situations (Paul et al. 2006). Solution that goes through the deduction process, synthesis dan logic application is needed because every solution is different from one person to another due to the methods used, and also due to the situation and environment that are different. Furthermore, the main features of problem solving is to stimulate analytical thinking because original thinking is needed in order to solve problems.

Besides that, this skill can be used to boost self-confidence, create awareness of the self, increase knowledge, add experience, decide and fortify actions to be taken in order to solve problems. Students can also enhance their analyzing and decision making skills, and learn to be more appreciative of changes that happen and adapt themselves accordingly. The use of ICT is an opportunity for self-learning through exploration of diverse disciplines of knowledge. Students can also access Islamic education references and material easier and faster (Kamarul Azmi & Ab. Halim, 2007). This self-learning material gives freedom to students to decide the direction and take control of their learning. It gives them the encouragement to make wiser decisions and thus provides the expected/ intended response.

Students are able to solve problems given to them and work together as a group in cooperative learning using ICT applications (Wan Hasmah & Nur Munirah, 2013). Simulation activities in Islamic Education can enhance students' problem solving skills and encourage high level thinking. These skills can help students face problems that can occur in their daily life. Evaluation and analysis are made in order to come up with the best solution that is based on the Syariah.

### **Communication Skills**

Communication skills can be enhanced through T&L that uses ICT when the interaction that happens generates verbal and non-verbal communication skills. Khadijah et al. (2014) states that the ICT applications in T&L creates communication between students, students and teachers or teachers with their teaching material, and also between teachers. Communication between teachers or students with the parties that are involved in learning also occurs. As an example, collaborative learning encourages cooperation between students and develops communication skills through questions, references and feedback.

Mohd Nasri's (2010) study shows that multimedia software development for 'Jawi j-Qaf year one remedial class model: Single letters' that applies cooperative learning in groups has managed to encourage discussions, cultivate positive interactions and cooperation between students and ultimately generate higher-order thinking. According to Azliza Awang (2007) this kind of T&L is able to attract the attention of the students through the use of graphics and multimedia elements that can make the activities more effective, interesting and easy to understand. Cooperative learning based on situations, projects, problems and discussions gives opportunities to students to search for information, gather materials, communicate and evaluate the outcomes (Aliff et al. 2014) through challenging tasks. This learning process can increase the level of students' motivation (Siti Fatimah, 2010; Norsiaty, 2008) and give the opportunity to the students to learn according to their own ability (Rahmad & Shuki 2009; Kamarul Azmi & Ab. Halim 2007).

Besides that, the use of the Internet in T&L can stimulate and encourage students to take part in online discussions unlike conventional learning. Images, graphics, texts and sounds make the students want to be involved in interactive learning activities throughout the T&L session. According to Zuliana (2001) the use of the Internet in education as the material for T&L or additional references for teachers and students is a viable approach as it can be accessed everywhere, fast, current, and the scope is worldwide. In addition to that, through the Internet the students can indirectly communicate with field experts. When the students' communication becomes more expansive and their motivation increases (Md. Yusof and Maimun, 2009) it encourages active participation that is capable of increasing understanding and thinking.

### **CONCLUSION**

The aim of T&L in Islamic Education is to produce individuals who have strong faith in God, possess exemplary character and amiable personality, and have strong moral integrity. These students are able to contribute to their own wellbeing and also the society, religion and nation. The fast changing globalized world makes the use of ICT in the T&L of Islamic Education even more significant. It acts as a means to integrate Islamic knowledge with the modern knowledge in order to help students deal with the challenges in the era of the borderless world. It also can

generate higher-order thinking through the enhancement of creative and innovative thinking, problem solving and communication skills. These skills can build self-confidence and sharpness of the mind in order to produce excellent *khalifatullah*.

However, an effective implementation of HOTS using ICT in the T&L of Islamic Education requires careful planning in all aspects from the technical side to the facilities and applications to be used according to the needs and suitability of the target group. Complete equipment like computers and reliable internet service ensures that the T&L session will run smoothly and achieve its objectives. Other than that, computer savviness among teachers and students will ensure the effectiveness of the T&L. Software development skills are also important to ensure the application produced can stimulate the minds of the students to be able to perform higher-order thinking.

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## Good Teacher Quality From The Perspective Of Learners, Teachers And Headmasters Of Primary Schools And High Schools/Secondary Grammar Schools

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### ABSTRACT

The aim of this paper is to identify differences in perception of personal qualities of good teacher among learners, teachers and headmasters of primary and high/secondary grammar schools. The sample consisted of 425 respondents aged 13-60 years old (87 elementary school learners, 81 primary school teachers, 40 headmasters of primary schools, 87 students high schools/secondary grammar schools, 94 teachers of high schools/secondary grammar schools, 36 headmasters of high schools/secondary grammar schools). We used the Osgood's Semantic Differential for measurement of the perception of the concept of the good teacher quality. The semantic space was defined by three dimensions: value, power and activity. The scale contains 24 bipolar adjectives. We have identified a significant difference in the dimension "power" among internal partners of primary schools (learners, teachers and headmasters). The highest inclination to attribute "power" of the personal characteristics of good teacher quality was recorded in the primary school headmasters and vice versa the least one was represented by primary schools learners (among all groups). We have also found significant differences in the perception of good teacher quality in dimensions "value" and "power" between the headmasters of the primary schools and the headmasters of the high schools/secondary grammar schools. More significant focus on the personal characteristics of good teacher quality within the dimensions "value" and "power" was reflected by the headmasters of the primary schools. We did not find the significant differences among the groups in the dimension "activity".

### INTRODUCTION

A teacher quality is the term not clearly defined in different resources, so authors of studies usually apply terms such as successful, effective or good teacher in this context. According to Kennedy (2008) a teacher quality is the term difficult to explain and therefore he connects it with three various lists of features of the quality teacher: personal resources, performance, and effectiveness. By "personal resources" he means those qualities that teachers have even before they are employed as teachers and that are often assumed to contribute to the quality of their teaching practise (beliefs, attitudes, values, personality traits, knowledge, skills, expertise, credentials). By "performance" he means the work teachers actually do in their daily practise (practices that occur outside the classroom, practices within the classroom, learning activities provided for students). Finally "effectiveness" usually refers to how good teachers are at raising student scores on achievement tests (fostering student learning, motivating students, fostering personal responsibility and social concern).

Novák (2011) points out the teacher quality from the professional point of view of the teacher. A quality is a dynamic issue – it is applying of abilities in the action: performance – effective application of knowledge and abilities in various teaching situations followed by responsibility for his/ her performance. This is the basis of professional work: aware of his/her goals, target-oriented, planned, systematic and critically evaluated approach to activities within the teaching and learning processes.

Blaško (2013) states that the excellent teacher is a scholar, professional who can arouse in each learner a need to learn and teach him/her how to learn to be able to apply it in lifelong learning. This process can be achieved by teacher's influence, by a system of achieved teacher's competences, qualification, ethical and personal potentials. Peng et al. (2014) draw attention to the expectations of an excellent teacher, which include addressing all aspects of their students' development; possessing a rich subject knowledge; displaying such personality traits as happiness, kindness, confidence, diligence, intelligence and humor; to innovate and use modern teaching strategies and resources, and to frequently evaluate and update their teaching techniques; to carry out their own research; to network both socially and academically; and, above all, to achieve high student outcomes.

The main tasks of a teacher are to educate, bring up and develop personality of learners and it implies to his/her adequate education which involves university education, including study of pedagogy, as well as general education. A teacher is also an example of good behaviour for his/her learners. Furthermore, high demands are placed on a teacher, mainly his/her personal and character traits, including: honesty, conscientiousness, diligence, fairness, patience, consistency, responsibility, self-control, good relationship with the people, initiative, creativity, good verbal skills, logical and systematic thinking, sense of humour, willingness to accept new ideas, etc. (Turek, 2008).

An excellent teacher, according to Blaško (2012), should have necessary professional knowledge and skills which are developed and enhanced continuously and thus s/he increases his/her professionalism, as well as quality of his/her impact on learners. A teacher keeps all his/her list of knowledge and skills in his/her teacher's portfolio, which includes not only feedback of his/her activities (mostly done through questionnaires), but also learning outcomes of his/her learners. A teacher respects ethical principles of teaching profession; s/he is an example of



good ethical behaviour and polite interpersonal relationships. S/he should prove his/her positive attitude to work with learners, s/he is motivated to improve his/her activities, and s/he increases his/her professional development and self-education systematically. An excellent teacher sets the goals to enhance the quality of his/her activities, a plan of his/her professional development based on information about his/her teaching through self-reflection, observation of colleagues, feedback from learners and parents too. Moreover, it is necessary to highlight the relationship between a quality of school and quality of a teacher, and a quality of the relationship a teacher versus management of a school, etc. All above mentioned definitions and views on a quality/good teacher point out his/her professional, skilled and personal disposition to work as a teacher.

A good teacher is according to Black and Howard-Jones (2000) a person having the following personal and working attributes: good relationship with learners, s/he can identify with their roles, s/he is interested in them, motivates them, s/he encourages and inspires learners; s/he is honest and fair; s/he is an enthusiast; s/he is a good and understanding; s/he has a positive thinking; s/he sets up a positive learning environment; s/he has sense of humour; s/he is patient; s/he has some expectations from learners; s/he can manage a learning unit; s/he activates learners, mainly by applying a group work and modern teaching methods; his/her lessons are interesting and amusing; s/he likes subject s/he teaches and masters it; communicates with learners out of school; gives instructions what and how to learn; s/he arouses a sense of responsibility at learners for studying; s/he flexible.

Leskovjanská (2007) has carried out the research in the field of quality of teacher's personality in primary school from teachers and psychologists' points of view. She has found out that psychologists and teachers consider the most important characteristics and manifestation in teacher's behaviour the following attributes: capability of empathy, emotional stability of a teacher, patience at work. Another important attribute of a teacher from teachers and psychologists' points of view are: love and relationship to learners, teacher's adherence to principles, justice, responsibility at work and creativity. On the other hand, the least required personal characteristics and elements in teacher's behaviour are: negativism, aggression against a learner, lack of organization, non-systematic, indecision of teachers, not using the individual approach to learners.

Hoferková and Šťastná (2009) have carried out research on perception of „ideal“ teacher's characteristics from points of view of teachers in primary school, students of ninth grades in primary schools, students-teachers and public. Learners connect the ideal teacher with the following attributes: nice, tolerant, educated, funny, kind, fair, s/he should teach "something", enjoyable, strict, funny, nice, patient, friendly, natural authority, indulgent. Students-teachers perceive the following attributes of an ideal teacher: patient, position of authority, empathetic, tolerant, educated, friendly, creative, s/he should have a sense of humour, thorough, communicative, helpful, rigorous, intelligent, positive relationship with the children. According to the teachers the ideal teacher should be particularly empathetic, patient, tolerant, fair, creative, friendly, communicative, kind, open, humorous, be an example, optimistic, pro-social, education / sophisticated, authentic. According to the public, the teacher should be mainly matured morally, educated and empathetic.

According to the Istvan research (2011) a good teacher is from the perspective of students: reasonably rigorous, fair, s/he treats each learner the same way, s/he should not scream at students, s/he should not punish them if they do not know something, s/he should be patient, calm, s/he should have a sense of humour and clearly explain the subject matter. Comenius has already demanded that the teacher should be wise, deliberate, moral, vivid model of grace, cultural, educated, good speaker, and leader.

Our research intention is to identify and describe attributes of a teacher quality from points of view of learners, teachers and head-masters in primary and secondary schools. We are asking:

- what is the difference in attributes of a quality teachers from points of view of these internal school partners within three dimensions (value, power, activity) in particular school levels (primary and secondary)?
- what is the difference in attributes of a quality teacher within three dimensions (value, power, activity) from points of view of learners in primary schools and students of high schools and secondary grammar schools?
- what is the difference in attributes of a quality teacher within three dimensions (value, power, activity) from points of view of teachers in primary schools and teachers of high schools and secondary grammar schools?
- what is the difference in attributes of a quality teacher within three dimensions (value, power, activity) from points of view of headmasters in primary schools and headmasters of high schools and secondary grammar schools?

## METHODS

Research sample consisted of 425 respondents (internal partners of schools in Slovakia), including 87 learners in primary schools aged 13-14 (average age 13.7), 81 teachers in primary schools aged from 27 to 60 (average age 43.1), 40 headmasters in primary schools aged from 40 to 60 (average age 47.8), 87 students in high schools aged 17-18 (average age 17.2), 94 teachers of high schools aged from 28 to 59 (average age 48.1), 36 headmasters in high schools and secondary grammar schools aged from 41 to 58 (average age 48.3). Totally, 286 women and 139 men participated on research.

We have applied psychosemantics method within the research – semantic differential of Osgood, which enables to identify the way how people perceive terms (in our case it is a term of a quality teacher). Each term has except a denotative meaning, a connotative (hidden) meaning as well, while each term can be specify in semantic area using three dimensions (Gavora, 2010):

1. Dimension “value” – represents evaluation of the term according to impression it raises.
2. Dimension “power” – represents an energetic drive of the term. It is considered if it affects as a dominant, strong or on the other way weak, undistinguished.
3. Dimension “activity” – represents if the term expresses dynamic, activity or if it acts as calm and passive.

We have compiled the semantic differential consisting eight terms to each particular dimension. The following bipolar adjectives were involved in the “value” dimension: interesting – boring, friendly – unfriendly, creative – uncreative, competent – incompetent, having sense of humour – serious, tolerant – intolerant, fair – unfair, honest – insincere. The following adjectives were involved in the “power” dimension: certain – uncertain, peaceful – unfriendly, systematic – disorganised, demanding – easy, liberal – authoritative, sensitive – insensitive, principled – unprincipled, practical – theoretical. The following adjectives were involved in the “activity” dimension: active – passive, responsible – irresponsible, peaceful – dynamic, extrovert – introvert, fast – slow, patient – impatient, judicious – unfair, communicative – quiet.

## RESEARCH FINDINGS

Table 1 Average values of bipolar adjectives in the perception of quality teachers by learners/students (L/S), teachers (T) and headmasters (H), in primary schools (PS) and high schools/secondary grammar schools (HSGS)

Bipolar adjectives	L in PS	S in HSGS	T in PS	T in HSGS	H in PS	H in HSGS
interesting/boring	1.77	1.82	1.50	1.82	2.15	1.63
friendly/unfriendly	1.59	1.92	2.00	1.56	2.28	1.73
active/passive	1.99	1.39	1.80	2.67	1.86	1.61
responsible/irresponsible	1.53	1.06	1.06	2.34	1.52	1.17
certain/uncertain	1.94	1.58	1.50	1.93	1.38	1.50
peaceful/dynamic	1.80	2.49	2.50	1.36	2.39	2.78
extrovert /introvert	2.13	3.12	2.80	2.56	2.75	3.16
fast/slow	2.51	2.96	3.20	2.12	2.75	2.77
creative/uncreative	1.97	1.31	1.60	2.40	1.61	1.33
strong/weak	1.74	2.11	1.80	1.69	1.86	1.83
systematic/disorganised	1.89	1.90	1.40	1.76	1.86	1.50
competent/incompetent	2.10	1.59	1.30	2.17	1.54	2.00
demanding/easy	4.99	3.81	2.40	2.67	3.43	3.47
liberal/authoritative	3.07	3.66	4.40	3.23	4.03	3.56
having sense of humour/serious	2.11	3.20	3.00	1.86	3.13	2.67
sensitive/insensitive	3.14	3.02	2.90	3.13	2.59	2.39
patient/impatient	2.09	1.47	1.60	1.73	1.83	1.89
judicious/impulsive	2.55	1.80	1.50	1.68	1.95	1.78
tolerant/intolerant	1.82	1.66	1.30	1.62	2.05	1.83
judicious/unfair	1.74	1.17	1.85	1.25	1.55	1.56
principled/unprincipled	2.85	1.58	1.60	2.54	1.96	2.05
honest/insincere	2.28	2.26	1.70	1.61	1.69	2.11
practical/theoretical	4.15	3.60	2.10	4.29	2.74	3.72
communicative/quiet	1.63	1.47	1.40	1.40	1.64	1.72

According to learners in primary schools, a teacher quality is mainly responsible, friendly, communicative, strong, judicious, interesting, calm, tolerant, systematic, active, certain and creative. According to students in high schools and secondary grammar schools, a teacher quality is mainly responsible, judicious, creative, systematic and friendly. Teachers of primary schools perceive a teacher quality mainly as responsible, tolerant, competent, communicative, systematic, interesting, certain, judicious, patient, creative, principled, honest and active. Teachers in high schools and secondary grammar schools perceive a teacher quality mainly as fair, calm, communicative,

friendly, honest, tolerant, judicious, systematic, patient, competent, interesting and certain. Headmasters in primary schools declare that a teacher quality is mainly responsible, active, competent, fair, creative, communicative, honest, patient, active, strong, systematic, judicious and principled. Headmasters in high schools and secondary grammar schools perceive a teacher quality as responsible, creative, certain, systematic, fair, active, interesting, communicative, friendly, judicious, tolerant, strong and patient. Perception in studied groups in most of the bipolar adjectives was located significantly under a level of average (scale consisted of 7 degrees) in a strong semantic area of the term a teacher quality (in the area 1-1.99 above listed adjectives).

Move away from unambiguity in all studied groups have been recorded in bipolar adjective liberal – authoritative, because measured score got close to the central value, while learners in primary schools and teachers in high schools and secondary grammar schools have a tendency to accept a liberal teacher more. Headmasters in primary schools and teachers in primary school tend to support an authoritative teacher. Students in high schools and secondary grammar schools and headmasters in high schools and secondary grammar schools are in the zone of unambiguity (mean). Significant differentiation have been recorded in adjective demanding – easy, while ease with the term a teacher quality is highlighted by learners in primary schools and students in high schools and secondary grammar schools have a slight tendency to support it as well. Teachers in both levels of schools tend to support a slight demanding character. Headmasters in both levels of schools have supported unambiguity in the area of the mean within the bipolar adjective. We have recorded differentiation within the scale practical – theoretical. Learners in primary schools and teachers in high schools and secondary grammar schools support adjective theoretical. Teachers in primary schools and headmasters in primary schools support adjective practical. Students in high schools and secondary grammar schools and headmasters in high schools and secondary grammar schools do not perceive definite connection of a teacher quality with an emphasis on either practical or theoretical character.

Table 2 Differences in perception of a teacher quality by learners, teachers and headmasters in primary schools

Dimension	Research group	N	Mean	SD	ANOVA	Sig.
Value	Learners in primary school	87	15.44	6.22	2.766	.065
	Teachers in primary school	81	14.84	3.22		
	Headmasters in primary school	40	13.40	1.22		
Power	Learners in primary school	87	23.78	3.95	43.384	.000
	Teachers in primary school	81	21.27	2.74		
	Headmasters in primary school	40	18.10	2.28		
Activity	Learners in primary school	87	16.24	5.84	.258	.773
	Teachers in primary school	81	15.77	3.73		
	Headmasters in primary school	40	15.80	2.82		

In the field of differences identification in the semantic perception of the term a teacher quality in all three dimensions (value, power, activity) among three internal partners of primary schools (learners, teachers, headmasters), we have identified a significant difference only in a dimension “power”, while significantly the highest semantic connection with the teacher quality in dimension “power” have headmasters in primary schools, while, on the other hand, the lowest one have learners in primary schools (see Table 2).

In the field of differences identification in the semantic perception of the term a teacher quality in all three dimensions (value, power, activity) among three internal partners of high schools and secondary grammar schools (students, teachers, headmasters), we have not identified any significant difference (see Table 3).

From the aspect of comparison of perception of a teacher quality through attributes centred to three categories of the semantic area (value, power, activity) among learners in primary schools and students in high schools and secondary grammar schools, we have identified a significant difference only in the dimension “power”, while significantly higher semantic connection with a teacher quality in this dimension have students in high schools and secondary grammar schools in comparison with learners in primary schools (see Table 4).

Table 3 Differences in perception of a teacher quality by students, teachers and headmasters in high schools and secondary grammar schools

Dimension	Research group	N	Mean	SD	ANOVA	Sig.
Value	Students in high schools and secondary grammar schools	87	14.90	5.39	.043	.958
	Teachers in high schools and secondary grammar schools	94	16.01	4.99		
	Headmasters in high schools and secondary grammar schools	36	14.86	2.04		
Power	Students in high schools and secondary grammar schools	87	21.24	5.17	2.350	.098
	Teachers in high schools and secondary grammar schools	94	19.85	4.41		
	Headmasters in high schools and secondary grammar schools	36	20.03	2.40		
Activity	Students in high schools and secondary grammar schools	87	16.87	3.92	1.454	.236
	Teachers in high schools and secondary grammar schools	94	16.70	4.88		
	Headmasters in high schools and secondary grammar schools	36	16.89	3.97		

Table 4 Differences in perception of a teacher quality by students in primary schools and students in high schools/secondary grammar schools

Dimension of semantic area	Learners in primary schools		Students in high schools/secondary grammar schools		T-test	Sig.
	Mean	SD	Mean	SD		
Value	15.44	6.22	14.90	5.39	.612	.541
Power	23.78	3.95	21.24	5.17	3.643	.000
Activity	16.24	5.84	16.87	3.92	-.838	.403

Table 5 Differences in perception of a teacher quality by teachers in primary schools and teachers in high schools/secondary grammar schools

Dimension of semantic area	Teachers in primary schools		Teachers in high schools/secondary grammar schools		T-test	Sig.
	Mean	SD				
Value	14.84	3.22	16.01	4.99	-1.869	.063
Power	21.27	2.74	19.85	4.41	2.593	.010
Activity	15.77	3.73	16.70	4.88	-1.409	.161

Based on statistical comparison of perception of a teacher quality through three categories of the semantic area (value, power, activity) among teachers in primary schools and teachers in high schools and secondary grammar schools, we can state that a significant difference among them is again only in semantic dimension “power” towards higher semantic connection of this dimension with a teacher quality at teachers in high schools and secondary grammar schools (see Table 5).

Within the perception of a teacher quality through attributes centred to three categories of the semantic area (value, power, activity) there is also a significant difference at headmasters in primary schools and headmasters in high schools and secondary grammar schools. We have identified a significant difference in two dimensions of the semantic area of the term a teacher quality – “value” and “power”. We have recorded significantly higher semantic connection with a teacher quality in both dimensions at headmasters in primary schools (see Table 6).

Table 6 Differences in perception of a teacher quality by headmasters in primary schools and headmasters in high schools and secondary grammar schools

Dimension of semantic area	Headmasters in primary schools		Headmasters in high schools/secondary grammar schools		T-test	Sig.
	Mean	SD	Mean	SD		
Value	13.40	1.22	14.86	2.04	-3.735	.000
Power	18.10	2.28	20.03	2.40	-3.580	.001
Activity	15.80	2.82	16.89	3.97	-1.389	.169

## CONCLUSIONS

One of our research intentions was to describe attributes of a teacher quality from points of view three internal school partners: students, teachers and headmasters. Based on results presented in the previous part of the study paper we can sum up that the term a teacher quality within the semantic area is placed at all studied internal school partners (students, teachers and headmasters) in both levels of schools (primary and secondary schools) in the strong meaning of adjective (mean zone 1.00-1.99): certain, systematic, fair and communicative. In case of an adjective “responsible”, it is placed at the significantly highest ranks out of all adjectives describing the term teacher quality at 5 groups (excluding teachers in high schools and secondary grammar schools, where the average value is 2.34). Similar situation is with adjectives creative (teachers in high schools and secondary grammar school with the average value 2.40) and tolerant (headmasters in primary school with average value 2.05). In relation to the term a teacher quality, we have come up with findings that the term a teacher quality might be identified in the field of his/her personal features as a responsible, systematic, certain, creative, fair and communicative. Our findings, which describe personal attributes of a teacher quality, support findings of other authors (for instance Ištvan, 2011, Leskovjanská, 2007, Hofferková & Šťastná, 2009, Black & Howard-Jones, 2000 and others).

Another goal of our research was to identify whether particular internal school partners have different perception of a teacher quality (measured by 24 bipolar adjectives saturated in three dimensions of a semantic area of the term a teacher quality – value, power, activity) and, moreover, in the context of the school level (primary school, high school, secondary grammar school). We have identified a difference only in a dimension “power” in the field of identification of differences among all groups of internal school partners, as well as in the field of differences among internal partners in high school and secondary grammar schools. Headmasters in primary schools, followed by students in high schools and secondary grammar schools, perceive a teacher quality significantly more with such personal attributes, which include energetic impulse of the term a teacher quality. While seeking answers for developed research questions by ourselves: 1. What is the difference in attributes of a quality teacher from points of view of students in primary schools and students in high schools/secondary grammar schools within three dimensions (value, power, activity)?, 2. What is the difference in attributes of a quality teacher within three dimensions (value, power, activity) from points of view of teachers in primary schools and teachers in high schools/secondary grammar schools?, 3. What is the difference in attributes of a quality teacher within three dimensions (value, power, activity) from points of view of headmasters in primary schools and headmasters of high schools/secondary grammar schools?, we have come to conclusion that students from primary schools and high schools/secondary grammar schools, as well as teachers from primary schools and high schools/secondary grammar schools and headmasters from primary schools and high schools/secondary grammar schools, significantly differ in dimensions of the semantic area of the term a teacher quality “power”. As for students and teachers, higher semantic inclination to the term in the level of the energetic impulse, can be seen on the second level of education (high schools/secondary grammar schools). In case of headmasters, we have recorded a significant difference in two dimensions of the semantic area of the term a teacher quality – “value” and “power”. Headmasters from primary schools have higher demands on personal attributes of a teacher quality in both dimensions (“value” and “power”) compared with the headmasters of high schools/secondary grammar schools. A teacher quality is one of the significant indicators of the school quality and quality of education (e.g. Verešová et al., 2012, 2014, Blaško, 2012, 2013 and others). The quality of a teacher in the process of education and his/her cooperation with all internal and external school partners is significantly determined by his/her personal features. The findings of the research by Arnon & Reichel (2007) indicate that there are two major categories that comprise perceptions of the ideal teacher: first, personal qualities; and second, knowledge of the subject taught as well as didactic knowledge. Personal qualities are parts of his/her “personal self” and are reflected in the teaching profession and his/her “professional self”. As Korthagen states (2004), most researchers in this area agree that excessive inconsistencies between one’s personal and professional identities would in the long run give rise to friction within the individual teacher. The personal attributes of a teacher quality, which we have identified, significantly fit to the frame which Korthagen (2004) calls as “missions”. The “mission” and “professional self” are the ones of the deepest determinants of teaching profession (another are in direction from deep to observed ones beliefs, competencies, behaviour). According to Tickle (1999, in Korthagen, 2004) related to the deeper levels



are people's personal qualities, for example creativity, trust, care, courage, sensitivity, decisiveness, spontaneity, commitment, and flexibility. Therefore, we consider important (in the context of our research) that a teaching profession should do not only professionals in the field of their specializations and professionals in didactics of curriculum subjects (result of higher education), but mainly people whose personal qualities are represented by deep positive personal qualities, including our identified attributes of a teacher quality, such as responsible, systematic, to be sure of him/herself and preferred approaches to others, creative, fair or communicative.

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## Happy City: City Discussions

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### ABSTRACT

City, to where the citizen belongs to as being the citizen, thus having an identity with the city, to live in the city, with or without the rights of the citizenship..

Well, on which point will the citizen be right- while living inside the city/ while trying to live on the city-?

If being happy/ living happy is the will of each and every of us, who is going to create this happiness to us? we? or the others? who else? the country? the government? or the authorities? or the capitalism that we live for? or it's new face , the neo-liberalist economies? Well, where is the citizen undercover on the city? till where is the citizen right inside the city?

Every city user has a dream, an illusion, an imagination not only related with the city, but also about living on that city; and if the citizen has a utopia, then whose dystopia would it be. In other words whose utopia can be who else's dystopia? Or whose utopia is a dream as having a mythical origin in the city where he lives? Searching, discussing, rejecting the "happy city " are just some words of the lullabies of our childhood days? Or can those concepts be the basic points of our daily life?

Each and every citizen has a dream in the city, being happy on the city by living the dreams or rejecting the city after seeing a nightmare.

Being a refugee in a city, converge of a place in the city, being a part of myth of feeling himself as a citizen and soon rejecting the city life, and the dreams of being the other, living outside of the city, so on so forth. Which feeling must be the right to choose, to have to live a better life?

Thus, the paper will be about the *Happy City Workshop*, which was held on Trabzon in 2014, during the architectural workshop series of Karadeniz Technical University and the short movie of the workshop that was shot in there by 15 students. The paper also will not only have all of those discussion about the relationship among the city, the capitalism, the neo-liberal economies and the architecture, but also it will discuss the utopias and dystopias related with the happy city and all who are searching of, living on, discuss and examine the city, who has an utopia of the city, or who see that all of the utopias of the city can be dystopias as well of others, and those who reject them all, while put a light to the written texts chronologically about the city from the first city focused written text of St.Augustin's *The City of God* to Renzo Piano's city discussions and Charles Montgomery's book of *Happy City*.

**Keywords:**history, past, historicity, historicism, architecture

### 1.INTRODUCTION

As the citizens of the city where we live in we can all dream different city life standards and for sure different stories to have part in. Some of these dreams can be utopic, too. The fact that sometimes these utopic dreams of some citizens of the city can be dis-utopic to some other citizens. Therefore, it seems that almost each and every of the citizen can have different city dreams from the other citizens of the city according to their own point of views.

### 2. CITY DISCUSSIONS

*"Accordingly, two cities have been formed by two loves:  
the earthly by the love of self, even to the contempt of God;  
the heavenly by the love of God, even to the contempt of self.  
The former, in a word, glories in itself, the latter in the Lord.  
For the one seeks glory from men;  
but the greatest glory of the other is God".*

*De Civitate Dei, Book 14, chapter 28*

The first text in the world history, which was about the city, was written by St. Augustine in the 5<sup>th</sup> century known as *The City of God*. He wrote the book as arguing for the truth of Christianity over competing religions and philosophies and that Christianity is not only not responsible for the Sack of Rome, but also was responsible for the success of Rome.

It is interesting that the text is mainly based on the religion reasons and it is the best known and most read of his works, except the *Confessions*. It embodies the results of thirteen years of intellectual labour and study (from A.D. 413–426). It is a vindication of Christianity against the attacks of the heathen in view of the sacking of the city of Rome by the barbarians, at a time when the old Greco-Roman civilization was approaching its downfall, and a new Christian civilization was beginning to rise on its ruins. It is the first attempt at philosophy of history, under the aspect of two rival cities or communities,—the eternal city of God and the perishing city of the world.

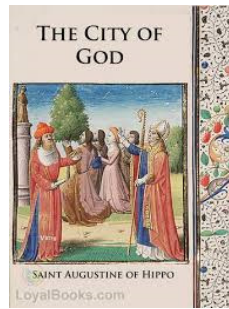


Fig.1. De Civitate Dei (The city of God), St Augustin

During the human history it is known that St. Augustin named the first text written about the city as *the City of God*, which is the masterpiece of the greatest genius among the Latin Fathers. This was the only philosophy of history known throughout Europe during the middle ages; it was adopted and reproduced in its essential features by Bossuet, Ozanam, Frederick Schlegel, and other Catholic writers, and has recently been officially endorsed, as it were, by the scholarly Pope Leo XIII. in his encyclical letter on the Christian Constitution of States (*Immortale Dei*, Nov. 1, 1885). From this point till the contemporary city discussions in the architecture praxis of today, there are many texts written about the utopias of living in a *Happy City*. Rem Koolhaas and Renzo Piano are maybe the most known architects who like to discuss the relationship among the citizen, the city and the architecture. For sure, Le Corbusier left many “perfectly shaped” *Corbi city plans* to his architect pupils on “his fan club” after him.

### 3. UTOPIA

*Utopia* (*Libellus vere aureus, nec minus salutaris quam festivus, de optimo rei publicae statu deque nova insula Utopia*) is a work of fiction and a political philosophy by Thomas More published in 1516 in Latin language. The book is a frame narrative primarily depicting a fictional island society and its religious, social and political customs.



Fig.2. The Utopia Insvlae Figvra

"Utopia" is derived from the Greek words *ou* (οὐ), "not", and *topos* (τόπος), "place", with the suffix *-iā* (-ία) that is typical of toponyms; hence *Outopía* (Οὐτοπία; Latinized as *Utopia*, with stress on the second syllable), meaning, "no-place-land". In early modern English, *Utopia* was spelled "Utopie", which is today rendered **Utopy** in some editions.

In English, *Utopia* is pronounced exactly as *Eutopia* (the latter word, in Greek Εὐτοπία [*Eutopiā*], meaning “good place,” contains the prefix *eu-* [eu-], "good", with which the *ou* of *Utopia* has come to be confused in the French and English pronunciation). This is something that More himself addresses in an addendum to his book *Wherefore*

*not Utopie, but rather rightly my name is Eutopie, a place of felicitie.* Most scholars see it as some kind of comment or criticism of contemporary European society, for the evils of More's day are laid out in Book I and in many ways apparently solved in Book II. Indeed, Utopia has many of the characteristics of satire, and there are many jokes and satirical asides such as how honest people are in Europe, but these are usually contrasted with the simple, uncomplicated society of the Utopians.

Yet, the puzzle is that some of the practices and institutions of the Utopians, such as the ease of divorce, euthanasia and both married priests and female priests, seem to be polar opposites of More's beliefs and the teachings of the Catholic Church of which he was a devout member. Another often cited apparent contradiction is that of the religious toleration of Utopia contrasted with his persecution of Protestants as Lord Chancellor. Similarly, the criticism of lawyers comes from a writer who, as Lord Chancellor, was arguably the most influential lawyer in England. However, it can be answered that as a pagan society Utopians had the best ethics that could be reached through reason alone, or that more changed from his early life to his later when he was Lord Chancellor.

Ferrara is a well-known city of the Emilia-Romagna Region, in Northern Italy, providing one of the best examples of the quantity of information that can be inferred from archaeo-botanical analyses from Medieval/Renaissance contexts. The city developed around a ford on the Po river in about the 7th cent. A.D., and is one of the few Italian cities whose original layout was not based on the Roman tradition. The Este family ruled Ferrara from the second half of the 13th cent. A.D., and under its control the city rose to a significant position within the Italian states. Today, Ferrara is famous for its historical center, which is extraordinarily well preserved, featuring small orchards and gardens, and it was declared a World Heritage Site by UNESCO in 1995.



Fig.3. The Utopic city Ferrara, Italy, Renaissance period.

The archaeo-botanical records considered here originate from deposits dating from between the end of the 13th to the 15th cent. A.D. and located within the urban environment. Other European cities with records of medieval seed/fruit remains from useful plants include Prague, Gdańsk, Elbląg and Kołobrzeg in Poland, and other Northern European cities.

#### 4. CITY UTOPIAS/ DIS-UTOPIAS

The relationship between the image and the space always been one of the basic discussion of the architecture. In fact this discussion goes back deep into the point that the image is more effective than the speech. The image production is also important as the space production as well. Therefore, the representation and presentation are the basic elements of the architecture. And the "travel" of the space from the abstract plane to a concrete material plane, the production, consumption and marketed of the imagination as a commodity has been ready to use as a part of the contemporary architecture.

The relationship between the image and the space always has been one of the main discussion of the architecture and moreover than this even the image went up more effective than speeches on the praxis of the field. The image is making up the production of the needed space, it seems. The relationship between the space production and the image is important because they are the basic tools for architectural representation and presentation. Space can be defined as a material from produced from the abstract plane form of an image which is thought by the user. The image is to be produced as a commodity, on the contemporary world and it is to be consumed and marketed to the users, and even marketing on the shelves, it loses its own identity and becomes something else, a simulacra and a simulation as Jean Baudrillard indicated on his theorem.

All of this virtuality, with a postmodernist push up on consolidation, is an incontestable fact. Paul Virilio stated that "Extremist science" is not completely calculated one as the disappearance of all kinds of science as a major one and it takes risks. It is a tragic case of a sudden cybernetic knowledge turned into a techno-science. It is also a massive techno-culture. Well with this point of view, the subject of dizziness caused by the acceleration of truth.

Moreover, on this situation final objectivity also works against any kind of authenticity. "

Today, we observe that the capitalist economy produces a dystopian image of the city each and every day more than before, the fact that it is now an advance form known as neo-liberal economies nowadays. The phantasmagoric relation between reality and fiction imagery is going back and forth day by day and thus, relentlessly the cities are growing. High towers, billboards change the reality of a city day by day, the city is now surrounded by billboards more than before. Most of the time our minds are mixed up by the images that we see all during the day by the subliminary advertaisments. Space is one of the biggest part of this imaginary World, to access to a high society level luxury it is a "gate". According to Henri Lefebvre's indication on his book, "The Production of Space", it is understood that the space is not just urban plots, it is an urban image, and even the image of the city and all the practices imposed by daily life on the city build up a commodity. The location of the image is as important as the production of an utopia undeniable. As Krishan Kumar states that, something that had only been imagined utopia sober, would not be attractive interestingly. Fiction utopias have often promising feature, which are images of the world. On the other hand, Lewis Mumford indicates that the first utopia has gone so far away as claiming the city itself.

Economic and political conditions in the city today, the brutality of neo-liberalist capitalism is transforming the production and is also a growing nightmare, which constitutes one of the most appropriate scale for utopia. Literately, because cities are all below the *built environment*, different scale of social and political relations network "reality" organizations can be also known as the part of cities. Therefore, as Kumar said, Utopia is a self and actual imagine of being a literary exercise for citizens own social and political speculation tool.

## 5. TRABZON ON THE MOVIE

The *Happy City Workshop*, was held on Trabzon in 2014 by sharing the city discussions, during the architectural workshop series of summer academic period of the year on Karadeniz Technical Universty (KTU) and the short movie of the workshop that was shot in there by 15 students.

The Happy City Workshop, which was held in Trabzon in 2014, had a process of discussions related with the city, being the citizen of contemporary cities, dreams and wills of the citizens as utopias and/ or dystopias of them. In the movie, it was felt that, the citizens can have different dreams and wills related with having a happy city.

In the end of the workshop, by the light of the movie that was shot by the attended students it is understood that: Modern life standards are created by the pushing touch of the neo-liberalist economies. They are, for sure, more than what is needed to live; they are including luxury consumption. Each and everyday as we want to have more touch of luxury consumption on our life, we do not feel it, but, we make our lives standing far away from the nature. Since, we start to push our lives more to city side far from the nature, we start to live on a simulacr and simulation platform as Jean Baudrillard noticed on his theorem. We start to live a life, which is surrounded with brand, far away from green nature on where we have more money, but less health, more "high statue levels", but less friendship on the society. Thus, it is seen that somebody's utopias can be somebody else's dystopias, and a totally happy city cannot be created for everyone, in the same time, under the same solutions.

It is also understood that if the citizen of the city, here in Trabzon, is old, the city image on his mind has a direct link with the nature, which has also pastoral background. Whereas, if the citizen is young, the city image is something related with being a part of the luxury contemporary life, surrounded with brands, far away from the green nature on where he has more money, a better social statue and having possibilities to be a popular identity inside the society, which gives him a possibility to be known by the others on the daily life. Thus, on one-hand stands the nature related pure life, whereas on the other hand social popularity related materialistic life.

## 6. CONCLUSION

As we live in residences far away from the green nature, we start to be a part of luxury simulacr and simulation. As we live in residences, as we are going to gym classes, having diet foods, buying and using brand fashion products just we see on the media, we think that we are part of the high-society. Thus, the happiness on the city life is becoming the part of the great luxury image, which is created as a simulacr and the simulation by neo-liberalist economies, whereas it should be going back to the green pure nature, where is the beginning point of our life. The more we become old, the more we can understand this reality, and thus the city utopias on our minds are starting to change. However, as the new citizens of the cities, young-hood has different dreams and wills that the old attendances of the society, and thus contemporary cities are created according to their "utopic" high level materialistic luxury standards focused city image.



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## Human Rights Education: The Case Of Russian Universities

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### ABSTRACT

The promotion of human rights is one of the main issues of the global agenda for the 21<sup>st</sup> century. UN and UNESCO documents describe human rights education as a necessary condition for equality and sustainable development. This paper analyses the current situation of human rights education in Russian universities. The research is based on analysis of international and national documents, as well as a student survey. The article examines the main forms of youth engagement on human rights issues and its instruction in the Russian regions. The authors discuss the challenges, analyse their origins and make recommendations for the enhancement of human rights education in Russia.

**Keywords:** human rights education; higher education; curriculum; Russian Federation.

### INTRODUCTION

The promotion of human rights is one of the main issues of the global agenda for the 21<sup>st</sup> century. UN and UNESCO documents describe human rights education as a necessary condition for equality and sustainable development. In addition, the universality of human rights implies that they should be studied by students of all ages and all over the world.

The Vienna Declaration and Programme of Action of the World Conference on Human Rights (1993) “considers human rights education, training and public information essential for the promotion and achievement of stable and harmonious relations among communities and for fostering mutual understanding, tolerance and peace” (Vienna Declaration, 1993). The Conference appealed to all countries to include issues of human rights, humanitarian law, democracy and rule of law as subjects in the curricula of both formal and informal educational institutions (Manuchehr, 2010).

In 2004, the UN General Assembly adopted the World Programme for Human Rights Education. The first phase refers to the integration and inclusion of human rights education into elementary and secondary education. The priorities of the second phase (2010–2014) were human rights instruction in higher education and training of teachers, civil servants, law enforcement officials and armed forces personnel. During the third phase (2015–2019), nations should continue the promotion of human rights education in schools, as well as in universities. Considerable efforts have been made to include a human rights agenda in academic programmes worldwide, including in the Russian Federation (Mahdi Meghdad, M., Erfani Nasab, A., 2010; Bajaj, M. 2012).

Before entering human rights courses in Russian academic programmes and curricula, it is necessary to consider the current state of human rights teaching, as well as students’ needs and their background on the issue.

The term “human rights education” is not mentioned in current Russian laws. However, according to a letter by the UN High Commissioner for Human Rights, “Russia, considering the development of education as a social policy priority, establishes the humanitarian character of education, priority of universal human values, health and wellbeing, free development of personality, development of civic consciousness and respect for human rights and freedoms as key principles of state policy in this area (Permanent Mission of the Russian Federation to the United Nations, 2012). According to Article 43 of the Russian Constitution and the Federal Law “On Education in the Russian Federation” (2012), Federal state standards (FSS), which are adopted by Russian Ministry of Education, contain certain requirements for academic programmes. Article 3 of the same law states that the main principle of state educational policy is the humanistic character of education, and the priority of human rights and freedoms, free development of personality, civic consciousness and legal culture (Federal Law, 2012).

Human rights issues may be integrated into Russian higher education through established law courses, including “Legal studies”, “Theory of state and law”, “Constitutional law” or “International law”, or a special course. The main goal of this research is to assess the current state of human rights education through analysis of federal

educational standards and curricula, as well as a student survey, and to provide recommendations. The student survey allows for assessment of the students' background knowledge when they enter the university and analysis of their motivation to study human rights. It is important to uncover students' preferences for the form and level of a special course on human rights, as well as to find out their opinions on factors that hinder human rights education.

## METHODOLOGY

This research is descriptive, combining both qualitative data analysis and a quantitative survey. The authors analyse strategic UN documents, Russian federal educational standards, Bachelor's programme curricula and literature on education. A student survey was undertaken in order to identify students' perceptions of the quality of human rights education, and survey results are presented in table form and interpreted. The target group of the survey was made up of students enrolled in Bachelor's programmes at Ural Federal University in Ekaterinburg, Russia.

## ANALYSIS

### State educational standards and academic programmes

In the Russian Federation, human rights education and training are regulated by federal educational standards (FGOS); academic programmes are designed in compliance with those standards. Human rights education in schools consists of three stages. During elementary and secondary years, children are taught core moral values and behavioural norms in a course titled "The World Around". At this stage, students conceptualize the meaning of human dignity, their own personal values and the values of other people; they also develop respect for others, tolerance and cooperation.

Throughout compulsory education, values and behavioural norms are taught in more detail through a "Civic Studies" course, which meets one hour per week, where teenagers develop respect for law and the rights of others. However, this course is elective, not obligatory, and it is not included in the academic programmes of all schools. During the survey, no respondent indicated this course as a source of knowledge about human rights. At further stages of secondary education, human rights are taught through inclusion of these issues in "History" and "Civic Studies" courses, elective courses such as "Legal Studies", as well as extracurricular activities (Azarov, 2008).

As mentioned above, the second and third phases of the World Programme are aimed at higher education. According to this Programme, human rights should be included in Bachelor's and Master's level courses and academic programmes in order to interpret social and global human rights issues.

Analysis of federal educational standards and Bachelor's programme curricula revealed that the higher professional education system includes a "Legal Studies" course, which presents a short review of current Russian law. This is a one-semester course, consisting of 36 academic contact hours, two hours per week. Future chemists, engineers, journalists and ecologists study human rights issues in one lecture on "Constitutional Law of Russia" that is included in this course. This restricted approach to human rights studies creates a situation in which students who do not study law are, in turn, not aware of Article 2 of the Russian Constitution on "Human and Civil Rights and Freedoms" or European and international human rights standards, and they cannot assert their rights in everyday life (Glushkova, 2014).

Since 2010, a third generation of federal state standards have been implemented in Russian universities, where only foundational courses are indicated; the content of other courses is described according to a competence-based approach of knowledge and skills. The broad academic freedom included in these standards allows each higher education institute to design and decide on the content of academic programmes and curricula independently. (Federal Law, 2012).

In 2014, a new educational standard called 3+ was launched. Foundational courses are not indicated; the educational content is described through general cultural and professional competences. However, analysis of these curricula reveals a paradoxical situation. The university must decide whether a course is obligatory or elective. However, this freedom to define programme content resulted in a situation where many general humanitarian courses related to tolerance and human rights issues were excluded from curricula. For instance, the political science curriculum at Ural Federal University included a course titled "Human Rights and International Humanitarian Law". After the transition to the third generation and 3+ federal standards, this course was excluded. This may be explained by the fact that federal standards for Bachelor's programmes in political science do not require competence in human rights and freedoms or the skills to defend their own rights and the rights of others. (Decree of the Ministry of Education and Science of Russia, 2014).

The elimination of human rights courses will negatively impact the implementation of the World Programme for Human Rights Education as its second and third phases focus on the educational structures that prepare future citizens and leaders. Political science departments, in part, serve as these structures where future politicians and civil society leaders are trained.

Despite the significance and value of human rights topics, human rights courses remain elective for Bachelor's programmes in Russia. The exception is law universities and departments, where "Human Rights" is a required course. Human Rights and freedoms issues are broadly covered in courses on Russian and comparative constitutional law, civil law, theory of state and law, international public law and European Law. This coverage is due to the fact that federal educational standards for lawyers stipulate the ability "to respect human honour and dignity, to respect and protect human and civil rights and freedoms, to prevent and stop lawlessness, to take necessary actions for the restoration of violated rights" (Federal State Educational Standard, 2011). Moreover, very few human rights departments exist, primarily in law schools and departments. The first department of legal theory and human rights was established in 1995 by famous lawyer F. M. Rudinskiy at the Academy of the Ministry for Interior Affairs in Volgograd (Glushkova, 2014).

However, positive advances in this field should be mentioned. Implementation of the second phase of the World Programme for Human Rights Education in Russia led to the creation of human rights departments in universities such as Moscow State Pedagogical University, Russian State Humanitarian University, Moscow State Institute of International Relations (MGIMO), Perm State Pedagogical University, Humanitarian University in Ekaterinburg and in Bashkir and Kazan Universities. Ural Federal University is home to the UNESCO department on human rights, peace, democracy, tolerance and international understanding.

### Student survey

The implementation of the World Programme for Human Rights Education and inclusion of a special human rights course in curricula of university programmes requires prior investigation of the target group's needs. This includes the level of knowledge of high school graduates and Bachelor's students on human rights issues, and their opinions on the obstacles to the successful promotion of human rights in Russian higher education. What are the reasons for the lack of interest for human rights in Russian society? What is the opinion of future professionals about teaching human rights in university? How interesting are human rights issues for students in the modern world? These questions were researched by means of student survey in order to find out students' perceptions of human rights and, in turn, the most appropriate form of human rights education.

### Research group

The survey of Bachelor's students in Chemistry, Economics and International Relations was carried out at Ural Federal University in Ekaterinburg, Russia during the 2014/2015 academic year. The group included 92 students in the Chemistry programme, 67 of which are in their second year, and 25 in their fourth year; 47 second-year Economics students; 112 students in International Relations, 63 of whom are second-year students and 49 of whom are third-year students. The total number of participants in the survey is 251 Bachelor's students.

### Data analysis

Answers to the question of whether human rights were studied at the student's school showed that the topic of human rights was introduced in school. The vast majority of students responded that knowledge of human rights was acquired during the course "Social Studies" (87.6%), 11.5% of respondents mentioned history lessons and 14.3% of respondents indicated other disciplines, in particular, law courses. As noted above, the majority of Russian schools include legal issues in the "Social Studies" course, but in a number of specialized schools with a focus on the humanities, law is an elective subject [Table 1].

**Table 1:** Students' answers to the question "Were human rights issues studied at your school?"

Programme	Total number of respondents	Yes		No	
		Number	%	Number	%
International Relations	112	98	87.5	14	12.5
Economics	47	47	100	–	–
Chemistry	92	84	91.3	8	8.7
Total	251	229	91.2	20	8.4

The high percentage of students who answered in the affirmative to the question of human rights awareness in high school, is not an indication of gains in knowledge quality. For example, questioning 108 second-year students of the Department of International Relations after the lecture “Constitutional and legal status of man and citizen” (October 2013) showed that for 60% of students, lecture material was completely new. Students wrote that they never received such information (Bogatyreva, 2014). Students studied this subject within the course “Comparative Constitutional Law”, which is included in the International Relations curriculum. Students of other departments participating in this survey did not have the opportunity to deepen their knowledge of human rights at university. There are no courses dedicated to the topic of human rights in their curricula.

The following responses were received to the question of whether students' knowledge on the subject of human rights expanded during their university studies [Table 2].

**Table 2:** Students' answers to the question “Did your knowledge on the topic of human rights expand during your studies at the university?”

Programme	Total number of respondents	Yes		No		Undecided	
		Number (n)	%	Number (n)	%	Number (n)	%
International Relations	112	100	89.3	9	8.0	3	2.7
Economics	47	25	53.2	16	34.0	6	12.8
Chemistry	92	40	43.5	35	38.0	17	18.5
Total	251	216	86	18	7.1	17	6.7

The presented results [Table 2] reflect the content of curricula and programmes. International Relations students responded positively to this question with few exceptions. This is due to the fact that professional competences within the federal standards involve “the ability to protect their legal rights in practice, including personal rights, with respect to the relevant rights of others in a multi-ethnic and international environment” and “the ability to understand the theoretical and political concepts of human rights issues in international relations and international practice of human rights protection” (Federal State Educational Standard, 2009). Courses such as “Theory of State and Law”, “Russian and Comparative Constitutional Law” and “International Law” are included in the International Relations curriculum in order to develop these competencies. However, the curriculum does not contain a separate “Human Rights” discipline.

Economics and Chemistry students were only able to expand their knowledge of human rights in the “Legal Studies” course. Analysis of curricula in Russian universities revealed that this course, which is the only source of knowledge on human rights for students of non-legal professions, is an elective one. For instance, at Ural Federal University, Chemistry students may choose between “Legal Studies” and “History of Civilizations”.

It is especially interesting to compare the data in Table 3 and Table 4. The majority of students believe that human rights represent a challenging issue in the modern world. Thus, 92.8% of International Relations students who may work with people of different civilizations, cultures and traditions in their future professional life agreed on the importance of human rights issues. However, only 59.8% of them consider it necessary to introduce a course on human rights in their curriculum [Table 4]. Even fewer Economics students agreed with the importance of studying human rights at 31.9%.



**Table 3:** Students' answers to the question “Do you consider human rights issues relevant to the modern world?”

Programme	Total number of respondents	Yes		No		Undecided	
		Number (n)	%	Number (n)	%	Number (n)	%
International Relations	112	104	92.8	5	4.5	3	2.7
Economics	47	37	78.8	5	10.6	5	10.6
Chemistry	92	75	81.5	8	8.7	9	9.8
Total	251	216	86	18	7.1	17	6.7

Despite the fact that the vast majority of surveyed students (86%) consider human rights issues relevant and important to modern society [Table 3], only slightly more than half felt the need to introduce a separate human rights course at 54.9% [Table 4].

**Table 4:** Students' answers to the question “Should Human Rights course be included in the curriculum?”

Programme	Total number of respondents	Yes		No		undecided	
		Number (n)	%	Number (n)	%	Number (n)	%
International Relations	112	67	59.8	24	21.4	21	18.8
Economics	47	15	31.9	24	51.1	8	17.0
Chemistry	92	56	60.8	19	20.7	17	18.5
Total	251	138	54.9	67	26.9	45	17.9

Meanwhile, only 39% of those who consider it necessary to study a special course on human rights believe that this course should be taught in high school, 37.4% think it should be taught at university and only 7.1% of respondents believe that this course should be taught both at school and at university.

It is important to mention that the students who expressed the need to introduce a special course on human rights insist on its elective nature at 62.9%. Only 19.1% of students believe that it should be mandatory. Preference for the elective course might indicate students' heavy workload or their unwillingness to study another course. In written comments to this question, students explained that they cannot cope with the existing curriculum, and they do not wish for the introduction of an additional course.

The absence of a special course on human rights in the curriculum and the lack of worldly humanitarian courses in modern Russian higher education, even in curricula for future politicians and managers, evidence the unpopularity and low interest of Russian citizens in this topic. The respondents were asked to comment on the reasons for the lack of popularity of human rights in Russia and the obstacles to the development of human rights education. The question was open, and students could name several factors preventing the advancement of human rights issues in Russian society. The most common responses are presented in Table 5.

As shown in Table 5, respondents associated the main obstacle to human rights issues in Russian society with the low quality of education. It should be noted that aggregated groups are presented in the table. The group titled “poor quality of human rights education and lack of qualified personnel” is comprised of the following respondents' answers: ‘lack of systematic scientific study of the subject’; ‘lack of public awareness’; ‘people do not know their rights’, ‘people do not have the necessary knowledge’; ‘human rights issues are not studied at school or at university or in the media’; ‘human rights are not compulsory in the school curriculum or they are considered superficially’; ‘only the introduction of a compulsory course in schools will improve the situation’. Respondents also mentioned ‘the lack of qualified teachers who can teach human rights so that it would be interesting’, ‘very poor teaching of human rights’, ‘human rights issues are taught poorly, so it is not interesting’.

The next groups include factors associated with the weakness of Russian civil society and the lack of interest on behalf of the state in disseminating knowledge about human rights. Respondents reported ‘low activity among the

population’, ‘lack of necessary civil society institutions and traditions to defend their rights’, ‘societal indifference’, ‘the reluctance of people to fight for their rights’, ‘the inability to defend their rights in the fight against the state - Leviathan’, ‘for the government issues of sovereignty are of top priority instead of human rights’, ‘our ignorance is to the state’s advantage; there will be no need to change anything in the country’.

30 respondents attributed the causes of human rights’ lack of popularity with the traditions of autocratic Russian statehood, serfdom and the communist past.

In 83 questionnaires (33% of all respondents), the corresponding columns were left blank. This finding also indicates a low level of civic consciousness and lack of awareness of Russian students in the field of human rights.

**Table 5:** Frequency distribution of answers to the question “What is an obstacle to the study of human rights in Russia?”

	Generalized groups of reasons	Number of respondents (n)
Obstacles to the study of human rights in Russia	The poor quality of human rights education and lack of qualified personnel	48
	The weakness of society (underdevelopment of civil society, low level of legal awareness and political culture)	45
	The conscious efforts of authorities (the less citizens know their rights, the easier they are to control)	38
	Socio-cultural factors and traditions of Russian statehood (mentality and Russian traditions coming from autocracy and serfdom)	31
	Systematic violations of human rights, abuses	10
	Immaturity of the legal system (youth of the judiciary system in Russia)	5
	Human rights are not an important topic	4
No obstacles	Complicated, boring topic	2
		7
Columns were left blank		83

The last question asked students to rate their knowledge of human rights on a 5-point scale [Table 6]. It is interesting that the lowest and highest values totalled 11 responses each. The most common self-evaluation was the answer “I have a vague idea”. Students explained that “human rights were not taught at school” or “little mentioned”; “systematization of knowledge was not carried out during studies”; “human rights were not taught at school, there was no systematic knowledge, but legal studies were taught at university where I got the general idea”. Some students wrote that it was “difficult”, “boring” and “uninteresting”.

**Table 6:** Evaluation of students' knowledge in the field of human rights

Programme	Total number of respondents	Evaluation				
		I know nothing about this subject 1 point	I have vague ideas 2 points	I know general concepts 3 points	Knowledge is systematic, but there are some gaps 4 points	Excellent knowledge 5 points
International Relations	112	1	4	45	55	7
Economics	47	–	–	29	17	1
Chemistry	92	1	5	57	28	1
Total (n)	251	2	9	131	100	9
%	100	0.8	3.6	52.2	39.8	3.6

Assessing their knowledge in the field of human rights, 52.2% of respondents answered that they have a general idea. 39.8% rated their knowledge as systematic, and only 3.6% considered their knowledge to be excellent. Chemistry students commenting on their level of knowledge in the field of human rights responded that they would like to know more, but they never had to study them deeply and systematically. Students often explained their low self-evaluation by the lack of appropriate lessons at school, and only the “Legal Studies” course helped to form general perceptions on human rights.

According to Table 6, students' self-evaluation in International Relations is relatively high; 55 respondents gave themselves 4 points. They explained their human rights awareness by the fact that they attended university courses such as “Theory of State and Law”, “Comparative Constitutional Law” and “International Law”, where they were able to examine the concepts of “human rights and freedoms”, as well as national, regional and international human rights defence mechanisms. However, it should be borne in mind that the table presents the results of students' self-evaluation, and it can be assumed that the respondents may either overestimate or underestimate their knowledge. Objective evaluation is possible only when the assessment is carried out by a qualified teacher.

## CONCLUSIONS

This study showed that, despite the intrinsic value of human rights education, the “Human Rights” course still has not received the status of a separate subject, which would oblige each higher education institution to include it in the curriculum as a compulsory, rather than elective, course. A separate course on human rights is only common for law schools.

Analysis of federal educational standards, academic programmes and the results of the survey of Bachelor's students showed that human rights are still not considered a mandatory element of curricula. General cultural and professional competences that are related to the ability to know and protect individuals' rights are not included in a significant part of the federal standards. The exceptions are law students, as well as those enrolled in International Relations programmes since the national standard stipulates competence in human rights protection. According to the results of the survey, students of other programmes are poorly informed about their fundamental rights and freedoms. During their university studies, 43.5% of Chemistry students expanded their knowledge of human rights, while 89.3% of students in the Department of International Relations did so.

According to these conditions, it would be appropriate to include topics of rights and freedoms protection in courses such as history, philosophy, law, sociology and political science. The authors believe that representatives of all professions, not just lawyers, need the knowledge and skills to observe and protect human rights and freedoms. Development of these competences within special workshops would contribute to the enhancement of political and legal culture and the promotion of values such as peace, non-discrimination, equality, justice, non-violence, tolerance and respect for human rights and fundamental freedoms in all cultures and civilizations. The vast majority of respondents agreed that these issues are relevant in today's world. However, only half of the respondents agreed to the introduction of a course on human rights into the curricula at universities. Respondents attributed the impeding of the development of human rights education to the lack of a compulsory course in schools and university programs, poor quality of teaching and the lack of highly qualified personnel.

The authors believe that it is necessary to update human rights education in universities through the wide use of new teaching technologies and interactive teaching methods, including informational. Teachers should actively use resources that are commonly used among young people: Internet, IT technologies, social networks, e-learning courses. On-going reform to the Russian higher education system made the creation of flexible curricula possible, which implies a shift to individual educational paths for students. This new educational strategy in universities will allow a “breath of fresh air” for subjects related to human rights issues. Implementing the above-mentioned recommendations can help to increase the interest of young people in human rights. Given the ability to plan their own educational paths, students would give priority to a human rights course while selecting disciplines, regardless of their study programme,

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## In The Context Of Preventing Social Violence, Television Series Impact On The Behaviour And Education Of Both Children And Teenagers

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### ABSTRACT

Between students and teachers at schools a traditional teaching method is used, whilst outside of the school environment visual and audio devices are prominent. Despite efforts of prevention, children and teenagers spend a large proportion of their time outside of school watching television or using a computer. More frequently than adults, young people within these age groups appear to act like the role models they observe in TV series. Observing their role models act as bad characters and doing bad things, such as committing robbery, rape, using drugs, hurting people and committing murder may have a negative impact within these age groups and cause undesirable behaviours. As a result, the education organisation of the country needs to work in conjunction with the producers and scriptwriters of these tv series. The role models appearing in existing series or future projects need to deal with the problem using wisdom, knowledge, respect and not violence. TV series can therefore contribute to the education given at schools and contribute to the culture within society to enable important steps to be taken for a happier and safer world.

### INTRODUCTION

There is no day without violence. Some people resort to violence instead of talking, empathizing and taking legal actions to solve their problems. Because of that, others are subject to both financial and emotional damage and they feel unhappy and anxious. In order to solve this problem which make people anxious, the source of violence should be retraced, at first. For this reason, all components include learnings from both current and past environment of people and watched news and films are required to be analyzed.

Psychologists usually look for the reasons of most cases in childhood period of individuals. In a family; if parents make their children disciplined by violence or dictate something to his/her spouse by resorting to violence, children might use this kind of method to solve their problems with their friends. Also, this problem solving method might continue after childhood.

Following environment of individuals is school and friends. In this context, a good education should not be limited with scientific education of schools; some other activities should be included to develop coexistence and problem solving skills. These activities can be performed in on-class or off-class places. Children and adolescents spend their out of school time mostly by using computers and watching television. Although most parents suffer from this situation, they couldn't find any solution. Children and adolescents spend long time on freely selected topics by themselves on these media tools. However, children and adolescents is not aware or they ignore the extent to which content of these tools beneficial or harmful.

### HYPOTHESES OF THE STUDY:

1. In addition to scientific education of schools, additional training and social-oriented activities might make possible to prevent the violence tendency of children and adolescents.
2. By the help of media literacy lessons, not only taking advantage of media can be taught to children and adolescents, but also they can be protected from harmful content of media.

**Scope and Limitations of the Study:** Age range of studied children and adolescents is from schooling age to university graduation period. Because of the wide age range, it couldn't be possible to make different questionnaires for each of them. For this reason, previous questionnaire results were compared with scientific results.

**Method of the study:** a literature review was made and obtained data from studies in this field and questionnaire results was synthesized.

### 1-Functions of Television

Radio and television broadcasts have news giving, education, advertising/ propaganda, and entertainment functions (Aziz, 2002:49). The most important function of television was news giving and the least important one was entertainment in early years of television broadcasting. However, today first function and the last function has been replaced thanks to the Internet journalism. Individuals have started to spend most part of their time in front of television especially when they are at home. Initially, television was a magic box only in living room and



watched together with family members. Today, television has transformed into a device which is located nearly all rooms and family members may watch separately in their rooms. In an ordinary day, television is not turned off nearly that housewives watch discussions, brickbats, marriage and divorce issues in television programs designed for women, when the father got home, mafia serials or cinema films which include violence are started to watch. In this context, children and adolescents start to watch this kind of programs unavoidably.

The Supreme Board of Radio and Television conducted a survey with 4306 student who is 6-18 from 1 to 12th classes of public and private schools and found that 65,8% of them spend 1-3 hours in front of television in average. Watching television has the highest rate among elementary school students while it is seen that this rate is decreased by 4,4% among high school students. Importance degree of media tools in terms of students who take part in the study was questioned and rates are below: books/newspaper/magazines; 70,7%, the Internet, 60,8%, computers, 48,6%, mobile phones, 45%, televisions, %40,5. On the other hand there is an interesting finding that 39,6% of students evaluate television as “neutral”. This category refers to 39,6% of participants and if half of this category is added to participants who evaluate television as important, this category will be increased by 60%. (RTÜK, 1. Çocuk ve Medya Kongresi).

This survey results not only help to explain the meaning of television for children and adolescents, but also point out the computer and the internet environment as important tool as television. Accordingly, it is seen and understood that children and adolescents need to be informed and there is a need for research and finding solution for these issues.

## 2- Television Serials

Serial films, also called as soap operas, refer to films which are broadcasted episodically and have topical integrity among each of episodes (www.nedirnedemek.com). The term soap opera means soap bubbles and it is also used to understand how to produce subjects like a bubble just like how to produce bubbles from a soap.

If movies and TV serials are compared, story line of movies is nearly 1-2 hours and they are not fragmental. On the other hand, in TV serials all characters remain stable in every episodes, but different cases are handled in each episodes based on previous ones. While plot of movie is explicit, end of TV serials are unpredictable. The most characteristic side of TV serials is that each episodes of TV serials ends intriguingly and this directs audience to watch next one. Audience who wonder the next episodes become serial addicts and they may even make connection between some characters or cases from serials and themselves or their environment. Children and adolescents are identified themselves with some characters of the film and as a result of this identification, they tend to behave in similar way. If characters in the film solve problems by resorting violence, children and adolescents may also use the same method in their real lives.

## 3-Description and Reasons of Violence

Violence can be described as all states and acts which damage on lives, rights, freedoms, needs or health of individuals, other creatures or institutions in order to gain advantage and dominance, earn one's love and respect (wikipedia.org).

In addition to all kind of physical attacks, some non-physical verbal behaviors are also within the scope of violence description. Also, states of action avoidance or inertia like silence or unresponsiveness, withdrawal may be accepted as a violence signal on the basis of context and nature of relationship (Mutlu, A.Ü. İletişim F. Dergisi:55).

## 4- TV Serial Watching Habits of Children and Adolescents and Influence Degree of TV Serials on Children and Adolescents

Television shows act of violence directly so researches about this broadcast media have begun 1950s in USA and developed in two ways. First way is content analysis to determine amount and frequency of scenes include violence in television, and second way is behavioral effect of violence on different segments of society and age factor is prioritized in this. By this way, it is researched whether there is a causal relationship between violence in media and aggressive behavior in society or not (Mutlu, A.Ü. İletişim F. Dergisi:57).

According to conducted researches, influenced degree of children and adolescents is based on their age, watched programs and daily television viewing time. Studies show that reflection of violence in television on children is also based on attitudes of family members towards violence (Tümkan, <http://talimterbiye.mebnet.net>).

Some studies show that television does not direct people to violence by itself, but it encourages and increases. Violence exists as a part of life in everywhere and every time from news to films, TV serials or cartoons. This situation normalizes the violence. It can even be mentioned sympathetic violence for some cartoons. Under real violence, children may close their eyes as a shield. However, in some scenes in cartoons, characters exposed to violence can come to their feet and children laugh at them. Children, who recognize that violence can't damage, may attempt to practice this kind of harmful behaviors upon someone (<http://mebk12.meb.gov.tr/meb>).

News in television may be showed like a film frequently. Because of this, Hans Magnus Enzensberger describes word of war which includes news and violence as “media trance” and make a different interpretation: if results of researches about mass communication are analyzed, it is seen that violence-based stories shown in TV films might stimulate aggression. Printed or audio-visual communication tools are watched more when the violence is rewarded, shown as attractive, came true and evaluated as right and when violence creators are not criticized, aggrieved victim is shown as a normal behavior. The cheapest way to make a program watchable is using violence and sexuality, as known (Tümkan, <http://talimterbiye.mebnet.net>). Although all media bosses know this ugly truth, they don't see no harm to show violence in order to attract more audience, take more ads and earn more money.

Children and adolescents who watch the violence on television start to believe that their environment is fearful so they may behave more aggressively and may even resort to violence. This kind of people behave in anti-social manner and may imitate the violence which was watched on television. In addition to this, violence can be seen as a way to solve problems by children and adolescents, and their possibility of committing a crime increases in their adulthood (Karatay ve Kesgin, [www.egitimsen.org](http://www.egitimsen.org)).

Although, conducted researches have mentioned both positive and negative effects of television, negative effects and protection methods from them are emphasized in this study. For this purpose there are two real examples below:

First example of this study is about how pre-school children are influenced by television. When working mother gets her home, Kral TV (private music channel) is on television screen usually to entertain her child until she prepares the dinner. In time, child starts to stomp on his/her tricycle. As a result of this recurrent behavior, it is determined that the source of this behavior is a video clip on television. Ferdi Tayfur, who is an arabesque musical artist, in his video clip for “Hadi Gel Köyümüze Geri Dönelim” (Let's Return to Our Village) song, he is a poor guy and comes into İstanbul from his village to work and street gangs fight him and they break up his bike.

Second example shows how university age adolescents are influenced by television serials. Polat Alemdar is a powerful character of Kurtlar Vadisi, which has begun his broadcasting life in 2003 in Show TV as a mafia serial, and he solves his problems by resorting violence so he sets a bad example for adolescents. Especially first years of this TV serial, most adolescents have tried to look, wear, and walk like Polat Alemdar and solve their problems by resorting violence. Two familiar friends who are university student and behave like Polat Alemdar began quarreling with each other and one them stabs his friend in his 18 points of body.

Conducted researches show that scenes include violence and inappropriate content have a direct influence on children behaviors. Specially designed programs for children like cartoons or etc. include 6 times more violence elements. Children who watch this kind of programs, perceive violence as a natural part of life and they are violence insensitive.

It is said for children who watch too much television and influenced by aggression in their early ages that they show a tendency to violence and break a law and pay more penalty. In some programs women figures are shown as heroine and aggressive and it is found that female children who watch this kind of programs are more aggressive than their peers. The most determinant factor on aggressive attitude is watching television, according to studies. According to studies which were conducted in America reveal that children are exposed to 20 scenes include violence in one hour averagely and also in prime time 350 characters are seen in television and 7 of them were died. A 13 years old American child has witnessed to 8000 murder on television, in average. Even if these numbers are less in Turkey, current situation does not seem well (Karatay ve Kesgin, [www.egitimsen.org](http://www.egitimsen.org)).

According to study of Turkish Statistical Institute (TÜİK), 94% of children who are in their 6-10 prefer watching cartoons than other television programs. However, this rate is 50% for 11-15 year-old children. The rate of watching TV serials and films is 44% for 6-10 year-old-children while this rate is 77% for children who is in their 11-15. According to “Information Technologies Usage and Media in Children” research of TÜİK, 92, 5% of 6-15 year-old children watch television every day. At these ages, 49% of children watch 2 hours, 39% watch 3-4 hours and 11% watch 5-8 hours television. 72% of children who are 11-15 watch cartoons and 60% watch films and TV serials. The percentage of children who watch entertainment, music and reality shows is 49, who watch sport programs is 23, who watch instructional programs like documentaries is 20. ([www.aktifhaber.com](http://www.aktifhaber.com))

## CONCLUSION

Efforts on controlling violence in television and protection of children against this violence should be evaluated in three terms. These factors are especially parents, law makers/political decision makers and the epitome of television industry. Studies can be effective by integrative cooperation of these three factors (Mutlu, A.Ü. İletişim Fakültesi Dergisi).

Spent time and proper programs for children and adolescents on television must be controlled by parents. Television shouldn't be located in their rooms in order to protect them from violence. If possible, programs which were known by parents should be watched together with children and adolescents; proper behavior manner should be taught them by talking about scenes which include violence and sexuality. It should be avoided this kind of statement "let me watch the TV serial and let him/her watch whatever s/he wants". Parents should renounce, otherwise, this will be as meaningless as prohibiting children from smoking by addicted parents. One of the most important problems is that children and adolescents of today don't want to mind their parents. On this topic, professional help should be got from teachers and pedagogues.

One of the precautions can be taken by education institutions to prevent children and adolescents from violence is adding media literacy lessons to curriculum and by this way children learn how to use media in proper and efficient manner.

In addition to legal arrangements, broadcast firms have important responsibilities. Resorting aggressive behaviors and violence in problem solving, showing violence as right, rewarding violence instead of punishing increase children and adolescents' acts of violence. By this reason, programs which include violence and obscenity should be broadcasted when children is not in front of television. Also, this kind of programs should include protective signs (Türk ve Bıyık, <http://dokuman.tsadergisi>).

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## **Incorporating ICTs In Moroccan Higher Education: Benefits And Implementation Challenges**

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### **ABSTRACT**

The role of information communication technologies in enhancing the quality of education has been recognized by scholars within and across disciplines and sectors. In the field of higher education, there have been persistent calls to implement step-away policies from traditional, pen and paper-based methods. This educational claim seems to be all the more urgent for the educational systems of developing countries, namely Morocco. Taking the Moroccan official educational discourse as a locus of investigation, this paper seeks (1) to highlight some of the many benefits of this educational trend, especially in English language teaching/learning, (2) to analyze the ICT-related 2013-2016 action plan of the Moroccan ministry of higher education and (3) to pinpoint technology-bound avenues that can make the Moroccan educational system more technology-friendly.

**Keywords:** ICTs/Language education/EFL/Benefits/Higher education/Morocco/Action plan/Avenues

### **INTRODUCTION**

By consensus, computer and internet-based teaching styles offer plenty of educational benefits for learners and most importantly for instructors. Several scholars, such as Kol and Shonick, 2000; Kern, 2006; James, 1996; Cameron, 1989, emphasize the pedagogical potential of Computer Assisted Language Learning as a means to boost both learners' and instructors' motivation and pro-activity. Warschauer (2000) refers to the inextricable correlation between CALL application in teaching/learning and the proliferation of globalization and technology in the world of today. Gone should be the days when instructors are the key source of information and knowledge. Faithful to this perspective, this paper endorses the urgent need for the implementation of a technology-oriented ELT policy at the Moroccan university level. As a field practitioner, I unpack factual information about the educational prospects of the Moroccan higher educational system, especially in terms of using ICTs to stay current with the latest technology-bound educational tendency. Likewise, I put forth some technology-relevant teaching avenues that can help bridge the gap between the teaching methods and the job market needs. Within this realm, the questions remain:

- 1- What are some of the pedagogical, technology-based avenues that can be explored by EFL practitioners in higher education?
- 2- Do educational policies in Moroccan higher education capture the need for technology-related teaching strategies?
- 3- What are the academic and professional benefits that Moroccan university students can enjoy through the adoption of a step-away policy from traditional teaching methods?

### **ON THE IMPORTANCE OF ICTs IN LANGUAGE EDUCATION**

Given the rapid proliferation and use of information technologies in the world of today, it seems that relying on technology in language teaching/learning is becoming a viable, if not mandatory, educational alternative. Technology, more particularly computers, are practical tools for enabling language learners not only to work on various language-bound skills but also to endow them with an academic profile that can ease their integration in the modern technology-faithful job market. In tune with this perspective, many scholars, specifically Kol & Scholnik, 2000; Kern, 2006; Warschauer, 2003, specify that the rapid changes in communication technology are bound to modify the way languages along with other mainstream subjects are instructed and learned in academic contexts.

Obviously, the literature on computer-assisted language learning offers plenty of experimental evidence in favor of using a computer –based approach to English language teaching and learning. James (1996) and Warschauer (2000) point out the countless benefits of the computer as a tool that can enrich language teaching/learning experiences. In stark contrast to traditional, technology-free teaching methods, the computer offers a myriad of resources that make the teaching/learning endeavor more flexible, more enjoyable and more rewarding.

However, the use of technology as a platform for absorbing, meaningful language tasks seems to be an old/new practice, especially for EFL language tutors. There was a time when language practitioners used magnetic tapes and modestly equipped language labs to nurture the use and practice of language in non-conventional ways. Although these pro-technology teaching methods were useful, they definitely do not elevate to the efficiency of

modern multimedia labs that favor the use of highly professional computers and the worldwide web. Regardless of its numerous benefits, technology as a pedagogical resource might cause confusion in terms of what technological activity to assign for students and how to handle a computer-based language class (Stockwell, 2007). Hence, the need to take into careful consideration the context of the teaching practice before proceeding to select the appropriate technological option and/or task.

### THE CONTEXT OF HIGHER EDUCATION

In a non-western higher education context, the target students are basically upper-level language learners. That is because L2 language learners at the university are supposed to go through beginning and intermediate levels in the pre-university educational stage. At the university, students face the challenge of learning and using English in specific contexts both within and across disciplines and specialties, such as medicine, management, law, political science or some other field. Commonly referred to as English for Specific Purposes (ESP), this type of English calls for students to activate their linguistic and extra-linguistic repertory of knowledge to meet future career requirements. Because of the challenging nature of this learning task, some students, especially those with less proficient linguistic capacity, may lag behind and eventually lose interest in English language learning- a status that is bound to limit their future chances of International marketability.

The challenge for university English language tutors is as persistent, if not more, as it may be for the students. Language practitioners at the university level face the continuous challenge of devising class activities that can make students more involved, more communicative and more responsive. Thus, the challenge for university English language educators is, in the words of Willis (1996: 36), *“to come up with a goal-oriented communicative activity with a specific outcome, where the emphasis is on exchanging meanings, not producing specific language forms.”* Hence the suggestion for language practitioners to step away from mechanical drilling and monotonous grammar exercises along with other passive class activities. For upper-level university English classes to be more productive and meaningful, it is highly imperative to foster hands-on tasks whereby students have a better *“opportunity in the classroom to use the language for genuine communication”* (Willis, 2007, 4). In this regard, computer-based pedagogical materials seem to be a handy way to optimize teaching and involve students in the learning process.

### THE COMPUTER/ THE NET: GETTING LEARNERS INVOLVED

*“Tell me and I forget, teach me and I remember, Involve me and I learn.”*

(B. Franklin)

In recent years, there has been a remarkable scholarly trend that investigates the real potential of the computer and the internet as tools to ease the involvement of English language learners and ultimately make English classes more learning-rich and more learning-meaningful. While scholars, in particular Warschauer & Healey, 1998; Levy & Stockwell, 2006; Stockwell, 2007, agree on the fact that applications of technology in language teaching is beneficial for both learners and educators, they specify that the abundance of technological educational resources may also be a source of confusion in terms of what teaching materials to use, how to use them and when to use them. For example, Levy and Stockwell (2006: 218) maintain that *“advice about which technologies to use and how they may be used often come from the people around us”*. Differently put, the linguistic profiles of students as well as the learning objectives turn out to be major determinants of the applicability of computer-based educational resources. Levy & Stockwell (2006: 234) show on empirical evidence that the selection of computer-related pedagogical materials is definitely *“context-specific”* depending on learning needs and instructors’ objectives.

In an attempt to facilitate the choice of computer-bound pedagogical materials, Stockwell (2007) advocates that teachers need to be clear whether they focus on language areas or on language skills- a taxonomy that I find very effective in the choice and implementation of computer-assisted language learning materials. What Stockwell (2007) intends by language areas are grammar, pronunciation and vocabulary. On a different scale, language skills are speaking, writing, listening and reading. There is a definite abundance of online, computer-specific language education pedagogical materials which target the elaboration and reinforcement of different language areas and skills. As cases in point, Cameron, 1989; Becker, 2001; Horst, Cobb & Nicolae, 2005, among several other scholars, suggest a significant amount of hands-on, computer-based activities which can be exploited to get learners involved and enhance their competencies in language areas and skills. It remains up to the individual instructor to select the tools that match learners’ academic profiles and needs.

In the Moroccan context, the university officials seem to recognize the urgent need for the integration of purposeful policies which can reconsider the peripheral role of the English language in the whole educational system- a proclivity which tunes with the scholarly consideration of English as a global language (Crystal, 2003, 1). It is important herein to specify that French has always had the upper hand as a primary tool of learning. This trend finds its root in the historical background of Morocco as a country that underwent French colonization for years. Currently, there are persistent claims to give English a pre-eminent status in the Moroccan educational system.



## LANGUAGE PROSPECTS IN THE MOROCCAN UNIVERSITY

The status of English in the Moroccan educational system is getting more and more central. English is officially considered as a tool which can, in addition to rising intercultural awareness, open up new and genuine developmental and professional opportunities and horizons for all the actors in Moroccan higher education, be they students, professors or administration staff. Taking into consideration the key role of English in academic development, the Moroccan ministry of higher education has issued an official statement which puts English literacy as a pre-requisite for future candidates seeking a teaching position at the university. Congruently, the ministry has issued an ambitious action plan which targets the implementation of e-education in Moroccan universities.

## THE MOROCCAN MINISTRY'S ACTION PLAN: 2013-2016

The implementation of ICTs in the Moroccan educational system seems to be a top priority for policy makers in the field of higher education. In the 2013-2016 action plan, the Moroccan ministry of higher education plainly acknowledges the key function of e-education as a stepping stone for Moroccan university graduates and the for the Moroccan educational system as a whole. While setting the objectives and the implementation measures of this action plan, the official discourse emphasizes that nothing can be achieved single-handedly. Hence, the importance of getting potential stakeholders involved.

## ICTs AND STAKEHOLDERS

In its 2013-2016 action plan, the Moroccan ministry pinpoints the fact that the implementation of ICTs in Moroccan universities requires the investment of several key actors, namely the ministry, the university, media and technology-bound agencies and institutions that are not necessarily affiliated to universities. The involvement of a variety of actors should be seen as a daring step taken by the people in charge of policy-making that enforces a new, unprecedented team-oriented vision. Unlike traditional action plans, which were more monopolistic, now it seems that the involvement of actors from within and actors from without the educational sector is a beneficial, mandatory option.

The involvement of governmental institutions in charge of media technologies constitutes a strong asset for the implementation of a technology-friendly environment in Moroccan universities. Moroccan communication companies, such as Maroc Telecom, are bound to be pivotal players in providing material and immaterial back-up for the implementation of a technology-based educational vision. In addition to governmental agencies, non-governmental agencies which are not affiliated to universities are given a genuine opportunity to be asset-holders in the creation of an ICT-favorable learning environment. Accordingly, the ministry officials have put forth a set of performance indicators that can orient the different actors in this nationwide challenge.

## PERFORMANCE INDICATORS AND EXPECTED RESULTS

In the ministry's action plan, the guidelines recommend using all kinds of technology resources, be they computers, internet and software applications, in the teaching and learning endeavors as well as in the managerial practices of colleges and universities. Reaching "*a satisfying level*" of technology-based teaching/learning practices is a primordial recommendation. While there should be a shift from teacher-oriented teaching styles, learners are called for to develop multiple skills and intelligences in processing classroom input. The learner, in tune with this action plan, is an active player, rather than a passive receiver, who contributes in the process of information acquisition and sharing.

The action plan equally accentuates the paramount importance of endowing Moroccan universities with professional multimedia centers and ICT laboratories that enjoy a wide variety of pertinent and useful pedagogical resources. As a follow-up, the number of university courses which adopt ICT-oriented pedagogical tools is to be duly reinforced. Additionally, the number and percentage of university staff members be they professors or administration staff, benefiting from technology literacy training is considered as a tangible indicator of effective and rational technology integration in Moroccan tertiary education.

By 2016, it is incumbent upon the Moroccan ministry officials to reach a set of goals which enable Moroccan universities to have a high credibility level- an outcome which will definitely boost the profile and marketability of Moroccan university graduates. The following are the ministry's expected results:

- i. Generalizing the incorporation of ICTs in the teaching/learning processes.
- ii. Developing a nucleus of technologically skilled human resources in every university.
- iii. Installing a professional and resourceful electronic data center in every university.
- iv. Providing a successful ICT platform which can serve the main users, namely students, professors and administration staff.
- v. The availability of online courses nationwide.
- vi. Having focal points in electronic learning.
- vii. Founding a compound or national university specialized in electronic training.

Basically, the Moroccan ministry of higher education is setting a purposeful policy which ranges from enforcing ICT-bound resources through technologically empowering the teaching staff and students to equipping administration staff with the necessary technological skills and knowledge. In line with these steps, the ministry's action plan advocates the absolute necessity to take practical measures which can ease the establishment of an ICT-oriented vision.

The decision-makers in higher education have specified a set of measures which can ensure a smooth integration in the digital era. In stark contrast to traditional tendencies, the new trend is for using media and communication technologies in face-to-face learning contexts- an alternative which is bound to make the learning process more interactive, more productive and less professor-centered. Concomitantly, there is an appeal for competence-building in e-learning by offering all the actors in the educational field specific training to up-grade their e-education skills through ongoing, purposeful programs.

Lastly, the decision-makers are keen on creating virtual, e-learning-bound universities as a measure to encourage learners who are unable to take regular courses to start and carry on their academic endeavors. Thus, it seems that the Moroccan ministry's 2013-2016 action plan proposes a sound road map which aims at realizing a set of targets that are conducive to enhancing the status of Moroccan universities to a level that allows them to (i) ensure high quality education not only inside but also outside classrooms, (ii) to boost the technological literacy of the main actors in the educational sector, namely professors, students and administration staff and (iii) to ensure the future marketability of Moroccan university graduates. The afore-mentioned goals are certainly very promising, but their realization surely entails a lot of challenges and implications.

### IMPLICATIONS OF INTEGRATING ICTs IN HIGHER EDUCATION

Definitely, the incorporation of an ICT-based environment in Moroccan higher education offers several benefits. In fact, it opens a variety of pedagogical avenues for professors and students alike. While ensuring the accessibility of academic data for both of them, this ICT-oriented policy is bound to reshape the role of professors from main information-holders and purveyors of knowledge to class facilitators and monitors. In an ICT-based context, learners tend to have a genuine opportunity to use ICTs to optimize their learning and end up as active and experiential, rather than passive, learners. ICT-bound learning is also flexible in the sense that students can choose what to learn, when to learn and how to learn things they need. Finally, the integration of technology will create a new profile for students by easing their technology-friendliness- an asset that can boost their future professional marketability both nationally and internationally.

Nevertheless, it is important to be wary about the overenthusiastic calls for the integration of media and technology in Moroccan higher education. There are a set of criteria that the decision-makers in Morocco need to account for:

- i. The selection of technological resources needs to be done on sound pedagogical principles. ICTs can serve positively only if the main users, namely professors and students, know how to use valid, credible learning materials that fit their academic context and meet their pedagogical expectations.
- ii. The availability of institutional factors which favor the integration of ICTs. In tune with this pre-requisite, Moroccan universities are called for to set solid ground for a technology-friendly academic context. As a case in point, the number of learners should be manageable enough to facilitate e-learning. This is remotely possible in Moroccan open-access university schools where the number of learners is so high that the implementation of face-to-face computer-based learning remains a sheer fallacy. This is not the case for limited-access schools where the number of students is low and is in favor of using technology in class. Another institutional factor relates to professors' profiles and mindsets. Some professors may not be willing to give up their computer-free teaching styles for the reason that modern technologies may not be efficient alternatives for the Moroccan higher educational system which is not fully integrated in the digital divide era- such an attitude may hinder the actualization of the ministry's action plan.
- iii. The financial funding of an ICT-based educational environment is a challenging project which necessitates the allocation of huge budgets. Although no information is provided by the ministry about the eventual cost of incorporating ICTs in Moroccan higher education, it remains evident that procuring the necessary budget requires the strong will of actors from within and also from without the university milieu. Therefore, the current Moroccan government is advocated to be motivated enough to assign optimal financial resources that can ensure the realization of this nationwide project.

### CONCLUSION

In the Moroccan context, information and communication technologies constitute an outlet for improving the quality of knowledge acquisition and training in tertiary education. As explained in this paper, the overall benefits of applying ICTs are two-fold: (i) the enrichment of the quality of learning and teaching, and (ii) enhancing the learners' computer literacy and, thereby, boosting their professional marketability. The application of ICTs in Moroccan universities dovetails with the Moroccan governments' objectives to implement technology-friendly educational innovations.

The application of ICTs in the learning and teaching processes brings about countless benefits. In addition to boosting learners' motivation and interest, it can help improve their competencies in various academic fields and areas allowing them to develop efficient life skills. This target is not easy to accomplish because it requires sizeable investment in the human as well as in the material capital. In addition to enhancing the students', the professors' and administration staff's computer literacy, it is mandatory to provide the necessary technological equipment and computer laboratories.

The ultimate challenge for the teaching staff includes the absolute necessity to stay current with the latest trends in educational technology and to figure out how to apply them in fruitful, productive ways. In this respect, Stockwell (2007: 107) stresses that "*people in the field [of CALL] may find it very daunting when confronted with the ever-growing list of technology available to them, and decisions regarding appropriate technology choice are complex.*"

Finally, it is safe to say that the educational decision-makers in Morocco truly capture the need for integrating ICTs in higher education. However, it is important to specify that ICTs integration is definitely not a panacea for grass-root educational reforms in tertiary education. While ICTs may improve the quality of learning and teaching different subjects, particularly English which is gaining ground as an educational tool alternative, they may hinder educational progress in case the human and material infrastructures should be poor and inefficient.

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### Appendix: Developing E-Education in Moroccan Higher Education

This appendix displays the translated version of the Moroccan Ministry's Multi-phased E-education Action Plan. The official document in Arabic is accessible at the Ministry's website:

[www.ensup.gov.ma](http://www.ensup.gov.ma)

Implementation authorities	*FB	Prospects of achievement	Performance Indices	Expected results	Measures	Targets
-The Ministry  -Universities -Government sectors in charge of media and communication technologies  -Institutions not affiliated to universities	-	2013-2016	-Multimedia available for students and professors  -Satisfactory level with pedagogical ICT-related presentations	- Full integration of media and communication technologies in teaching methods	Development of the use of media and communication technologies in face-to-face education.	-Developing the use of media and communication technologies in training  -Enforcing e-training and reducing face-to-face training
	-	2013-2016	The number and percentage of beneficiaries from trainers' training in every university	-Implementing a pre-elaborated training plan  -Having well-trained human resources in e-learning in every university	Building competencies in e-education	
	-	2013-2016	-The number of universities having a data center in educational ICTs  -The quantity and percentage of electronic pedagogical materials	-Creating an educational ICT-based data center in every university  -Availability of electronic pedagogical materials	Developing university data centers in educational ICTs	

\*FB: Financial Budget

Implementation authorities	FB	Prospects of achievement	Performance indices	Expected results	Measures	Targets
-The Ministry -Universities -Government sectors in charge of media and communication technologies -Institutions not affiliated to universities	-	<b>2012-2013</b>	Percentage of e-learning platforms in universities	Availability of efficient ICT platforms offering tools in each university for main users: Students Teachers Administration staff	Developing e-learning platforms	- Developing the use of ICTs in training
	-	<b>2014-2015</b>	-The number of courses offered online -The number of trainings -The number of beneficiary students	-Offering online courses nationwide -Availability of focal points in e-learning	Developing pilot projects in e-learning	-Enforcing training and reducing Face-to-Face training
	-	<b>2013-2016</b>	Percentage of the project's progress	National university specialized in e-learning	Considering the significance of founding a virtual university	



## Instrumentalization Process Analysis On The Appropriation Of A Digital Work Environment In Target Language By Turks Learners In FFL

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### ABSTRACT

This study aims to analyse the strategies implemented by Turkish learners in French as a foreign language to appropriate a digital work environment in french. During the course taught in 3rd year of FFL license entitled "Integration of ICT in Education" in Uludag University, analysis of the activity will be based on the theory of instrumental genesis that will highlight the process of appropriation of digital tools by learners. The study will highlight the birth of new knowledge on the lexical level generated during the instrumentalisation process. Semi - structured interviews will list the stategies developed by learners and statistical analysis will measure lexical aquisitions.

### INTRODUCTION

In the teaching of fle, under the influence of Piaget's constructivism and more directly under CEFR's recommendations published in 2001, according to the methodology of action-oriented approach, the teacher must lead either to transmit a knowledge vertically, but by carrying out learner's tasks to solve situations-problems and / or to complete a project. Since 2001, many researches propose various CEFR's interpretations. Thus Bourguignon (2007), characterizes the learning sequence, established according to the action- approach called "the action-learning scenario", distinguishing basic points:

- The challenge, here, is to consider the learner as a "language user". We are invited to rethink the causal logic: "I will be better learners, better user." The learning is realized through the use of language; but it is not in use through school tasks which the CEF invites us to reflect but to use through ' tasks are not only language. "
- Asking language-users to perform tasks, not only language ones, requires to include the communicative task, here considered a purpose of learning, it is necessary to carry out in the performance of an action. So, communication is at the service of the action which alone gives its meaning, which is explained in the third point.
- If the speech acts are realized in actions, they fit themselves within the social context which only gives them their full meaning. "

In the field of didactics, the analysis of a class situation through the study of relations between the teacher (E), the learner (A) and knowledge (S), is modeled by the didactical triangle (figure 1)

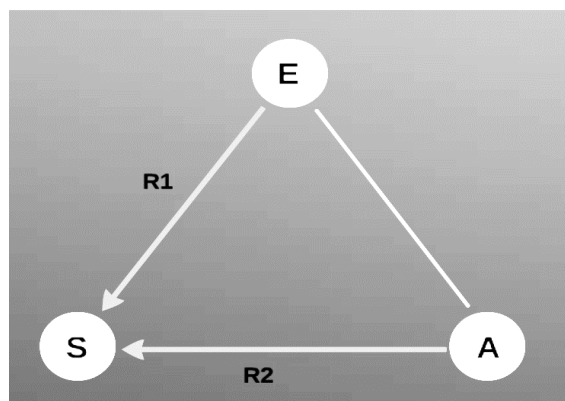


Figure 1. The didactical triangle

The relation of the learner to knowledge is, by the nature of their respective positions in the didactic situation, different from the relation to knowledge of the teacher. The instrumental genesis takes its roots in the fact that if the teacher incorporates an artefact "tool" in the teaching situation, the relationship to knowledge of the learner is changed and is correlated with the relationship of the learner to the artifact. Figure 2 shows this modification. To

accommodate this phenomenon in FFLT, the reverse process can be noticed. Indeed, when a teacher asks his students to guess the meaning of a word in a text, learners use the dictionary to translate it. The tool is the intermediary between the learner and knowledge. If the teacher decides to withdraw this tool simply by forbidding it, the relationship to knowledge changes. The learner will be forced to develop new strategies to guess the meaning of the word. Considering the context, analyzing this phenomenon highlights the dual nature of the activity and Rabardel and Folcher (2005: 254) describe an activity as follows:

"The activity has two types of orientation, first, the realization of tasks: productive activity, and secondly, the development of internal and external resources (tools, skills, patterns and conceptualizations, system value ...): constructive activity where the subject produces the conditions and means for a future activity"

In the theory of instrumental genesis, during an activity, the user (learner) uses an artifact (material or symbolic: a computer, a method, a language). During this process, the user appropriates the artifact that becomes an instrument. In parallel to this appropriation, the user develops strategies of use (schemes of actions) to perform a task. This process called instrumentalisation generates itself new knowledge. Trouche (2005) schematically shows this transformation (figure2).

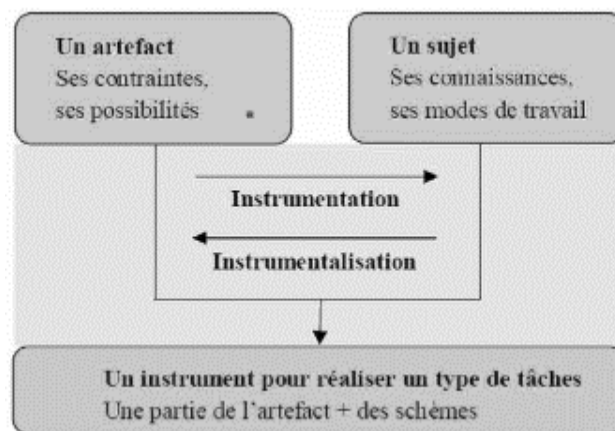


Figure 2. The instrumentalisation process

The artifact is any "object" material or symbolic, Integrated by the teacher in the didactic triangle and is according Rabardel (1995) "the thing to be used, elaborated to enroll in activities".

The instrument, is composed of the artifact to which are added the schemes of use, that is to say, the strategies developed by the user to appropriate it. Some of these strategies is invariant. Rabardel (1995b), thus expresses about the instrument "The instrument is an entity that includes on the one hand, the material or symbolic artifact and on the other hand, the schemes of use, representations which belong to the user's skill and which are needed for the use of the artifact. It is this mixed entity, which is both subject and object that is the true instrument for the user. "

"The instrument is not "given" but must be developed by the subject. The appropriation of the instrument by users results from a gradual process of instrumental genesis. (...) The instrument is not ephemeral, it is permanent and is the subject of conservation as provided for future action, though of course it will evolve in relation to the action situations with which it will be associated with the subject. "

1 - A technical object is primarily an artifact.

2- If this artifact is transformed in the activity by the user according to a purpose built by the later then it becomes instrument.

3- "Through the use gradually constitutes an invariant organization of action, a scheme" (Rabardel, 1995).

So to simplify, we can develop what we call the "didactic square" in which the teacher as a conductor Agency its business by configuring the instruments.

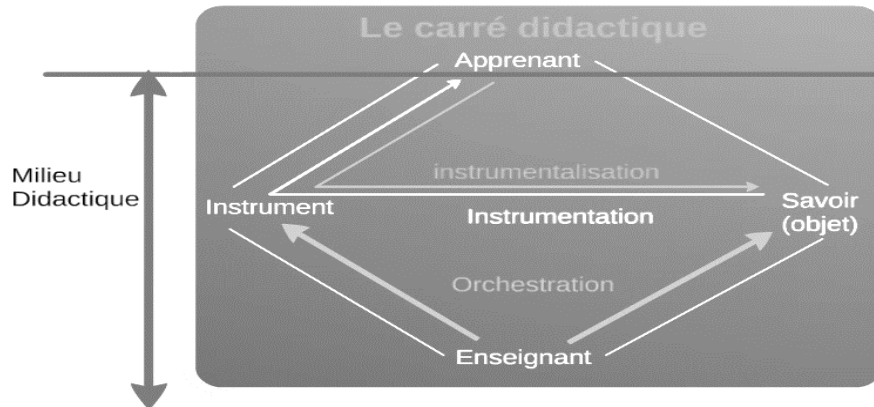


Figure 3 : the didactical square

The purpose of this study is twofold:

- Identify and analyze the appropriation strategies of a digital work environment entirely in French by Turkish learners of FFL Department at the University of Uludag
- Show that during this appropriation, (in parallel with the development of strategies) there is emergence of a new knowledge from the exploitation process. In our case it will be the acquisition of new vocabulary and techniques to find the meaning of a lexical unit without using the dictionary.

## MÉTHODE

License second year learners follow three courses on the use and integration of New Information and Communication Technologies in Teaching FFL (NICT).

The first course entitled “Computer 1-2 “consists of 2 X 14 sessions 4 hours). It is spread over two semesters. The purpose of this course is to train learners on the material (components, peripherals, network architecture, internet use ) and on the software (Windows 7,8,10 environment, office suite Office - Word , Excel, Power Point)

The second course entitled "Integration of NICT in teaching” concerns hardware and software specifically adapted to classroom practices.

Finally, a third course in the third year of the license entitled “didactisation of resources" mobilizing knowledge acquired in the preceding two courses in order to didactise resources and integrate them into sequences with NICT. The instrumentalisation process can be represented as below (Figure 4)

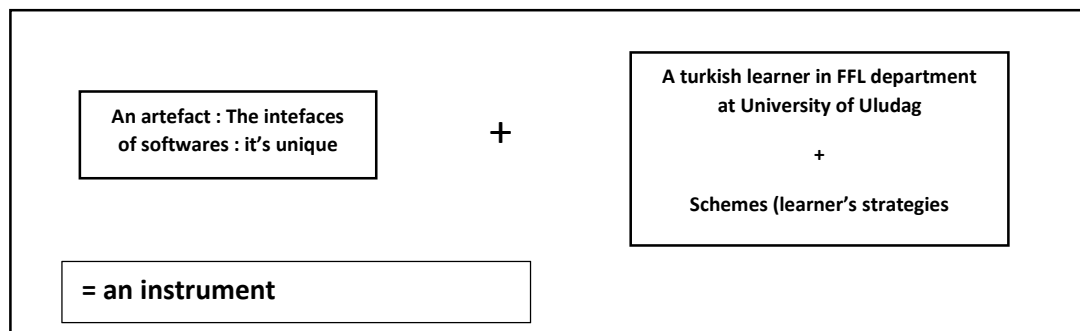


Figure 4. The instrumentalisation process in our research

We gave a sample of 100 French words, extracted from different interfaces and we gave them to be translated by learners before formation. We calculated the percentage of words correctly translated ie the percentage of words already known by the learners. Then, Semi -structured interviews were conducted with learners. We asked them how they "guessed" the meaning of words, what strategies they have adopted .We then listed the schemes (strategies) used in order of frequency of use

## FINDINGS

According to the results of the pretest and posttest, we note that learners have translated, at the end of the formation, 64% more words have been correctly translated compared with the pretest done previously. In the delta of 64 %, 55 % of the words are translated correctly with the appropriation of the instrumentalisation process. (11% would be due to external causes such as other courses or a book reading ...). The following table (table 1) is indicative as it comes from the perception of learners.

Table 1.

	Pretest	Posttest
Percentage of words translated correctly	19	83
Percentage of words translated correctly thanks to ICT lesson according to learner's perception		55

Statistical analysis is not intended to give a precise value of the lexical acquisition but to show that indeed when instrumentalisation process of the artifact "Software Interface" there is the emergence of new knowledge. This artifact (or set of artifacts as there are several software) was selected, configured (translated in french) by the teacher. This preparation phase is the orchestration performed by the teacher.

### Finding of semi-structured interview

1 - *"I looked at the place of the word in the French interface and as I know the Turkish interface (or English), I found "*

The presence of transparent words strengthens the identification:

"I know that the word below "document" is the word "image"

Instead of the word, neighboring words involved in the translation of the word by learners

2 - *"I looked at the icon and colors next to the words"*

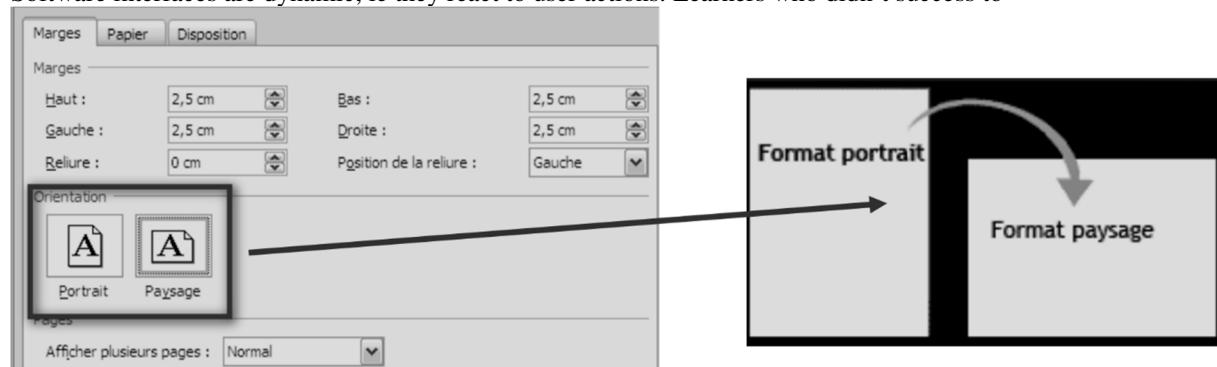
The present icons next to certain words and / or font colors enable learners to translate. The presence of shortcuts and icons can also contribute to find the mean of a word as shown in figure 5



Figure 5. Finding meanings of a word with icons and keyboard's shortcuts

3 - *"I've tried by clicking"*

Software interfaces are dynamic, ie they react to user actions. Learners who didn't success to



#### 4 - "I asked someone"

Communicating with another learner to find the meaning of a word is a strategy that belongs to the category of social schemes. There is here co- construction of knowledge.

### CONCLUSION

This study highlighted several facts:

1 - When a teacher integrates a tool in a class situation must, firstly exploit this tool (appropriate) to conduct the orchestration so that it anticipates the knowledge that will emerge of the activities of learners and use of strategies. At their turn, learners are exploiting the tools.

2 - Transposing the theory of instrumental genesis in our study in the didactics of FFL, was particularly relevant for analyzing an activity in which we have used NICT.

3- This theory could not only be used for tices, but also for any other artifact such as:

- Methods (FLE manuals) and didactic approaches associated.
- Information resources (movie, song ...) integrated into the didactic sequences.

In our case we would have a double instrumentalisation processes: one conducted by the teacher upstream courses that will enable it to achieve the orchestration, and the second instrumentalisation process performed by the students in the class.

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## Intangible Cultural Heritage And Possibilities Of Its Development On The Basic Schools With Accent On Folk Traditions And Crafts

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### ABSTRACT

The article reacts on aspects that are related to a preservation of the cultural heritage in connection to education. It focuses on the folks' traditions and crafts, on the role of the school subjects based on practical activities and technical skills that are realised at the basic schools. It succeeded with a help of the analytical-synthetic approaches to refer on the reality that the basic education plays a significant role in the preservation of the intangible cultural heritage.

**Keywords:**Cultural Heritage

### INTRODUCTION

The intangible cultural heritage represents in our cultural framework an area of the application-research field, which has not received attention sufficiently. In the field of education, the interest was oriented rather on the tangible culture – in this area, there are more valid findings available.

An emphasis on the intangible cultural heritage and its protection is obvious also in the interest of UNESCO, which established Lists of intangible cultural heritage (2014) which is now also administered by this organisation. The importance of the intangible heritage lies in the knowledge and skills that are (together with it) passed on. Despite the fact that the tangible and intangible cultural heritage are very different, they are two sides of the same coin – they both carry a meaning and engrained memory of the mankind (Bouchenaki, 2003).

The tangible cultural heritage is sometimes as the dead victims of the past, see e.g. P. Kouřil (2004) who adds that in addition to those so-called dead victims of the past, we can also find also victims pretty much alive – mainly from the area of the intangible culture and also the culture whose carrier is not a piece of paper, a stone or a parchment, but the actor themselves.

### INTANGIBLE CULTURAL HERITAGE IN THE BASIC SCHOOL EDUCATION

R. Kurin (2004) is quite extensively dealing with the definition of the essence of the term intangible cultural heritage, when he states that, according to the convention from the UNESCO conference in Paris in 2003, this term includes i.a. oral traditions (fairy tales, stories), music, singing, dance, puppetry and theatre, traditional crafts, social customs, ceremonies and celebrations. The value of the intangible cultural heritage is identified and can be used, if the individual (while encountering it) may and is able to acquire a relationship that comes from the cognition of the importance of the culturally-historical heritage, its understanding and experiencing that is a part of experience (cp. Kirchner, 2009), as an individually cognized, experienced and memorable life content (cp. Pechová, 2012 and Slavík, 2001). The culturally-historical environment may potentially stimulate everybody regardless the age or a socio-cultural origin to develop their creativity, cognitive abilities and imagination, to join actively and confidently the social life, and to increase their understanding of the local, natural, regional, national and global environment (cp. Trust, 2004).

From the perspective of pedagogy, the culturally-historical heritage has basically two values: firstly, it is an object that is beneficial to be cognized, which should the young generation create the relationship with by the possibility of cognition of its value. Therefore it is not primarily the value bound to the contents of the culturally-historical heritage – those are just the beginning, accelerator or facilitator of cognition and creation of the deeper relationships that may lead to a change of attitudes. This may manifest in e.g. the interest in a place where we are living, its development or protection (cp. Pechová, 2013). Additionally, e.g. Parkan et al. (2008, p. 10) summarizes the benefits to the identity development in this context in connection to the school education – the development of the cognitive, understanding and assessment-of-cultural-phenomena-related skills or the support of one's own creativity.

It is obvious that school education plays an important role in fields of the intangible cultural heritage. In relation to this, UNESCO (2010) urges countries that accede to the convention about the facilitation of access of the society to the results of the regional research focused on the intangible cultural heritage. A significant accent lies in the given document (ibidem) on the placing of the subject matter containing information about the intangible cultural heritage to the school curricula and preparation of the school materials, teachers' education with respect to their ability to convey knowledge about the intangible cultural heritage to the young generation, preparation of the methodical materials, and application of the experiencing methods.

## TRADITION AND FOLKS CRAFTS IN THE TECHNICAL SUBJECTS AND SUBJECTS FOCUSED ON PRACTICAL AND CREATIVE ACTIVITIES

The technical and practical activities subjects taught at the basic schools provide an appropriate space for the instruction about the issue of social customs, ceremonies, celebrations and traditional crafts in relation to the possibilities of their preservation and cultivation despite the fact that from this point of view is the given field looked at minimally. Currently are the topics related to the social customs, ceremonies and celebrations classified into the curricula of the particular school subjects – mainly to the classes devoted to arts civics and music. It seems as a full non-use of potential that the school educational system provides, especially in the fields of the folks crafts. We base this paper on the knowledge about motivation and creation of the pupils' interest. If we want them to acquire a positive relationship to the traditions and folks crafts, it is appropriate to include also the practical activities (apart the transmission of knowledge) into the education. If the pupil has a possibility to create a product related to the intangible cultural heritage, there is a big possibility that the experience of joy and success from the creative activity will become a crucial motive to realise traditions that have an intangible nature. For example, pupils create in the technical education a ratchet (a ratchet is a product making a noise that was, according to the traditions, used in order to call people for a church service from the Maundy Thursday when the bells fell silent, so-called left to Rome). It can be assumed that they will be stimulated to search for other knowledge about Easter-related traditions. The individual is closer to walking around the village itself on the Maundy Thursday with the handmade ratchet and realising of the tradition. As helpful seem to be the applications of the inquiry-related approaches, cp. publication of J. Dostál (2015).

For the production of the technical objects connected to the intangible cultural heritage, a number of materials can be used in the education, i.a. wood, metal, wither, leather, husks of the corn, etc. The materials should allow the children (regarding their age) to work with the material without using enormously raised effort. This fact has to be considered also in relation to the classes devoted to the traditional crafts, such as blacksmithing, artistic metal-processing or artistic carving. During the creation of the traditional or folk-craft-related objects, the children acquire knowledge, skills and attitudes for their everyday life. The manual skills and skills to handle tools are nowadays highly valued.

## MUSEUM EDUCATION AND ITS IMPORTANCE IN THE BASIC SCHOOL EDUCATION

For keeping the intangible cultural heritage play the museum education an irreplaceable role. The importance of the museum education evidences also V. Jůva (2008) who state that from the perspective of subject content, the museums offer to their visitors scientifically, aesthetically and quite often also didactically well-founded processed elements of the cultural heritage. Those traditionally represent the basis of education and allow the acquirement, understanding and empathy into the world of the human culture. This can be appropriately used in form of educational excursions.

The educational function of a museum represents its immanent potential and real activity, which initiates specific educational processes during which is one subject learning, usually during a direct or a vicarious effect of another teaching or instructing subject (Průcha, Walterová and Mareš, 2003, p. 53). V. Jůva (2008) notices a remarkable fact typical for the educational processes in the museum, where, in contrast to schools and other educational institutions with high level of intentional learning (which is externally guided), the functional educational effect predominates (e.g. aesthetic environment, positive climate of the institution, value of the museum exhibits, the didactic-museum concept of expositions and exhibitions).

## CONCLUSION

The direct link between the intangible culture, its cultivation, its transfer and education is clearly described in the article. The basic education seems to be substantial and perspective for its broader transfer. However, the educational practice does not reflect the current societal needs, which are typical of the increasing requirement on the effect in the fields of intangible culture towards the young generation

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## Intercultural Education Of Nurses

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### ABSTRACT

As more and more immigrants settle in Poland, improving intercultural competence in the healthcare services sector is likely to contribute to facilitating the process of their integration. The healthcare system must therefore be prepared to provide services delivered by well trained professionals. In addition to being familiar with the legal regulations and procedures relevant to providing medical treatment and nursing care to people whose nationality is other than Polish, the medical personnel are required to exhibit tolerance and to show awareness of the culture-bound differences that transpire in conversation. Source literature treats migration as an extremely stressful factor. In this context developing the awareness of cultural differences related to nationality, ethnic background, and religion among prospective health care delivery professionals, including students of nursing, and incorporating the subject matter into curricula appears to be the right decision that should ensure equality and prevent potential social exclusion of patients from migrant backgrounds.

To present the methods and techniques applied while teaching intercultural communication to students of nursing. The paper is based on the authors' own experience and observations as teachers of intercultural communication to students of nursing between 2010 and 2015. In their classes the authors employ the kinaesthetic and sensory learning styles as well as the experiential learning model (accommodators). Various types of activating tasks are used in class. They are based on reflection, experience, discovery, and problem-solving. The opinions voiced by students of nursing confirm how relevant and necessary classes in intercultural communication are, as they equip the graduates with a cultural competence to work with a foreign patient.

### INTRODUCTION

Intercultural education has emerged fairly recently as an area of study that focuses on practices which improve one's knowledge and skills, influence attitudes, and seek to prevent discrimination and violence by advocating equality policies. In Poland it has not yet secured a strong position in education. There are few theoretical studies available; research and academic debates are scarce.

The Schengen Agreement has led to a steady increase in the mobility of EU citizens, including students who thanks to the Erasmus programme feel more willing to study at a European university of their choice. In the past, when people used to seek employment in the place where they lived, a traditional degree was a sufficient benchmark as the job market and the education market were compatible and the graduates' qualifications predictable regardless of which school they finished. As college and university graduates ever more often decide to study or work abroad, several pressing issues that need accounting for have emerged such as how universities assist their graduates with assimilating into a culturally unfamiliar background and how they should develop cultural competences. Furthermore, students of medical sciences, including nursing, are in immediate need of intercultural communication classes, as they are bound to deal with an ever growing number of immigrant patients of culturally diverse backgrounds.

Investing in culturally competent health care services, especially since more and more immigrants decide to stay in Poland permanently, should facilitate the process of integration. The health care system should be prepared to provide services delivered by well-trained staff. Technical knowledge about medical and nursing care and familiarity with legal regulations applicable to foreign patients should go hand in hand with tolerance and the awareness of differences in communication that stem from the fact of having a different cultural backgrounds.

Source literature treats migration as an extremely stressful experience which may influence the immigrant both physically (decreased immunity) and mentally (depression). Thus boosting awareness among prospective health care delivery professionals in the course of their studies, especially the awareness of intercultural differences,

appears to be the right solution promoting equality and preventing exclusion of migrant patients. How, then, should the immigrants and the host nation prepare for intercultural contact?

## OBJECTIVE

This article presents the methods, techniques and principles applied in teaching intercultural communication to students of nursing and explores how they gain intercultural competences as a result of the teaching process.

## RESEARCH METHODOLOGY

This article was completed on the basis of analysing source literature and the authors' own observations as instructors teaching practical classes in intercultural communication to students of nursing between 2010 and 2015. The authors gained their expertise and experience in the field in the course of study visits and academic placements in England, Sweden, Germany, and France; they have also completed the Antidiscrimination Training Academy programme having selected cultural sensitivity as the focus of their workgroup and participated in a number of training workshops on cultural diversity. These experiences have led the authors to create a module on intercultural communication for students of MSc Nursing and to write the textbook *Pielęgniarstwo transkulturowe* (transcultural nursing) and the book *Różnorodność kulturowa w opiece pielęgniarskiej* (cultural diversity in nursing).

## OVERVIEW

Source literature defines cultural competences in a variety of ways. Elizabeth Marx lists the following as cultural competences [1]:

- sensitivity to other cultures, i.e. a welcoming attitude to other cultures and cultural awareness;
- the ability to adapt to new circumstances; the ability to face new and ambiguous situations; flexibility of thinking, communicative skills, and the ability to make new contacts easily; and knowing foreign languages and the ability to learn them;
- person-oriented approach that combines empathy, interpersonal sensitivity, the ability to listen and work in an international team, and assertiveness;
- resistance to stress: self-confidence and the ability to face challenges.

A well-designed curriculum of intercultural communication training and education should develop three qualities [2]:

- awareness that contributes to developing an attitude of intercultural sensitivity, the eagerness to learn about other cultures, and an open outlook on differences, new information, varied perspectives, and different priorities and rules of behaviour, which in turn eliminate schematic thinking and egocentric and stereotypical view of the world;
- knowledge which equips a person with culture-specific information that replaces stereotypes and allows to understand difficult situations properly and offers facts about history and geography, family, friend and male-female relations, methods of upbringing, etc.;
- skills that bring about patterns of behaviour suitable for a given culture, such as ways to behave in a public place and among different people, verbal and non-verbal communication, and the ability to cope with ambiguous situations.

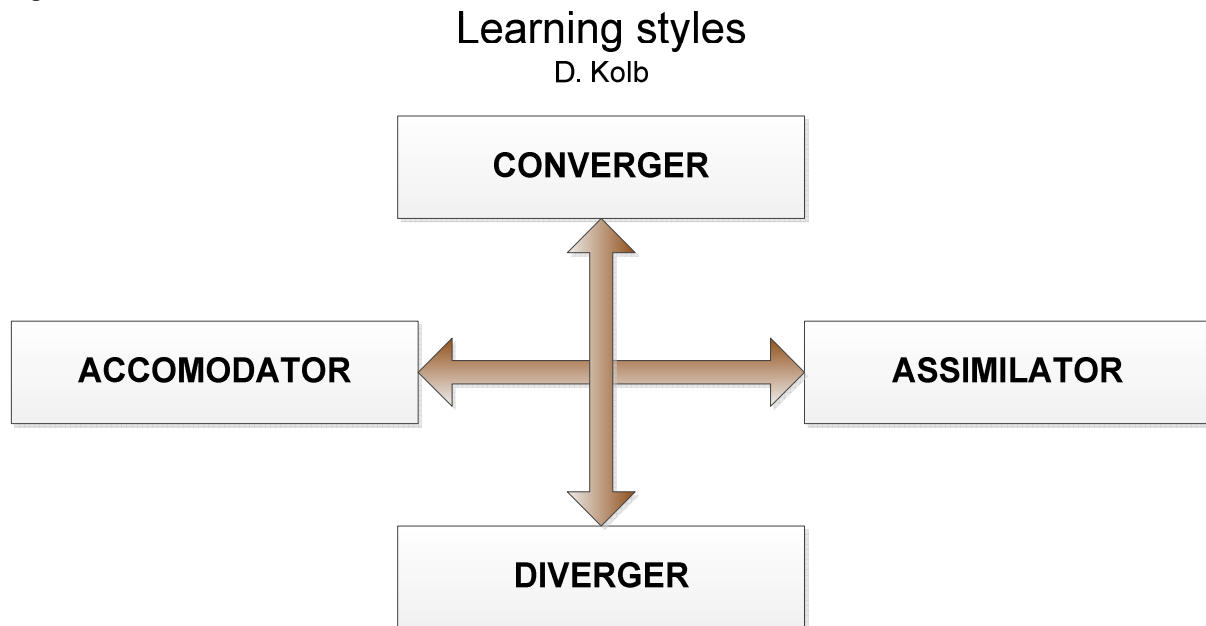
Intercultural education seeks to bridge gaps and foster integration as opposed to merely living next to each other [3]. In addition to familiarising people with differences and facilitating their comprehension, it also boosts awareness of one's own cultural heritage and its significance and enhances one's own cultural identity. For these reasons, in their teaching practice the authors focus on the following issues:

- the art of intercultural communication: identity and its role in communication; reflecting on one's own identity, identification with particular groups, and self-perception; identifying and experiencing difficulties in contacts across cultures;
- the influence of culture on perception, way of thinking, and behaviour: natural distribution and the iceberg concept of culture; typology of cultural dimensions; identifying national and professional stereotypes and applying strategies to deal with them; verbal and nonverbal communication in providing healthcare to patients of different cultures;
- mechanisms applied in intercultural contacts: stereotyping, prejudice, and discrimination; micro-inequities and counteracting discrimination; M. Bennett's Developmental Model of Intercultural Sensitivity (stages of ethnocentrism and ethnorelativism); identifying the stages of developing intercultural sensitivity, emotions, cognitive processes, behaviours inherent to culture shock, and the behaviours characteristic of the representatives of the host culture who come across the symptoms of acculturative stress on the part of the migrants; culture shock, the acculturation curve, acculturation models and strategies among foreigners; posttraumatic stress disorder among refugees.

Preparing their classes, the authors paid particular attention to choosing the most effective methods and techniques to teach adults. They have also taken into consideration different learning styles. From the many models proposed



by specialists in the field, the authors decided to stick to the four learning styles differentiated by D. Kolb [4]: the converging style, in which the learner poses questions about how something is done or happens and puts his/her ideas into practice (his/her interests are specific and he/she does not rely on emotions); the diverging learning style, in which the learner asks why something happens, relies on creativity and imagination (the learner exhibits a person-oriented approach and has varied interests); the assimilating learning style, in which the learner asks what happens, creates theoretical models, and has an idea- rather than person-oriented approach; and the accommodating learning style, in which the learner asks what if, focuses on actions and enterprises, takes risks, and prefers to solve problems intuitively (Figure 1). In their classes, the authors also rely on the learning styles advocated by A. Sitko-Lutek [5]: the kinaesthetic learner who best remembers new concepts when the learning process coincides with activity, e.g. role-play games; and the sensory learner whose knowledge retention rises when the material appeals to his/her feelings and who learns best when he/she can experiment and relate new information to his/her earlier experiences.



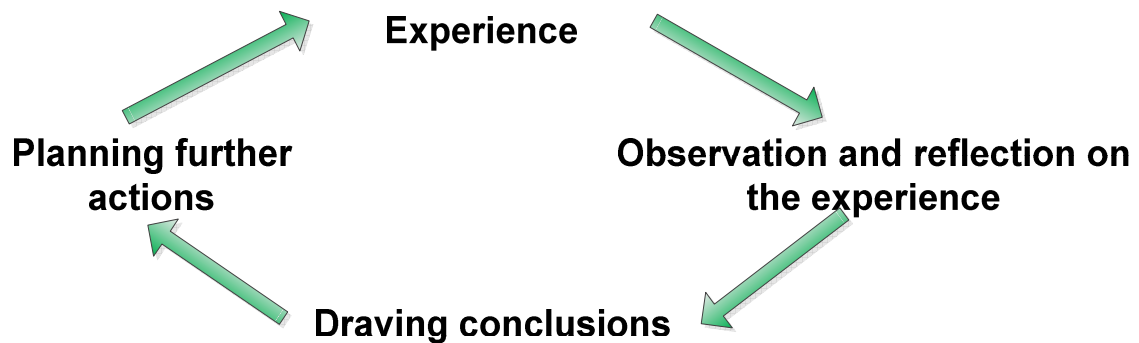
**Figure1.** Learning styles.

D. Kolb [4], the creator of the experiential learning model which the authors drew heavily upon while designing their intercultural communication module, stresses the fact that for learning to take place it must coincide with interaction with the environment and that knowledge is constructed through transforming experience in the course of dealing with certain situations and exchanging reactions with other participants of the education process. D. Kolb advocates the idea that the learning process should be treated as a cycle whose two primary elements include an individual's experience and its analysis. Although the model itself is quite complex, Kolb proposes four distinct stages in the experiential learning cycle (Figure 2):

- concrete experience that coincides with the learner's views is encountered; the learning process is initiated;
- reflective observation takes place; the learner analyses the new experience and looks at it from different perspectives;
- abstract conceptualisation occurs; it allows the learner to analyse the available data further and begin to draw conclusions from the new experience he/she encountered;
- active experimentation concludes the learning process; the learner transforms his/her behaviour and starts to experiment with freshly gained knowledge to check whether the newly developed theories prove to be useful in problem solving and decision making processes.

## The Experiential Learning Cycle

D. Kolb



**Figure 2.** The Experiential Learning Cycle.

The application of Kolb's experiential learning model in class calls for abandoning the traditional approach to teaching which rests upon preceding practical training with providing the necessary theoretical background first. Kolb recommends a completely opposite course of action: the learner is encouraged to generalise the rules and principles he/she observes and apply them to different situations and relate the experience he/she encounters to wider theoretical concepts which facilitate comprehension, thus bridging the gap between theory and personal experience which makes the former more acceptable. Furthermore, every subsequent experience offers an opportunity for the learner to draw conclusions and initiate a new learning cycle. Hence presenting new concepts should begin with subjecting the learner to a certain experience which is then reflected upon, analysed, and examined in practice.

There are three basic principles that the authors seek to apply while conducting classes in intercultural communication. The first one entails developing individualised educational modules that cater for the real needs and expectations of the learners both in terms of the course content and the teaching methods and techniques used, including spatial arrangement of the classroom. The second principle involves planning the teaching process in a manner that allows the time that elapses between classes to be educationally active: the learning process initiated in class continues outside the classroom so that the learner has enough time for further reflection in the course of which he/she relives the experience he/she had encountered. To achieve this, the authors deliberately choose to leave certain matters open, so that the learner thinks about them while preparing for the following class, thus generating motivation to introduce changes. The third principle rests upon treating control and evaluation of the teaching/learning process as an integral part of the course, the evaluation of a person remaining distinctly separate from the evaluation of the course of action taken and effects achieved; a separate assessment applies to the level at which a given task is completed and the progress (change) that is made. Occurring as final stages of the educational process, control and evaluation constitute its indispensable elements. Accounting for the aspects mentioned above provides guidelines for preparing and conducting future classes. It also emphasises the significance of the stages taking place before actually meeting the learners in person, i.e. the needs analysis stage, the objective-defining stage, and the content preparation stage. M. Knowles [6] mentions the following guiding principles that should be applied while preparing classes in intercultural communication:

- adults need to know why they need to learn;
- adults want and need to learn through experience;
- adults treat learning as a problem solving task;
- adults learn best when the content presents immediate value to them;
- adults do not want to be treated as empty vessels which the teachers fill in;
- adults learn best when they are valued for who they are and when their experience matters; when they are allowed to voice their opinions without the fear of being censured; when they are allowed to make mistakes without being judged and punished; and when they are engaged in the learning process.

The authors' experience proves that the last of Knowles' rules mentioned above is crucial and needs to be observed above all others. To build the learners' sense of security the authors use various techniques [7,8]:

- the teacher and students establish rules of conduct together and accept them as a group: this offers an opportunity to present, discuss and adopt other rules that come into being during teamwork (you need to make sure that you leave some free space on the flip chart to write down the new rules);
- the instructor makes the students aware of the rules of proper communication: avoiding passing judgments, formulating concrete utterances, speaking from one's own point of view, and counteracting any divergence from the established rules;
- with time, the teacher lets the group assume a greater degree of responsibility for their work;
- the students know that they have the right to refuse to participate in a given activity without any consequences from the teacher and other participants;
- creative responses are supported and encouraged;
- interference from the outside is minimised;
- the teacher monitors the students' reactions and the processes taking place within the group.

Various types of activating tasks are used in class. They are based on reflection, experience, discovery, and problem-solving and include: didactic games such as *targowiskocech* (a market of characteristics) and *krążącekarteczki* (pass on the card); simulation (e.g. identity circle); case studies (including biographies); audio-visual aids (films); drama and role-play activities, for example *Hosts and Guests* or *Albatros* (students watch a short scene and evaluate what they have seen without any background knowledge; the activity exposes how stereotypical people's thinking is); and discussion (brainstorming and snowballing). The *Hosts and Guests* activity [8] will serve as an example of such activating techniques; it employs Kolb's experiential learning cycle and focuses on experiencing intercultural communication. The activity simulates a trip to a foreign country and meeting its inhabitants in order to get to know their culture, customs, and everyday life better. Its objective is to provide the students with the opportunity to observe and identify the most vital aspects that either boost or deteriorate the effectiveness of intercultural communication; it also serves as a good illustration of how stereotypes emerge. The awareness that the host and the guest view the world differently and think stereotypically may form a basis for either exchanging ideas and building productive relations, or triggering a conflict.

Materials and facilities required: flip charts, markers, scotch tape, scissors; two classrooms for a group of 15-16 students (45 m<sup>2</sup> and 20 m<sup>2</sup>); two people: an instructor and an assistant; time: about 45-60 minutes.

#### 1. Introduction.

You are about to set off on a journey abroad. Half of the group assumes the role of inhabitants (*hosts*) and the other half the role of tourists (*guests*); students count to two to divide into two groups. Ones, the guests, leave the classroom with the teacher to get ready for the journey; twos, the hosts, stay in the classroom with the assistant and prepare for welcoming their guests.

Instruction for the guests: you are tourists in a foreign country who have a passive knowledge of the language spoken there; the hosts understand your language but because of its intonation and pronunciation, they cannot articulate Polish words apart from *tak*(yes) and *nie* (no). Your task is to ask the hosts questions, preferably closed-ended ones, to find out about the country's tourist market.

Instruction for the hosts: you are the inhabitants of X who greet their guests at an airport; you have a passive knowledge of the language they speak. Your culture stresses the importance of social harmony and warm interpersonal relations; in a conversation, the content is not important and your facial expression and tone of voice govern the manner in which you answer closed-ended questions: a smile for *yes* and a serious face for *no*. In your culture, an unknown woman (a tourist) cannot approach a man first; if she does, the man feels offended and avoids contact, turning his back on her or leaving without speaking a word. This does not apply when a female host introduces the woman tourist to the man. The hosts should avoid talking about their culture to the tourists.

#### 2. Procedure.

After a ten-minute preparation stage, the guests enter the room (arrive at the airport) where they are greeted by the hosts. The instructor and the assistant encourage the students to change conversation partners and try to communicate with other people; they listen to the conversations, observe nonverbal strategies, and when the degree of participation dwindles naturally after ten to twenty minutes, they finish the activity and ask the guests to go home (go to the other room).

#### 3. Summary and analysis.

Group work: the instructors encourage the hosts and guests to discuss their experiences and share their impressions and reflections. They have ten minutes to write down on the flip charts the answers to the following questions: what the other group are like (their behaviour); how they felt at the beginning, in the middle, and at the end of the role-play; what their expectations about the meeting were. Then the instructors ask each group to choose one representative to present their ideas, without divulging, however, the instructions they had been given at the beginning.

Whole class: the instructors invite the students to present the results of their effort: first, the hosts, then the guests; after that the hosts reveal the rules of their culture, then the guests say why they came and

what guidelines they had been given by the instructors. The instructors encourage the students to reveal the guests' real intentions the actual reasons why they had behaved the way they had, as opposed to the interpretation produced by the hosts. The instructors ask the students what their thoughts are when they juxtapose the real intentions, causes and cultural significance of particular behaviours with the interpretation provided by the other group.

Summary: the instructors explain to the students that the role-play activity let them experience most processes involved in intercultural communication; these processes are then labelled on the basis of observation in the course of the activity and the group and whole class work that followed. It is important to note down on the flip chart what facilitated interpersonal contact and what hindered it as well as to record all ideas repeating and paraphrasing them at the same time.

Application: the instructors ask the students to share similar experiences they had encountered at work and encourage them to elaborate on how they had acted then and how they would act now. Discussing the role-play exposes the advantage that stems from possessing knowledge about intercultural communication and acquiring intercultural skills. It also serves to emphasise the significance of openness, patience, and thoughtfulness.

Short lecture: difficulties in intercultural communication according to L.M. Barn; ways to improve intercultural communication according to S. Ting-Toomey.

Each class should finish with the students evaluating the effectiveness of the training. The authors have employed a variety of tools to canvass the students such as an anonymous evaluation questionnaire containing questions as to how satisfied they are with the class and to what degree the class met their expectations as well as comments about the usefulness of the issues addressed, students' recommendations as to proposed changes in the curriculum and their assessment of the instructors. The technique the authors use most often, however, is simulating a situation in which the student packs for a journey. The participants are asked to note down on one slip of paper what they would take with them when the class finishes (take only the most necessary items) and on the other what they would leave behind (leave the items you do not need). They are then encouraged to put the first slip into a suitcase placed in the middle of the classroom and throw the other one away. Such a procedure serves the students to make their final reflections and sometimes to relive the difficult situation again and for the instructors to improve the teaching methods and techniques.

## CONCLUSION

The opinions voiced by students of nursing confirm how vital intercultural education is and that it is necessary to teach such classes as they enable the nurse to cater for the needs of a foreign patient. These intercultural competences can be gained through activating methods of teaching based on experience.

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## Intersexual Differences In Adolescents' Perception Of Success

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### ABSTRACT

In this paper, we focus on the identification of intersexual differences in the perception of the terms „success“, „successful“ person and „person with a disability“. The research group consisted of 250 respondents (121 boys and 129 girls). The results point out that the largest distance can be found between the term „disabled person“ and the other term. The term „disabled person“ turned out to be the most distant from the terms „successful person“ and „success“. This indicates that the respondents of our survey do not consider a disabled person being a person capable of achieving and experiencing success. Girls differentiate the term „a person with a disability“ from all the other concepts at a much lower rate than boys. It may imply higher tolerance of people with a disability among girls.

### INTRODUCTION

Nowadays, we are confronted with the term success maybe too much. We hear about success and successful people from mass media every day. A lot of motivating publications about success are printed out every day. They describe success as something easy, great and self-evident, which can be reached so easily. This term has become a part of our everyday life and despite that it is very hard to define it, because everyone imagines different things when it comes to success. For someone is success to live happy family life and for other is success a good job position and financial independence. Successfulness is connected with quality of life. This quality can be divided into various spheres - physical, psychical, social, financial, sexual, functional and spiritual (Hamranová, 2013).

We think that such differences can be seen also between men and women, when it comes to a term success. It is more typical for men that success is associated with materialism, good social status and power meanwhile, women think more of family and good relationships when it comes to success. Successfulness, thus, means mainly subjective experience of success, which is connected rather with good emotions than bad ones.

### THE STUDY

In English, Scottish, American and French monolingual dictionaries we can find definitions of success like: The Oxford Dictionary for the Business World (1993) and Compact Oxford English Dictionary (2003) define success as the realization of one's own goal, satisfying result, prosperity, and good reputation. The Original Roget's Dictionary says that success is about prosperity and cornucopia. Shorter Oxford English Dictionary (2002) defines success as a positive result of some action, finishing an effort and achieving the goal or at least a part of it. Collins New English Dictionary (1997) and Cambridge Dictionary of English (1995) say that success is achieving something desired. The most detailed definition of success can be found in Longman dictionary of American English (2002) which says that success is completing of something a human tried to achieve or desired for. The dictionary also says that success is a result or an effect which a human thought of or it can be a promotion in work. French dictionary Le Petit Robert (1967) defines success as an achievement of wanted positive result or it can be a situation which makes a positive result. Success is also a positive acceptance or public popularity and it could be a tool for seduction of the opposite sex.

With problems of success dealt also Sejčová (2007) who defines success as a result of activity leading to a positive assessment of a group or individuals themselves. She says that success without an actual subjective emotional success experience cannot even be a true success for the individual. According to her opinion, the term success is used in many contexts:

- Positive social evaluation in the form of admiration, fame or condemnation
- An actual result of an activity, i.e. successfully solved task
- The inner side of experience, i.e. feeling of success in form of joy or happiness

Sejčová (2007) differentiates 4 types of personality according to their reactions on success or failure:

1. Individuals motivated by success – they need success, they are active and they are discouraged by failure.
2. Individuals motivated by failure – they mobilize all their strength when they fail to achieve better results, failure does not discourage them.
3. Individuals demotivated by success – success demotivates them for many reasons: fear of the loss of favour (in classroom), prevention of negative emotional state which is a part of success.



4. Individuals demotivated by failure – failure discourages the individuals from next activity, they lose desire to work and become passive.

Besides the personality typology in connection with success, we come across with various categories which are often connected to success:

-General-output successfulness – to achieve something, to win a competition, etc.

-School successfulness – to get a good mark, to pass a placement test, to get better results, etc.

-Material successfulness – to have a house, car, to be well-situated, etc.

-Successfulness in social relationships – to have a harmonious relationship, to get on with parents, friends, to have children, etc.

Psychological differences between men and women are described in many specialised publications. Evident differences between boys and girls can be seen even from the development point of view in many areas (speech, etc.). It is undoubted that girls achieve biological, psychological and social precocity sooner than boys. Besides intersexual differences related to cognitive, emotional and social areas, we find also differences in the area of output motivation which is narrowly connected with success/failure experience. What interests us is if these differences reflect also in perception of success and successful person in the semantic field of these terms.

## RESEARCH

The main goal of our research was to identify intersexual differences of perception of success and successful person in the semantic field in connection with semantic distance to related and distance terms and to find out the semantic meaning of these terms in a group of boys and girls. We were also interested in opinions of boys and girls on determinants describing a successful person. Input words of our research were terms: I, success, person with disability, wisdom, ideal, successful person.

Research group consisted of 250 respondents, high school students in Bratislava (2<sup>nd</sup>-3<sup>rd</sup> graders).

Gender	Male	Female	Together
Count	121	129	250
%	48,4	51,6	100

Table 1. Research file according to sex

After the analysis of respondents' answers we came to a conclusion that there are almost none intersexual differences in perception of term success and successful person in the semantic field of our research group. It is important to say that term *a person with disability* showed up as the most distance from the other terms, i.e. as the most distance from terms successful person and success. It indicates that our respondents suppose that even a person with disability can be a successful person who achieves success.

Results of semantic differentials of input words – boys.

	myself	success	ideal	person with a disability	wisdom	successful person
myself		7,95	7,85	10,59	8,74	8,83
success	7,95		6,64	12,17	8,24	6,83
ideal	7,85	6,64		11,6	8,07	7,18
person with a disability	10,59	12,17	11,6		10,97	12,25
wisdom	8,74	8,24	8,07	10,97		7,85
successful person	8,83	6,83	7,18	12,25	7,85	

Table 2

As we see in the table, the closest term for success is ideal. It is followed by successful person, I, and wisdom. The most distant term to success is a person with disability. Semantically closest to the term successful person are success, ideal, and wisdom. They are followed by terms I, and a person with disability.

Results of semantic differentials of input words – girls.

	myself	success	ideal	person with disability	wisdom	successful person
myself		7,79	7,94	9,23	8,29	8,59
success	7,79		6,15	11,19	7,09	5,93
ideal	7,94	6,15		10,71	7,02	6,22
person with disability	9,23	11,19	10,71		9,96	11,34
wisdom	8,29	7,09	7,02	9,96		6,77
successful person	8,59	5,93	6,22	11,34	6,77	

Table 3

In the table 3 we can see that semantically closest to term success is a successful person, followed by terms ideal, wisdom, and I. The most distant, as before, was a person with disability. Order of semantic distance to the term successful man is the same as in the boys table, i.e. success is the closest to the term. Complete order is success, deal, wisdom, and I. Successful person is the most distance from a person with disability.

Interesting is also finding that girls differentiate term person with disability from the other terms in far smaller extent than boys. We can assume that girls tolerate persons with disability more than boys, which was confirmed by the analysis of intersexual differences of the semantic meaning of person with disability. Boys, thus, judge persons with disability more negatively as girls. They consider them more impulsive, passive and slower and overall they incline to negative adjectives than to positive ones.

## FINDINGS

According to the results above we can say that we did not find almost any differences in perception of success and successful person between boys and girls. This correspondence with Vernarcova' s (2010) findings who states that in most recent researches there are no more intersexual differences. For boys is a successful person one who is active, social, fast, wise, ambitious and self-confident. Girls consider a successful man one who is social, active, decisive, ambitious and self-confident. A person with disability is, according to our respondents, slow, withdrawn and passive. It means that there is a prejudice in people's mind that persons with disability are less capable and powerful.

## CONCLUSIONS

We try to get rid of this stereotype in our conception of inclusive education. This was is not easy and it has to start with training of future pedagogues (Šramová, 2014). Besides that, it is a task for society to actively participate and deal with the thorniest problems of persons with disability and to enable them to present their strong points.

Šramová, Cabanová, Vačková (2012) recommend:

- To enable persons with disability access to all main politics, systems and services
- To invest into specific programs and services for persons with disability
- To accept the national strategy for persons with disability
- To invite persons with disability to problem solving
- To increase the capacity of human sources for people with disability

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## Knowledge Management Of Local Wisdom Model For Tourism Along The Route Of Lower Central Provinces Of Thailand

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### ABSTRACT

The objectives of this research were to: 1) collect, analyze, and synthesize the local wisdom along the route of lower central provinces tourism using knowledge management processes; 2) study and organize the local wisdom along the route of lower central provinces tourism to support the local tourism business sector; 3) develop a website database and a video for the local wisdom on the route of lower central provinces tourism to enhance sustainable local tourism; and 4) evaluate the website database and the video of the local wisdom on the route of lower central provinces tourism followed by target groups of tourism. The research samples were selected using multi-stage sampling technique. These included 18 owners representatives for the local wisdom survey, 4 experts for the focus group discussion, 22 local community representatives for the academic forum, media try out with 224 tourists; and purposively selected 6 people for public hearing both in the public and private sectors. Findings showed that almost of 18 local wisdoms in this region have a high potential to support and promote tourism in the lower central provinces. The 54 tourist attractions were located near the local wisdom on the route of lower central provinces tourism. The results of the experts' focus group discussion showed that: the local wisdom included recommended product, souvenir, food, and consumer product; tourists should be slow tourism which include 2-3 overnight stays, media promotion should be explored to make it more accessible and disseminate information rapidly especially in social media. The expert's evaluation on the quality of the website and video were found at an excellent level, results of tourist's opinion on website, videos, and printed media were at a good level.

### INTRODUCTION

Tourism plays a vital role in the economic systems of Thailand. It does not only contribute immensely to the overall income of Thailand, but it also creates a lot of opportunities such as in business enterprises like hotels, restaurants, souvenir shops, and transportation. This brings investment, employment, and contribution to local income. In 2013, the tourism receipts in Thailand were reported to reach US\$ 146,410.70 (Ministry of Tourism and Sport, 2014). Ecotourism created activities that were compatible with the cultural status and local culture. Tourism promotion should tap the potentials of the community to participate and develop sustainable tourism by studying the knowledge of Thai wisdom, such as finding the Thai local wisdom and studying its identity in order to realize and appreciate the importance of their local wisdom. In addition, it is important to study the key products and tourist demand adaptation to have value added in their cultural products. Findings of this research could be significant in managing the local wisdom in the region. This could engage various stakeholders in managing the tourism route and involved them in which knowledge management processes such as classifying knowledge, learning exchange, application, transfer, sharing and restore knowledge among the people in the community. Ultimately, local wisdom would be disseminated and circulated in the community and organization involvement. The knowledge management, therefore, is the working system to be used for community development which could be reinforce and strengthen the lifelong learning and top up the local wisdom to create the innovation and value added in tourism. Results of this study could support the current social and economic systems on knowledge-based society to match with the social contexts and situation.

In Thailand, government policies were implemented to increase and improve the tourist places all over the country. The central region was one of the most popular tourist destinations because it is near Bangkok, a capital city of Thailand and is very convenient for transportation and communication. The lower central region composed of 8 provinces which are rich in both modern and traditional cultural aspects. Natural resource environments were also abundant for tourism development to show local wisdom in their communities.

Therefore, this study sought to 1) collect, analyze, and synthesize the local wisdom along the route of lower central provinces tourism using knowledge management processes; 2) to study and organize the local wisdom along the

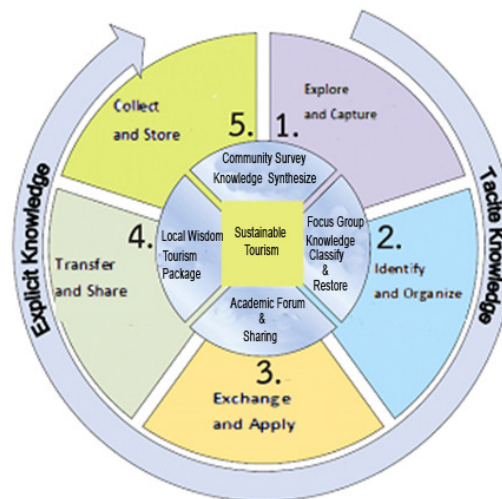
route of lower central provinces to support the local tourism had been explored; 3) develop a website database and a video for the local wisdom on the route of lower central provinces tourism to enhance sustainable local tourism; and 4) evaluate the website database and the video of the local wisdom on the route of lower central provinces tourism followed by target groups of tourism.

## THE STUDY

The scope of this study encompassed the local area of the lower central region of Thailand. Overall, the study composed of 8 provinces, namely Nakhon Pathom, Ratchaburi, Suphanburi, Kanchanaburi, Samut Sakhon, Samut Songkhram, Phetchaburi, and Prachuap Khiri Khan. From the preliminary survey, the study area could be divided into 4 routes of local wisdom tourism depending on their location and main mode of transportation. Analysis of preliminary results showed that 54 tourist attractions were located along the route of lower central region tourism.

In this study, research samples included respondents in 8 lower central provinces in Thailand who were selected using multi-stage sampling techniques. The first phase involved a survey to investigate the local wisdom where 18 representatives of local wisdom were selected using purposive sampling based on the potential for tourism development. The second phase involved the focus group method with 4 experts in tourism and knowledge management. Finally, the third stage conducted an academic forum with 22 purposively selected local representatives comprised of experts, government officers, and private sectors on local wisdom in tourism and knowledge management. **academic forum** that purposively selected 22 local representative experts, government and private officers on local wisdom in tourism and knowledge management; evaluated all **media try out** with 224 tourists collected by the accidental sampling technique; and **public hearing** with 6 representative persons that purposively selected both in the public and private sectors in lower central provinces. The research tools included a survey form of the local wisdom and product in lower central provinces, an expert's opinion evaluation form, and an academic forum brainstorming form. Data gathered were analyzed using percentage, mean, and standard deviation. Qualitative content analysis using photographs and audio-video recordings were also conducted.

The knowledge management model used in this study modified the KM for Local Wisdom Study Model which composed of 5 steps (Sompong and Rampai, 2015) as shown below in figure 1. In this model shown that the KM process on local wisdom composed of 5 steps to manipulate, there were **Step 1** - Explore & Capture; **Step 2** - Identify & Organize; and **Step 3** - Exchange & Apply **Step 4** - Transfer and Share **and Step 5** - Collect and Store. In transforming the knowledge from Tacit Knowledge to the Explicit Knowledge for Local Wisdom Tourism, it required to manage the local wisdom into 5 activities which will create the sustainable tourism at the central point of the model.



**Figure 1** A model on Local Wisdom Study  
**Source:** Sompong and Rampai (2015)

In the first phase of this study (Figure 2), the researchers applied the first 3 steps. In **Step 1** - (Explore & Capture), there was the activities in community survey and knowledge synthesize from 18 representatives of local wisdom in the selected communities. **Step 2** (Identify & Organize), focus group method with 4 experts in tourism and knowledge management **was employed, then** the explicit knowledge of local wisdom was classified and restored in the database by the researchers. **Step 3** (Exchange & Apply), academic forum and sharing were organize with 22 selected local representatives. Finally, the explicit knowledge had been verified at this stage



and could be prepared 18 local wisdom into the tourism package. The researcher would apply knowledge package to the media development and disseminate to the target audiences in the second phrase.

In the second phrase of this model (Figure 3) showed **Step 4** (Explore & Capture) which were the Website and video production and media try out with the tourist attractions at the remote areas. The process end up with **Step 5** (Explore & Capture) which the researcher organized the public hearing and information dissemination to the people and government officials in the local area.

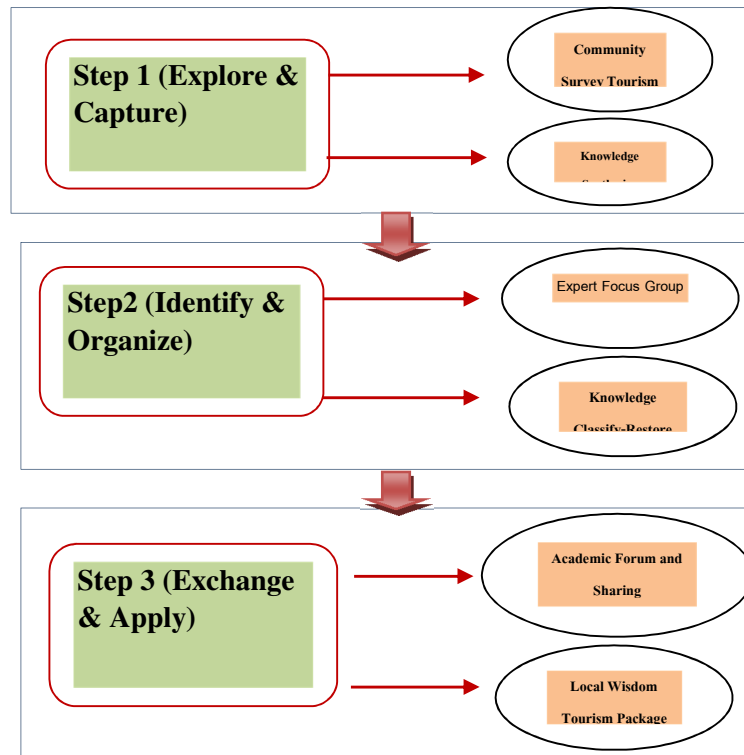


Figure 2 Steps and Activities in Knowledge Management on Local Wisdom Study (Phase I)

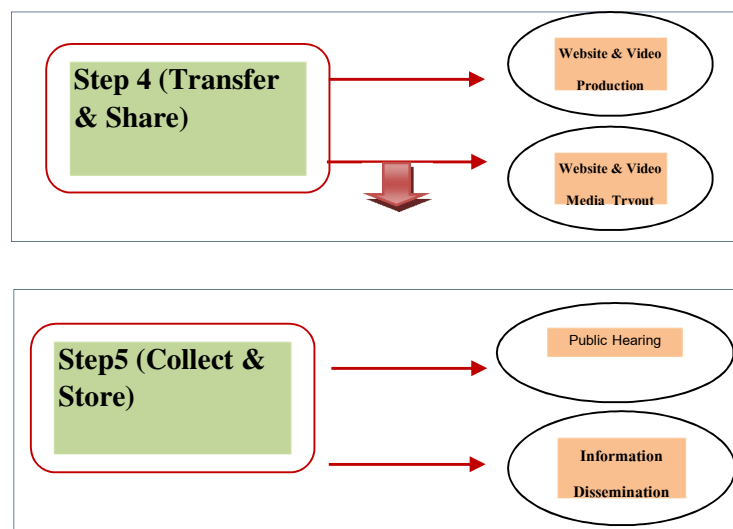
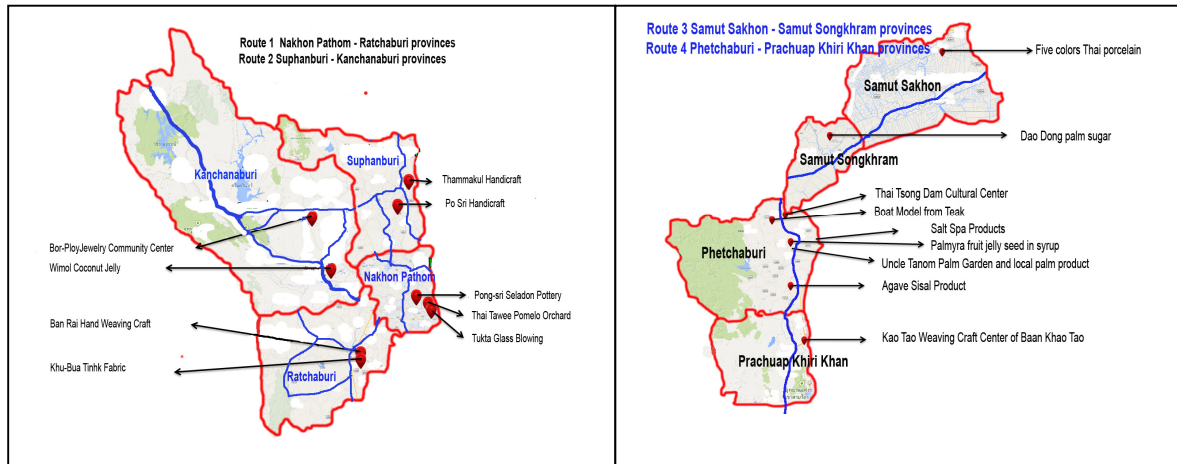


Figure 3 Steps and Activities in Knowledge Management on Local Wisdom Study (Phase II)

## FINDINGS

The results of document study and preliminary survey showed that Thai local wisdom in 8 provinces in the lower central region (Nakhon Pathom, Ratchaburi, Suphanburi, Kanchanaburi, Samut Sakhon, Samut Songkhram, Phetchaburi, and Prachuap Khiri Khan province) had attributes and identities with a high potential for tourism development. This could be divided into 4 tourism routes: a) **Route 1** Nakhon Pathom - Ratchaburi provinces; **Route 2** Suphanburi - Kanchanaburi provinces; c) **Route 3** with Samut Sakhon - Samut Songkhram provinces; and d) **Route 4** Phetchaburi - Prachuap Khiri Khan provinces. The results of tourist attractions survey along the routes showed that the 54 tourist attractions were located near the local wisdom along the route of lower central provinces tourism.



### Local Wisdom in the Lower Central Provinces in Thailand

Findings showed that there were 18 wisdoms with a high potential for tourism in the lower central provinces in Thailand. Each route showed unique differences in wisdom. These were classified according to the identities and dominances such as local handcraft product (also known as OTOP or One Tambon, One Product), traditional local food and drinks, decorations, traditional garments, and cultural performances, among others (Table 1).

**Table 1** The list and identities of local wisdom in 8 lower central provinces in Thailand

Local Wisdom	Identities	Strengths	Tourist Opportunities
1) Thammakul Handicraft	Decorative Product with Thai literature	OTOP; supported by the local government	High
2) Po Sri Handicraft	Bamboo and rattan product with local styles	Local product with low cost and easy to find	High
3) Wimol Coconut Jelly	Authentic product from fresh coconut	Good taste without chemical preservatives	High
4) Bor-Ploy Jewelry Community Center	Local source of blue sapphire and yellow sapphire	Skillful community and well-known for localized gemstone mining	High
5) Khu-Bua Tinhk Fabric	Well-known for foot of the glass cloth (Teen Jok)	Transform from the north region, the old ancestor	High
6) Tukta Glass Blowing	Glass blowing to many form such as barge swan, animal, fruit, and tricycle (Tuk-tuk)	Domestic and Export products	Moderate
7) Thai Tawee Pomelo Orchard	The technology in growing pomelo and fruit packaging	Known for sweet pomelo	Moderate
8) Pong-sri Seladon Pottery	Thai pottery style for house decoration and porcelain ceramics from beginnings 700 years ago	The style is interesting for the foreigners and high class society ware	Moderate
9) Five colors Thai porcelain	Name of Thai porcelain with designs in five	Strong community to learn local wisdom with	High

Local Wisdom	Identities	Strengths	Tourist Opportunities
10) Porcelain of Don Kai Dee Village	colors(white, black, green, red and yellow )	homestay services	
10) Dao Dong palm sugar	Good pakaging for sale.	100 percentage of palm sugar products	High
11) Thai Tsong Dam Cultural Center	Indigenous culture: cultural dance, costumes, local food, cotton weave, and handicrafts.	Special cultural performances	High
12) Salt Spa Products	Local products from salt for healthy spa	Value-added for natural salt in the community	High
Local Wisdom	Identities	Strengths	Tourist Opportunities
13) Boat Model from Teak	Boat model - making from Teak (the Queen of Timbers)	The art of making boat model from teak engaged with the belief and faith in boat styles in the past.	Moderate
14) Palmyra fruit jelly seed in syrup	The local food product from Palmyra fruit jelly seed in syrup	High quality local food products	Moderate
15) Uncle Tanom Palm Garden and local palm product	Local wisdom learning resource on palm garden and products	Learning for both Thai and foreigners with support from the government	High
16) Agave Sisal Product	Handicrafts from Agave Sisal Leaf	Local handicrafts which originated from the Royal Project	High
17) Kao Tao Weaving Craft Center of Baan Khao Tao	Cotton weaving craft center at Khao Tao Village	Handicrafts which originated from the Royal Project with support from the Queen of Thailand	High
18) Ban Rai Hand Weaving Craft	Local cotton weave products of the Ban Rai Village	Local style of bathing cloth and Thai traditional costume	Moderate

#### Academic Forum on the Local Wisdom

Output of the 22 participants from “Academic Forum” on the local wisdom tourism along the route of lower central provinces had many factors to supporting for sustainable tourism. The owners of local wisdom should have the readiness and willing to share their knowledge as well as the community and government officers and private sector. They should also realize about the importance of local wisdom and participate in management and practice systems in order to work with high efficiency and sustainable. They should be able to offer the activities for tourist in trailing their local wisdom with the real practice so they would be appreciated and learning so much. The owners should work through the cooperation as the committee members and have meeting to develop the local knowledge for tourism. Finally, the communication strategies as well as the quality development of the local product under the standard should be employed. Development the tourism program within 2-3 days traveling namely slow tourism could be used for this purpose.

#### Evaluation of the Website and Video

The experts’ evaluation on the quality of the website and video were found at an excellent level (mean=4.67). In the process of website and video tryout in the knowledge management process at the tourist attraction, most of the tourists opinions’ on website, videos, and printed media on the route of lower central provinces tourism were found to be at a good level (mean=4.28), and the usefulness at the good level (4.25) as well as the local wisdom knowledge management in four routes tourism, the content quality and design, easy and convenient were at the high level.

## CONCLUSIONS

Results of the expert's focus group discussion showed that: 1) local wisdom could be divided into 4 groups which included recommended products, souvenirs, food, and consumer products; 2) tourists should include 2-3 overnight stays in their itinerary; and 3) media promotion should be explored to make the wisdom more accessible and rapidly diffused especially in social media. The experts' evaluation on the quality of the website and video were found at an excellent level. Meanwhile, results of tourists' opinions on website, videos, and printed media on the route of lower central provinces tourism were found to be at a good level. The academic forum conducted with representatives and experts found that the integrated factors or keys to success along the route of lower central provinces tourism included the following. Local wisdom owners must have the readiness and service in mind to disseminate the local wisdom both in the public and private sectors. The villagers had to participate in local wisdom management. Moreover, in the development of local wisdom for tourist attractions, the owner should design activities for tourists using the "learning by trailing" approach, use slow tourism strategy and should integrate local wisdom into the local curriculum in schools. The government and private tourism sectors should be encouraged participation in local wisdom management along the route of lower central provinces tourism. Local authorities representatives of the government organization should encourage people to work and perform their functions.

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## Knowledge Of People With Type 2 Diabetes About Their Disease And Their Influence In Treatment Adherence

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### ABSTRACT

**Background:** Diabetes Mellitus is a chronic disease in fast expansion, reaching even the characteristics of a pandemic set. A significant percentage of diabetics have little knowledge about their disease and few skills to put into practice. This lack of knowledge results in a low adherence to treatment and poor metabolic control. The education, the provision of information and empowerment are essential to making conscious decision, adherence to treatment and good metabolic control. **Objectives:** Identify the levels of knowledge that people with type 2 diabetes have about their disease. **Methods:** Quantitative, cross-sectional, non-experimental, descriptive, correlational study, with a sample of 102 people with diabetes type 2, aged 40 to 85 years, mostly male (51.96%). The evaluation protocol includes: social-demographic and clinical questionnaire, Questionnaire about the knowledge of Diabetes, also resorted to HbA1c to directly assess adherence. **Results:** The sample presents enough knowledge on diabetes (41.2%), with men showing more knowledge on it. Analyzing the relationship between the adherence to treatment and disease knowledge, there is an association slightly significant ( $p < 0.05$ ). **Conclusion:** The lack of knowledge of diabetic patients have shown a great impact on their health and quality of life, the provision of information is essential for the person to make informed decisions about their health / disease. Therapeutic education thus assumes a central role in the treatment of diabetes, because the individual must be capable of skills and knowledge to adhere to treatment plan and so help control daily symptoms and limitations that the disease can cause it.

**Keywords:** Diabetes type 2 insulin-dependent, knowledge, adherence to therapeutic regimen, therapeutic education.

### INTRODUCTION

Diabetes Mellitus (DM) is a chronic disease in fast expansion, being even able to reach the characteristics of a pandemic set. It is one of the major public health issues, not only in terms of the growing number of individuals affected but also in terms of disability and premature mortality associated thereto, taking into account expenses for treatment and prevention thereof, and is related to relevant physical, psychological, socio-familial and economic implications. The World Health Organization (WHO, 2011) supports that diabetes and its complications have a significant economic impact not only on patients but also on their families and on the national healthcare systems, pointing out to the existence of approximately 346 million people with diabetes across the world and foreseeing that death due to diabetes can even double between 2015 and 2030. This reality is also a cause for concern in Portugal, and this pathology is increasingly common and mainly associated to age increase. In 2013, the prevalence of diabetes in the Portuguese population, based on both genders and age groups between 20 and 79 years, was 13.0%, which corresponds to a total number of about 1 million individuals, a fact which is truly alarming (Boavida et al., 2014).

It is consistently described as one of the most demanding and complex chronic diseases from a behavioural and psychological point of view. Therefore, treatment compliance is a crucial aspect to control the disease, and lack thereof creates significant complications related to an incidence and prevalence increase. According to the WHO (2003), in the so-called developed countries, 50% of chronic patients do not comply with the treatment. This rate increases exponentially when it pertains to developing countries, where resource shortage and the lack of equity of access to healthcare services turn low compliance into a problem. The notion of compliance, used more recently, refers to the active participation of the patient and the existence of collaboration and interaction in the healthcare relationship. It requires the patient's agreement to obey to the recommendations of the healthcare professional, in a context where both parties are active partners in the treatment plan (WHO, 2003; Bugalho & Carneiro, 2004), involving active and voluntary participation of the patient, who shares the responsibility of the treatment with the



team of healthcare professionals, understands the existence of an agreement between the parties, respecting beliefs and desires (Bugalho & Carneiro, 2004). In the eyes of Haynes, Acklooe, Sahota, McDonald and Yoo (2008), as well as of the WHO (2003), compliance only exists when an individual's behaviour regarding medication taking, dietary compliance and/or lifestyle changes coincides with the recommendations of a healthcare professional, that is, it is regarded as the level of conformity between the recommendations and the behaviour of the individual regarding the proposed therapy program. From this perspective, a good compliance with the treatment involves not only a process of commitment to the decision of the therapeutic regimen but also the adoption of therapeutic attitudes and the continuation thereof. According to Telles-Correia, Barbosa, Mega and Monteiro (2008), lack of compliance occurs when the patient's behaviour does not match the recommendations of the healthcare professional, not being strictly limited to deviations in the implementation of the therapy program, taking into account the fact that the patient did not follow indications regarding changes in lifestyle and health-related routines in order to adopt healthy practices. Non-compliant behaviour must therefore be understood as patients' reaction to the mismatch between their ideas and those of the healthcare professional on their disease and/or problems. According to Christensen (2004, qtd. in Levensky, 2006), non-compliance rates vary, depending on whether they refer to treatment in the acute stage, between 20 and 40%, treatment of chronic disease - 30 to 60% - and 50 to 80% in treatment for preventive purposes.

Non-compliance is thus a significant barrier to the success of the treatment and may result in worsening of the health status of the patient, possibly creating errors in future treatments. This deterioration in the clinical condition can require the prescription of more medication, involving the need to carry out more diagnostic tests and more expensive and complex therapies, consult a doctor more often, use emergency services and an increase in hospital admissions (Cabral & Silva, 2010). This idea is validated by Levensky (2006), Bugalho and Carneiro (2004), and Osterberg and Blaschke (2005), who confirm not only that non-compliance to therapy has adverse effects on healthcare quality but also that it is a significant obstacle to the success of treatments, involving higher costs in medical and social terms.

A low compliance to diabetes self-care arises from the mixture of several characteristics of the disease and its treatment. For Wagner, et al. (1998), the fact that diabetes is a chronic disease without immediate discomfort, without a clear risk, the therapeutic regimen requires changes in one's lifestyle, the treatment is complex, intrusive and undesirable, there is no direct monitoring of behaviour and the treatment's goal is prevention rather than cure are factors which predict a low compliance. Malerbi (2011) stresses that factors related to non-compliance to diabetes treatment can be classified into three groups: treatment features, patient behaviour and social factors.

Glycated haemoglobin values are often used to assess compliance to treatment, as they will reflect the control level and appear to be presently the best indicator of the patient's health status. Patients with a good metabolic control are presumably compliant (Johnson, 1994). A low amount of HbA1c indicates a good health status and a presumed good compliance to the treatment, whereas a high amount thereof reflects a poor health status, suggesting that there is a problem in compliance to the treatment, but not specifying in which compliance aspect the patient is failing (Johnson, 1994). Compliance to treatment among patients with type 2 DM is highly influenced by the patient's level of knowledge, which includes not only what they know and do not know but also mistakes, beliefs and unclear assumptions (Campbell, 2012).

Knowledge of the disease is essential, since all aspects of the therapeutic regimen are interconnected; for example, food, exercise and medication jointly influence glycemic indexes. Hence, the modification of one parameter requires the adaptation of the remaining parameters. It can be easily understood that the level of information on diabetes is regarded as a basic coping strategy for therapeutic compliance.

Structured and targeted educational programs play a crucial role in terms of compliance rate. Kalogianni (2012) believes that it is vital to educate patients on and convince them of the benefits of the treatment, as well as maintain a therapeutic relationship based on communication, trust and motivation. A structured education enables not only significant improvements in metabolic control but also the adjustment to a new disease status and development of the abilities the patient is required to have, so that the latter is the main manager of his/her disease, thus reducing long-term costs for the patient and society. Assal (2000) mentions therapeutic education as a continual and systematic process, included in healthcare and aimed at empowering individuals to participate in their health process, thus improving their quality of life, enabling people to obtain therapeutic skills for personal use. The International Diabetes Federation (IDF, 2011) mentions that education is essential to individuals suffering from diabetes, so that they are able to make informed decisions, handle the daily routines of a complex chronic disease and change their behaviour in the face of the daily control of their disease. Therapeutic education must be perceived as an integral part of the treatment and a tool to help the diabetic patient adopt a new behaviour and change existing attitudes to maximize his/her health. Blair (2010) highlights that the education of the diabetic patient must

empower and grant him/her the basic abilities and knowledge essential to monitor his/her blood sugar and understand how medication, food and sport affect his/her glucose levels, thus not depending so much on healthcare professionals during the management of the disease.

### PURPOSE OF THE STUDY

Identify the levels of knowledge that people with insulin-dependent type 2 diabetes have about their disease and understand to what extent depictions of the disease and knowledge can influence the compliance behaviour to the therapeutic regimen prescribed.

### RESEARCH METHODS

Quantitative, cross-sectional, non-experimental, descriptive, correlational study, with a non-probability sample of 102 people with type 2 diabetes who attend the metabolism consultation of the Diabetes Department of the Centro Hospitalar Tondela Viseu - Portugal. The inclusion criteria were: type 2 diabetes, with an effective clinical diagnosis for over 1 year, administering insulin for over 1 year and attending metabolism consultations at the Diabetes Department. A self-applied questionnaire was chosen, given the specific language of the scales combined with a low educational level and literacy of the sample and the user's difficulties in reading and writing. The socio-demographic characterization of the diabetic patient was performed using different types of questions (open-ended and closed). The patient's clinical characterization includes collection of anthropometric data, such as: weight, height, body mass index, abdominal perimeter; and clinical: blood pressure and HbA1c. Using the Questionnaire of Knowledge on Diabetes (Bastos, 2004), we aimed at assessing the level of knowledge on DM. This questionnaire includes 24 items, with the following answer possibilities to each item are: "Yes", "No", "Do not know", and revealed internal consistency with a Cronbach alpha of 0.76. Items include questions on DM knowledge and aspects related to the cause, insulin production and hyperglycaemia, disease duration and heredity, questions associated to the therapeutic regimen and its effect on metabolic control, erroneous notions, consequences of hypoglycaemia and hyperglycaemia. This was followed by stratification in cohorts according to the mean  $\pm$  1 standard deviation (Pestana & Gageiro, 2003), where the higher the score in the questionnaire, the more knowledge individuals have. It is worth noting that the clinical parameter used to directly assess compliance to treatment was HbA1c.

### FINDINGS

#### Socio-demographic characterization

The sample was composed of 102 individuals with insulin-dependent type 2 diabetes, with 51.96% being male, with a mean age of  $63.24 \pm 10.47$  years. The mean age of men, 62.77 years, is lower than that of women, 66.73 years. Most diabetics are married (75.5%), although the group of widowers (18.7%) is also significant. Most individuals live in rural areas (66.7%), and the remaining individuals live in urban areas (33.3%). The implementation of the chi-square test allows the conclusion that there is no statistically significant connection between the area of residence and gender variables ( $\chi^2 = 0.079$ ;  $p = 0.779$ ). Out of the total number of individuals, 50.0% live with their spouse/domestic partner and 1.0% in institutions. Primary education (52.9%) is the main educational level diabetics hold, followed by 6th grade (18.7%) and 8.8% without schooling. As for the professional status, the majority reported that they were retired (56.9%), and out of 24.5% professionally active individuals, 36.0% perform duties in the area of trade.

#### Clinical characterization

In terms of the sample's clinical profile, it is worth mentioning a mean of 15.73 years of disease evolution time, in which women have the highest mean, 16.39 years. Women also have a higher mean (6.74 years) of insulin administration time, the mean of the sample being 6.03 years. The sample as a whole has acute complications and, among chronic complications, retinopathy is the most prevalent (30.06%), with 33.75% females and 26.51% males. Cardiovascular disease was mentioned by 24.54% of the individuals, being more common in women (27.50%). Amputation is the least reported complication, 1.23%.

Taking into account the outcomes related to sample characterization according to the values of clinical parameter HbA1c, out of the 102 respondents, 42.2% had an appropriate glycemic control (HbA1c between 0.5 and 7.9%), in which females, 44.9%, had better glycemic control, although the expression of the value of the chi-square test does not show significant statistical differences ( $\chi^2 = 0.291$ ;  $p = 0.590$ ). The average of HbA1c is 8.29%, the maximum value of the sample being 11.9% and the minimum being 6.2%, in which the highest mean corresponds to men 8.31%.

### KNOWLEDGE CHARACTERIZATION

Most individuals sampled have extensive knowledge (41.2%), followed by individuals with little knowledge (40.2%), out of which 18% have satisfactory knowledge. Male individuals are those who have more information on diabetes, since the majority of female respondents (40.8%) have little knowledge on diabetes, whereas the

majority of male respondents (43.4%) revealed they possessed significant knowledge. Nonetheless, there are no statistically significant differences ( $X^2=.302$ ;  $p=.860$ ).

Although 41.2% of the individuals sampled have extensive knowledge, we observed the existence of knowledge deficit in areas related to the disease's identity, causes, complications and treatment. Questions which were perceived by individuals as having a higher level of difficulty and which reflect a lower rate of correct answers correspond to questions: "Eating many sweets and food with high sugar content is one of the causes of Diabetes"; "Regular exercise increases the need of insulin or of another medication for Diabetes"; "Diabetes occurs when kidneys have a poor ability to keep urine without glucose"; and "An individual with Diabetes must clean a wound with an iodine solution and alcohol".

Eating many sweets and food with high sugar content is recognized as the cause of the disease by 84.3% of respondents, the role of endogenous insulin is unknown by most participants, 60.8%, with 15.7% of the population believing that insulin is produced in the kidneys. The way to assess diabetes is unknown to 53.9% of individuals and 4.9% of respondents is unfamiliar with the main types of diabetes. The disease's chronicity is acknowledged by 65.7%, but 33.3% of participants have the false notion that diabetes can be cured. Approximately 3.9% do not know that children of diabetic parents are more prone to diabetes (hereditary component).

As for acute complications of diabetes, the sample has knowledge deficit, as 36.3% still do not recognize the signs of hyperglycaemia and 28.4% do not know that tremors and perspiration are signs and symptoms of hypoglycaemia. Regarding chronic complications, the population surveyed has extensive knowledge. Medication is regarded as the most important component in diabetes control and treatment by 78.4% of respondents; 53.9% do not recognize the relevant role of exercise for the disease's treatment and 74.5% have the mistaken belief that an adequate diet consists in special foods.

Analyzing the connection between knowledge and compliance, it was found that there is a slightly significant negative association ( $r= -0.204$ ;  $p=0.040$ ), which indicates that a higher level of knowledge is related to lower values of HbA1c, and thus to higher adherence to the treatment (Table 1).

**Table 1 – Simple linear regression: compliance to treatment according to knowledge**

Compliance to treatment	r	p
Knowledge	-.204	.040

## DISCUSSION

The sample surveyed has knowledge deficits in areas related to the disease's identity, causes and treatment, and medication is considered as the most important aspect for diabetes control and treatment by 78.4% of respondents; 53.9% do not recognize the relevant role of exercise for the disease's treatment and 74.5% have the mistaken belief that an adequate diet consists in special foods. Knowledge levels were higher in terms of chronic complications of diabetes, with 100% correct answers in most items.

Comparing our data with other findings from researches conducted in Portugal, we highlight that in Gomes' study (2011) the "complications of diabetes" was the dimension in which respondents showed more knowledge, with 100% correct answers in most items, in the dimension of symptomatology of hypoglycaemia and hyperglycaemia the rate of correct answers surpasses 75%. The disease and its treatment were the dimensions in which participants obtained the highest rate of incorrect answers, with values equal to or higher than 50% of wrong answers. As for the research by Sousa and McIntyre (2008), diabetics are more knowledgeable in the area of treatment, whereas causes and identity are the dimensions about which diabetics have least knowledge.

International studies are in line with the findings of our research, in which people suffering from diabetes have deficits of knowledge about different dimensions of their disease. A study carried out in India (Gulabani, John & Isaac, 2008), aimed at quantifying the level of knowledge of diabetics in different areas, such as prevention and treatment of complications associated to the disease, confirms that the diabetic's knowledge on the treatment and complications of diabetes is limited, particularly in terms of preventive aspects, showing a clear need to empower patients with the knowledge necessary to help them derive maximum benefits from their treatment. Another international research, with a view to determine the knowledge of 96 individuals with type 2 diabetes, revealed that 82% knew what diabetes is, as well as the signs, symptoms and complications associated thereto, but 75% of the individuals could not identify the main causes of diabetes. In terms of diabetes management, 88.5% and 74.0% did not know how to avoid complications and prevent/control diabetes, respectively. They also had gaps in knowledge on the treatment dimension, in which merely 4.2% recognized that adopting a healthy meal plan was

an integral part of the treatment (Okolie, V., Ehiemere, O., Iheanacho, N. & Kalu-Igwe I., 2009).

Patients' knowledge on their disease and therapy are acknowledged as being the factors which can have the most influence on the compliance with the therapy program. In the current research it was found that a higher knowledge of diabetics about their disease is related to a higher compliance with treatment ( $p=0.040$ ). These findings show that, in the face of the disease, individuals have to obtain know-how and skills enabling them to manage the disease in everyday life, as well as the symptoms and limitations associated thereto, thus increasing compliance to the therapy program in order to achieve a good metabolic control (Gulabani, John & Isaac, 2008). Our findings are in line with national and international studies analysed, which show that diabetic patients with deeper knowledge on their disease show a higher compliance to treatment and a better blood sugar control (Al-Qazar et al., 2011; Sousa & McIntyre, 2008).

The study developed by Chan & Molassiotis (1999), which analyzed the connection between knowledge on diabetes and compliance, revealed a significant gap between what patients are taught to do and what they effectively do. Most participants had a satisfactory know-how on the disease, but fail when it comes to using this know-how in their everyday life. These findings suggest that having knowledge is not enough to guarantee a behavioural change, that is to say knowledge on the disease, cannot be used on its own to predict adherence.

## CONCLUSION

The lack of knowledge of diabetic patients has had a significant impact on their health and quality of life, being associated to an increase in hospitalizations and premature death (Williams, 1991). The study conducted by Norris et al. (2002) on the issue of education in diabetes and its impact on patients' health showed that 50% to 80% of individuals had knowledge deficits and that education about therapy reduced the levels of HbA1c in 0.76% on average in patients who attended educational programs for three months.

The transmission of clear and accurate information on the disease, its treatment and control, can encourage the diabetic patient to adopt self-care practices and compliance, and a shared approach between the healthcare professional and the patient contributes to suppress gaps in the area of knowledge. Nonetheless, it is essential to stress that the know-how acquired while coping with the disease throughout its course is useful not only to reproduce the information received, but also to incorporate new attitudes and living habits.

The findings of our research and of those mentioned, which show knowledge deficits in some dimensions of the disease, support the fact that, in the face of the disease, individuals must acquire skills enabling them to manage their disease, its symptoms, limitations and control in everyday life, in order to integrate it into their life and adjust their routine. For this to happen, it is fundamental that individuals have knowledge on their disease and available possibilities to ensure better control thereof, and the supply of information is essential to conscious decision making of individuals on their health/disease, enabling them to maintain maximum autonomy vis-à-vis healthcare professionals.

Therefore, education on therapy assumes a crucial role in diabetes treatment, as in the face of the disease the individual has to be empowered with skills and know-how enabling him/her to daily manage the symptoms and limitations the disease may cause. Knowledge deficit results in a deficient control, leading to higher values of HbA1c, and thus less than half the individuals suffering from type 2 diabetes is able to achieve an optimal glycemic control. These data prove that education, supply of information and patient empowerment are basic but essential aspects for conscious decision making, compliance and suitable treatment.

The positive effects of education on diabetes control and management are undeniable, and it is fundamental to take into account that education regards a chronic disease for which acquiring health-related skills, knowledge and behaviours is necessary to live and delay complications and reduce dependence on healthcare professionals, enabling the integration of diabetes into everyday life. The individual's living background, his/her level of acceptance of the disease, abilities, know-how and skills influence his/her motivation to learn how to manage the disease. The education of the diabetic is marked by the transfer of responsibilities to the patient, with a view to increase his/her autonomy and encourage the role of the patient as a partner of the healthcare team during his/her treatment.



## Acknowledgements

The Instituto Politécnico de Viseu, the Center for Studies in Education, Technologies and Health (CI&DETS) and the Portuguese Foundation for Science and Technology (FCT).

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## Learning Strategies: Validating A Questionnaire

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### ABSTRACT

Learning strategies are paramount for students to acquire flexible knowledge intentionally.

The aim of this study was to ascertain the Riddlefactorial validity of the Learning Strategies Questionnaire for University Students (CEA-U) Cabrera, Garcia, Betancor & Blanco (2007). 332 university students participated, 284 of whom were women. Their mean age was 19.48 years.

The results of the confirmatory factor analysis and Cronbach's alphas of the instruments and the three scales: motivational, cognitive and metacognitive strategies revealed good internal consistency suggesting they are statistically valid and reliable.

The results were discussed in view of the gains of the CEA-U for psychoeducational evaluation.

**Keywords:** strategies; learning; students; higher learning; university;

### INTRODUCTION

Scientific literature documents that learning strategies “are student-selected activities or mental operations to facilitate acquisition of the content that is directly or indirectly manipulable and that have an intentional character” (Beltrán, 1998 cit in Donaciano and Almeida, 2011, p. 286). Learning strategies are also defined as “a systematic guiding plan of school work to achieve desired objectives.” (Rosario, Núñez and Pienda, 2006 cit in Donaciano and Almeida, 2011, p. 286). In a more recent perspective, learning strategies “are procedures (cognitive and behavioural skills) used by individuals during learning activities in order to ensure success of all stages. Strategies can be modified by the student in order to increase the effectiveness of learning in an activity or specific environment” (Zerbini, 2008 cit in Peixoto et al, 2012, p. 3).

Cabrera Garcia, Betancor & Blanco (2007) advocate the existence of three types of learning strategies: cognitive, metacognitive and motivational. Cognitive operations are effected through ordered thought and attention. When students do not pay attention, their awareness is disorderly with random thoughts appearing. (Csikszentmihalyi, 1999 cit in Araújo et al., 2010). Therefore, to acquire, organise and utilise knowledge, students use cognitive strategies (Ribeiro, 2003 cit in Cunha and Boruchovitch, 2012). As for metacognition, this is related to knowledge itself and the evaluation, regulation and organization of the cognitive processes themselves. According to Weinert (1987) cit in Ribeiro (2003), metacognitions can be considered cognitions of the second order: thoughts and knowledge about oneself and reflections on actions. Campione, Brown and Ferrara (1982) and Flavell (1981) cit in Davis et al. (2005) refer to metacognition either as knowledge about oneself, both about cognitive processes themselves and their modes of operation, as well as executive control involving the regulation and cognitive monitoring.

With regards to classifying learning strategies, these are also classified according to base cognitive knowledge, differentiating work processes from the text and the so-called support processes. In the first three the following are differentiated: essentialization, structuring and elaboration (Garcia, 1998 & Hernandez, 1994 cit in Cabrera, Garcia, Betancor & Blanco, 2007).

The model proposed by Ramsdem (1992) cit in Tavares et al. (2003) defines three contextual domains that influence the development of study and learning strategies: teaching, assessment and programmes. Teaching is the method used by teachers to facilitate learning, and assessment is the method used by the teacher to evaluate what has been learned. Programmes, specifically the content and the structure, format learning in each subject (Tavares et al., 2003). On the other hand, Tavares, Bessa Almeida et al (2003) cit in Donaciano and Almeida, (2011) structure learning strategies into four categories: strategies for acquiring and/or organising information that are directed towards increasing the knowledge acquired by the student, such as underlining, note-taking, memorising

key issues, revising, planning, monitoring and self-regulation; strategies to process information in order to improve understanding, including organising and exploring ideas, writing summaries and abstracts, group study and individual systematic study; strategies to assess their own learning and performance, which include: simulations and review questions to confirm learning, exam preparation behaviours, analysis of the issues, preparation of reports and organising learning from previous assessments; personal management strategies aimed at self-management of study, including managing available resources.

**Research Questions:** The development of learning strategies through cognitive and behavioural activities by students is paramount to the intentional acquisition of flexible knowledge which will allow its effectiveness to be increased thereby representing learning strategies. In this context, the following question emerges: what learning strategies are implemented by the students attending higher education?

## THE STUDY

**Problem Statement:** Currently, we question the capacity of higher education meet the goals brought about by today's creative challenges, since students are incentivised to excessive amounts of memorization, to reproduction of knowledge and to routines (Csikszentmihalyi, 2007, MWilliam, 2008, MacLaren, 2012, cit in Morais et al., 2014), so that it is necessary to lay out strategies and methods of motivating learning (Milgram, 2010 Sadoghi & Ofoghi 2011 cit in Morais et al., 2014). Knowledge of the manner of learning is required in students attending higher education, and they should master it. In this sense, improvement in learning and teaching can be helped by knowledge of the students' learning styles.

**Purpose of the Study:** The objective of this study was to ascertain the learning strategies implemented by higher education students. To that end the University Students Learning Strategies Questionnaire (CEA-U) Cabrera Garcia, Betancor & Blanco (2007) was validated for Portuguese. Three scales were analysed, respectively: motivational strategies, cognitive learning strategies and metacognitive learning strategies.

**Research Methods:** The methodological psychometric validation was carried out with 334 college students in 1st and 2nd year health courses, residing in central Portugal with 284 female participants and 50 males, aged between 18 and 37, with a mean age of 19.48 years.

**The data collection instrument:** The original Learning Strategies for College Students Questionnaire (CEA-U) by Cabrera et al. (2007), is a self-administered questionnaire, whose aim is to gather information on learning strategies used by university students during the study period. Students are asked to report the degree to which they use these strategies. It is a Likert-type scale with the following response format: 0 – not at all, 1 – slightly, 2 – sometimes 3 – often and 4 – always. It consists of three subscales: motivational strategies comprising 27 items, cognitive strategies with 22 items and metacognitive strategies with 8 items, for a total of 57 items. In turn, these three scales are, according to the authors (Cabrera et al, 2007), a reduced version of three scales: the questionnaire on habits and motivational strategies towards study, the questionnaire on cognitive learning strategies and finally the questionnaire on control strategies in study.

The validation study began by translating the original Learning Strategies for College Students Questionnaire (CEA-U) Cabrera et al. (2007) by a native Spanish expert. It was then translated back into Spanish by a Spanish teacher. After completing these procedures, the questionnaire was adapted to Portuguese with minor modifications, which, made the text more suitable in Portuguese without changing the meaning.

In the psychometric study, the processes adopted by Cabrera et al. (2007) were replicated, and the results were subjected to factor analysis in order to consider content validity and cultural adaptation to determine if the items that constitute the original factors measure the same concepts. The internal consistency was determined by the Pearson coefficient correlation of the various questions with the overall score, determining the Cronbach's alpha, and determining the splitting coefficient or the split-half method. For Pestana & Gageiro (2014) reference values should be considered as follows: >0.9, very good; 0.8 – 0.9, good; 0.7 – 0.8, average; 0.6 – 0.7, reasonable; 0.5 – 0.6, poor; <0.5, unacceptable. For the factor analysis, we chose analysis of the main components when using varimax-type orthogonal rotation and values greater than 1. To achieve a good factor definition, it was agreed that the items or variables that have "r" correlations below 0.2 should not be considered in the overall score when it contains this particular item (Striener and Norman, 1989).

## FINDINGS

### *Scale of motivational strategies*

Table 1 shows the mean, standard deviation and Cronbach alpha values. From the mean scores there is heterogeneity in the responses given that the mean values range from 1.46 in item 8: "When I am very active or excited, I usually use relaxation techniques before I start studying." and mean=2.87 in item 18: "I seek to feel satisfaction when I manage to learn what I have studied." Analysing the value of the correlation coefficients, we find that item 20, "When I have concerns, problems or I am very restless, I try to draw pictures or doodle to relieve tension." was eliminated because it presents a correlation below 0.20. The Cronbach's alpha values of this first evaluation can be classified from good ranging between  $\alpha=0.853$  and  $\alpha=0.862$ . Carrying out a new study of internal consistency with the remaining items, we observed a slight increase in r values as well as for the alpha coefficients.

The item which best correlates with the remaining is item 17 which explains 56.2% of variability. Analysing the Cronbach's alpha values, we can classify them as good since they vary between 0.861 in item 27 – "I usually distribute difficulties in studying to resolve them 'step by step'." and 0.865 in item 1 "I feel reactions of attraction and pleasure with the material I am studying" with an overall alpha of 0.868.

**Table 1:** Internal consistency of the learning strategies scale

	Items	1 <sup>st</sup> assessment				2 <sup>nd</sup> assessment		
		Mean	SD	r	$\alpha$ 1 <sup>a</sup>	r	R <sup>2</sup>	$\alpha$
1.	I feel reactions of attraction and pleasure with the material I am studying.	2.39	.628	.335	.860	.343	.238	.865
2.	When I start studying I usually concentrate intensely on studying.	2.18	.759	.277	.861	.286	.450	.867
3.	When I'm studying, I'm focused on what I'm doing; I do not like to become distracted from my goal.	2.34	.834	.336	.860	.345	.489	.865
4.	When I'm studying I'm so interested in what I'm studying that I lose track of time.	1.75	.745	.388	.858	.393	.327	.864
5.	When I'm studying and my will to do so declines or other interests or problems arise, I usually analyse the causes to reassure myself.	1.92	.836	.321	.860	.327	.283	.866
6.	When lack of will or phobia arises, I try to avoid them by imagining positive things.	2.17	.921	.481	.855	.486	.356	.861
7.	When I have little desire to study, I often consider pleasant study situations or content to get into it.	2.13	.869	.403	.856	.483	.391	.861
8.	When I am very active or excited, I usually use relaxation techniques before I start studying.	1.46	.967	.357	.859	.363	.378	.865
9.	I try to finish studying with a pleasant situation to have a good memory for the next study session.	1.51	.995	.448	.856	.446	.451	.862
10.	When I have concerns or problems that prevent me from studying, I often relate them with pleasant ideas to help me to study.	1.55	.915	.460	.856	.470	.418	.862
11.	I often relate what I will study with things I already know or experiences related to the topic that I have had.	2.51	.789	.492	.855	.495	.445	.861
12.	I often relate the topics I'm going to study with my interests.	2.49	.770	.519	.855	.526	.485	.861
13.	Before I start studying, I try to consider the importance, interest or applicability of what I'm going to study.	2.44	.842	.541	.856	.451	.438	.862
14.	I often consider the usefulness of what I'm going to study: why is it important? What will it do for me? How useful is it?	2.59	.818	.418	.857	.424	.408	.863
15.	I try to set goals for myself before studying to motivate myself, for instance, "I will be able to learn this within half an hour", "Today I will get up to page x".	2.67	.907	.435	.857	.436	.359	.863
16.	To encourage myself to study, I often reward myself if I reach a goal. For example: "If I can all of this this afternoon, I'll go to the cinema."	1.95	1.030	.407	.858	.404	.526	.864
17.	I often encourage myself with positive things when I can achieve what I has set for myself.	2.27	.883	.559	.853	.557	.562	.859

18.	I seek to feel satisfaction when I manage to learn what I have studied.	2.87	.732	.376	.858	.379	.527	.864
19.	I often value success and what I've learned after studying.	2.82	.791	.445	.857	.453	.508	.862
20.	When I have concerns, problems or I am very restless, I try to draw pictures or doodle to relieve tension.	1.95	1.135	.142	.868			
21.	When I have concerns that prevent me from studying, I think about them for a while and then start studying.	2.02	.807	.328	.860	.395	.202	.866
22.	When I lack the will to study or dislike it, I often take a look at the topic to let it float around in my mind for a while to make it motivate me to study.	1.83	.866	.409	.857	.450	.320	.864
23.	When I lack the will to study, I usually develop diagrams, ideas or graphs on the subject before looking at it. This keeps me entertained and stimulates me to study.	1.84	1.021	.462	.856	.501	.412	.862
24.	When I lack the will to study or dislike it, I try to focus on the parts that are most enjoyable and simple so as to facilitate the task.	2.13	.887	.500	.855	.414	.513	.861
25.	When I have no desire to study, I start with the easiest or most attractive things in order to get into it.	2.27	.894	.411	.857	.257	.466	.863
26.	I often change activities in order to maintain interest in what I am studying.	2.07	.883	.260	.862	.499	.288	.868
27.	I usually distribute difficulties in studying to resolve them "step by step."	2.06	.820	.495	.855	.343	.302	.861

We started the factor analysis study with the 26 items by analysing the main components with Varimax type orthogonal rotation with eigenvalues greater than 1. The results of the Kaiser-Meyer-Olkin test ( $KMO=0.815$ ) indicate that we can proceed with the factor analysis. In our study Bartlett's sphericity test was not taken into consideration since in large samples it leads to rejection of the null hypothesis. The factor solution obtained allowed seven factors with latent roots greater than 1 that together explain 59.9% of the total variance to be selected. Meanwhile, we found the variance ratio of each variable explained by the factors, called commonalities. Only item 27 – "I usually distribute difficulties in studying to resolve them 'step by step'." had a commonality below the 0.40 benchmark for Marôco (2014), but it was not excluded because its value was 0.393. Nevertheless, the variances chart, called Scree plots (Figure 1), indicates that 5 are the number of components to be retained in accordance with the inflection point of the curve, so that we forced the rotation to five factors.

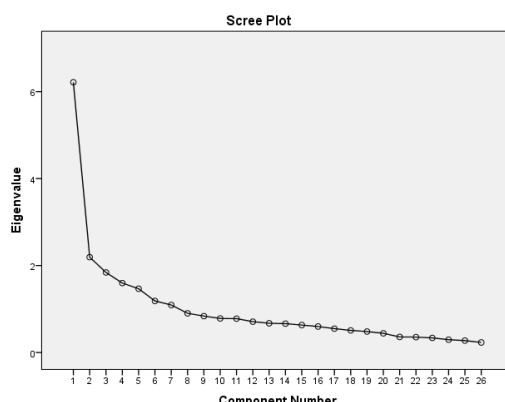


Figure 1. Scree Plots of the learning strategies scale

The final factor solution has a structure similar to the original scale with five factors that explain 51.20% of the total variance (see Table 2). Factor 1, designated self-reinforcing with a value of 3.062, explains 11.77% of the total variance and consists of items 6, 7, 8, 9, 10 and 22. Factor 2 with a value of 2.885, has items 5, 11, 12, 13 and



14, explaining 11.9% of the total variance, and was designated implication. Factor 3 with a value of 2.660 explains 10.23% of the total variance and was designated positive association. Items 15, 16, 17, 18 and 19 enter its construct. Factor 4 explains 9.32% of the total variance. It is made up of items 1, 2, 3 and 4 and was designated applicability and has a value of 2.245. Factor 5, with a value of 2.281, explains 8.77%. It was designated gradual approach and consists of items 23, 24, 25, 26 and 27. Item 21 was excluded due to a factor weight of less than 0.40. (Marôco, 2014).

**Table 2:** Order of the items by factor and factor weights

Items	Factors					h <sup>2</sup>
	1	2	3	4	5	
1 I feel reactions of attraction and pleasure with the material I am studying.				0.544		.449
2 When I start studying I usually concentrate intensely on studying.				0.823		.695
3 When I'm studying, I'm focused on what I'm doing; I do not like to become distracted from my goal.				0.813		.697
4 When I'm studying I'm so interested in what I'm studying that I lose track of time.				0.621		.523
5 When I'm studying and my will to do so declines or other interests or problems arise, I usually analyse the causes to reassure myself.		0.519				.538
6 When lack of will or phobia arises, I try to avoid them by imagining positive things.	0.420					.528
7 When I have little desire to study, I often consider pleasant study situations or content to get into it.	0.497					.653
8 When I am very active or excited, I usually use relaxation techniques before I start studying.	0.810					.579
9 I try to finish studying with a pleasant situation to have a good memory for the next study session.	0.701					.701
10 When I have concerns or problems that prevent me from studying, I often relate them with pleasant ideas to help me to study.	0.645					.560
11 I often relate what I will study with things I already know or experiences related to the topic that I have had.		0.616				.521
12 I often relate the topics I'm going to study with my interests.		0.657				.584
13 Before I start studying, I try to consider the importance, interest or applicability of what I'm going to study.		0.707				.610
14 I often consider the usefulness of what I'm going to study: why is it important? What will it do for me? How useful is it?		0.688				.584
15 I try to set goals for myself before studying to motivate myself, for instance, "I will be able to learn this within half an hour", "Today I will get up to page x".			0.622			.495
16 To encourage myself to study, I often reward myself if I reach a goal. For example: "If I can all of this this afternoon, I'll go to the cinema."			0.749			.738
17 I often encourage myself with positive things when I can achieve what I has set for myself.			0.748			.710
18 I seek to feel satisfaction when I manage to learn what I have studied.			0.636			.710
19 I often value success and what I've learned after studying.			0.568			.595
21 When I have concerns, problems or I am very restless, I try to draw pictures or doodle to relieve tension.						.646
22 When I have concerns that prevent me from studying, I think about them for a while and then start studying.	0.531					.638
23 When I lack the will to study or dislike it, I often take a look at the topic to let it float around in my mind for a while to make it motivate me to study.					0.456	.551
24 When I lack the will to study, I usually develop diagrams, ideas or graphs on the subject before looking at it. This keeps me entertained and stimulates me to study.					0.698	.610

25	When I lack the will to study or dislike it, I try to focus on the parts that are most enjoyable and simple so as to facilitate the task.	0.77	.703
		1	
26	When I have no desire to study, I start with the easiest or most attractive things in order to get into it.	0.67	.582
		3	
27	I often change activities in order to maintain interest in what I am studying.	0.44	.393
		3	

### Confirmatory analysis

We carried out a confirmatory factor analysis (CFA) of the scales using the AMOS 22 software (Analysis of Moment Structures). We considered the covariance matrix and adopted the maximum likelihood algorithm MLE (Maximum Likelihood Estimation) to estimate the parameters. The following indicators were used as a global set of quality indicators: (i) the ratio of chi square and degrees of freedom ( $\chi^2/df$ ), evaluates the quality of the model itself. Perfect adjustment is considered if ( $\chi^2/df$ ) is equal to 1, good when it is less than 2, acceptable when it is less than 5 and unacceptable for values greater than 5. (ii) Goodness-of-Fit Index (GFI), Values or greater than or near 0.95 are recommended; (iii) Comparative Fit Index (CFI) is a comparative, additional content, adjustment to the model index, where values closer to 1 are best fit indicators and with 0.90 as a reference to accept the model. (iv) Root Mean Square Error of Approximation (RMSEA): values below 0.08 are recommended. (v) Root mean square residual (RMR) – the lower the RMR, the better the adjustment, with RMR=0 indicating a perfect fit. (vi) Standardized root mean square residual (SRMR) is an absolute measure of fit. A value of zero indicates a perfect fit and a value less than 0.08 is generally considered a good fit.

The local quality adjustment model was obtained by factorial weights ( $\lambda$ ) and individual reliability of the items ( $r^2$ ). Composite reliability (CR) was also evaluated and the mean extracted variance (MEV) for each of the factors. The reference values for the factor weights are 0.50 and 0.25 for individual reliability. Composite reliability estimates the internal consistency of items for the factor indicating the degree to which these items are consistently demonstrations the factor. A  $CR \geq 0.70$  indicates an appropriate construct reliability. The average extracted variance (AEV) evaluates convergent validity, that is, the behaviour of the items is explained by the factor (Marôco, 2014). A value of  $AEV \geq 0.50$  indicates acceptable convergent validity.

We tested the solution by performing a pentafactorial CFA as shown in Figure 2 (a). We did not observe problems of multicollinearity and influential extreme multivariate and univariate cases according to the Mahalanobis distance criteria. We found that the contents of the CFA only had good fit for the RMSEA, RMR, and SRMR (Table 4) in the initial model. Because they have factor weights below 0.50, item 22 in factor 1, item 5 in factor 2, item 1 in factor 4 and item 26 in factor 5 were eliminated. Submitted to a new factor solution with the remaining items, the modification indices show that they should correlate in factor 1 – errors e3 vs. e5, in factor 2 – errors e7 vs. e8, in factor 3 – errors e14 vs. e15 and e15 vs. e16 and in factor 5 errors e23 vs. e25.

All regression weights are significant ( $p < 0.001$ ) and greater than ( $\lambda \geq 0.50$ ), showing the factor's relevance in predicting the items. Individual reliability is also appropriate ( $r^2 \geq 0.25$ ) (Figure 2 c).

**Table 3:** Order of the items by factor and factor weights

Model	$\chi^2/df$	GFI	CFI	RMSEA	RMR	SRMR
Initial model	3.032	0.834	0.781	0.078	0.056	0.075
Model 2	2.253	0.899	0.898	0.061	0.057	0.073

Because problems of collinearity were found with item 16 it was eliminated. The results show a good fit in the final model in all of the indices analysed (Table 4), except for the ratio  $\chi^2/df$ , which is tolerable.

**Table 4:** Indices of model fit of the final model and the of 2<sup>nd</sup> order model

Model	$\chi^2/df$	GFI	CFI	RMSEA	RMR	SRMR
Final model	2.181	0.904	0.903	0.060	0.053	0.070
2 <sup>nd</sup> order model	1.929	0.923	0.929	0.053	0.041	0.055

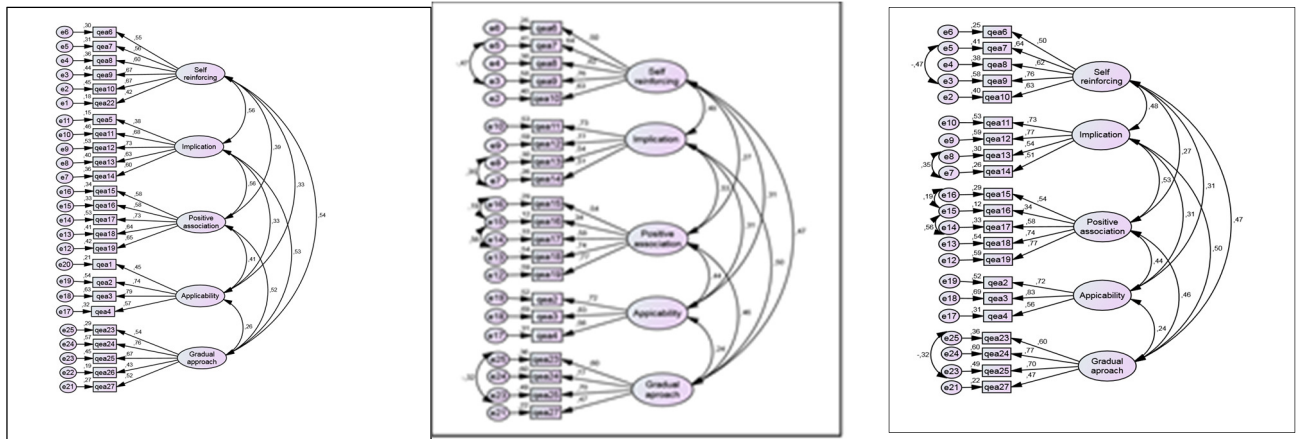


Figure 2. (a) Initial factor structure; (b) Initial factor structure with proposed modification indices; (Factor structure without item 16)

Composite reliability in presenting values above 0.70 in all factors of the scale showed a good internal consistency of the items relative to each of them. The same happened to convergent validity (VEM) that were shown to be normal, taking into account the reference values (0.40). The discriminant validity of the factors was evaluated by comparing the VEM with the squares of the correlations between the factors, yielding considerably lower results than the VEM. The existence of discriminant validity among the factors was thereby concluded.

**Table 5:** Confirmatory factor analysis in the motivational strategies scale

Factors	F C	VEM
Factor 1	0.769	0.404
Factor 2	0.736	0.418
Factor 3	0.753	0.438
Factor 4	0.748	0.505
Factor 5	0.735	0.417

In showing themselves to be positively associated, the correlational values suggest the existence of a 2<sup>nd</sup> order factor, such that we proposed a hierarchical structure with the inclusion of this factor, which we have called learning strategies for higher education students. Figure 4 shows the model proposed with quality of fit values considered good, which shows the factorial validity of the scale ( $\chi^2/df=1.929$ ; CFI=0.929; GFI=0.923; RMSEA=0.053; RMR= 0.041; SRMR = 0.55). The values are substantially better than those obtained with the first order model after we proceeded to the proposed modification indices. (Table5). Moreover, it is worth noting that by presenting a factorial weight of 00.48, item 27 was removed from the model.

For the sample under study, in the 2<sup>nd</sup> order hierarchical model, the factors: Self-reinforcing (4 items), Implication (4 items), Positive Association (3 items) Applicability (3 items) and Gradual approach (3 items) have similar standardized  $\alpha$  values to the original scale. (Figure 3).

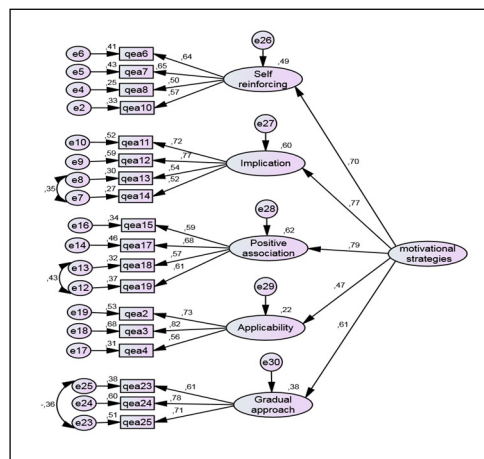


Figure 3. Factor structure with the proposed 2<sup>nd</sup> order model

**Table 6:** Cronbach's alpha values for the motivational strategies subscales

Subscales	No. of items	Cronbach's alpha	
		Original version	Current study
Factor 1: Self-reinforcing	4	0.70	0.686
Factor 2: Implication	4	0.73	0.757
Factor 3: Positive Association	4	0.71	0.737
Factor 4: Applicability	3	0.76	0.738
Factor 5: Gradual approach	3	0.63	0.678
Total factor	18	0.82	0.838

We concluded the study of this scale alluding to the Pearson correlation matrix established with the factors scale. We found that the correlations are positive and significant ranging from weak ( $r=0.223$ ) in the relationship of gradual approach vs. applicability, explaining 49.7% of the variance, to strong ( $r=0.466$ ) in relation to Self-reinforcing vs. Implication with 58.21% of the variance explained.

**Table 7:** Pearson Correlation Matrix between the motivational factors of the scale

Subscales	Self-reinforcing	Implication	Positive Association	Applicability	Gradual approach
Implication	0.466***	--			
Positive Association	0.319***	0.420***	--		
Applicability	0.290***	0.261***	0.317***	--	
Positive Association	0.444***	0.391***	0.393***	0.223***	--
Overall factor	0.763***	0.728***	0.706***	0.543***	0.718***

\*\*\*  $p < 0,001$

### *Scale of cognitive strategies*

A scale of cognitive strategies consists of 22 declarative statements organized into an ordinal Likert scale with the following response format: 0 – not at all, 1 – slightly, 2 – sometimes 3 – often and 4 – always. The original scale had a factorial solution consisting of four components that explained 55.2% of the total variance. The first factor consisted of seven items representing strategies based on cognitive *essentialization* and structuring processes and is called organization. The second factor configures five items that reference the development strategies that go beyond what is in the text (for example, expand information from other sources, generate new information, among others), so that it was called Generative elaboration. The third component groups four related items to the development strategies, but which differ from the previous ones because they focus on the information found in the text, for example (linking it to prior knowledge, looking for examples, among others) and has been designated Anchoring. Finally, the last factor groups six items related to memorization strategies and has been designated memorization.

In its original version, the scale of cognitive learning strategies showed good internal consistency, since Cronbach's alpha values obtained were: for organization (0.84), Generative elaboration (0.86) Anchoring (0.75) and memorization (0.73). In the light of these results we just proceeded with confirmatory factor analysis with an estimation of maximum verisimilitude.

To analyse the data we resorted to the most appropriate statistical procedures such as:

- Distribution of items assessed by asymmetry (Sk) and flatness (Ku), eliminating all those with absolute asymmetry values greater than 3 and flatness greater than 7
- Construct validity assessed by factorial validity, convergent validity and discriminant validity.
- Quality of global fit of the factor model, conducted in accordance with the reference indices and values (as shown in the motivational strategies scale).
- Quality of local fit assessed by factor weights and the reliability of individual items. The model's fit was carried out from the change indices greater than 11 proposed by AMOS.
- Convergent validity of each factor evaluated by Mean extracted variance (MEV). The existence of convergent validity was considered when MEV was greater than 0.5 (Marôco, 2014)
- Discriminant validity of the factors assessed by comparing MEV for each factor with the Pearson correlation squared. Evidence of discriminant validity is considered when the squared correlation between the factors is less than each factor's MEV.

- The construct's reliability, assessed by composite reliability (CR), indicates the degree to which the items are consistent manifestations of the latent factor. If  $CR \geq 0.7$  the construct's reliability is appropriate.

**Psychometric properties: construct validity and factorial validity**

The descriptive analysis of the items in the cognitive strategies scale revealed that they all had a minimum value of 0 and maximum of 4 with mean scores ranging between 1.18 (0.798 SD) in item 49 and 3.07 (0.878 SD) in item 29. All items had absolute asymmetry values below 3 varying between 0.008 and 0.929 and flatness values less than 7 ranging between 0.050 and 0.990. We therefore proceeded with confirmatory factor analysis. The critical ratios of the paths between the different items and corresponding factors are all greater than 1.96 and highly significant as can be seen.

Figure 4 reproduces the tetrafactorial model tested, the correlation coefficients and the factorial structure of the scale. The circles represent the four designated factors as well as the latent variables, the rectangles are the items that represent the manifestation of the respective factor also called the manifest variables and the smaller circles are the errors associated with each item. The direction of the one-way arrows indicates that each factor reproduces a response to each item. The factors underlie the manifestation observed in answers to items, but part of that manifestation is not due to the respective factor, but to unknown causes, called the errors that represent the part of the variance not explained by the factor. The two-way arrows between the factors indicate the relationship established between themselves.

The model revealed an inadequate quality of fit in presenting the following values:  $\chi^2/df = 3.117$ , CFI = 0.855, GFI = 0.843, RMSEA = 0.076, RMR = 0.076, and SRMR = 0.08. We observe that the standardized coefficients range from 0.23 in item 43 and 0.85 in item 41. Because their values are less than 0.50, items 29, 45 and 46 were removed. In the second model (Figure 5) the modification indices pointed towards the association of errors 2 and 19 belonging to factor 1, which was carried out and the indices of model fit showed more adequate values except for the ratio of the chi square degrees of freedom:  $\chi^2/df = 2.179$ ; GFI = 0.910 CFI = 0.935 RMSEA = 0.060; RMR = 0.049; SRMR = 0.06. Given however that items 30 and 48 showed standardized coefficients less than 0.50, we proceeded to refine the model eliminating them.

In the third and final model (Figure 6) modification indices were not proposed and the indices of model fit continue to show they are adequate except for the ratio of the chi square degrees of freedom which worsened slightly:  $\chi^2/df = 2.268$ ; but were better in the others which remained GFI = 0.920, CFI = 0.941, RMSEA = 0.062, RMR = 0.043, SRMR = 0.057.

Note the prevalence of significant indices with coefficients greater than 0.58 among the factors (constructs) and their observable manifestations. Each indicator also has significant factor loads in their respective factors. As for the correlations between the factors, there are significant relationships between all factors except for factor 1 (organization  $p=0.737$ ) and factor 2 (Generative elaboration  $p=0.246$ ) with factor 4 (memorization). That is, these factors are independent in their relationships.

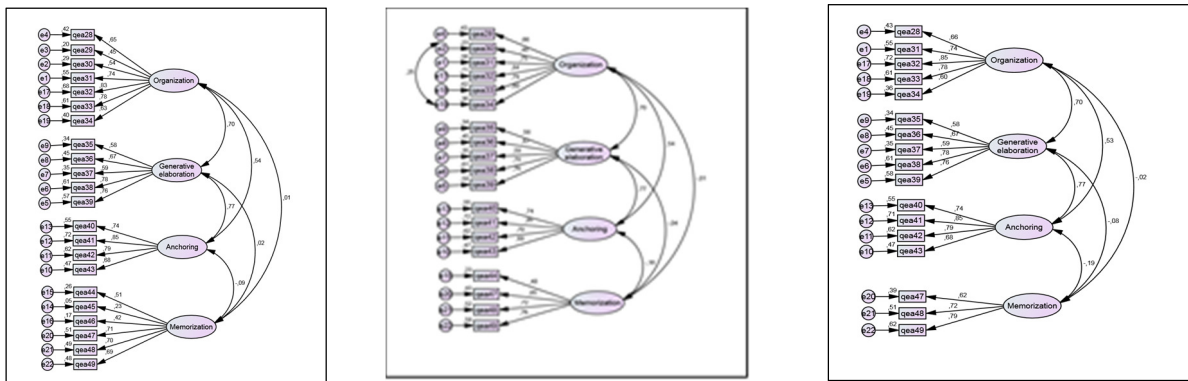


Figure 4. Factor structure1 Figure 5. Factor structure2 Figure 6. Factor structure3

**Convergent validity and composite reliability**

The MEV values allow us to conclude the existence of convergent validity as their indices are greater than 0.40 (reference value). The discriminant validity of the factors evaluated by comparing MEV with the squares of the correlations between the factors, do not allow us to conclude there is discriminant validity between organization and Generative elaboration and between Generative elaboration and Anchoring.

As for composite reliability, in presenting values greater than 0.70 in all of the scale factors, it showed good internal consistency of the items relative to each factor.



**Table 8:** Mean extracted variance and composite reliability

Factors	CR	MEV
Factor 1 – Organization	0.850	0.535
Factor 2 – Generative elaboration	0.810	0.464
Factor 3 – Anchoring	0.850	0.589
Factor 4 - Memorization	0.754	0.508

Factors F1 organization (5 items), F2 Generative elaboration (5 items), F3 Anchoring (4 items) and F4 Memorization (3 items) produce similar  $\alpha$  values to the original scale for factor 1, slightly lower for factor 2 and higher for the other factors and overall value of the scale.

**Table 9:** Cronbach's alpha values for the cognitive strategies subscales

Subscales	No. of items	Cronbach's alpha	
		Original version	Present study
Factor 1 - Organization	5	0.84	0.847
Factor 2 – Generative elaboration	5	0.86	0.803
Factor 3 – Anchoring	4	0.75	0.843
Factor 4 - Memorization	3	0.70	0.751
Total factor	17	0.73	0.864

Through the Pearson correlation matrix established between the scale factors and overall factor, we found that memorization has negative and non-significant correlations with all of the subscales except with the overall factor with which it is positive and significant. In the other subscales the correlations are significant and positive, and the lowest is observed between Anchoring and organization with 21.4% of the variance explained and the highest between Anchoring and Generative elaboration with a variability of 41.6%. With the global factor over 50.0% of the variance is explained.

**Table 10:** Pearson correlation matrix between the factors of the cognitive strategies scale

Subscales	Organization	Generative dev.	Anchoring	Memorization
Generative elaboration	0.614***	--		
Anchoring	0.463***	0.645***	--	
Memorization	-0.012n.s.	-0.031n.s.	-0.118*	--
Overall factor	0.834***	0.866***	0.754***	0.185**

n.s. non-significant ; \*  $p < 0.05$ ; \*\*  $p < 0.001$ ; \*\*\*  $p < 0.001$

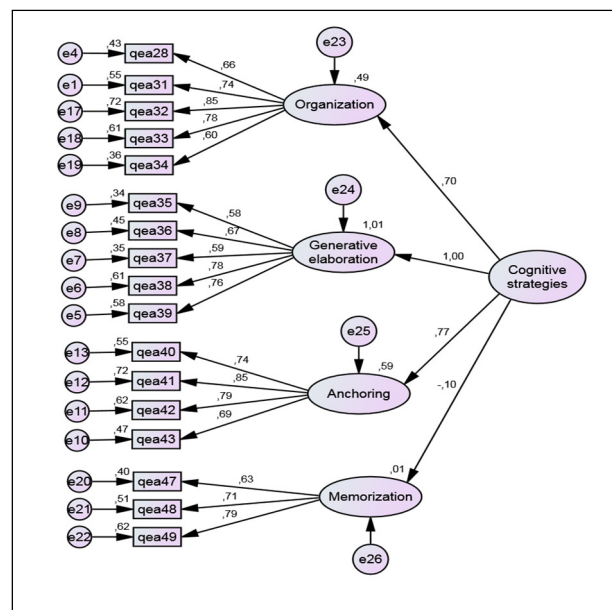


Figure 7. 2<sup>nd</sup> order model

### Metacognitive Strategies Scale

The metacognitive strategies scale consists of 8 indicators organized into an ordinal Likert scale. The items are polytomic with a response format as follows: 0 – not at all, 1 – slightly, 2 – sometimes 3 – often and 4 – always. The original scale configured two factors, each consisting of four items. The first was designated planning as it refers to control strategies prior to the act of studying and explained 29% of the variance. The second was called revision, defining control strategies put into practice in the learning process as in completing study and explained 29.3% of the variance. A scale showed good internal consistency with Cronbach's alpha values of 0.76, for planning and revision and of 0.81 for the overall factor (metacognitive learning strategies).

### Internal consistency and factor analysis for this study

The internal consistency analysis of the 8 items showed that the mean values range from 2.13 in item 54: "If there is something I don't understand or don't know how to do, I try not to move on until I resolve it." and mean=2.69 in item 56: "When I finish studying I have the habit of reviewing everything to see if I am missing anything."; thus, they can be accepted as being well centred. Having analysed value of the correlation coefficient all of the items were found to be greater than 0.20. The Cronbach's alpha values were good in ranging between  $\alpha=0.791$  and  $\alpha=0.839$ , for an overall alpha of 0.831. The item that best correlates with the others is item 53 which explains 66.3% of variability.

**Table 11:** Internal consistency of the metacognitive strategies scale

Items	Mean	SD	1 <sup>st</sup> Evaluation	
			r	Cronbach's alpha
50. Before I start studying, I often consider what I have to study, what activities I have to do or how much work or time study will consume.	2.35	.894	.809	.811
51. I usually divide the task, work or study into parts, to make it easier for myself.	2.40	.863	.753	.794
52. When I study, I usually order the different activities that have to do, telling myself, "First I have to do this and then that..."	2.51	.879	.771	.804
53. I tend to be look ahead, calculating the time I have available to distribute it realistically.	2.36	.944	.814	.802
54. If there is something I don't understand or don't know how to do, I try not to move on until I resolve it.	2.13	.899	.348	.839
55. When I study, I usually continually review what I'm weaker at or where I fail in order to memorise it properly.	2.45	.803	.584	.809
56. When I finish studying I have the habit of reviewing everything to see if I am missing anything.	2.69	.935	.519	.817
57. When I finish studying, I try to memorise and consolidate the points I consider I'm weaker at.	2.66	.875	.537	.814

The study of the factor analysis was started through the principal component analysis with Varimax-type orthogonal rotation with eigenvalues greater than 1. The results of the Kaiser-Meyer-Olkin (KMO=0.838) indicated that we could proceed with the factor analysis. The factorial solution obtained allowed two factors to be selected with latent roots greater than 1 which explain 61.31% of the total variance. The variance chart, called Scree plots, tells us that there are 2 components to be retained in accordance with the inflection point of the curve.

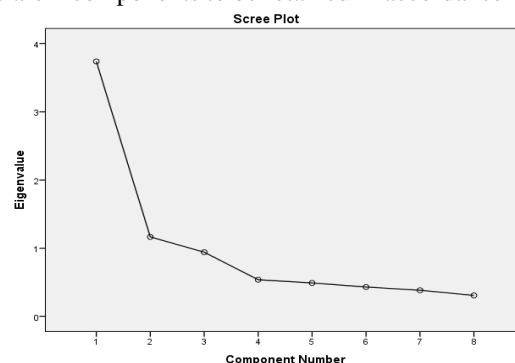


Figure 8. Scree Plots

We obtained a factorial structure equal to the original scale. Factor 1, called planning, explains 34.99% of the variance and consists of items 50, 51, 52 and 53. Factor 2, called revision, has items 54, 55, 56 and 57 and explains 26.31% of the total variance.

### Confirmatory Factor Analysis

We tested the two-factor solution performing an CFA as shown in Figure 9. The descriptive statistical analysis revealed that the items did not have absolute asymmetry values greater than 3 and flatness greater than 7. In this model, the goodness and fit indices are considered tolerable because the chi square degrees of freedom and RMSEA are suitable for the remaining items ( $\chi^2/df=3.881$ , CFI=0.941, GFI=0.943, RMSEA=0.093, RMR=0.049, SRMR=0.062). All of the items had significant standardized coefficients with the respective factor and greater than the reference value (0.50), except item 54, so that it was eliminated.

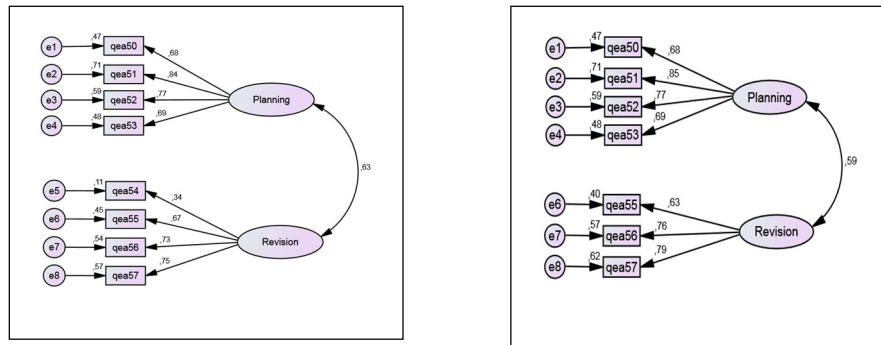


Figure 9. (a) Initial factor structure (b) Final Factor structure

Their removal, which limited the discriminant validity of the subscales, does not alter the conceptual interpretation. The final modified scale therefore shows the two dimensions. All regression weights are significant ( $p < 0.001$ ) and greater than 0.50, showing the factor's relevance in predicting items and the individual reliability is also appropriate ( $r^2 \geq 0.25$ ). The final model has adequate fit indices except for the ratio of chi-square with degrees of freedom (see Table 12).

**Table 12:** Goodness of fit indices of the first and second models

Model	$\chi^2/df$	GFI	CFI	RMSEA	RMR	SRMR
Initial model	3.881	0.943	0.941	0.093	0.049	0.062
Final model	2.375	0.975	0.979	0.064	0.035	0.045

The composite reliability was found to be adequate revealing values greater than 0.70 in both factors. This allows us to state there is good internal consistency of the items relating to each of the factors. The convergent validity (MEV) also presents normal indices since they are greater than the reference values (0.40). With regard to the discriminant validity (DV) assessed by comparing MEV with the square of the correlation between the factors, there was a lower value than the MEV, such that we concluded that there was discriminant validity ( $DV=0.349$ ) among the factors .

**Table 13:** Composite Reliability and mean extracted variance

Factors	CR	MEV
Factor 1 – Planning	0.836	0.563
Factor 2 - Revision	0.770	0.529

Cronbach's  $\alpha$  values of the original scale are in conformity and Table 15 shows they are slightly lower than those obtained in this study except for the revision factor that has the same coefficient.

**Table 14:** Cronbach's alpha values for the metacognitive strategies subscales

Subscales	No. of items	Cronbach's alpha	
		Original version	Present study
Factor 1 : Planning	4	0.70	0.831
Factor 2 : Revision	3	0.76	0.763
Overall Factor	7	0.81	0.839

The Pearson correlation matrix established with the scale's factors reveals positive and significant correlations with a value of  $r=0.505$  between the revision and planning, explaining 25.5% of the variability. With the global factor and the subscales, the correlational values are higher with a variability above 64.0%.

**Table 15:** Pearson correlation matrix between the metacognitive strategies scale factors

Subscales	Planning	Revision
Revision	0.505***	--
Overall Factor	0.907***	0.822***

\*\*\*  $p < 0.001$

### Overall Confirmatory Factor Analysis

Following the procedures adopted by the scale authors, we submitted the factors resulting from each of the scales to a confirmatory factor analysis that brings together three megafactors. The first collects the factors implication, Generative elaboration, Anchoring and memorization, and was called cognitive megafactor. The second named approaching megafactor, brings together the factors gradual approach, reinforcement, applicability and positive association. The third and last named organizational megafactor consists of the organization, revision and planning factors. Descriptive analysis reveals that all of the factors had an absolute asymmetry of less than 3 and a flatness less than 7. The critical ratios of the paths between the different items and the corresponding megafactors are highly significant except for the memorization item ( $CR = -1.114$ ;  $p = 0.265$ ) so that it was eliminated. The trifactor model tested revealed a tolerable quality of fit with the following values:  $\chi^2/df = 4.808$ ;  $CFI = 0.867$ ,  $GFI = 0.905$ ,  $RMSEA = 0.107$ ,  $RMR = 0.408$  and  $SRMR = 0.06$  and with standardized coefficients of  $-0.007$  in memorization (see Figure 10 A and B).

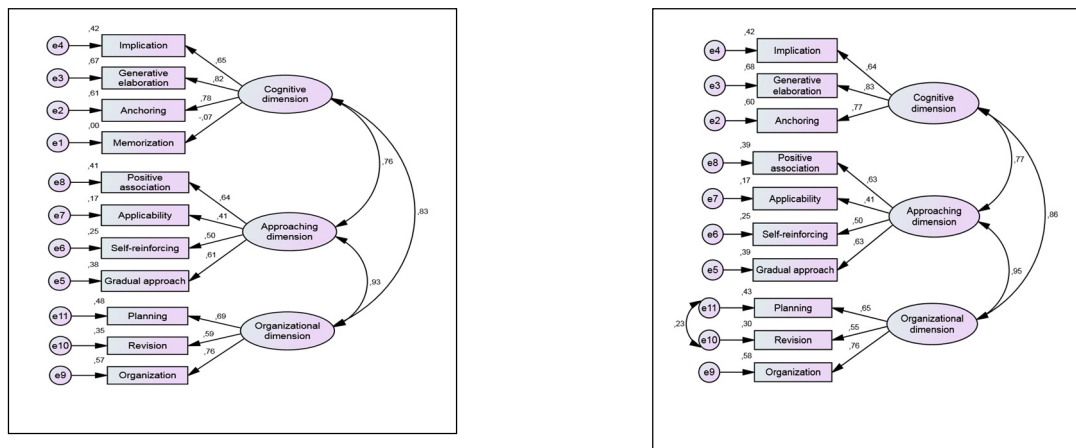


Figure 10 A The initial megafactor Figure 10 B - Megafactor without memorization

Having eliminated the memorization megafactor and proceeding to the modification indices proposed with the association of errors 10 vs. 11, the overall quality of fit of remained tolerable (see Table 16).

**Table 16:** Goodness of fit indices of the megafactors

Model	$\chi^2/df$	GFI	CFI	RMSEA	RMR	SRMR
Initial model	4.808	0.905	0.867	0.107	0.408	0.060
Model with fit	5.012	0.918	0.892	0.110	0.388	0.054
2 <sup>nd</sup> order model	5.012	0.918	0.892	0.110	0.488	0.054

All of the items of the scale showed factor weights (factor 1:  $\lambda=0.64-0.83$ , factor 2:  $\lambda=0.41-0.63$ , factor 3:  $\lambda=0.55-0.76$ ) and appropriate individual reliability ( $r^2 \geq 0.25$ ).

Given the correlational values between dimensions that have high positive and significant among factors suggestive of a 2<sup>nd</sup> order model, a hierarchical structure was proposed with a 2<sup>nd</sup> order factor we have called “learning strategies”. The model modified with the 2nd order factor meant that quality of fit values remain tolerable and equal to those obtained in the first order model. (See Figure 11).

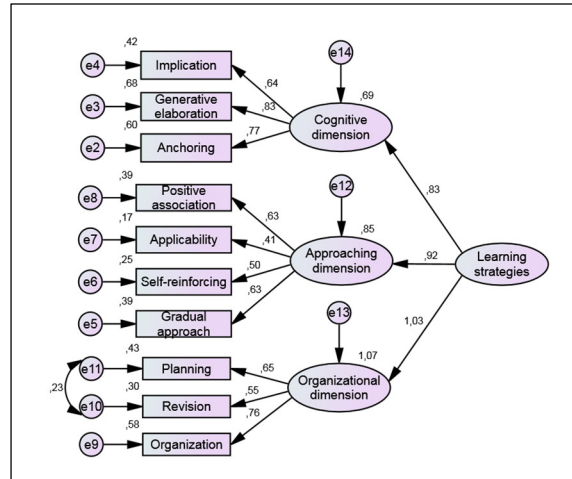


Figure 11 – 2<sup>nd</sup> order modified model

The standardized  $\alpha$  values are 0.795 for the cognitive megafactor, 0.626 for the approaching megafactor and 0.723 for the organizational megafactor with an overall alpha of 0.853, which indicate good composite reliability for the first and third factor and acceptable reliability for the second. The mean extracted variance confers adequate variance only to the first factor, leading to problems of discriminant validity in the others.

**Table 17:** Composite reliability and mean extracted variance and discriminant validity

Factors	CR	MEV	Discriminant validity	
			Factor2	Factor3
Factor1 – Cognitive megafactor	0.795	0.566	0.592	0.739
Factor2 – Approaching megafactor	0.626	0.301		0.902
Factor3 – Organizational megafactor	0.723	0.468		--

Having determined the final factorial structure of learning strategies, the results of the statistics on each of the factors are presented by megafactor and the overall value. All of the scores were the object of transformation statistics ((gross score-minimum expected score)/range)\*100) in order to use the percentage as a unit of measure. Of the results presented the minimum and maximum indices are found to range between 0% and 100.0%. It is in the positive association (mean=66.42%  $\pm$  15.53) that students use better learning strategies on average, sequenced by using revision (mean=64.99%  $\pm$  17.97). The learning strategy used least is self-reinforcing (mean=45.69%  $\pm$  16.47). Analysing the results, the organizational megafactor is found to be the strategy used most by students on average (mean=59.18%  $\pm$  14.99) and the least one found is the approaching megafactor with an average rate slightly above 50.0%. The minimum and maximum ratios are situated between 15.0% for the approaching megafactor and 97.92% in the organizational megafactor. Overall, the strategies are used on average by 55.43% of the total sample with an amplitude between 22.5% and 84.38%. The skewness and kurtosis values indicate dimensions and overall value normal distribution and variation coefficients dispersions located between moderate and high to the subscales.



**Table 18:** Statistics of learning strategies by factor, megafactor and overall value

Factors/Megafactors/Overall	Women		Men		Total						
	M	SD	M	SD	Min	Max	M	SD	CV (%)	Sk/erro r	K/erro r
Implication	62.9	15.5	61.1	13.61	18.7	100.	62.7	15.3	24.4	0.120	-0.834
Generative elaboration	8	8	2		5	0	0	0	0		
	52.2	16.5	50.1	16.82	0.0	100.	51.9	16.5	31.9	-1.210	0.146
Anchoring	7	3	0		0	0	4	7	0		
	59.4	17.2	54.8	16.03	6.25	100.	56.9	17.1	30.0	0.135	-0.973
Positive Association	8	5	7	6	0	0	5	3	7		
	67.2	15.2	61.7	16.39	15.5	100.	66.4	15.5	24.1	-1.548	-0.033
Applicability	5	6	5		0	0	2	3	0		
	52.7	15.6	49.8	16.53	0.0	100.	52.2	15.7	30.1	-1.654	-0.530
Self-reinforcing	2	5	3		0	0	9	9	9		
	45.7	16.5	45.3	16.40	0.0	93.7	45.6	16.4	36.0	-0.090	-0.097
Gradual approach	5	1	7		5	5	9	7	4		
	53.3	18.3	44.3	15.47	0.0	100.	52.0	18.2	35.0	-0.857	1.248
Planning	7	9	3		0	0	2	5	8		
	61.0	18.4	54.3	16.23	0.0	100.	60.0	18.2	30.3	0.293	-0.473
Revision	9	1	7		0	0	8	4	5		
	65.3	18.1	62.8	16.93	8.33	100.	64.9	17.9	27.6	-1.172	-0.199
Organization	7	5	3		0	0	9	7	5		
	56.3	18.8	47.1	17.95	0.0	100.	54.9	18.9	34.5	-0.496	1.086
Cognitive Megafactor	7	4	0		8	8	8	8	2		
	57.7	13.9	54.9	13.02	17.3	94.3	57.3	13.8	24.0	-0.233	-0.808
Approaching Megafactor	8	1	6		1	2	6	0	5		
	51.3	10.6	47.4	10.17	15.0	80.0	50.7	10.6	20.9	-0.037	0.203
Organizational Megafactor	5	2	0		6	6	4	6	6		
	60.1	15.0	53.4	13.30	10.4	97.9	59.1	14.9	25.3	0.270	0.387
Strategies (Overall)	9	7	5		2	2	8	9	2		
	56.0	11.1	51.6	10.12	22.5	84.3	55.4	11.1	20.0	-0.045	-0.439
	9	9	7		0	8	3	4	9		

The mean order showed that women use learning strategies more than men, scoring with statistically significant differences in the gradual approach strategies ( $p=.002$ ), planning ( $p=.009$ ), organization ( $p=.005$ ), approaching megafactor ( $p=.028$ ), organizational megafactor ( $p=.007$ ), overall strategies ( $p=.017$ ). (See Table 19).

**Table 19:** Mann-Whitney U test between learning strategies and gender

Gender Factors/Megafactor/Overall	Women Mean order	Men Mean order	MWU	Z	p
Implication	168.87	159.72	6711.0	-.624	.532
Generative elaboration	169.20	157.84	6617.0	-.771	.441
Anchoring	171.35	145.62	6006.0	-1.749	.080
Positive Association	171.53	144.63	5956.5	-1.834	.067
Applicability	169.64	155.33	6491.5	-.980	.327
Self-reinforcing	167.94	165.02	6976.0	-.198	.843
Gradual approach	174.44	128.10	5130.0	-3.164	.002
Planning	173.28	134.66	5458.0	-2.625	.009
Revision	169.10	158.39	6644.5	-.731	.465
Organization	173.65	132.57	5353.5	-2.785	.005
Cognitive Megafactor	170.36	151.28	6289.0	-1.289	.197
Approaching Megafactor	172.38	139.78	5714.0	-2.204	.028
Organizational Megafactor	173.48	133.55	5402.5	-2.699	.007
Overall Strategies	172.78	137.51	5600.5	-2.382	.017

The applicability strategy was largely implemented by older students ( $\geq 20$  years), distinguishing it significantly from 18 to 19-year-olds who scored worse on applicability ( $F=3.756$ ;  $p=.024$ ). Second year students distinguished themselves with statistical significance from those in the first year in using positive association strategies, applicability and approaching megafactor more (see Table 20).

**Table 20:** T test for independent samples between learning strategies and the year of the course

Factors/Megafactors	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		t	p
	M (%)	SD	M (%)	SD		
Positive Association	64.62	16.01	69.25	14.52	-2.689	.008
Applicability	49.87	15.79	55.90	15.23	-3.472	.001
Approaching Megafactor	49.54	11.15	52.73	9.56	-2.718	.007

## CONCLUSIONS

The psychometric study of for Learning Strategies Questionnaire for University Students (CEA-U), sustains its validity on theoretical assumptions. In its final version this questionnaire was composed of 44 items (20 items in the motivational strategies scale, 17 in the cognitive strategies scale and 7 in the metacognitive strategies scale). This allows the implications of learning strategies to be scrutinized in the context of university students. First, the motivational strategies scale presents six factors (implication, positive association, applicability, self-reinforcing and gradual approach). The cognitive strategies scale then has four factors (organization, Generative elaboration, Anchoring and memorization). Finally, the metacognitive strategies scale has two factors (planning and revision). Because of the multiplicity of factors we performed a confirmatory analysis of the psychometric data belonging to the respective scales.

The CEA-U validation results show acceptable Cronbach's alpha values and with good internal consistency, having psychometric standards considered inadequate when values are below 0.70 (Pestana and Gageiro, 2014; Marôco, 2014; Fortin, 2009). The values obtained were as follows: motivational strategies scale  $\alpha=0.838$ ; cognitive strategies scale  $\alpha=0.864$ ; metacognitive strategies scale  $\alpha=0.839$  and global learning strategies scale  $\alpha=0.838$ . From this discussion we can see that CEA-U expresses an up-to-date validation with good internal consistency, which makes it relevant for its application in a university context.

Charactering university students' learning strategies is assumed to be a basic element of planning in the teaching/learning process in the context of the methodology inherent in the Bologna reforms. This grants the CEA-U the potential for use in pedagogical practice and academic research. With this study, we found that the validation methodology carried out allowed us to infer the Portuguese version of the questionnaire has good psychometric properties. The study of CEA-U was revealed to have a multifactorial origin. These factors depend on the learning strategies that each individual adopts.

With regard to the internal consistency of the CEA-U, it can be said to be a reliable questionnaire, both in terms of first order factors as well as second order ones. It has acceptable internal consistency coefficients like many similar instruments. To this end, the various validation tests performed show credibility conditions for its use in the teaching context and psycho-educational research.

## Acknowledgements

CI&DETS, Superior School of Health of the Polytechnic Institute of Viseu

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## Learning The Phonetic Of Ffl By Turkish Learners: Need For Specific Teaching Materials

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### ABSTRACT

This study is meant to analyze the evolution of the pronunciation problems encountered by Turkish learners of French as a foreign language at the University of Uludag from preparatory class to the fourth year of license. The first part of this study highlights the fact that the learners in question cannot be considered as generic students and that the specificities of these learners can be correlated with their pronunciation mistakes: mistakes that tend to persist and can be fixed during learning. In the second part, the lack of teaching materials in the field of phonetics for Turkish learners will be highlighted by comparing specific difficulties with books available. Finally it is shown how this study serves as a theoretical basis for a project related to the learning of phonics by Turkish learners.

**Keywords:** phonetic, French as a foreign language, Turkish learners, didactic material.

### INTRODUCTION

In FFL teaching, communicative competence plays a major role since the birth of the communicative approach and the Common European Framework of Reference for Languages (now the Framework) (2001) in which it is called "the communicative language competence." The acquisition of this skill is proposed by the Framework in three competences (2001, p. 17-18): linguistic competence, sociolinguistic competence and pragmatic competence, all three considered in different language activities such as reception, production, interaction and mediation which can be accomplished in oral and / or written activities.

In the teaching of foreign languages, these activities refer to four basic communication skills: oral comprehension and oral production skills, and skills of reading comprehension and written production. Such differentiation of these skills facilitates the organization of the order of skills to teach and also that of teaching programs. While all skills are necessary for a good command of a foreign language, one skill stands out from the others: the competence of oral communication. The importance of this skill in language teaching is emphasized with the communicative approach in which it is addressed through the components of perception and production.

The acquisition of oral communication skills through learning the phonetic which Borel (1991) underlines the importance: "To correctly identify the meaning, it must first be correctly identified the sound support. In fact, without a good phonetics, we did, in speaking, no chance to pass a message to be understood, even if the words were well chosen and if the syntax is correct. Moreover, prosody, through its intonation structures, accentual and rhythmic, provides, for the most part, the syntax orally. The meaning is accessible only if the syntax is decoded."

Hence, the need for the teaching / learning of phonological skills in a non-French-speaking environment and the need for appropriate support for the aural learners' mother tongue differ, because the difficulties are not the same for all languages.

### THE PROBLEMS ENCOUNTERED BY TURKISH PRONUNCIATION LEARNERS FFL: OVERVIEW

Although the phonetic alphabet is universal for French, pronunciation difficulties in learning a foreign language vary depending on the mother tongue of the learner. In regard of a Turkish EFL learning audience, many recent research focuses on analyzing the specific difficulties. From Özçelik's (2008) research, one can summarize that the pronunciation problems Turkish students encounter is possibly because of their mother tongue

1. The relationship between spelling / sound, a category consisting of several difficulties encountered in Turkish learners are :

- the tendency to read the words as they are written ; ex : Tu as ... ? → /tuɑ ... / → [tyɑ ...]
- the pronunciation of the dropped "e" (ə) that should not be pronounced; ex : J'entre → /zɑntRe / → [zɑ̃tR]
- the pronunciation of the dropped "e" /ə/ like the "e" oral vowels simples /e/ ; ex : je serai → /zeseRe / → [z(ə)s(ə)Re]
- the tendency to pronounce the "h" silent; ex : Eh bien! → /ehbjɛn/ → [ebjɛ̃]
- the pronunciation of double consonants; ex : d'accord → \*/dakkoR/ → [dakõR]

- the correct pronunciation of nasal vowels creates problems for Turkish learners; *félicitations!* → /felisitasjon/ → [felisitasjɔ̃]
- the change of the phonemic structure which can be in various forms such as by adding a phoneme to create a syllable, ex : *des projets* → \*/depɪRʒɛ/ → [depRɔʒɛ] ;  
by replacing phonemes /b/, /c/, /d/, /g/ when in syllable-final (which never happens in Turkish) by the phonemes /p/, /ç/, /t/, /k/, ex : *b Je t'embrasse* → \*/ʒətəmpRas/ → [ʒətəbRas] ;  
by the omission of one or more phonemes during pronunciation, ex : *travailler* → /tRavaj/ → [tRavaje],  
and by the substitution of phonemes, ex : *On s'appelle* → /onsaple/ → [ɔ̃sapel].
- 2. The ability to recognize words, which means that the learner read more easily and fluently the words he already knows
- 3. The wrong segmentation of rhythmic groups, ex : [Le chat] [est] [sur] [la chaise]
- 4. The intonation of interrogative and exclamatory sentences are problematic
- 5. Misplacement of the tonic accent due to the interference the mother tongue as the emphasis in Turkish is an increase in the intensity and not the duration and that due to the interference of English where the emphasis is lexical.
- 6. Sequencing; Turkish learners struggle to perform successive chains.
- 7. The link; Turkish learners do not respect the binding rules, including mandatory connections
- 8. The rhythm, the reading speed and lack of punctuation knowledge are sources of pronunciation problems among Turkish learners
- 9. The pronunciation / R / "uvular" is problematic but does not prevent access to meaning
- 10. The English language skills have influences on the French pronunciation (Özçelik, 2008, p. 206-213)

The research performed by Onursal-Ayırır (2012) about the problems of perception due to the connection with dictations shows that learners have less difficulties in the perception of words and / or phrases often encountered such as « de temps en temps », « de plus en plus », « comment allez-vous ? »..., however, to overcome difficulties in discriminating links, learners attempt to compensate their deficiencies by various methods:

1. Replacing expressions containing links with already known words, ex : « la porte est ouverte » become \**“la porte tout vert”*
2. Creating new words or phrases, ex. « un petit homme » → \**“un petito”*
3. The links "adjective + noun" masculine becomes feminine, ex. « le premier acte » → \**“le première acte”*
4. The addition of the letters in the case of link, ex. « elle m'a beaucoup aidé » → \**“elle m'a beaucoup paidé”*
5. The addition of phoneme appeared in the link, ex. « prend-il des médicaments ? » → \**“Prend-t-il des médicaments ?”*
6. Notwriting the unheard links (Onursal-Ayırır, 2012, p. 40-41).

To these problems of discrimination and production, may be added the problem of assimilation of successive phonemes. For example in words such as « pilule », « habitude »... where phonemes [i] / [y] are consecutives, an assimilation of the phoneme [i] is observed that comes close to the phoneme [y]. The phonemes [ʒ] and [z] in the final become respectively [ʃ] and [s].

For example, "cage" [ka: ʒ] pronounced [kaʃ] without lengthening and this refers to the verb "cacher", "age" [a: ʒ] becomes [aʃ] and means "la hache" or "hacher". The same for the [z] final, the most representative errors are "française" [frɑ̃sɛ: z] pronounced [frɑ̃sɛ: s] or "anglaise" [ɑ̃glɛ: z] pronounced [ɑ̃glɛ: s]. the phonemes [w] and [ɲ] that do not exist in Turkish, so during the pronunciation of the first there is the addition of the phoneme [v], "trois" pronounced [truva] or "toilette" pronounced [tuvalet]. For the phoneme [ɲ] two different pronunciations can be heard; while in the word "magnifique" [maɲifik] this phoneme is pronounced [magnifik] in the word "montagne" [mɔtaɲ] the same phoneme becomes [mɔteɲ].

## RESEARCH OBJECTIVE

This research aims to analyze in detail certain difficulties encountered by our students through an analysis of the sources of error and an analysis of the degree of persistence of the types of errors; to list other error generating variables for a given phoneme in order to develop the most appropriate material to our audience, who are future teachers of FFL.

For this research, the difficulties are approached in two views: discrimination and production. At the level of the selection of phonemes analyzed, two types of phonemes have been chosen:

- Phonemes existing in mother tongue and foreign language [i]/[y]/[u]. The reason, according to Borel (1991) is that « "The sound and / or phonemes, facing in both languages seem to be identical, but there are often differences more or less apparent. Moreover, there are distribution problems: identical phonemic units may have, in both languages, different uses in the speech. There is therefore a real teacher training problem. "
- Phonemes that do not exist in Turkish mother tongue, namely the nasal.



## METHOD

### Univers of the research

The universe of the research consists of four license classes of didactics department FFL of Uludag University in Bursa in Turkey and two classes of preparatory to this higher school Licensed Foreign Language of the same university.

The numbers of learners who participated in the research are shown in the table below (table 1), for a total of 146 learners with few exceptions, the first foreign language is English which they do not master at the same level.

Table 1: The number of participants

	preparatory class	License 1	License 2	License 3	License 4	Total
Number of participants	37	25	44	25	15	146

### Corpus research

The experimental corpus has been made up from extracts of phonetic exercise books intended for a broad public. They are : « *Les 500 exercices de phonétique, Niveau A1/A2* » and « *Les 500 exercices de phonétique, Niveau B1/B2* » of D. Abry and M.-L. Chalaron published respectively in 2010 and 2011, that of C. Martins, J.-J. Mabilat « *Sons et intonation : exercices de prononciation* » published in 2004.

This corpus consists of 8 exercises of oral comprehension and 9 exercises of oral production in isolated words sentences and in texts.

## FINDINGS

### 1. Discrimination exercises results review

Table 2 presents the results of discrimination to the phonemes [i] / [y] / [u] in single words in the first three activities, and in the fourth case in complete sentences including only one of the specified phonemes. This table allows us to observe and compare the difficulties of discriminating phonemes that exist in native language and in foreign language.

Table 2: Results of sound discrimination [i]/[y]/[u]

	1-Discrimination [i]/[y]		2-Discrimination [u]/[y]		3-Discrimination [i]/[y]/[u]		4-Discrimination [u]/[y]/[i]	
	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors
End of Preparatory Class	84	16	80	20	79	21	85	15
License 1	89	11	85	15	86	14	89	11
License 2	93	7	86	14	89	11	87	13
License 3	92	8	83	17	92	8	86	14
License 4	99	1	92	8	95	5	91	9

The first corpus representing the evolution of the number of errors regarding the discrimination of sounds [i] / [y] during the training license, shows that the amount of errors decreases over time to be virtually zero at the end of the license (at the beginning 16% errors of discrimination against 1% error in the fourth year). Therefore, discrimination [i] / [y] does not generate significant problems when these phonemes are in single words.

The corpus 2, which is about the evolution of the number of errors for discrimination [a] / [y], shows that the discrimination of these phonemes still poses no persistent problems so that the error rate is slightly higher than the previous phoneme. These 8% of errors concern mainly the word "habit[y]de" which is pronounced "habit[u]de" in English.

As for discrimination of phonemes [i]/[y]/[u] in the corpus 3, the conclusion is the same: there are some persistent errors even when the experiment is done on discrimination of these three phonemes. What is different concerning the discrimination of phonemes [u] / [y] / [i] is that these phonemes are integrated in complete sentences. Note that the error rate is slightly higher when discrimination is made in complete sentences when it is made into single words. (15% errors in preparatory class and 9% at the end of license cycle). Indeed, learners must "isolate" the phoneme and not be influenced by the rest of the sentence.

The results of discrimination to the phonemes [ã] / [õ] / [ɛ], phonemes that do not exist in the native language but which are specific to French, are presented in Table 3.

Table 3 : Les résultats de discrimination des sons [ã] / [õ] / [ɛ]

	5- Discrimination [a]/[ã]		6 - Discrimination [o]/[õ]		7 - Discrimination [õ]/[ɔ]/[o]		8 - Discrimination [ɛ]	
	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors
End of Preparatory Class	80	20	85	15	87	13	65	35
License 1	81	19	92	8	92	8	78	22
License 2	86	14	92	8	98	2	72	28
License 3	87	13	94	6	100	0	76	24
License 4	85	15	92	8	100	0	85	15

The corpus 5 representing the evolution of the percentage of correct answers on discrimination of phonemes [a] / [ã], demonstrates not only that the discrimination of these phonemes generate problems in preparatory (20% errors), but also that the relative errors persist sustainably: 15% error in the fourth year license. This could be explained by the fact that nasal sound [ã] does not exist in Turkish.

Discrimination of phonemes [o] / [õ] corpus 6, creates some problems in preparatory classes (15% errors). At the end of the first year of the license, the error rate is divided by two (8%) and remains constant throughout the license (8%). Errors on discrimination of these phonemes persist although quantitatively less important than the discrimination of phonemes [a] / [ã] seen previously.

Contrary to the previous corpus in which discrimination between the nasal [õ] and the closed "o" created some problems in this corpus 7 discrimination between the nasal [õ] and open "o" less problematic. Only 13% of errors in preparatory classes.

As for discrimination [ɛ] in the corpus 8, we see that 33% of preparatory class answers are wrong. The error rate decreases gradually during the licensing cycle but errors persist in the end cycle (15%), the percentage of errors of this phoneme is as high as that for the nasal [ã].

Regarding the part of the problems of discrimination of phonemes groups [i] / [y] / [u] and [ã] / [õ] / [ɛ], it is possible to say that discrimination does not create concerns in general. Even if learners do not evolve in a French environment outside the school system, mistakes in discrimination do not persist or very little if at all. This shows the need to find or develop a more appropriate way to make the ear more sensitive to persistent problems.

## 2. The results review of oral production exercises

In this second part of the statistical study the mistakes made in oral production were analyzed, reading more precisely, on problematic phonemes for Turkish learners.

Table 4: Results of the pronunciation of sounds [y] / [u] / [i]

	9 – Speaking [i]/[y]-consecutive		10 – Speaking [y]/[i]-consecutive		11 – Speaking [u]/[y]-consecutive		12 – Speaking [y]/[u]-consecutive	
	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors	percentage of correct answers	Percentage of errors
Preparatory Class	63	37	55	45	55	45	51	49
License 1	68	32	63	37	61	39	52	48
License 2	60	40	64	36	77	23	47	53
License 3	60	40	77	23	77	23	35	65
License 4	69	31	84	16	95	5	83	17

As it can be observed in the corpus 9, discrimination of phonemes [i] / [y], create problems for Turkish learners, even if they exist in the Turkish language. In this corpus we gave words to read to learners in which the phonemes [i] and [y] were chained. Throughout the five-year cycle, the error percentage is about 33%. This can be explained by the spelling of the phoneme [y] in French is "u" whereas the Turkish phoneme is used for the phoneme [u]. Moreover, most learners have a level of English B1. This prior knowledge of English is then presented as a didactic obstacle during the pronunciation of the suffixes "-ue" and "-us" as the word "issue" [ɪʃu:] and "virus" [vaɪrəs].

The corpus 10 also concerns the phoneme [y], but this time it precedes the phoneme [i] (while in the previous corpus he succeeded him). Results show that in the beginning of the cycle, still under the influence of English, the spelling "u" to be pronounced [y] is 50% pronounced [u] in transparent words "public", "single" "multiple". The percentage of errors is greatly reduced in the fourth year (16%).

The results of the corpus 11 show that preparatory class consecutive pronunciation of phonemes [u] and [y] is very problematic (45% errors). In the fourth year of the license, the percentage of errors is only 5%. Under the influence of English suffixes "-ture" and "-lure" are mispronounced. This type of error does not seem to be persistent.

However in the corpus 12, the order of the phonemes is inverted relative to the preceding case. The error rate is 49% in preparatory classes. The error is quite persistent in the fourth year (17% of pronunciation errors). Suffixes such as "-our" as in "humour". [u:mər] are problematic because of the English interference. Conducting this analysis we noticed another kind of error: the "dropped e" in the last syllable "tu louches" pronounced /tu louch[e]/

Finally, according to the corpus 9 and 10, it is apparent that not only the place of the phoneme [y], but also the adjacent phonemes, cause variations in the percentage of errors and the persistent nature committed pronunciation errors. In our case, the pronunciation of the phoneme in the corpus 9 [y] at a word succeeding phoneme [i] has shown itself the most problematic. Regarding the corpus 11 [a] / [y] and 12 [y] / [u], we see that the sequence of phonemes [y] / [u] is more problematic.

In the following tables the results of pronunciation problems made in complete sentences and texts are presented.

Table 5: 13 Speaking [y]/[u]/[i] in sentences

	End of preparatory class	License 1	License 2	License 3	License 4
Percentage of correct answers	37	38	30	45	63
Percentage of wrong answers	63	62	70	55	37

In this exercise, the phonemes [y] / [u] / [i] are present in the same sentence consecutively. The results show that students experience great difficulty to pronounce these phonemes in this configuration. In preparatory classes 63%

(2 thirds) sentences have errors. In the final year of the license there are fewer errors: 37% but (1/3) of the sentences have errors.

Table 6 : 14 – speaking [y]/[u]/[i] in a text.

	End of Preparatory Class	License 1	License 2	License 3	License 4
Average fault per learner	8	5	3	3	1

In this corpus 14, the phonemes [y] / [u] / [i] are placed into groups of words in a text, but the phonemes are not consecutive. We notice here that the average error is greatly reduced by learning throughout the cycle: 8 errors on average in preparatory class to an error in the final year of license. We do not take into account here the problems concerning the division into rhythmic group, links and chains.

Table 7 : 15 – Speaking : the nasal [ã] (graphie ant/ent)

	End of preparatory class	License 1	License 2	License 3	License 4
percentage of correct answers	45	55	39	38	60
of errors	55	45	61	62	40

In this exercise, the corpus 15, 5 sentences containing -ent -ant and spellings were read by the students. This exercise has proven the most difficult for learners. Preparatory class, 55% of sentences include pronunciation errors. At the end of the fourth year, 40% of sentences contain what do they contain?. In the corpus, the phonemes [ã] have been read very often [ing]. The phonemes constituting verb endings in the third person plural (-ent) tend to be read [ã].

Table 8 : 16 – Speaking : the nasal [õ] in sentences

	End of Preparatory Class	License 1	License 2	License 3	License 4
percentage of correct answers	15	57	71	64	71
Percentage of wrong answers	85	43	29	36	29

The sentences of the corpus 16 on the nasal [õ] located at the end of a word in sentences also contain the phoneme / o / closed. We noticed a high percentage of errors in preparatory classes (85%). After the phonetics classes and course understanding /speaking first-year license, the error rate was halved.

Tableau 9 : 17 – Speaking : nasal [õ]/[ã]/[ẽ] in a text

	End of preparatory class	License 1	License 2	License 3	License 4
Average fault per learner	8	6,6	6,4	6	2

The results of this last corpus 17 representing the evolution in the average number of errors made by students regarding nasal embedded in a text, shows that during the first years of license, the pronunciation of the three nasals create persistent problems. In the last year, according to the results the problem visibly decreases. However, this decline is relative since learners have a strong tendency to read word by word without paying attention to rhythmic groups, links and chains.

## CONCLUSIONS AND PROPOSALS

We can summarize the findings of our experiment in four points:

1. First, we find that reading exercises (spelling / speech), namely to associate a phonemes spelling, pose a lot of problems even for phonemes in which discrimination does not constitute a major difficulty. Besides, it is an observation already made by Özçelik (2008).
2. In the statistical analysis we noticed the influence of the place of the phonemes within a word or group of words and the subsequent nature (or not) of phonemes sources of error.
3. Previous knowledge of learners is likely to create a didactic obstacle. In our case the knowledge of English (level B1 for the majority of our learners), generate pronunciation errors in transparent words ("false friends") or like syllables (eg, "personne / person, objet/ object"). False friends words in the native language are also sources of errors (eg « pantalon / pantolon », « camion/ Kamyon »).
4. It is observed that the majority of progress both in terms of discrimination on the production plan have been achieved during the first year of license. We can explain this by the nature of the first year courses. Indeed these are language courses separated by subject: phonics and spelling lessons, during production and oral reception, grammar, speaking and reading comprehension.

This study finally ends to the following conclusion: a Turkish learner FLE needs specific teaching phonetic materials adapted to his needs because currently such books do not exist on the market.. Despite the quality of the available literature, they have shortcomings in the treatment of certain phonemes, prosodic topics in some sources of problems for Turkish learners. Our project's main objective to overcome deficiency by creating educational materials dedicated to Turkish students about learning phonics to improve their competence in listening, oral output (pronunciation) and written production (spelling speech) . This material must be used in class and independently by students outside class.

In the context of the project "Uludag FLE" for the development of specific training materials for phonics phonetics, inspired by a similar project dedicated to the Spanish public and carried out in Spain at the University of Leon (<http://flenet.unileon.es/phon/phoncours.html>), so we have the goal of achieving a composite didactic material constituted by a book and an Internet Site providing interactive exercises workable autonomy. This material will specifically designed to be adapted to Turkish learners.

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## Making The Process Of University Teachers' Motivation More Effective

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### ABSTRACT

At present, managements of all organizations have to face the task of hiring and retaining competent staff, particularly by means of the right motivation. Motivation, as one of the basic preconditions of effective and successful performance of employees in the working process, is an essential part of human resources management also at universities. Well motivated university teachers are people with clearly defined objectives who take steps to achieve them. They have developed a strong sense of duty and responsibility, i.e. they are aware that their efforts are directed at meeting the needs of the university and also their own interests.

When developing a motivational program, it is important to have a basic idea about its form and specifications of its creation in the specific conditions of the university. A motivational program of a university should focus exclusively on its positive influence on working motivation of university teachers. The essence of an effective motivational program at universities should motivate to work through a suitable working environment for the university teachers, as well as through innovation of the current remuneration system, which should take into account the ratio of efforts to the work and salary.

The aim of this paper is, based on an analysis of the current state of motivation and motivational factors of university teachers in Slovakia and at the University of Žilina, to propose how to make the process of university teachers' motivation more effective at the Žilina University.

Each process of motivation is usually difficult and requires a thorough analysis and rich theoretical and practical experience. In comparison with other investments, it can bring to the University of Žilina better rating at much lower costs and also other values that cannot be quantified, such as a feeling pleasure of a job well done, a sense of recognition, self-realization and the overall satisfaction of the employees and the university management.

**Key words:** motivation, motivational program, university, university teacher

### INTRODUCTION

Human performance is affected by many internal factors which include motivation. The term motivation is derived from the Latin word “move” = to move. Motivation cannot be directly seen or measured but only observed and identified in human actions.

There are several definitions of motivation which may look different but which are essentially the same. They see motivation as a psychological process which affects internal inducements (motives) which regulate human behavior and activate the person to achieve a particular goal (Sedlák, 1997).

Motivation to work is a certain “energetic” side of human conduct which brings in dynamism into the working process and activates the people. It focuses on work performance, required working behavior etc. In addition to internal inducements – motives, which affect the working motivation of an individual or of a working team, motivation is closely related to needs, habits, interests, working attitudes and ambitions.

The working motivation is associated with satisfaction of the people at work but this does not automatically mean that the worker is motivated. On the other hand, highly motivated people are often able to cope with dissatisfaction with certain aspects of the work.

### DEFINITION OF UNIVERSITY TEACHERS' MOTIVATION AND MOTIVATION FACTORS

In every country university teachers represent a specific category of employees. They form the intellectual elite of each nation, a picture of erudition and continuous progress used for the benefit of the entire society and transmitted to students or employers. University teachers perform work which is extremely responsible, very demanding in terms of mental capacity and, particularly, personal requirements. Similarly as other employees in other organizations, they have to be effectively motivated. Well-motivated teachers have clearly defined objectives and they adopt appropriate measures to achieve them (Mattová, Pleschová, 2007). They have a strong feeling of duty and responsibility, i.e. they are aware of the fact that their efforts focus on meeting of the university needs, as well as their own interests.

Motivation is the most sophisticated and the most dynamic characteristic of university teachers; it is a certainty, a basis and commitment used for creation of new values – knowledge, ideas, new solutions (Kachaňáková, 2011). It is characterized by enthusiasm, determination, reasonableness, orientation on goals and pro-active conduct of each teacher and department, or even faculty and university. Motivation represents a dynamic processes going on in the person. The processes indicate direction and provide energy (Slávik, 2012). Motivation can be also defined as a process through which the teachers and whole departments outline their objectives. It can be a culmination of a conflict of different motives which the teacher experiences and from which he must choose. It can be understood and implemented as substantiation of any action (Blášková, 2010). Motivation gives rise to the quality and adaptability of the social system of a faculty and university. It predetermines in which direction the teacher will develop, which of his competencies he will apply, the quality of his work, research, teaching of students etc. The motivation to be a teacher operates as an interiorized personality factor which contributes to teacher's professionalism. It means that some events or circumstances in the individual's history played a role which was so important that they contributed, as an internalized motive, to the choice of the teaching profession (Kasáčová a kol., 2006).

An important role in the teaching profession, in addition to expert knowledge and professional skills, is also played by the teacher's notion of himself, i.e. how he perceives (evaluates, assesses) himself as a teacher. This notion is a strong factor which (in a positive case) may facilitate and support application of the teacher's professional knowledge and skills or (in a negative case) it may obstruct them. This internal property of the teacher is called perceived professional proficiency and it is the motivation potential of the teacher as it determines how much internal energy he is able to accumulate and to dedicate to his work, how persistent he is in dealing with pedagogical situations, how tenacious he is when he wants to succeed. It is assumed that the higher the teacher's perceived professional proficiency the more efforts, perseverance and tenaciousness he exerts. Teachers who perceive their professional proficiency as strong are able to exert more efforts as they are supported by their internal motivation force. On the contrary, teachers who perceive their professional proficiency as weak quickly exhaust their energy and efforts when they face obstacles. Moreover, they often connect their activities with unpleasant feelings, stress etc. (Pajares, 1996; Milson, 2003). Still, it should be noted, that the perceived professional proficiency is the teacher's conviction and not his actual proficiency and it even does not reflect how his professional proficiency is applied. It is his own belief in his power and abilities but not the actual abilities used by the teacher. The actual performance of the teacher at school can be best evaluated by external observers and not by himself. Naturally, teachers with strong perceived professional proficiency are usually efficient (Gavora, 2009).

## CURRENT STATUS OF MOTIVATION OF UNIVERSITY TEACHERS

### CURRENT STATUS OF MOTIVATION OF UNIVERSITY TEACHERS IN SLOVAKIA

After Slovakia joined the European structures and its economy transformed into the market one, human capital has become a key factor of success in the competitive fight between organizations in the business sector, as well as in the public administration sector, specifically in schools. The competitive advantage has been more and more often acquired through quality of labor force, i.e. through employees who bring certain values into the organization and therefore many organizations highlight the importance of their employees. The primary objective of every organization is to hire the right employees, to retain and to develop them, mainly by effective motivation of the employees.

The following challenges are often faced by Slovak organizations from the viewpoint of the motivation process:

- Unbalanced application of the motivation program on the employees of the organization. If this is the case some employees may feel neglected which may lead to their demotivation.
- Incorrect application of motivation tools on the individual employees. Each employee has a unique personality with individual needs.
- Incorrect application of a motivation tool, even with good intentions, may be counterproductive, such as public praise of an employee who is introvert, promotion of an employee and extending of his powers and responsibilities against his will.
- "Application" of motivation tools only in the form of promises. As an example of this approach we can describe a situation in which an employee, who is most positively motivated by personal development, is constantly promised educational activities but the promises are never delivered.

## CURRENT STATUS OF MOTIVATION OF UNIVERSITY TEACHERS AT THE UNIVERSITY OF ŽILINA

The following set of motivation tools has been used for motivation and development of the potential of pedagogical employees at the University of Žilina:

- a) qualification and personal premium (reflecting the achieved education and the contribution to the work of the department, faculty and university),
- b) financial bonuses (reflecting extraordinary qualities of the teacher and /or his contribution to development of the study program, image of the department and faculty, success of students on the labor market etc) – it depends on the financial possibilities of the faculty and the university,
- c) financial bonus for prestigious publications, the so-called publication grants for the teachers (reflecting excellent publications, contributing to the development of the faculty, university and its successful accreditation),
- d) contribution to the third pillar of the pension co-insurance (reflecting financial support to the long-term care of the teacher during the retirement period) – the contribution is paid to all university employees involved in the retirement co-insurance scheme,
- e) praise and recognition (reflecting appreciation of excellent performance of the defined tasks, new approaches to teaching, publishing of articles in impacted magazines etc.), either in the form of individual or public appreciation (at department meetings),
- f) individual and family holidays organized by the university (reflecting recognition of the employees' work and supporting their regeneration),
- g) organization of faculty student events, university balls, sports and games days, "Christmas punch" etc. for the employees and students of the individual faculties, university units and university as a whole (reflecting recognition of the teachers work and results of the students and their mutual solidarity) etc.

In 2014 the faculty of safety engineering at the University of Žilina conducted a survey about work motivation with 32 respondents - university teachers. The survey has produced the following results relating to the motivation of university teachers:

- the level of motivation to quality publishing activity is only average,
- the level of motivation to valuable and responsible scientific-research activity is only average,
- the level of motivation to cooperation with superior and managing units of the faculty or university is only average,
- the level of motivation to quality teaching and objective evaluation of students is sufficient,
- the level of motivation to continual improvement of professional knowledge and skills of the teachers is sufficient,
- the level of motivation to submit new suggestions and to improve efficiency of the teaching and work at the faculty is sufficient.

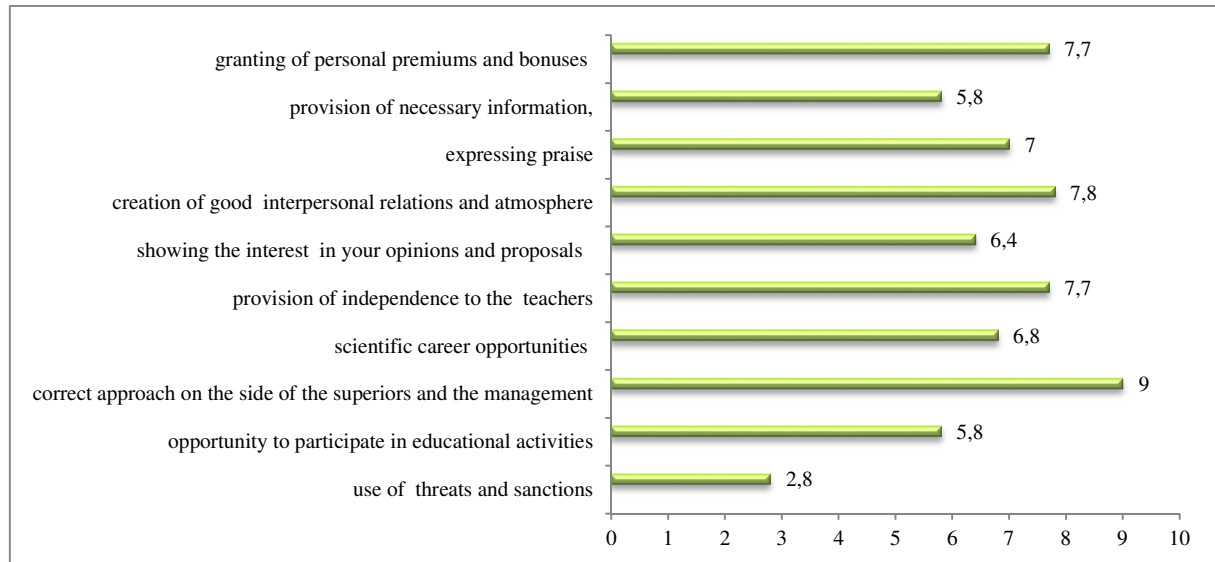
University teachers from the faculty of safety engineering at the University of Žilina have evaluated the current application of motivation tools and approaches from the viewpoint of the department or faculty in the following order:

1. showing the interest in opinions and proposals of the teachers,
2. correct approach on the side of the superiors and the management,
3. provision of independence to the teachers,
4. granting of personal premiums and bonuses,
5. expressing praise,
6. opportunity to participate in educational activities,
7. provision of necessary information,
8. scientific career opportunities,
9. creation of good interpersonal relations and atmosphere,
10. use of threats and sanctions.

The results have also shown that:

- 54% of the respondents believe that department managers change the motivation tools usually only if there is a significant change in the needs and expectations of the teachers,
- 46% of the respondents believe that department managers do not change the motivation tools at all – they keep using the same spectrum of the tools,
- Ca. 36% of the respondents believe that the overall level of teachers' efforts would increase if the motivation approach on the managerial side (faculty or university management) is more efficient in respect to the teachers.

Fig. 1 shows evaluation of efficiency of the motivation tools by the university teachers from the faculty of safety engineering at the University of Žilina. The evaluation indicates average number of points for efficiency of each motivation tool which has been applied or may be applied by the management – based on the points scale from 1 to 10. 10 points mean the maximum efficiency of the motivation tool and 1 point means the minimum efficiency of the motivation tools.



**Figure1:** Evaluation of efficiency of motivation tools by university teachers from the faculty of safety engineering at the University of Žilina

The results indicate that the teachers worry most about unjust approach and abuse of personal contacts between employees and their superiors and therefore correct relations with superiors and management have been evaluated as the most significant motivation tool. Positive relations and atmosphere at the workplace are seen as the second most important motivation tool. It is generally known that it is much easier to work in the atmosphere of collegiality, willingness and open cooperation than at a workplace full of conflicts and tension. Significant motivation tools also included personal premiums and bonuses and independence, as well as praise and scientific career opportunities. Praising of positive performance of employees by managers always encourages them and supports their enthusiasm to continue quality work and it also increases the feeling of satisfaction from their efforts. In respect to the scientific career, each employee should be aware of his/her opportunities. The less important motivation tools included provision of necessary information and opportunity to participate in educational activities. Threats and sanctions have been evaluated as the least motivating. This confirms the fact that negative motivation methods are, as a rule, not efficient and that positive motivation should be preferred.

#### **PROPOSAL TO INCREASE EFFICIENCY OF THE MOTIVATION PROCESS AMONG UNIVERSITY TEACHERS AT THE UNIVERSITY OF ŽILINA**

In order to increase efficiency of the motivation process among university teachers at the University of Žilina it is necessary to have the environment favorable for improvement of the following conditions:

- To accurately define university and faculty motivation objectives and to create a motivational program,
- To outline performance standards (numbers of study programs, numbers of publications, numbers of scientific projects etc.),
- To identify motivation incentives (anticipated amounts of financial bonuses, character of non-financial benefits) and other significant prerequisites of the motivation process.

To increase efficiency of the motivation process among university teachers at the University of Žilina we recommend to improve quality of the following elements - the following steps (adapted according to Blažková, 2013):

1. *To collect information about the needs, motivation preferences and expectations of the teachers.*  
To effectively motivate the teachers it is essential to identify their needs, values and expectations and to determine how important they are for them. Individual employees respond differently to different motivation factors and therefore it is essential to communicate with them and to find out which of the motivation factors affect the teachers and to use them most efficiently to benefit the university. The information can be acquired, e.g. based on an analysis of teachers satisfaction, analysis of perceived

- motivation and preferences (e.g. in the form of a short questionnaire, motivation interviews, use of outputs from valuation interviews, use of impulses from department meetings etc.).
2. *To set up objectives of the motivation process, both for the individuals and teams (departments) and to define suitable methods to achieve them.* The motivation objectives should be based on the objective set for each teacher after completion of his performance evaluation process. The task of the head of the department is to ensure conformity of the individual motivation objectives with those of e.g. the department, faculty and university. At the same time, it is necessary to define appropriate methods to achieve the motivation objectives, including all necessary and supporting activities which will contribute to their achievement, while taking into account financial demands, probability of meeting the objective with the selected method, risks if the objectives are not achieved etc.
  3. *To assess expediency, efficiency and economy of the motivation process.* Some benefits, e.g. development of the teacher's potential or better quality of cooperation within a department, can be assessed directly from qualitative statements of the involved individuals (e.g. statements made by the teacher himself and also opinions of his colleagues, head of the department and students) or indirectly, based on other quantitative results (a high number of successful projects may indicate high competences of the teacher and quality cooperation within the department).
  4. *To define positives, imperfections and corrective measures resulting from the process.* The identified positives will be an excellent response for the motivators and they can be used to achieve better quality of future motivation processes. (Negative findings should serve as warnings which should not be repeated to avoid disruption of the future motivation processes).

From the viewpoint of the *personal process of teacher's motivation* it is recommended to strengthen the following objectives, e.g.:

- To increase the scientific career opportunities of the teachers (preparation for habilitation or appointment proceedings)
- To improve scientific –research activities of the teachers,
- To improve quality of publishing activities of the teachers,
- To improve pedagogical activities of the teachers, e.g. to improve quality of the content of lectures and seminars,
- To strengthen the overall motivation of the teachers in the field of continual development of their potential etc.

In addition of the mentioned personal objectives, there may be also additional combinations of similar or different motivation objectives. These objectives have to be set up specifically for each teacher to suit his/her personality and also to meet the needs of the department, faculty and university.

From the viewpoint of **team (department) process of teachers' motivation**, it is recommended to strengthen the following objectives, e.g.:

- To strengthen the confidence, support and team spirit of the department,
- To strengthen pro-active cooperation within the department e.g. through various projects implemented jointly by the whole department,
- To continually improve respective competences, skills and experience of the teachers in the department,
- To improve quality of decision-making and creative discussion about the most suitable procedures in the department,
- To harmonize the efforts and ambitions with those of other departments,
- Not to allow non-ethical conduct of department members, etc.

An important role in increasing efficiency of the motivation process of university teachers at the University of Žilina is played by the number of motivation factors or tools. The richer the group of motivation tools selected for a particular teacher, the more effectively the team can affect his motivation. It has been recommended that heads of departments, the dean and the university rector should pay more attention to the following **motivation tools**:

- to develop positive interpersonal relations in the department, faculty and university, e.g. by means of two-way pro-active communication, creation of environment to support innovativeness and inventiveness,
- to demonstrate the prestigious status and position of the employee in the department, faculty or university, e.g. by praise (appreciation of positive results),
- to grant financial rewards or benefits or bonuses to employees,
- to use appropriate management styles and motivating personal features of the employees (helpfulness, honesty, confidence, respect and deference, keeping the promises, empathy, correctitude),
- to allow and to support scientific career opportunities,



- to support cooperation with the business sphere (to offer to companies the activities in which the university/faculty has achieved excellent results),
- to modernize equipment of classrooms and other premises of the university, including offices, to get high-performance technology and ergonomic facilities for the work,
- to provide other benefits ( flexible working hours, work from home, qualification growth – courses, training, study courses abroad, secondments, scientific symposia), etc.

Every motivation process is demanding and requires careful analyses, wide theoretical and practical experience but, in comparison with other investments, it may bring to the University of Žilina high returns at much lower costs and also values which cannot be achieved in any other way, such as feeling of joy from good work, feeling of recognition, self-fulfillment and, last but not least, overall satisfaction of the employees and the university management.

## CONCLUSIONS

Each employee needs motivation for his/her performance. Even though many managers believe that motivation of employees depends on their personal attitudes and individual properties which cannot be significantly influenced, the reality is different. Surveys have proved that motivation of employees is affected most by the superiors whose ability to motivate depends on their emotional intelligence and empathy.

The most common mistake is to simplify motivation to financial remuneration. Even though financial remuneration is important it has been well-known from practice that not even a relatively high salary guarantees high performance. Moreover, if the motivation is based only on money then more and more money will be needed to achieve the same motivation effect.

Teachers at the University of Žilina are motivated by relations with the students and colleagues, provision of information, recognition and support by the management, working conditions and opportunity for professional development. Effective forms of motivation should be supporting achievement of the outlined objectives of the university, provide the employees with a good feeling about their previous and current results and encourage them to achieve better results. They should operate in synergy with the internal motivation of the employees and they should be cost-effective.

## ACKNOWLEDGEMENTS

Publication of this paper was supported by the European Union within the project No. 26110230090 Quality education with support of innovative forms, quality research and international cooperation – successful graduate for practice needs.

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## Mass Media And Religious Practices In The Immigrant Situation: A Challenging Developmental Psychology Encountered By The Sri Lankan Tamil Adolescents Living In Palermo, South Italy

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### ABSTRACT

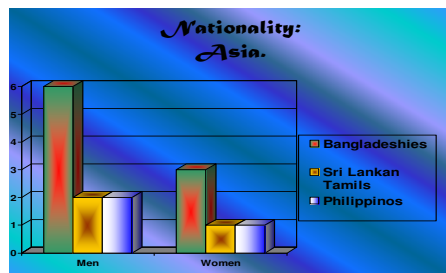
Mass Media and Religious Practices in the immigrant situation is a challenging Developmental Psychology, encountered by the Sri Lankan Tamil Adolescents living in Palermo, South Italy. Adolescents in the modern world face a lot of challenges in the process of their growth. One of such challenges is that of the social impact of Mass Media, which manipulates and determines the individual's decisive moments of growth. They are left with no choice but confront Mass media and personal choice of religious attitudes, and religious practices, (Cohen 2010; Kukreja 2010). The attitudes and belief-systems are built and sustained by the social structure. (Cooper and Denner 1998). In this article we administer focus group analysis on 'Mass Media and Religious Practices in the immigrant situation: A challenging Developmental Psychology encountered by the Sri Lankan Tamil Adolescents living in Palermo, South Italy.' We try to verify the 'Theory of Concepts of Beliefs' which states that: Every human being tries to transcend specific situations for a desirable end which are ordered by relative importance. (Bilsky and Schwartz 1992). The results are interesting. Enumerated in the full article.

**Keywords:** Psychological challenges, Adolescents' socio-religious development, Mass media, Tamil Immigrants, Focus group, Inter-cultural-adaptation.

### INTRODUCTION

Adolescents in the modern world face a lot of challenges in the process of their growth. One of such challenges is that of the social impact of Mass Media, which manipulates and determines the individual's decisive moments of growth. The Adolescents in the modern times are left with no choice but confront Mass media and personal choice of religious attitudes, and religious practices, (Cohen 2010; Kukreja 2010). The attitudes and belief-systems are built and sustained by the social structure. The strength and force of the influence of Mass Media depends upon the demographical ethos of the community where the individual adheres to conformism or non-conformism of the social environment (Cooper and Denner 1998).

In this article we interact with the Adolescents from Tamil Culture, the Immigrants from Sri Lanka. During the ethnic war in Sri Lanka from 1983 the Tamils started fleeing from Sri Lanka to America and other parts of Asia, and to various European countries, (Tamilnet.com 2014). In Palermo, South Italy there are various nationalities of immigrants (Daniels 1990; Hurrelman 1994). From Asia, nearly 2,000 catholic Tamil Immigrants are from Sri Lanka, the second largest number, according to the statistics of Caritas. ([caritaspalermo.it](http://caritaspalermo.it) 2013).



Courtesy: "Caritas diocesana di Palermo" from original Italian (Charitaspalermo.it)

Mass Media and technology has influenced the adolescents of the present time in great magnitude, in their expression of freedom, morality and thereby also in their religious practices. "The new technological possibilities are mostly viewed and employed from pragmatic perspectives. If they are critically evaluated it is mostly from ethical consideration." (Fernando 2006). Mass media has grown tremendously, making a remarkable impact upon the adolescents "An increasing number of young people spend a great deal of time watching television, reading newspapers and magazines, playing records, listening to the CD and surfing the Internet". (Devadoss 2006, p.185).

## 1.2. Media's impact – a Challenge for Immigrant adolescents.

As quoted by the same authors (Antony et al., 2014) on confronting mass media in the Indian Context, it is fitting to cite the arguments for our further verification in Immigrant Situation. Are the immigrant adolescents motivated enough to counter act the following research results, is to be seen at the end of the focus group analysis.

i) A group of 7888 Dutch Students were studied under the use of everyday internet and found that it is related to the psycho-socio-spiritual well-being. Researchers like Aa, Overbeek, Engels, Scholte, Meerkerk, Eijnden, proposed a Diathesis-Stress Model Based on Big Five Personality Traits, have shown that the adolescents who were using frequently the internet were losing the personal uplift and overall growth. "Results from structural equation modelling analyses showed that daily Internet use was indirectly related to low well-being through CIU (Compulsive Internet Use). In addition, daily Internet use was found to be more strongly related to CIU in introverted, low agreeable and emotionally less-stable adolescents. In turn again, CIU was more strongly linked to loneliness in introverted, emotionally less-stable and less agreeable adolescents." (Aa 2009, p.765).

ii) A recent research study in America with the mixed student of White, Asians, Hispanics, Afro-Americans, and Indan-Alaskan Native students by Werner, Matthew, Bumpus, and Rock, in the article "Involvement in Internet Aggression during early Adolescence," have noted that the present day Adolescents are constantly involved in internet communication and contacts and violence and also for other purpose of shopping and gaming and education as well. "About 89% of adolescents surveyed used email, 75% used Instant messages, 48% exchanged IMs everyday, 33% used cell phones to send text messages, 55% used Internet social networking on daily basis." (Werner 2009, p.608)

It's undeniable that there are problems caused by abuse of Media. It can become a menace and can demoralise the adolescents, bringing in violence and sex and secularism without control. Therefore it is a challenge for the Adolescents today (Yusuf & Sterkens 2014), to face this reality fair and square. As Bilsky and Schwartz indicate a similar attitudinal foundation in their article on "Universal Psychological Structure of Human Values", whose theory we propose to verify with proceeding focus group discussion.

iii). Theory of Concepts of Beliefs, stating that "Every human being tries to transcend specific situations for a desirable end which are ordered by relative importance". (Bilsky & Schwartz 1992)

Seconding this theory, "High level media knowledge offers young people a strong, broad perspective to be able to interpret messages along many different dimensions giving them more choices of meaning and to select the one that is most useful from several, but interrelated points of view: cognitive, emotional, moral and aesthetic." (Devadoss 2006, p.190).

## 1.3. Adolescents in Immigrant Situation.

There is a constant tug-of war within communities of the same culture and with extra-culture, trying to emerge out the best characteristics of both the culture, "social identity is constructed in the context of attitudes toward one's group, and is related to prejudice, intergroup conflict, culture, and acculturation", (Tajfel 1978, p.8)

The Adolescents from the traditional Tamil Cultural background finding themselves in the problematic immigrant situation may have psychological need (Shoemaker 2010), and fear of God and the necessity for religious practices as a protection (Daniels 1990; Hurrelman 1994), than giving in to the allurements and psychological compulsion of mass media as a challenging developmental psychology. The situation of immigration in itself is a particular phenomenon, "Especially in minority contexts religiously affiliated schools experience a double challenge: to contribute to the flourishing of their own religious tradition, and to stimulate interaction with and full participation in the surrounding society". (Yusuf & Sterkens 2014, p.47).

## 2.1. Area of Research

Location: Palermo. Instrument: "Focus Group" Interview with the Adolescents.

Gender: Boys and Girls. Age group: 13 - 19. Quantity: 10. Religion: Catholics.

Education: Both school going and non-school going Adolescents.

Language: Tamil / English / Italian.

## 2.2. Hypothesis

The Tamil Immigrant Adolescents in Palermo, deep rooted in traditional Tamil Culture have psychological need and necessity for religious practices as concrete assurance and security than giving in to the allurements and psychological compulsion of mass media.

## 2.3. Instrument: Focus Group

The instrument “focus group interview” is a flexible and adaptable tool that allows the researcher to make viable and relevant formulation of the questions, thereby, we have reasonably constructed 5 parts. Part 1 – Opening Question. Part 2 – Introductory Question. Part 3 – Transition Questions. Part 4 – Key Questions. Part 5 – Ending Question.

## 3. Administration and Results of Focus Group Interview

Focus group interview was administered on 08/09/2013. There were 10 adolescents of the Tamil Immigrants. The participants were well informed a week earlier about the importance of the focus group. When they arrived for the interview they were received cordially and were given snacks and soft drinks and were made to take comfortable seats for the interview. The entire sitting was video recorded with their knowledge for the purpose of being precise and document correctly.

Participants: Names are modified for anonymity..

1.Rib / 2.Ney / 3.Col / 4.Jad / 5. Ale / 6. Ash / 7.Nil / 8.Shl / 9.Nis / 10.Sur.

### *Part 1 - Opening Question*

1A) Are you all interested in sharing your experience about mass media and its use and drawbacks and your expectations?

2B) Is mass media an interesting tool for you to learn and to gain from it? Does it affect you in anyway, be it positive or negative?

### *Part 2 - Introductory Question*

3C) Do you have recourse to any of the printed material, internet, email, and messenger, chat, browsing the web, iPhone, computers, Mobile phone messaging, TV, DVD, and other Mass Media gadgets and programmes?

4D) According to your use, how much of the content is social / secular oriented? 20%... 50%... 80%... And how much of it is religious content 20%... 50%... 80%...?

5E) What are the general aspects of Mass Media that you like?

6F) Which are the aspects of Mass Media that you think are destructive?

### *Part - 3- Transition Questions*

7G) Does Mass Media play an important role in your life? (for Growth, learning, communication, entertainment, work, earning, etc.)

8H) Does Mass Media positively help you in your Religious Practice? (for praying, learning, expressing yourself, etc.) 20%... 50%... 80%...

9I) Is there any mass media programme/tool/gadget that you specifically use in religious context/ religious practice?

10J) Does Mass Media deviate your attention from your Religious Practice in anyway?

### *Part - 4 - Key Questions.*

11K) Do you feel addicted to Mass Media to the extent of spending more time on it than your religious practices?

Rib: no. I can stop using mass media when i need to go for prayer (2)

Ney: no I am not addicted (2)

Col: I am partially addicted (1)

Jad: **I am addicted a lot** (0)

Ale: no I am not addicted (2)

Ash: I am not addicted. I can do without mass media. (2)

Nil: I am not addicted I am be without mass media. (2)

Shl: a bit addicted to entertainment. (1)

Nis: not addicted, instead I use for religious practices. (2)

Sur: I too use more for religious practices. (2)

12L) Do you think Mass Media has directly or indirectly reduced your participation in religious practices?

13M) Do you think Mass Media is a support to your Religious Practices or a hindrance to your religious practices?

14N) Do you think the existing use of mass media is appropriate (with regard to your religious practices) for you and for other adolescents who live in this similar situation?

#### Part - 5 - Ending Question

15O) Has Mass Media reduced your participation of religious practices ...0% 10%... 90%...?

16P) Has Mass Media positively contributed for your religious practices, 30%, 50%, 70%, 80% ...?

17Q) What do you propose for the adolescents (including you) with regard to the use of mass media and the religious practices?

#### 4. ANALYSIS AND INTERPRETATION

Part 4 being the Key Questions we have demonstrated the full structure of the response of the participants with the significant words and corresponding values, (the same procedure is followed for all the questions, but not displayed in this article). For each question we identify positive, negative and neutral responses according to which we have given values such as: Positive response “2” / Neutral response “1” / Negative response “0”

17 questions are termed “A,B,C,...Q” to enable clarity and to facilitate easy reading.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Rib	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2
Ney	2	2	2	2	2	0	2	2	2	2	2	2	2	1	2	2	2
Col	2	2	1	0	2	0	2	0	0	0	1	0	2	0	0	0	0
Jad	2	2	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0
Ale	2	2	2	2	2	0	2	2	2	2	2	2	1	2	2	2	0
Ash	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	1	2
Nil	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2
Shl	2	2	1	2	2	0	1	2	0	2	1	1	2	2	2	1	2
Nis	2	2	1	2	2	0	2	2	2	2	2	2	2	2	2	2	2
Sur	2	2	2	2	2	0	2	2	2	0	2	2	2	2	2	2	2
Total	20	20	17	16	20	2	17	16	14	14	16	15	17	15	16	14	14

Table-1: Focus group response. Column: 17 questions. / Rows: 10 Candidates

The table-1 gives 17 column referring to the questions (A,B,C,...) and 10 rows referring to 10 adolescents who responded in the Focus Group.

**4.1 Interest in Mass media:** The questions “A,B and E” clearly points out that the adolescents whom we were interviewing in the Focus Group all got the response “20” which is a clear indication that the topic on which we held the interview and the discussion was fully in line with the adolescents’ inclination and need of the time.

**4.2 A critical view of the aspects of the Mass Media.** The lowest point scored by the groups is question “F” which is an indication that the negative aspect of the mass media is known to the adolescents and is strongly expressed by the group. It also points out to the fact that the group is coherent in their attitude. It goes to show that the group has present, concomitant experience, (Indrapala 2009), and denote an unusual capacity to critically evaluate mass media.

**4.3 Balanced attitude:** To counter check if the Adolescents are only negative about the view of mass media or do they also think positively about the same, we have placed question “E”, to which the participants have unanimously stated many good aspects of mass media, signifying that the attitude is not biased but open ended and realistic.

**4.4 Access to mass media:** It wouldn’t be appropriate to gather information about mass media influence from someone who has no recourse and no access to it. So we placed the question “C”, according to which almost all of them have responded positively, which is already 95% affirmative. Only two of them have given neutral response.

**4.5 Correlation of Media and Religious practices:** The questions “H, M, and P” poses the connection between mass media and religious practices, (Waggoner 2010). The response correlates media and religious practices with



the points of “16, 17, 14” respectively which is 87% positive and affirmative. The adolescents in this “stage of growth” to use media for religious practices is something natural, (Whittington & Scher 2009). As the modern generation is accustomed to activity rather than passivity, the results indicate that the Tamil Adolescents in their migrant situation use media for the religious practices.

**4.6 Verifying the Media Impact, Primary Aim:** Our scope of the interview is to clarify if “the mass media psychologically enslaves the adolescents as against the religious practices”, to which the questions “J, K, L, M and O” are explicit. The result from the adolescents is refuting strongly with the result “14, 16, 15, 17, and 16 respectively” which is 78% “*not affected / not deviated / not hindered .. by mass media*”. This indication is very important. The common concept is that the Tamil Adolescents are deep rooted in their cultural tradition (Cooper & Denner 1998) hence they are able to withstand the onslaught of the modern technology, which is a salient aspect of Tamil ethnicity. This result is very closely affirming our hypothesis: *The Tamil Immigrant Adolescents in Palermo, deep rooted in traditional Tamil Culture may have psychological need and necessity for religious practices than giving in to the allurements and psychological compulsion of mass media.*

Moreover the very words of the adolescents saying that “*I’m not addicted ... I use mass media for religious practices too...it does not deviate,...*” strengthen the argument that media can be positively used, in spite of the fact that mass media is negatively seen as a drug addiction. The immigrant situation in Palermo is a strong reason for the Tamil Adolescents to resist the psychological impact of the mass media, because the survival problems are primary pre-occupation (Miller and Gur 2002) in the life of the adolescents living in this immigrant condition.

**4.7 Integrating Religious Practice with mass media:** Another important aspect of the hypothesis is the need for the religious practice, which is indicated in “D, H, I,” for which the adolescents responded with “16, 16, 14” that is 76% positive. Though 2 candidates gave a negative reply out of the 10 candidates which is a true picture of the modern adolescents to differ as individual identity.

**4.8 Prudent use of Mass media:** To have counter check with the role of mass media we have placed two questions “G, and N” to which the adolescents have responded “17, and 15” respectively, that is, 80% affirmative. They express that mass media plays an important role in their life and one can use it in an appropriate way at the same time. As in their own words “*according to me it is useful. But we must be careful... So if we want we can always gain... mass media and religion can go hand in hand... etc...*”

## CONCLUSION

The scope of the research is “to identifying the constructive and destructive factors of mass media”, concurrently we have identified in the result 4.2. of the analysis, a critical view of the aspects of the Mass Media by the adolescents. From the question “F” where the adolescents indicate the negative aspect of the mass media (strongly expressed by the group). Secondly, from the question “E” the participants have unanimously stated many good aspects of mass media, signifying that the attitude is not biased but balanced in recognising both destructive and constructive aspects of mass media.

The second aspect of the “Correlation of Media and Religious practices” with the questions “H, M, and P” posing the connection between mass media and religious practices, the response indicates definitively, the links between media and religious practices (Mosher & Handal 1997), with the points “16, 17, 14” respectively which is 87% positive and affirmative. The adolescents in this “stage of growth” use media for religious practices, which is something creative and psychologically filling the void of boredom and making it down to earth empirical reality of the religious practices (Bilsky & Schwartz 1992), which is usually supernatural in character. The Tamil Adolescents in their migrant situation is psychologically drawn to ‘activity’ rather than ‘passivity’ in the use of media for the religious practices.

The aspect pertaining to the hypothesis, we see that the immigrant adolescents live in an ambient of uncertainty of the existential reality and needs which makes them surmount the natural tendency of getting addicted to Mass Media (Mosher & Handal 1997), compared to other local adolescents, in the words of the Tamil Immigrant Adolescents, “*I have no difficulty with mass media. I can always go to pray whenever i want*”... “*Mass media is good and appropriate in my life. I see my (Tamil) friends too are very controlled and not addicted. We go to play and spend more time talking than sitting in front of TV or other mass media*”. The maturity they show seems to be well-advanced due to the necessity for survival (Harker 2001; Miller & Gur 2002).

Finally our verification of the ‘Theory of Concepts of Beliefs’ is found to be true such as: *Every human being tries to transcend specific situations for a desirable end which are ordered by relative importance.* (Bilsky & Schwartz 1992). This brings us to the conclusion that religious, cultural and structural formation is important to every growing individual especially the adolescents to confront the media world and to face the multi-dimensional immigration situation.

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## Mass Melancholy Perceived As Education Material on Historical Turkish Dramas After 2000

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### ABSTRACT

It is an important fact that movie films and TV dramas which found a new visual and thematic style starting from mid-1990's in Turkey has created argument areas which affect daily and politic life beginning with 2000's. Especially the power to create public memory and alter established information resources of historical dramas watched by large masses on both tv and cinema is seen as quite a problematic field regarding historians and politicians who perceive existing dramas as historical documentaries.

Main purpose of this study is discussing the illusion regarding relation between creation process and reality of art created by seeing historical dramas on movies and TVs as an educational material. Main question of this study is the fact that seeing historical dramas as an educational material is in fact confusion with their objective to rehabilitate deep wounds in our social psychology. In this context, during this study it is intended to answer to the question about at which point historical dramas stand between reality and fiction and to what extent their content match up with reality. During this effort to find an answer, what historical dramas correspond to will be discussed (with readings on origins of psychological structure which form main sources; mass melancholy, melancholic anger and melancholic subjectivity concepts), and right points of criticism seen on daily political arguments will form other themes of this study.

Within the scope of this study, a general analysis of historical dramas produced for both television and cinema in 2000's will be made and the subjects of arguments they created on the period they are broadcasted or screened will be classified. Dramas examined as a result of all classifications will be observed by using sociological, politic and cinematographic criticism method.

### INTRODUCTION: The Power of Historical Dramas to Determine Daily Politics and Mass Melancholia

Fethi Açıkel addresses melancholia in the field of sociology and politics, not in the field of psychiatry, and determines it as an ideology of life against modernism. According to Açıkel, *Subjectivity here is a melancholic refusal that constantly 'dreams of returning to its authentic self, that 'hopes to bring the past into existence within its authentic comfort' and that accepts other existences as illegitimate. This is the rise of a melancholic subjectivity that cannot put the thought that 'its imperial ego and sacred memories' are irreversibly damaged out of its mind. Moreover, this is a subjectivity that cannot face its historical responsibility and that considers melancholic anger and melancholic denialism as an ideology of life. Today, we encounter the expansion of a melancholic refusal that cannot cope with the 'loss/defeat and failure' it experiences against modernity, that cannot face the fact that ancient civilization came to an end and died mentally and physically, and that still tries to keep the 'sacred time' and 'authentic civilization' alive with all its glory in its inner world.* (Açıkel, 2003:187-188) As a matter of fact, historical perception is based on this fiction when considered in line with Serol Teber's description of melancholia as the will to determine one's own destiny. That is, melancholic masses deny their current positions, losses and defeats in a historical context based on the glorious past, and try to build today upon this denial. Therefore, they sometimes experience mania (the mood of an elevated energy level) as a result of melancholia or are stuck in melancholia for a long time. The severity between periods of melancholia to mania differs from time to time. (Freud, 1964) This results in bipolar disorder also called manic-depressive illness. The melancholia of the past can turn into manic episodes all of a sudden. Within this context, masses feeling behind of the modern world rebuild themselves through melancholia or mania with the fictitious history on TV or at the cinema.

Historical dramas may also end up creating so powerful agendas that they even manage daily politics. The power to determine politics is evaluated, of course, over the power of historical dramas to create social memories. Therefore, it includes the impression that they miseducate or should accurately educate the masses.

The role of historical dramas to create social memories or their effects of the construction of reality seem to be the continuation of a certain effect of the hypodermic needle model on the affecting power of mass media. Hypodermic needle model is a model of communications. According to this model, any message given through mass media is directly received by masses. That is, messages are injected under the skin just like a needle, and masses are absolutely affected by the messages without making any judgements. Today, communication spiral is quite complicated and multi-directional. It is not possible that messages are absorbed by masses without making any judgements, just as is the case with the visualization of violence, which was proved not to turn the society towards

violence in time. As a matter of fact, mass media was found not to promote violence but just to teach how it is carried out. This means that communication channels alone have long lost their power to change and transform masses. Therefore, consideration of historical movies and TV dramas as education materials actually means that they are attributed exaggerated meanings. This results from the fact that the mass watching the historical dramas in question have multi-directional expectations and motivations towards drama. Approaching these dramas with the purpose of acquiring knowledge or learning a history lesson is considered to be highly problematical. It should be understood that the dramas in question are mere fictions within narrative possibilities and not the reality itself. However, even a little fragmentation of the glorious and merry days and memories of the past turning masses towards melancholia and the positioning of the dramas outside the official or ideological history records do carry the situation to a different political ground. Therefore, the present study tries to examine *the rise of a melancholic subjectivity that cannot put the thought that 'its imperial ego and sacred memories' are irreversibly damaged out of its mind* via the analyses of historical movies and TV dramas in the 2000s in accordance with their release dates and the discussion areas they create.

### Melancholia and Mass Melancholia

Melancholia which was believed to be a disease in the Ancient Greek medicine was considered to be the synonym for laziness and sluggishness in the Middle Age. It was also associated with art and literature in the writings of Theophrastus and Aristotle. In modern times, melancholia has become one of the most interesting fields of study from a scientific point of view in many areas such as psychology, sociology, art and literature.

As for the etymology of the word melancholia, it means one of the four bodily fluids. According to the doctrine from the writings of Aristotle and Galenus to the Middle Age, melancholia is one of the four bodily fluids and is named as the black bile. *"In the ancient doctrine based on the four temperaments and four bodily fluids, (as a matter of fact, Galenus describes 9 temperaments which correspond to one season and one period of life) melancholia is associated with the characteristics of human body. The excess of blood results in a "sanguine", sympathetic humor, the excess of phlegm results in a phlegmatic, "sluggish and stagnant" humor, the excess of yellow bile results in a "choleric" and angry humor, and the excess of black bile results in a melancholic humor.* (Binkert, 1995:15) Aristotle asked "Why do all the extraordinary men in philosophy, politics, poetry and art have an evident excess of black bile?", and traced black bile back to ancient times, determining that the situation of having an excess of black bile was extraordinary. In fact, there is nothing illogical and irrational here. Borgna described the basic symptom of the disease not as an irrationality or a lack of reason but a fragmentation of meaning and the replacement of an acknowledged meaning with a totally different meaning. The person does not lose his/her mind; logic enters into roads other than the general meaning, and the code of the roads can only be revealed through the conduct of a (essential and intuitive) study. (Borgna,2014:29-30)

The Turkish Language Association (TDK) explained the meaning of melancholia as a blind love rather than a black bile. The word is generally used to express sadness and passionate love. According to Serol Teber, *"Melancholic people, though not always consciously aware, sense in their own selves that people's selves (too) are political products, and a wrong life cannot be lived right. The problem in melancholic people generally focuses on the basic will to determine one's own destiny. Melancholic people want to make sense of their own lives even if this would cost them their lives, and become introverted in despair, doubt and grief as they cannot achieve this. Therefore, melancholia can be considered as a significant rebel of one or more against an ordinary existence, which ends up with regression, withdrawal, abnegation –just as in the examples of Socrates and Antigone, making her/himself killed directly or indirectly to the people/institutions s/he despises- or frequently with self-destruction.* (Teber, 2002: 14)

Fethi Açıkel also associates conservative political ideology with mass melancholia in his work based upon the consideration that the self is a political product, and bases the effort to make sense of life on a call of longing for the past and a refusal of the destiny. In his work, Açıkel describes melancholia as *the effort of a self to resist time and change as the self buries the object of love s/he has lost inside and tries to exist together with the dead object of love. It is the denial of loss/death/benefit or the abnegation of the harm done to the symbolic integrity of the self. It is an angry response to loss. Within this context, melancholic politics can be described as an –suppressed- anger towards the death of the 'object of love' or the 'authentic tradition'; and as a hard resistance to and refusal of the practical necessities of life itself. It is the effort to abnegate the death of peaceful tradition and to keep the past alive. It is the impossibility of death, that is, the denial of death. A melancholic self refuses to return to life after grieving the loss of the 'object of love'. Therefore, it is the refusal of not only death but also the idea of returning to life.* (Açıkel,2003:187-188) Judith Butler also reads the relationship between melancholia and death as the denial of grief and the inclusion of loss. Melancholic people imitate death as they cannot grieve. However, inclusion of death requires the instincts of death to such an extent that it is a matter of concern whether the two can ever be separated on an analytical or a phenomenological basis. (Butler,2005:135)

Mass melancholia is the mass acceptance of the feeling of individual death and a way of collective resistance to the acceptance of death itself, though the existence of the lost hope and the object of love is still felt. In Açıkel's



words, the *efforts to resurrect the ancient/mythological contents of history* are the best examples of mass melancholia especially in Turkey. The effort to attribute meaning to historical dramas, their consideration as education materials, and the belief that they have the power to transform masses are all part of this mass melancholia.

### Overview of the Historical Turkish Dramas of the 2000s

Considering the historical Turkish dramas of the 2000s, it is observed that the Ottoman Empire, the proclamation of the Republic of Turkey and the recent historical and political narratives constitute the main themes of the dramas. It is especially seen that historical dramas of the Ottoman Empire have become more popular since 2000 in line with the historical conjuncture also reflected in the novels of the period; and none of these developments, of course, are independent of the conjuncture. While the historical narratives focused more on the proclamation of the Republic of Turkey following the 1990s, the magnificent centuries of the Ottoman Empire have become more popular along with the Ottomanism within the recent political conjuncture. Historical dramas examined in this section of the study which have been watched by masses since 2000 are considered in terms of their potentials to create social perceptions, to make an impression in the public opinion and to determine political agendas or to be determined by the political agendas.

#### Abdulhamid Düşerken (2002) (The Fall of Abdulhamid)

Abdulhamid Düşerken, is a 2002 movie based on the novel *Sultan Hamid Düşerken* of Nahid Sırrı Örik directed by Ziya Öztan. It is the first movie of Öztan's trilogy followed by "Kurtuluş" (Salvation) and "Cumhuriyet" (The Republic).

The movie addresses the issues such as the Second Constitutional Era, the dethroning of Abdulhamid, the 31 March Incident and the arrival of the Harekât Ordusu (Army of Action) in İstanbul within a love story; and is about Major Şefik, a successful man and one of the leaders of the Committee of Union and Progress who fought at the forefront at the democratization fight of the Ottoman Empire, and his love for the daughter of a minister and his overwhelming ambition for power.

The movie was harshly criticized by conservative and right wing parties for that it was made to insult Sultan Abdulhamid. Besides the criticisms claiming that the story was only based on a hostility towards Abdulhamid, the director of the movie was also stigmatized that he is the official history movie maker of the state.

That the movie does not prefer or deliberately refuses to call Abdulhamid "The Sultan", displays the impulsive action of the Harekât Ordusu which was even criticized by Mustafa Kemal himself, and insults Ottoman Empire constitutes the most important criticisms directed at the movie.

#### Hacivat Karagöz Neden Öldürüldü? (2005) (Who Killed Shadows?)

It is a historical movie starring Haluk Bilginer and Beyazıt Öztürk which was directed by Ezel Akay in 2005. The movie is the first part of Akay's trilogy *Anadolu Ortaçağ* (Medieval Anatolia) (the trilogy is still uncompleted). The movie set in Bursa in the 14<sup>th</sup> century is about Hacivat and Karagöz, two important characters within the Turkish history. All the chiefdoms and states in Anatolia are sick and tired of the Mongol invasions, and the people runs away from the Mongols and settles in Bursa. Karagöz, too, comes to Bursa with his mother running away from the Mongolian taxmen. He is an illiterate but intelligent Turkmen immigrant who makes people around him laugh especially when he is angry. Hacivat, on the other hand, is a postman carrying news between the states. He is an intelligent, dissolute, reveler and talkative opportunist. He gets away from difficult situations by talking. Hacivat meets Karagöz when he buys his sick cow. Hacivat realizes the natural talent of Karagöz and wants to take advantage of it. They start to work as stonemasons at a mosque built by Orhan Gazi after himself. However, Hacivat and Karagöz constantly have words with each other and make other workers laugh, thus slowing down the work. As Hacivat and Karagöz slow down the work and make insinuations about everyone, Seljukian vizier Sultan Pervane is killed upon the death warrant of Orhan Gazi.

As the movie was considered to be a historical comedy, it did not receive severe political criticisms like the other historical films of the time. However, it has a narrative falling out of the official historical records. The movie makes bold statements regarding the complex cultural structure of Anatolia especially when Turkish people converted to Islam, and claims that the social role of women decreased along with Islam. However, the movie did not become the target of political environments due to the clever choices of its director, its successful cinematography, its casting and, mostly, the clever use of the narrative possibilities offered by comedy.

### **Cenneti Beklerken (2005) (Waiting for Heaven)**

*Cenneti Beklerken* is a historical movie directed by Derviş Zaim in 2005. It is the first movie of Zaim's trilogy followed by the movies “Nokta” (Dot) and “Gölgeler ve Suretler” (Shadow and Faces).

The movie is about Eflâton, a miniature master living in İstanbul in the 17<sup>th</sup> century. One day, Eflâton is taken to the mansion of an Ottoman vizier by force. He is told that Danyal, the son of a Sultan who rebelled against the Ottoman Empire, has been caught in a distant state and will be executed. Then, he is asked to make a Western style portrait of the rebellious in order to make sure of the identity of the Sultan’s son. Following the order, Eflâton goes on a tough journey to Anatolia with a couple of men.

Although the movie mainly focuses on the story of the painting of the figure prohibited by Islam, it reflects the insecurity of the Ottoman Empire prevailing in Anatolia in the 17<sup>th</sup> century and tells about the famous “impostor şehzade” incident in the Ottoman history. However, the movie did not cause much historical or political controversy despite the complicated matters it addressed.

### **Fetih 1453 (2012) (The Conquest 1453)**

It is a high budget Turkish historical movie directed by Fatih Aksoy in 2012, and tells the story of the conquest of İstanbul around Ulubatlı Hasan.

The movie is considered to be a highly brave production as it claims to tell about the conquest of İstanbul, an event which constitutes a turning point in the history of Turkey and is celebrated every year with enthusiasm. Therefore, it became the target of many discussions even prior to its shooting, and anything regarding the movie such as the casting, the costumes and the visual effects was constantly on the agenda.

The character Ulubatlı Hasan who climbed the walls of İstanbul and placed the Turkish flag also became controversial after the release of the movie. Discussions mainly focused on whether Ulubatlı Hasan was for real or just a myth. Many recognized historians participated in the discussions and countless television programs were made in this regard. Prof. Dr. Feridun Emecen clarified the claim that Ulubatlı is a fictitious and legendary character saying that “In the movie, you only see Hasan; he is not mentioned as Ulubatlı Hasan.”

The movie is considered to focus on Ulubatlı Hasan instead of Fatih Sultan Mehmet, a more controversial figure, as it adopts an abstaining position regarding a common historical event and personality valued by both conservative and nationalist ideologies in Turkey.

Moreover, the movie is thought to be inadequate in terms of cinematography despite the 4.5 million viewers it attracted. It is far behind “Troy” or “300” with its war scenes in terms of its cinematography and narrative.

Besides the national controversies, the movie was also criticized and banned in certain countries abroad. Its projection was cancelled in Beirut and in Lebanon following the protests of the Greek Orthodox groups claiming that the movie insults the Greeks in private and the Christianity in general.

Greek’s weekly gazette *To Proto Thema* bewilderedly claimed that “the Turkish invaders are presented as if they are the masters of the world. The director Faruk Aksoy has failed to represent significant historical events including the plunders and the slaughter of the Greeks.”

### **Elveda Rumeli (2007) (Farewell Rumelia)**

It is a historical TV series directed by Serdar Akar between the years 2007 and 2009. It is about a poor father and his daughters living in Macedonia ruled by the Ottoman Empire in the 1900s. The milkman Ramiz and his family lives in the village Pürşican in Manastır. It is the final days of the Ottoman Empire. Civil rebellions arise in the Balkans, and the uneasiness prevailing in Macedonia because of the separatists gradually increases, foreshadowing the big events to break out in the near future. The unionists are organized against Abdulhamid and opposes the Ottoman Empire. The world and Macedonia, of course, witness rapid changes.

The TV series which addresses the rebellions aiming to found a nation-state based on nationalism in the Balkans during the time of the Ottoman Empire did not cause much controversy with its historical narrative in terms of the political agenda. Nevertheless, it strongly reflects the lost nostalgia of the past to which the new Ottomanism ideology holds on considered within the conjuncture. The series presents a quite clear message regarding the

perception of the time with the way it addresses the Turkish families living peacefully in the Balkans and the Macedonian komitadjis.

### **Muhteşem Yüzyıl (2011) (The Magnificent Century)**

It is a TV series directed by the Taylan Brothers between the years 2011 and 2014. The TV series addressing the period of Suleiman the Magnificent was watched with great interest not only in Turkey but also around the world. It is important to note that the TV series is the most controversial historical drama examined within the present study. The government's severe criticisms and the pressure put on the TV channel on which it was broadcast occupied the agenda for quite a long time. The controversies regarding the TV series can be examined under two categories: historical and political.

Moreover, it got reactions of the viewers to a great extent and countless complaints were made to the Radio and Television Supreme Council (RTÜK), asking the TV series to be banned.

Recep Tayyip Erdoğan, Prime Minister of the time, severely criticized "Muhteşem Yüzyıl" saying "Some people claim that our history is merely made up of swords, wars, machinations, civil rebellions and, unfortunately, harem. Although some people who are clearly not one of us deliberately try to tell our history like this, we cannot and will not see our own history as such." (Milliyet:2012)

The scene in which the Sultan's son Şehzade Mustafa is killed also caused great reactions and was discussed by both the historians and the viewers due to its violent content. (5 thousand people visited the *türbe* (mausoleum) of Şehzade Mustafa in Bursa after Suleiman the Magnificent gives the death warrant of him in the TV series. Following this incident, RTÜK received lots of complaints (137 complaints in a week) claiming that the history was twisted and reflected in a wrong way.) (Haberturk:2015)

The TV series became the focus of discussions not only in Turkey but also around the world. For example, İSNA, semi-official news agency of Iran, claimed that the real women in the Ottoman harems are not like the ones presented in the TV series publishing a so called photography of the Ottoman harems and a photography of the women in the series side by side. The news stated that the dressing style of the women in the Ottoman palaces are not like the one presented by the director and scriptwriter. Fars News Agency in Iran referred to the words of the Prime Minister Erdoğan regarding the series and claimed that it insulted Iran and the Iranian people. Asriran, one of the most popular news websites, published the news with the headline "Muhteşem Yüzyıl even caused Erdoğan to raise his voice".

The TV series attracted great attention in the Balkans, and still occupies the Bosnia-Herzegovina media. Dnevni Avaz, one of the daily newspapers of the country, published the news "The Bad Image of the Ottoman Empire" and referred to the thoughts of the viewers, academicians and movie makers regarding the show. The news stated that "the clothes of the women in the palace are of the 19th century fashion in France, that the Sultan wears pants, and that the Suleiman the Magnificent is 26 years old, not 41." under the section "The Mistakes within the Show". The news added that the show also caused controversies following its broadcast in Turkey, and indicated that the TV series in question had a similar fate in Bosnia-Herzegovina.

"Muhteşem Yüzyıl" also caused two recognized historians to come up against each other with their books regarding the show. Historian Erhan Afyoncu, one of the concept counsellors of the show, published his book "**Muhteşem Süleyman**", while recognized historian and writer Yavuz Bahadıroğlu who severely criticized the show published "**Muhteşem Kanuni Sultan Süleyman ve Hürrem Sultan**" in order to disprove the claims and theses of it.

Two historical dramas should also be mentioned here. *Hürrem Sultan*, directed by Fatih Aksoy and broadcast on Star TV in 2003, became a successful drama with its production and story applying to a wide range of subject matters from politics to fashion though it has quite a similar subject as "Muhteşem Yüzyıl". The other drama is "Bir Zamanlar Osmanlı: Kıyam" (Once Upon a Time in the Ottoman Empire: Rebellion), which was broadcast within the same period as Muhteşem Yüzyıl and was supposedly influenced by its high ratings, did not last long.

### **Bir Zamanlar Osmanlı: Kıyam (Once Upon a Time in the Ottoman Empire: Rebellion)**

The TV series directed by Ezel Akay in 2012 is about the Tulip Period of the Ottoman Empire under the ruling of Ahmed III. It caused little controversies regarding historical mistakes besides some political discussions due to its broadcast on TRT and the way it reflected the spirit of the time.

### **Diriliş: Ertuğrul (Resurrection: Ertuğrul)**

It is a historical drama which is directed by Metin Günay in 2014 and is still broadcast on TV. It is about the foundation of the Ottoman Empire. The drama attracted the attention of both the viewers and the politicians; for example, Ahmet Davutoğlu, Prime Minister of the time, visited the set of "Diriliş Ertuğrul" and expressed his appreciation. Historians also discuss every episode of the show.

### **Son Mektup (The Last Letter)**

It is a 2014 movie which is directed by Özhan Eren and is about the Gallipoli Campaign. The movie caused more discussions compared to other movies regarding the Gallipoli at the time. Discussions mainly focused on the ideological position of the show despite its high budget, not on its inadequate cinematography or production. The fact that the name Atatürk, who achieved great successes in the Gallipoli Campaign, was mentioned only in the letter caused great controversies especially within the nationalist and leftists parties. The movie was also severely criticized in that it turned the issue of the Gallipoli Campaign and the question whether the success at the wars belong to the Ottoman Empire or to the founders of the Republic of Turkey a serious political resolution point on a conjunctural basis.

That the TV series "Çemberimde Gül Oya" (Rose Lace on My Scarf) and "Hatırla Sevgili" (Remember Darling) which were subjected to censorship and self-censorship and included the ignored events in recent history such as the pains and periods of military dictatorships attracted great attention resulted in an increase in the number of historical dramas. Movies such as "Beynelminel" (The International) and "Babam ve Oğlum" (My Father and My Son) also got a similar attraction. All these movies create areas of mania with the sharing and solidarist relationships and with the friendly stories they present as people who are sick of the alienating, manipulative and selfish social relationships of mass melancholia long for such relationships.

### **CONCLUSION**

Within this context, the present study tried to determine where historical dramas are positioned between fiction and reality and to what extent their content should correspond to reality. The present study found out that what historical dramas actually correspond to and which part of the political mental map they serve are crystal clear.

That consideration of historical dramas as education materials is in fact confused with their function of rehabilitation of the deep traumas in our social psychology, which constitutes the research question of the study, was explicitly determined to reflect a culture of social habit and perception. Our social perspective towards art is generally restricted with the thought that it does and should reflect only the reality and what we want to see. As a result, cinema in Turkey is perceived this way, thus leaving deep traces on the soul of the society with each image it presents. To give an example, it is out of the question that a beloved character in Yeşilçam (Turkish cinema) plays a bad character; because the audience interiorizes an image it sees on the screen. This was exactly what happened when Yılmaz Güney, who long played in adventure movies and was thus called as the "Çirkin Kral" (Ugly King), is slapped as the poor and miserable character Cabbar in the movie "Umut" (Hope) and the audience found it strange and reacted. In Turkey, our social perception of art is highly emotional and relies on the irrational responses.

Dramas are often questioned whether they are fictitious and imaginary products. Considered in terms of the creation of social memories, they are obviously not education materials.

It is considered to be highly problematical that fictitious and imaginary TV series in which fiction and reality intertwine, rating concerns are sought and political pressures become one of the determinant factors in the scenario are confused with real history or perceived that way. Historical events or phenomenon constitute another source of severe political criticism as they are reconstructed at the disposal of current conflicts between the middle class and the government in order to extend political and ideological hegemony areas.

Historical movies and TV series examined within the present study indicated that narratives regarding the Ottoman Empire shaped by the spirit of the modern times are quite high in number instead of subjects including recent history or different histories (history of Rome, China or Maya as seen in Hollywood movies). This situation leads us to the fact that art reflects the spirit of the time. Moreover, it was found that the perception created as a result of consideration of historical movies and TV dramas as education materials with regards to the relationship between the creation process of art and the reality is constructed on an incorrect basis. As previously mentioned, mass melancholia is still maintained as the mass acceptance of the feeling of individual death and a way of collective resistance to the acceptance of death itself, though the existence of the lost hope and the object of love

is still felt. Therefore, maybe the question of Aristotle should be asked once more with this study: “Why do all the extraordinary men in philosophy, politics, poetry and art have an evident excess of black bile?”

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## Matching And Mismatching The Learning Style Of Students And The Lecturer

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### ABSTRACT

The implications of learning style in education have a huge potential to improve teaching and learning. The purpose of this study is to investigate the effects of matching and mismatching learning style of students and the lecturer on the students' achievement. The casual comparison method (ex post facto design) was utilized in the study. The sample of the study included 258 prospective teachers. Participants' demographic information, learning style and course grade lists were used as data. Results of the study indicated that majority of the participating students and the lecturer has the "assimilating" learning style. It was also found that matching and mismatching learning style of students and the lecturer did not affect the achievement of students in the Turkish Folk Literature course regardless of the gender. Besides students' achievement, future studies should use students' motivation towards the course, their attitudes and/or their course involvement variables to examine the effects of matching and mismatching.

**Keywords:** Kolb learning style model; learning style; course achievement

### INTRODUCTION

Individuals are different from each other in their cognitive abilities, interpersonal styles and emotional reactivity. The history of the idea that individuals learn differently goes back to 2500 years ago when ancient Hindus used it in their religious practices (Claxton & Murrell, 1987). Ever since numerous learning style models have been developed. Curry (1983) developed the metaphor of onion to describe the framework for the learning style models. There are four layers at the onion metaphor (Figure 1). The personality trait is at the center of the onion. Information processing, social interaction and instructional preferences are other traits towards the edge of the onion respectively. It is difficult to develop valid and reliable instruments to measure learning style for the traits. Traits at the outer layer of the onion are less stable and more susceptible to change by intervention from researchers (Claxton & Murrell, 1987). Therefore research studies usually utilize traits close to the core level of the onion metaphor. Developed from the experiential learning theory, Kolb's inventory of learning style is one of the learning style inventories preferred in research studies (D'Amore, James, Eleanor, 2012). Having influenced from the works of twentieth century scholars including but not limited to John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire, Carl Rogers, Kolb (1984) developed the learning style inventory based on the Experiential learning theory. Kolb uses two elements to describe the learning process. The first one is the grasping the experience and the second one is transforming the experience. Learners either rely on reflective observation or active experimentation while transforming the experience. Also learners either rely on concrete experience or abstract conceptualization while grasping the experience (Figure 2). Kolb's learning style inventory characterizes individuals into one of four main learning styles: Diverger, Assimilator, Converger and Accommodator (D'Amore, James, Eleanor, 2012). Describing the strengths of individuals in different learning style categories according to Kolb's learning style, Claxton & Murrell (1987) indicated that while individuals with Diverger learning style have a good imaginative ability, individuals characterized as Assimilators are good at constructing theoretical models. On the other hand, individual with Convergers learning style are good at finding one correct answer in any given problem while individuals characterized as Accommodators are good at focusing doing things.

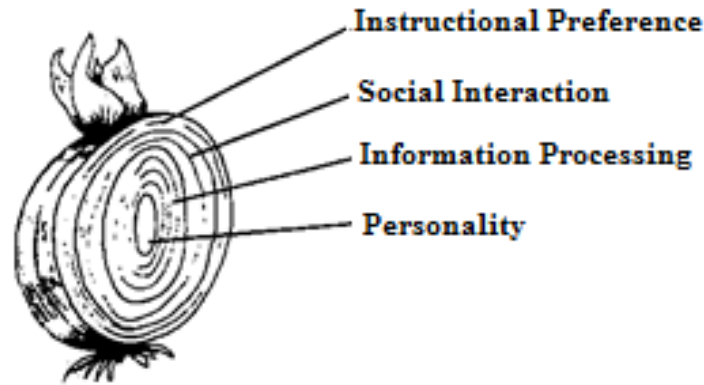


Figure 1. Curry (1983)'s framework of learning style models

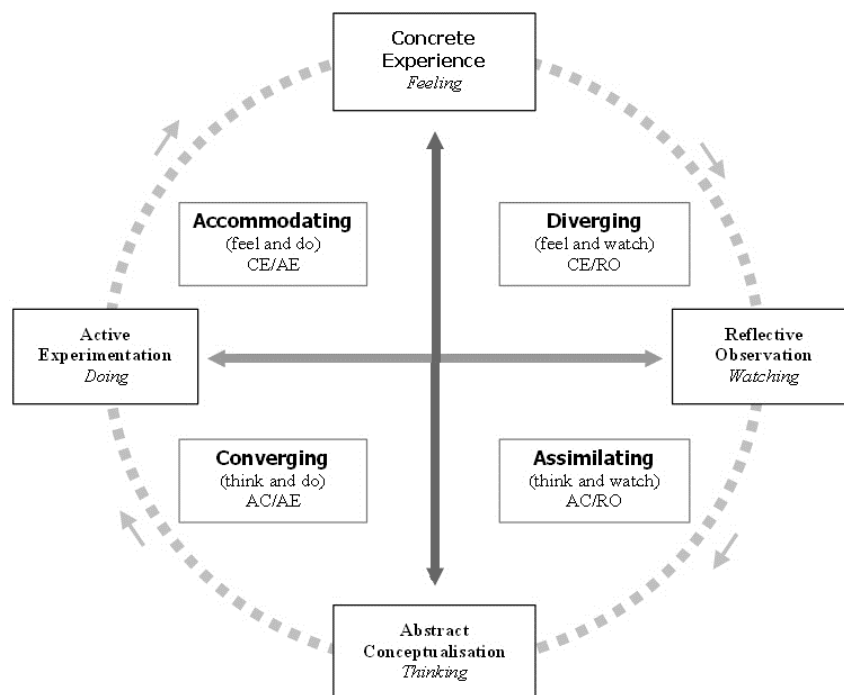


Figure 2. Kolb's model of experimental learning

Identification of individuals' learning style may have the potential to improve teaching and learning practices to improve learning. The relationship between academic achievement and learning style are investigated in studies (Akdemir et al., 2006; Ersoy, 2003; Bilgin & Durmuş, 2003; Ertekin, 2004; Tepehan, 2004; Önder, 2006; Yazıcı, 2004).

Akdemir et al. (2006) conducted a study to compare final grade of the students who were continuing their undergraduate education and were classified as dependent learner and independent learner according to their learning style in the Physics course. Statistically significant differences was found between the final grades of field dependent and field independent learners in the Physics course. Results indicated that final grades of students who were classified as having independent learning style in the physic course were higher than students classified as having dependent learning style. Ersoy (2003) conducted a study with 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grade students to investigate the relationships among students' learning styles towards the English course, their study habits and their achievement. A significant relationship between the students' learning styles and their achievement in the English course was found. It has been found that although the achievement of students having visual learning style is high, the students having kinesthetic and listening-based learning styles showed low achievement in the English course. In the research study which was conducted by Ertekin (2004), the relationship among the primary education students' learning styles, primary education Mathematics teachers' teaching styles and achievement of students in the Match course was investigated. Findings revealed that there is not a significant relationship between students'

learning styles and their achievement. Also there was not found any relationship between teachers' teaching style and students' achievement.

In another study Tepehan (2004) investigated the relationships among high school type of freshmen students graduated from, learning style and academic achievement. Results of the study revealed that there was not any relationship between students' learning style and academic achievement. Önder (2006) conducted another study to investigate the effects of utilizing teaching method aligned with the students' learning preferences on the achievement of the physics course. Findings of the study revealed that the achievement of students in the control and the experimentation group increased in the physics course. Also results revealed that the increase on students' achievement in the experimentation group is higher than the control group. Yazıcı (2004) investigated the relationship between learning style preferences of students and math achievement of 5<sup>th</sup> grade students. The study was conducted with 102 fifth grade students. Kolb's Learning Styles Inventory and the Mathematics Achievement Test were used for data collection. The study results revealed a significant differences among math achievement of students with regards to their learning styles.

Implications of learning style for training and development have been investigated for many years. Matching and mismatching the learning style and learning activities, and matching and mismatching the learning style of students have been the focus of many research studies (Dasari, 2006; Ford, & Chen, 2001). In the research conducted by Dasari (2006), the effect of matching teaching and learning styles on the achievement of the 6<sup>th</sup> grade students in science courses were investigated. The findings of the study revealed that there is a significant difference between the pre-test and the post-test scores of the experimental group. It was concluded that matching teaching and learning styles improved the achievement of the 6<sup>th</sup> grade students in science courses. Ford and Chen (2001) conducted a study to investigate the relationship between the matching and mismatching students' cognitive styles and instructional presentation conditions in a computer-based learning environment. The findings revealed that matching and mismatching cognitive style and instructional presentation had effects on learning outcomes. Limited number of research studies are insufficient to explain the effects of matching and mismatching the learning style of students and the lecturer on students' learning. The purpose of this study is to investigate the effects of matching and mismatching learning style of students and the lecturer on the students' achievement in Turkish Folk Literature course. Four research questions were developed to investigate the issue.

- What is learning styles of Turkish Language Teaching department students?
- Is there a difference on the achievement of students whose learning style match and mismatch the lecturer's learning style?
- Is there a difference on the achievement of female students whose learning style match and mismatch the lecturer's learning style?
- Is there a difference on the achievement of male students whose learning style match and mismatch the lecturer's learning style?

## METHOD

### Participants

The study population consisted of students studying at the Turkish Language Teaching department of public universities in Turkey. The convenience sampling method (Balcı, 2007) was used to select the public university. All students of the Turkish Language Teaching Department at Ereğli Education Faculty who had taken the Turkish Folk Literature course were invited to participate in the study by visiting their classes. Students accepting to be volunteer in the study involved in the study. Total of 258 students who took the Turkish Folk Literature course participated in the study. There was one lecturer at the department and she had taught all the Turkish Folk Literature course to all participants.

### Research Design

The casual comparison method (ex post facto design) (Tuckman, 1994) was utilized to investigate the effects of matching and mismatching learning style of students and lecturers on the students' achievement in Turkish Folk Literature course in the study.

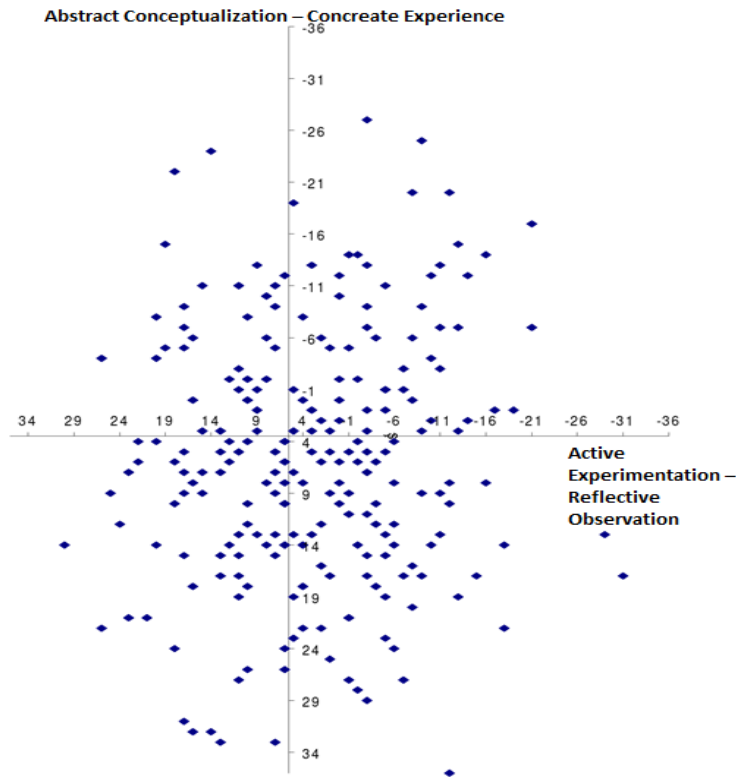
### Data Collection

The first data collection instrument is used to collect students' demographic information and data to determine their learning styles according to Kolb's learning styles. Kolb's learning style inventory was translated into Turkish by Aşkar and Akkoyunlu in 1993. Aşkar and Akkoyunlu (1993) used similar age group of participants to test the reliability of the instrument. The students' grade lists for the offered the Turkish Folk Literature course were also utilized for the data collection purposes.

## ANALYSIS AND RESULTS

Descriptive statistics and independent samples t-tests were used for the data analysis using the Statistical Package for the Social Sciences. All the statistical analyses were conducted with a significant level of .05.

The first research question investigated the learning styles of the Turkish Language Teaching department students. The descriptive analysis of the participants' learning style based on the Kolb's learning style was presented at the Figure 3.



**Figure 3.** Distribution of participants' learning style

The distribution of the participants' learning styles by gender was presented at the Table 1. Majority of the participants have the assimilator learning style regardless of their gender. Also, the learning style of the lecturer was assimilator.

**Table 1.** Distribution of participants' learning style by gender

Learning Styles	Gender				Total	
	Female		Male		N	%
	N	%	N	%		
Accommodator	25	17.6	16	13.8	41	15.9
Diverger	34	23.9	27	23.3	61	23.6
Assimilator	44	31	40	34.5	84	32.6
Converger	39	27.5	33	28.4	72	27.9
Total	142	100	116	100	258	100

The second research question investigated whether there is a difference on the achievement of students whose learning style match and mismatch the lecturer's learning style. The independent samples t-test was used to compare the achievement of participants in the match and the mismatch conditions. Findings revealed that there was not any significant difference in two conditions ( $t = -0.555$ ,  $p > 0.05$ ) (Table 2).

**Table 2.** Comparisons of the match and mismatch conditions

Learning Style	N	Mean	S	sd	t	P
Match	84	66,57	16,85	256	-0,555	0,58
Mismatch	174	67,77	16,08			

The third research question investigated whether there is a difference on the achievement of female students whose learning style match and mismatch the lecturer's learning style. The independent samples t-test was used to compare the achievement of participants in the match and mismatch conditions. Results of the analysis revealed that there was not any significant difference in two conditions for female participants ( $t = 0,277$   $p > 0,05$ ) (Table 3).

**Table 3.** Comparisons of the match and mismatch conditions for females

Learning Style	N	Mean	S	sd	t	P
Match	44	71.2	14.2	140	0,277	0,78
Mismatch	98	70.5	15.8			

The last research question investigated whether there is a difference on the achievement of male students whose learning style match and mismatch the lecturer's learning style. The independent samples t-test was used to compare the achievement of participants in the match and mismatch conditions. Data showed that the achievement of male students in match and mismatch conditions is not significantly different ( $t = -0,833$   $p > 0,05$ ) (Table 4).

**Table 4.** Comparisons of the match and mismatch conditions for males

Learning Style	N	Mean	S	sd	t	P
Match	40	61.3	18.1	114	-0,883	0,379
Mismatch	76	64.2	15.7			

## DISCUSSION

### Learning Style and Occupational Preferences

In this study, Kolb's Inventory of Learning Style was used to determine the learning style of the students of Turkish Language Education Department. According to Kolb, while it is expected that students who show interest to literature are more dominant in the "changing" learning style, it is expected that ones who have the jobs like teaching centre on the "assimilating" learning style. While it is expected that the students of the Turkish Language Education who aim at being a Turkish Language Teacher in the future are more prone to teaching, it is thought that the students in the Literature Department which takes part in the Faculty of Arts and Sciences are more prone to literature and therefore they prefer these departments. Correspondingly, it is expected that the students of Turkish Language Teaching Department centre on the "assimilating" learning style more when Kolb's proclaim is taken in consideration.

The majority of the students, 32.6%, and the lecturer of the Turkish Folk Literature course were in the "assimilating" learning style group which is the group that shows interest to teaching profession. As it has already been stated by Kolb, people who prefer teaching profession mostly take part in the "assimilating" learning style group (Ekici, 2003). This finding complies with the Kolb's claim. Demir (2008)'s study conducted with 200 students in the Turkish Language Education Department revealed that female and male students centre on the "decomposing" learning style. Demir (2008)'s findings do not comply with the results of this study. According to Kolb, individuals who have the "decomposing" learning style prefer the jobs which concentrate on using technology such as medicine, engineering, economics, computer sciences more. The use of different types of learning style inventories in both studies could be a reason to achieve such contradicted results.

In the research conducted with Aşkar and Akkoyunlu (1993), it was found that 73% of individuals in Social Sciences are dominant in the "assimilating" learning style. The results which were found in this study show consistency with the results of Aşkar and Akkoyunlu (1993)'s study since the Turkish Language Education Department is part of a Social Science. In the research studies conducted by Çaycı and Ünal (2007) and Hasırcı (2006), the learning styles of prospective teachers were investigated. Hasırcı (2006)' study and revealed that %41 students have "assimilating" learning style. Similarly Çaycı and Ünal (2007) found in their study that 59.8% prospective teachers have "assimilating" learning style. Prospective teachers are expected to have "assimilating"



learning style. The results of this study support the findings of Çaycı and Ünal (2007)'s and Hasırcı (2006)'s studies.

### **Learning Styles and Student Achievement**

While some studies conducted by Akdemir et.al. (2006), Ersoy (2003), Bilgin and Durmuş (2003), Koçak (2007), Öztürk (2007), Peker (2003), Yazıcı (2004) revealed significant differences between learning style and student achievement, other studies conducted by Ertekin (2004), Karataş (2004) ve Tepehan (2004) revealed that learning style doesn't affect academic achievement. There are limited number of research studies examining the effects of matching and mismatching students' and teachers' learning style on academic achievement. Ford and Chen (2001)'s study revealed that matching and mismatching cognitive style and instructional presentation had effects on learning outcomes. Also Dasari (2006)'s study found that matching the teaching and learning styles improved the achievement of 6<sup>th</sup> grade students in the science course.

In this study, the effect of matching the students' learning style and the teacher' learning style on academic achievement of students was examined. It was found that the lecturer who lectures the Turkish Folk Literature course and 84 students have the "assimilating" learning style. Results of this study revealed that there was not any significant difference in match and mismatch conditions on students' achievement. Data analysis also revealed that results are identical when examined for males and females alone which showed that gender does not affect the findings statistically. Although Ford and Chen (2001)'s and Dasari (2006)'s study have found that matching the teacher's and students' learning style have effects on students' achievement, results of this study revealed that matching and mismatching conditions do not have any effects on the achievement of students. According to Ford and Chen (2001) and Kolb (1984), the students whose learning style don't match may be more successful in long term. This study was conducted with prospective teachers. Therefore participants of this study might have gone in a process of adaptation to cope with different learning style that do not match their learning style.

The effect of matching students' learning styles and teachers' teaching styles on the academic achievement of students was investigated by Karataş (2004). While GrashaReichmann Learning Styles Inventory was used on the purpose of determining the students' learning styles, the Inventory of Teaching Styles prepared by Grasha was used for the teachers. Results revealed that there is a relationship between the academic achievement of students and teachers teaching style. However matching the teaching style of teachers and students learning style did not affect the academic achievement of students. It is seen that the result of Karataş (2004)'s study complies with the result of this study. The results of research studies, which were conducted by Akgün (2002), Demir (2006), Demir (2008), Gencel (2006), Güven (2003), Karakış (2006) and Öztürk (2007), support the findings of this research study because identical results were found when male and female students' academic achievement were compared in match and mismatch conditions.

## **CONCLUSION**

### **Implications for Practicioners**

It is expected that students and teachers know their learning styles. This study has showed that most of the students in the Turkish Language Education take part in "assimilating" learning style group as Kolb suggested. According to the results of Kolb's Inventory of Learning Style, it is expected that the people who make plans of occupation which are intended for the Turkish Language Education take part in "assimilating" learning style group more. Kolb's Inventory of Learning Styles can be used in determining the students who want to head for the Turkish Language Education Department by school counsellors at high schools.

This study has showed that matching or mismatching the learners' and teacher's learning style doesn't have an effect on their achievement in the Turkish Folk Literature course. Therefore teachers should avoid using Kolb's inventory of learning styles in Turkish Folk Literature to generate match and mismatch conditions. Also, the study has showed that gender doesn't play an active role on matching or mismatch conditions.

### **Contribution of the Study to the Theory**

This study has showed that there is no difference among the achievement of students in the case of matching and mismatching the learning styles of the teacher and the students. Various reasons might have contributed to achieve this result. The study population consists of undergraduate students. Participants throughout their education had taken courses from numerous teachers. While some teachers' learning styles matched their learning style, others' learning style did not match students' learning style. As a natural result of this, the students may have experienced a natural process of adaptation to the teachers whose learning style did not match their learning style. As a part of the adaptation process, participants may have developed skills which may adapt them to the teaching methods and techniques that teachers used in courses.

The content of the Turkish Folk Literature course shows variety. Therefore students might have showed more interest to the course. As a result of this, students might have formed positive attitude to the course which affected their achievement regardless of the match and mismatch conditions.

### Recommendations for Future Studies

The connection which Kolb established between occupational preferences of individuals and their learning style should be investigated for other teaching programs. It was found that the matching students' and the teacher's learning styles did not have an effect upon the achievement of the students in the Turkish Folk Literature course. Future studies should be replicated for other courses in the Department of Turkish Language Education so the possible effects of the content can be investigated. The Kolb's Inventory of Learning Style was used in this study. Different learning style dimensions are defined in other learning style inventories so this study should be replicated to investigate the effects of other learning style dimensions. Besides students' achievement, future studies should also use students' motivation towards the course, their attitudes and/or their course involvement variables to examine the effects of matching and mismatching.

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- Note: This study was completed as a master thesis under the supervision of Asoc. Prof. Ömür Akdemir by Emine Zehra Samancı.

## Migration Studies And Collaborative Learning In An Intercultural Environment: Evaluating The Project "Sono Un Migrante"

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### ABSTRACT

The purpose of this paper is to evaluate the outcomes of the Erasmus Intensive Programme *Sono Un Migrante*, financed by the Italian Erasmus LLP Authority and realized by the University of Salerno in the academic year 2013/2014. Through innovative educational methodologies, based on multimedia technologies and collaborative learning, the project was aimed at building a shared knowledge about migration and strengthening a sense of European identity among participants. The paper reviews the results obtained from the IP evaluation, with particular reference to participants' awareness of international migration and the individual and social skills developed by learners.

### 1. INTRODUCTION

The combination of e-learning and collaborative learning is often referred to as a tool to facilitate learning in educational settings in which the user has special characteristics, such as education for prisoners (Diana, 2013). Incorporating the use of ICT technologies into the process of collaborative learning can be very beneficial in terms of knowledge and experience. Moreover, an intensive use of ICT technologies in a collaborative learning environment can rapidly improve students' awareness of a common problem, as well as their ability to manage it and to find viable solutions (Ehlers, 2011, 2013). This can be especially true when the common educational task at stake is strongly related to political and social debates on such issues as race, ethnicity, religion, multiculturalism, and above all migration: all of them seem to be of great value in the making of the social identity of youth people in today's Europe. The aim of this paper is to evaluate an interdisciplinary experience of (ICT-aided) collaborative learning in an international environment, the Erasmus Intensive Programme *Sono Un Migrante* (SUM), financed by the Italian Erasmus LLP Authority and realized by the University of Salerno in the academic year 2013/2014. As we said in a previous paper, which was written just before the end of our educational experience.

The more general purpose of our IP is to develop communities of practice that focus not only on learning, but on the social construction of knowledge useful to the community in the perspective identified by Scardamalia and Bereiter (Bereiter, 2002; Scardamalia, 2002). Following these authors, we intend to push the stakeholders of educational systems to reconceptualize learning activities and to think of European schools and universities as learning communities producing valuable, critical knowledge for their students and for the wider societal context. This is therefore an example of collaborative learning in a sociological discipline in an intercultural context. In our opinion, the project raises issues of great interest for teaching sociology – and, more generally, social sciences – in a time when the need for the internationalization of university activities is becoming widespread, and the quest for a learning society is becoming more urgent (Kuhn, 2007) (Diana, Maddaloni, Melillo, Moffa, 2015, p. 516).

In this paper, we will provide some elements to assess whether these objectives of our initiative have been achieved. In Section 2 we will briefly discuss the assessment methodology employed. In Section 3 we will highlight the outcomes of the evaluation procedure, with reference to the students' attitudes towards immigrants (section 3.1), their attitudes towards the European Union (section 3.2), and the degree of satisfaction achieved by students in relation to the knowledge they acquired and the experience they lived. Finally, we will try to make some remarks on migration studies and (ICT-aided) collaborative learning in the more general context of tertiary education.

## 2. METHODOLOGY

The project evaluation was carried out through structured questionnaires submitted to participants at the beginning and at the end of the project. The *ex-ante* questionnaire was mainly aimed at:

- exploring participants' motivations and expectations;
- investigating participants' opinions and attitudes about the issues of migration and socio-territorial identity;
- assessing respondents' opinions and attitudes towards the EU.

The *ex post* questionnaire was aimed at:

- assessing the effects of the project on participants' awareness of international migration;
- evaluating the effects of the project on participants' attitudes toward the EU;
- investigating the effects of the project on participants' individual and social skills.

The questionnaires were administered anonymously to all 42 students who took part in the project. The participants were mostly women (72.5%) than men (27.5%) and they were aged between 19 and 37. Participants came from different European countries – Italy (50%), Romania (15%), France (12.5%), Cyprus (10%), Spain (10%), and Greece (2.5%). In accordance with the interdisciplinary approach that inspired the project, the students came from different degree programs: participant students were following mostly curricula of Political and Social Sciences (63.4%), but also curricula of Economics (14.6%), Humanities (11.9), and Law (2.4%). For the majority of participants (61.9%), the Intensive Program was the first experience of international mobility.

## 3. MAIN FINDINGS

### 3.1. ATTITUDES TOWARDS IMMIGRANTS

In the *ex-ante* questionnaire this dimension was investigated through a battery of *items*, containing different sentences about immigrants. The students were asked to give a score using a *Cantril scale* – from 0 (max disagreement) to 10 (max agreement) – to express their level of agreement with each statement. The items of the battery were also counterbalanced, i.e. alternating positive and negative opinions toward immigrants, in order to reduce the possibility of having response set.

Tab. 1 - *In the box below, there are some statements that we often hear when it comes to the EU. For each of them, please, express your level of agreement. You can use a scale from 0 to 10, where 0 means maximum disagreement, 10 maximum agreement. Of course, you can use any intermediate score. Please, answer in each row:*

	Mean	SD
Immigrants help to raise awareness of my country in the world	7,5	17,4
Immigrants do useful jobs that my fellow countrymen do not want to do	7,4	2,3
Immigrants contribute to the cultural enrichment of my country	6,9	2,5
Immigrants must have the right to vote	6,1	3,2
The spread of immigrants is a good opportunity for the dialogue among religions	6,0	2,8
Immigration is useful to renew our society	5,9	2,5
In my country, the national laws are too favorable to immigrants	5,0	2,7
In my country, there are too many shops owned by immigrants	4,8	3,0
Immigrants have values too different from mine	4,2	2,8
First we need to help our poor fellow countrymen and, only after, poor immigrants	4,1	3,2
Immigrants must preserve their traditions, even if they go against our constitutional principles	3,8	3,4
In my country, since immigration has increased, crime (drugs, prostitution etc.) also increased	3,6	3,1
The new rich in my country are all immigrants	2,8	2,4
Immigrants can bring dangerous diseases	2,8	2,8
Immigrants bring terrorism in my country	2,4	2,8
If immigrants want to live in our country, they have to live in distinct areas	1,3	2,4

In line with other research (Hainmueller and Hiscox, 2007; O'Rourke and Sinnott, 2006; Card, Dustmann and Preston, 2005) which show that determinants like young age and high education promote a more favorable attitude toward immigrants, data analysis shows an extensive attitude of openness and solidarity towards immigrants by our respondents (Tab. 1). This attitude is evidenced by the high average scores expressed in reference to the items: *Immigrants help to raise awareness of my country in the world* (7,5); *Immigrants do useful jobs that my fellow countrymen do not want to do* (7,4); *Immigrants contribute to the cultural enrichment of my country* (6,9). In contrast, lower average scores are attributed by respondents to the items that are negatively oriented towards immigration, as *Immigrants can bring dangerous diseases* (2,8); *Immigrants bring terrorism in my country* (2,4); *If immigrants want to live in our country, they have to live in distinct areas* (1,3).



The most important items were proposed again in the *ex post* questionnaire, in order to assess the effects of the project on participants' opinions (Tab. 2). Data comparison shows some significant differences, especially in reference to positive items, as *Immigration is useful to renew our society* (from 5.9 to 6.7); *The spread of immigrants is a good opportunity for the dialogue among religions* (from 6 to 6.5) and *Immigrants must preserve their traditions, even if they go against our constitutional principles* (from 3.8 to 4.5). In other words, the attitude of our respondents, already characterized by openness and tolerance towards immigrants at the beginning of the project, seems to be further strengthened because of the participation in the project itself and its activities. Data comparison also shows a decrease, at the end of the project, in the agreement with items that refer to "local attitude" as: *In my country, the national laws are too favorable to immigrants* (from 5 to 4.5) and *If immigrants want to live in our country, they have to live in distinct areas* (1.3 to 0.9). An interesting exception is represented by an increase (+1.4) in the agreement with the item *Immigrants have values too different from mine*. This variation can be interpreted assuming that the in-depth study of issues related to immigration helped participants to develop a critical sensibility, understanding the complexity of socio-cultural integration issues.

Tab. 2 - *In the box below, you will find a list of sentences about immigration. For each sentence, please, tell us how much you agree with it. You can use a scale from 0 to 10, where 0 means maximum disagreement, 10 maximum agreement. Of course, you can use any intermediate score. Please, answer in each row:*

	Mean ex ante (a)	Mean ex post (b)	Diff. b-a
Immigration is useful to renew our society	5,9	6,7	+0,8
Immigrants do useful jobs that my fellow countrymen do not want to do	7,4	6,6	-0,8
The spread of immigrants is a good opportunity for the dialogue among religions	6,0	6,5	+0,5
Immigrants help to raise awareness of my country in the world	7,5	5,8	-1,7
Immigrants have values too different from mine	4,2	5,6	+1,4
In my country, the national laws are too favorable to immigrants	5,0	4,5	-0,5
Immigrants must preserve their traditions, even if they go against our constitutional principles	3,8	4,5	+0,7
In my country, since immigration has increased, crime (drugs, prostitution etc.) also increased	3,6	3,7	+0,1
If immigrants want to live in our country, they have to live in distinct areas	1,3	0,9	-0,4

### 3.2 ATTITUDES TOWARDS EUROPEAN UNION

The issue of a European common identity is one of the most important challenges that the EU is called to face. In particular, for a long time a main concern of most scholars (Haste and Hogan, 2006; Dalton, 2008; Stoker, 2006; Pirie and Worcester, 1998 in Horvath and Paolini, 2013) has been young generation's weak sense of citizenship and political participation because of the crisis of traditional identities. However, current studies (Harris, Wyn and Younes, 2010; O'Toole, Marsh and Jones, 2003; Sloam, 2013 in Horvath and Paolini, 2013) have shown that the image of young people not at all interested in politics is quite incorrect. On the contrary, they seem to be very interested in political and institutional issues (Horvath and Paolini, 2013) and to have a stronger European identity (Eurobarometer, 2014). These trends are confirmed by our research. Within this section, some items from Eurobarometer survey and European Social Survey have been proposed, in order to allow a comparison between results. In the *ex-ante* questionnaire, the attitudes toward the EU were investigated through a specific section, containing a set of multiple choice questions (Tab. 3;4;5;6;7). Data analysis shows that, in general, our participants had a positive image of the European Union (64.2%) and declared themselves *interested* in issues related to the EU (85.7%). In line with the results presented by Eurobarometer (2014), our participants (69%) stated that their country benefited from the entrance into the European Union and they were quite favorable to the extension of the European integration process. Asked about the best tools to participate in the EU public life, our respondents, again in line with the Eurobarometer survey (2014), indicated in first place *Vote in the European elections* (48,8%) followed by *Participate in discussions on the Internet / social media of the European institutions* (34,1%); *Be a member or a supporter of European associations* (31,7%) and *Exercise the right of European citizens' initiative* (22%).

Tab. 3 - *Generally speaking, what image do you have of the EU?*

	a.v.	%
Quite positive	24	57,1
Very positive	3	7,1
Neither positive, nor negative	7	16,7
Quite negative	8	19,0
Total	42	100

Tab. 4 - *In general, how much do you feel interested in the issued concerning the EU?*

	a.v.	%
Very interested	19	45,2
Quite interested	17	40,5
A little interested	5	11,9
Not interested	1	2,4
Total	42	100

Tab. 5 - *In your opinion, has your country received benefits from its membership in the European Union?*

	a.v.	%
Yes, it has received benefits	29	69,0
No, it has not received benefits	10	23,8
I do not know	3	7,1
Total	42	100

Tab. 6 - *In your opinion, which of the following methods are the best to ensure that your voice counts in Europe? (You can choose at most two answers)*

	Table N %	Table Responses %
Vote in the European elections	48,8	29,0
Participate in discussions on the Internet / social media of the European institutions	34,1	20,3
Be a member or a supporter of European associations	31,7	18,8
Exercise the right of European citizens' initiative	22,0	13,0
Write directly to the European Institutions	12,2	7,2
Other	9,8	5,8
Write to your MEP (Model European Parliament)	7,3	4,3
I do not know	2,4	1,4
Total		100

Tab. 7 - *Thinking about the European Union, some people say European unification should go further. Others say it has already gone too far. Using the scale below, what number best describes your position?*

Minimum	Maximum	Mean	Std. Deviation
2	10	6,15	2,2

In the same section of the *ex-ante* questionnaire, a battery of sentences about advantages and disadvantages of European integration process was displayed (Tab. 8). Within this section, some items from Ause survey have been proposed, in order to allow a comparison between results. Data analysis confirms an overall favorable attitude towards the EU.

In particular, in line with other contributions about the topic (Felisini, 2012; Bontempi and Bettin, 2008), *mobility* (8,5) was perceived by our interviews as the main advantage of the European integration process. Moreover, high average scores were accorded to other positive statements like *EU supported knowledge, research and scientific progress* (7,6) and *EU promoted the integration of different cultures* (7,4). In contrast, negative items received quite low average scores: *EU made cultural identities and traditions disappear* (4,0); *EU produced and increase in drug trafficking and crimes* (3,2) *“EU created problems of integration between different cultures* (3,1).

Tab. 8 - *I think that the process of European integration has:*

	Mean	SD
Facilitated mobility of students within Europe	8,5	1,8
Supported knowledge, research and scientific progress	7,6	1,8
Promoted the free movement of goods and services by the creation of a common market	7,5	1,7
Promoted the integration of different cultures	7,4	2,1
Promoted the defense of basic human rights	7,1	2,3
Supported democracy	6,7	2,4
Caused a loss of power of the smaller countries	6,6	2,3
Increased jobs transferring to countries where labor is cheaper	6,2	2,4
Caused an increase in prices	6,2	2,8
Encouraged employment through greater labor force mobility	5,9	2,4
Increased economic prosperity through the adoption of a strong and stable currency	5,3	2,8
Favored immigration without control	4,1	3,1
Made cultural identities and traditions disappear	4,0	2,6
Increased drug trafficking and crimes	3,2	2,6
Created problems of integration between different cultures	3,1	2,5

As for the previous section, the most significant items were also inserted in the *ex post* questionnaire, in order to compare results and analyze the project effects on participants' opinions and attitudes toward the EU (Tab. 9). The comparison between *ex ante* and *ex post* data shows that the starting participants' opinions toward the European Union were substantially confirmed and strengthened by attending the project activities. An interesting exception was represented by the variation of the negative item *EU has created problems of integration between cultures*, which increased from 3.1 to 4.2. This difference can be explained by assuming that the in-depth study of the immigration topic and the comprehension of its related issues made the young participants more aware of the weakness and difficulties in managing the phenomenon by the EU.

Tab. 9 - *I think that the process of European integration has:*

	Mean <i>ex ante</i> (a)	Mean <i>ex post</i> (b)	Diff. b-a
Facilitated mobility of students within Europe	8,5	8,5	0
Supported knowledge, research and scientific progress	7,6	7,3	-0,3
Promoted the integration of different cultures	7,4	7,2	-0,2
Promoted the defense of basic human rights	7,1	7,1	0
Supported democracy	6,7	6,9	+0,2
Caused a loss of power of the smaller countries	6,6	5,8	-0,8
Favored immigration without control	4,1	4,6	+0,5
Created problems of integration between different cultures	3,1	4,2	+1,1

### 3.3. OPPORTUNITIES AND SKILLS

As shown by respondents' answers (Tab. 10), the participation in the project was perceived, above all, as an opportunity to *meet new people from different countries* (9,2) and *live a new experience*, different from their everyday life (8,6).

Participants considered the project as a chance for *testing themselves in a new context* (8,2) and *improving the knowledge of another language* (8,1) while *having fun* (8,1). Moreover (Tab. 11), respondents stated that the project contributed to expand their *knowledge of other cultures* (7,6) and their *knowledge about migration* (7,4). The project was favorably perceived by participants, especially in terms of development of interpersonal skills, as the *ability to adapt to changes* (8,4) and *to get along with different kinds of people* (8,3).

Moreover, respondents believe that participation in the SUM project contributed to develop their *linguistic skills* (7,7); their *ability to present ideas / report them to an audience* (7,7); their *ability to come up with new ideas and solutions* (7,6) and their *ability to work productively with others* (7,5).

Tab. 10 - *Taking part in this project gave me the opportunity to:*

	Mean	SD
Meet new people from different countries	9,2	1,3
Live a new, different experience	8,6	2,0
Prove myself in a new context	8,2	2,1
Have fun	8,1	2,1
Improve my knowledge of another language	8,1	1,5
Improve my CV	7,9	2,0
Acquire new skills	7,7	2,3
Experience different educational methods	7,6	2,0
Satisfy my personal interest in the issue of migration	7,6	2,2
Deepen topics that are not addressed in depth in traditional university programs	6,9	2,6
Feel more "European"	6,9	3,0
Enhance job opportunities for the future	6,9	2,1
Visit a foreign country	5,5	4,3

Tab. 11 - *To what extent, do you think that the project has provided you with each of the following skills?*

	Mean	SD
Ability to adapt to changes	8,4	1,7
Ability to get along with different kinds of people	8,3	1,7
Linguistic skills	7,7	2,1
Ability to present your ideas/report them to an audience	7,7	2,1
Knowledge of other cultures	7,6	1,9
Ability to come up with new ideas and solutions	7,6	2,0
Ability to work productively with others	7,5	1,9
Knowledge about migration	7,4	2,5
Attitude to critical thinking	7,3	2,4
Ability to coordinate the work of other people	7,3	2,0
Ability to clearly express your ideas	7,3	2,2
Ability to negotiate your ideas	7,2	2,0
Computer skills	4,8	3,3

In order to assess the project effects on participants' knowledge about migration, this item was assessed both *ex ante* and *ex post* (Tab. 12). The comparison between the two scores shows a significant change: knowledge on migration goes from 5.3 (before the project) to 8.3 (after the project), demonstrating the effectiveness of the educational activities. Both the interdisciplinary perspective and (ICT-based) collaborative learning approach were effective in promoting the understating of a complex and multidimensional phenomenon like migration.

Tab. 12 - *How would you rate your knowledge of the topic Migration?*

<i>ex ante</i>		<i>ex post</i>	
Mean	SD	Mean	SD
5,3	2,3	8,3	1,2

At the end of the project (Tab. 13), respondents feel more *sociable* (7,8); *tolerant* (7,8); *open minded* (7,7), *self-confident* (7,4) as they were more *aware of their abilities and limitations* (7,6).

The comparison between the set of items included both in the *ex-ante* questionnaire (for the assessment of expectations) and in the *ex-post* questionnaire (for the assessment of satisfaction) shows that participants' expectations, particularly high at the beginning of the IP activities, have been altogether fulfilled (Tab. 14). In particular, the expectation to *Meet people from different countries*, that was perceived by our respondents as one of the most important factors in the decision of taking part in the project, was fully satisfied (from 9.1 to 9.2). The comparison between the *ex-ante* and *ex post* results highlights other positive changes, in particular with respect to the items *Prove myself in a new context* (from 7.9 to 8.2); *Have fun* (from 7.3 to 8,1) and *Improve my CV* (from 7.2 to 7.9).

These results underline that participants considered the project as an opportunity to test and increase their set of skills testing themselves in a new and challenging situation.

At last, the positive change in reference to the item *Feel myself more European* (from 6.2 to 6.9) is particularly significant as it shows that the project has achieved one of its main goals: strengthening the European sense of belonging and citizenship among participants.

Tab. 13 - *After the project, to what extend do you feel more (from 0 to 10):*

	Mean	SD
Sociable	7,8	2,4
Tolerant	7,8	2,4
Open minded	7,7	2,2
Aware of your abilities and limitations	7,6	2,0
Self confident	7,4	2,0
Mature	7,4	2,3
Creative	7,1	2,7
Inquiring	7,1	2,2
Flexible	7,1	2,4
Independent	7,0	2,5
European	6,4	3,1

Tab. 14 - *Taking part in this project gave me the opportunity to:*

	Mean ex ante (a)	Mean ex post (b)	Rank ex ante	Rank ex post	Diff. b-a
Meet new people from different countries	9,1	9,2	1	1	+0,1
Live a new, different experience	8,6	8,6	2	2	0,0
Prove myself in a new context	7,9	8,2	6	3	+0,3
Have fun	7,3	8,1	7	4	+0,8
Improve my knowledge of another language	8,2	8,1	4	5	-0,1
Improve my CV	7,2	7,9	8	6	+0,7
Experience different educational methods	8,0	7,6	5	8	-0,4
Deepen topics that are not addressed in depth in traditional university programs	7,2	6,9	9	9	-0,3
Feel myself more "European"	6,2	6,9	11	10	+0,7
Enhance job opportunities for the future	7,2	6,9	10	11	-0,3
Visit a foreign country	5,9	5,5	12	12	-0,4

#### 4. CONCLUSIVE REMARKS

As a final remark, we would say that our research findings seem to confirm and strengthen the idea that learning in small groups is an appropriate way to make students not only benefit, but also enjoy the learning experience (Griffiths, 2000, p. 74). IP students – as well as most of teachers – strongly appreciated what the educational project intended to do, in terms of knowledge and skill as well as inter-cultural collaboration and identity building. We can also say that our approach, based on problem-based learning (where «all learning of new knowledge is done within the context of the problems»: Hughes and Overton, 2000, p. 232), seems to have helped participant students to acquire both new individual skills and an improved ability to work together (*ibidem*). Moreover, these educational results were obtained in an international environment.

Therefore, the educational methodology we used in the SUM project has proven to be a useful tool to achieve – albeit, perhaps, not in the same measure – the educational goals at stake in the making of a learning society on an EU (thus, inter-national, inter-cultural) scale. According to the evaluation findings we discussed in this paper, all participants students seem to have improved their level of knowledge, skills, personal development, and collaborative attitude. Of course, according to some scholar these results can be criticized for their seemingly implicit adhesion to neo-liberal ideology (Jarvis, 2007, pp. 96-121; see also Maddaloni, 2007). Nevertheless, we believe that – despite this ideological underpinnings – ICT-based collaborative learning can contribute to the building of a new European identity and citizenship.

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## M-Learning In The Transmission And Sustainability Of Cantonese Opera In Ksk Art Crew

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### ABSTRACT

Yueju (Cantonese opera), which originated in Southern China, has a long history in the genre of Chinese opera. This study examines how KSK Art Crew sustains this genre in Malaysia and examined the changes in its transmission processes. Past literatures reveal a number of published research monographs and articles on *yueju* in mainland China and the diasporic Chinese communities in the United States. This study focuses on KSK Art Crew, led by Kam Sin Kiew, and its innovative teaching methods and continuous effort in the sustainability of Cantonese opera in Malaysia. Findings reveal how Kam, the artistic director and founder of KSK Art Crew led new approaches in the teaching of *yueju* incorporating technological advances, M-learning approach, and pre-recorded music accompaniment that led to aesthetic and pedagogical changes. In addition, how performances were re-contextualized in the form of a dinner-show to adapt to the modern Malaysian audience is discussed.

### INTRODUCTION

*Yuejü* or Cantonese opera (粵劇) originated in *nanxi* (*namhei* in Cantonese), a form of Southern theatrical performance during the 12<sup>th</sup> century. *Yue* in Chinese refers to the city of Guangdong (Yung, 1989). It is a form of Chinese traditional performing arts that combines singing, acting, music, martial arts, acrobatic movement and elaborated costume based on historical stories or legends (Leong, Burnard, Jeanneret *et al.* 2012). *Yuejü* rose to popularity in the mid nineteenth century (Grout and Williams, 2003), while Chen (1991) claims that its peak was around the 1930s in China. *Yuejü* was a male-dominated profession until the twentieth century, when around the mid-1920s female cross-dressers became popular (Stokes, 2009). Famous artists in Cantonese opera were labelled as *sida tianwang* (four super stars, 四大天王) or *pinghou sidatianwang* (four great male vocalists, 平喉四大天王). Characterization and roles in *yuejü* such as *sang* (male role), *dan* (female role) *zing* (heroic role) and *cau* (clown figure) are similar to other form of Chinese opera. The essence of acting in a *yuejü* requires *cheong* (singing), *nin* (dialogue), *zok* (movement) and *da* (martial arts). The colour signifiers of its costume and make-up are red (loyalty and bravery), black (virtuous), white (crafty and sinister), blue (violence) and yellow (intelligence).

Reviewing literature concerning *yuejü*, scholar Yung published a few pieces in English. Yung examines the creativity process and *yuejü* performance practice. Four music styles are used in Cantonese opera: 1) speech-type, 2) aria-type, 3) fixed tune, and 4) narrative songs. His other published articles (Yung 1983a; 1983b; 1983c) describe the linguistic tones used in Cantonese opera, the method of *t'ien tz'u* (text-setting) and the method of padding syllables. The text of *bong wong* (aria type) in Cantonese opera was explained in Yung (1983a). Yung identified the historical background of *yuejü* and explained the nature of pre-existing tunes which a singer must know by heart, and notes that a scriptwriter would later mark only the titles of tunes to be sung by the singers based on the text (1989).

Another scholar, Su (2010) provided a detailed introduction to this art form in the Chinese diasporic community, its origin, role and its music, and defined three types of performance common in New York: 1) *Yuequ* (or *yutkuk* 粵曲, Cantonese operatic songs), 2) *Ze zi xi* (*jit ji hei*, 折子戏, extracted scenes or acts from a full opera) and 3) *Yue jü* (full-scale opera, 粵劇). Su (*ibid.*) explains that Cantonese opera is very adaptive in nature and can easily be fused with Western, popular or commercial genres. Some changes have taken place, such as in instrumentation. In *yuejü*, the *erhu* leads the ensemble while percussion has a role in keeping the pace of the performance. Yee (1998) explained that its original instrumentation consisted of the *erxian* (two-stringed fiddle), *zhutiqin* (bamboo fiddle), *yueqin* (moon-shaped plucked lute), *xiao* (vertical flute), *luo* (gong), and *gu* (drum). From the 1940s onwards it was orchestrated with instruments from the West such as violin, saxophone and steel guitar, along with expanded Chinese instruments: *yangqin* (dulcimer), *pipa* (four-stringed plucked lute), *dizi* (bamboo flute), and *suona* (double-reed instrument). Other scholars such as Leong *et al.* (2012) and Leung (2014) discussed its

pedagogical approach via oral transmission and apprenticeship.

In Malaysia, *yuejü* may be generalized by laymen as *daxi*, which it can refer to other forms of Chinese opera. In the early days, such as the authors' grandparents' time, the older generation had a common saying of '*qu kan daxi* [go and watch Chinese opera]' and *yuejü* was performed on a simple temporary stage in *kampong* (villages). In contemporary Malaysian society, the decline of *yuejü* as education, performance and entertainment is obvious. Therefore, the KSK Art Crew led by Kam Sin Kiew, based in the national capital Kuala Lumpur, revived the art in various ways. This study reports on Kam and her efforts, including changes in the context of *yuejü* via her transmission approaches and performances.

Founder Kam Sin Kiew, after whom KSK Art Crew is named, is not Malaysian but came from Hong Kong and was born in 1948. Kam's father was a professional *yuejü* artist who led a troupe in Guanzhou, China, and fled to Hong Kong during the Cultural Revolution. Kam along with her siblings continued their father's legacy in *yuejü* training. An accomplished performer, she had performed in Hong Kong and abroad in countries such as the United States, United Kingdom, Australia, Canada, Switzerland, Singapore, Indonesia and so forth. Kam arrived in Malaysia in 1983, married her (now ex-) husband and has remained in this country since then. She started out as a fashion designer but soon found that did not prosper well and returned to her passion, *yuejü*. Kam became a member of local Chinese associations and was soon invited to teach *yuejü*. It was then that she decided that *yuejü* was her fate and it became a catalyst for her playing a role in developing *yuejü* in Malaysia.

Kam founded Kam Sin Kiew Art Crew (KSK) and became the producer and artistic director for their performances. Another important figure is music director Ronald Poon Kong Kam, an accountant who is a *yuejü* aficionado and had training since childhood. Along with Kam are resident performers Lee Mei Wan, Lee Yuen Lin, Sam Yip, Yap Qiu Peng, See Wan and Jimmy Cheah. Lee is a school principal who joined KSK after she retired and became a resident performer and apprentice with Kam as her mentor. Lee Yuen Lin is an accountant turned house wife who began to learn *yuejü* in 2009 and also acts as the finance officer for KSK. Sam joined Kam in 2009 and Yap became a resident performer a year later. Cheah joined in 2012, introduced by Lee Yuen Lin, and See Wan, Kam's daughter, began her training when she was nineteen years old.

## THE STUDY

Technological advancement, globalization and westernization perhaps are always factors in the decline of traditional and folk arts. However, in Malaysia, the *yuejü* positioned in a country where Chinese remain the minority population, faces further challenges to its survival. Studies such as those by Loo and Loo (2012) and Loo and Loo (2014) reveal how Chinese folk music and *shidaiqu* went through re-contextualization in meeting contemporary Malaysian audience needs and KSK Art Crew is not an exception to this phenomenon. In this research, an ethnographic approach was carried out, along with interview in examining how Kam Sin Kiew, the artistic director of KSK Art Crew experimented with different ways of sustaining the *yuejü* in Malaysia, and in addition, how transmission methods changed in adapting to the contemporary practice of *yuejü* in Malaysia. This section discusses KSK Art Crew's transmission methods. Thirty rehearsals and training sessions at Kam's residence were observed. How Kam incorporated a M-learning approach in transmitting Cantonese opera is described, and how technology plays a role in its performances is discussed.

## FINDINGS

A lesson at KSK costs RM40 (USD10) for a two-hour session. As most of the performers are still under apprenticeship, each pays a RM500 (USD135) fee to perform for KSK. Kam then makes up for costume, make-up and stage setting. Therefore, performance is a part of the training for KSK's apprentices. Preparation for performances such as *Chingay* festival at Johor Bahru YEAR YEAR YEAR, *A Night of Cantonese Opera*, and *Empress Wu* was carried out at Kam's house. Three months of rehearsals took place at 8pm in the evenings since most of the performers have day-time jobs; more flexible time can be allocated during weekends. As Leung (2014) explains, up to the present oral transmission has been the main method of learning *yuejü*. At KSK Art Crew, oral transmission was employed in the absence of notation, and this makes rote learning and imitation the two main approaches in Kam's training structure that consists of: 1) basic warming up exercise, 2) steps with music and 3) body and hand gesture with music.

In addition, Kam employs a mobile phone as an M-learning device to make a video recording of her students' movements during class, which is not part of *yuejü* traditional pedagogy and performance practice. Playback is used to show a student which part he or she managed well or where mistakes were made. A student is able to watch his or her singing and movement. A collection of video clips becomes a resource that serves as a reference or guided learning after leaving class. A video clip captured by Kam's mobile phone also serves as a reflexive way of training in which Kam and student continue to discuss and correct posture, movement, singing and so forth. In

this way, it is observed that students grasp their mistakes faster than with verbal instruction alone. Since the conventional pedagogical method involves oral transmission, a mobile device with video capturing singing and movement then changes its context and forms a documented instruction, personalized to each student's progress.

Another technological input is the use of a karaoke system, not a new technological approach but one which differs from conventional *yuejü* pedagogy. This changes the context of oral transmission in its traditional practice. Performers learn a particular *yuequ* through karaoke playback where the highlighted cues of text on screen mark the entry for the singer. Students no longer need to memorize from Kam demonstration, and with the ease of karaoke, the same song can be repeated. At the same time, students can watch the performers' expressions. In addition, music accompaniment comes with the karaoke and this has eliminated the challenge of finding musicians who can play *yuejü* who are hard rare these days.

Observation of a few performances by KSK Art Crew shows that live music accompaniment with musicians experienced in *yuejü* is now rarely found in Malaysia. The only performance KSK Art Crew performed with live musicians during the course of this study's fieldwork was for Chingay Festival at Johor Bahru in 2013. The troupe performed on a temporary stage near a temple and functioned as a performance for the deities. However, based on the first author's experience, there was a difficulty, a mismatch because the performers were trained using the key of the karaoke recording, while the musicians played in a different key familiar to themselves.

Other productions such as *A Night of Cantonese Opera* (2012), *Empress Wu* (2013) and a restaurant performance (2014) employed minus-one as its music accompaniment. *A Night of Cantonese Opera* was a *ze zi xi* performed at The Actor's Studio in Kuala Lumpur where *Romance of the Red Pear Flower* and *Legend of the Moon Fairy* were among the *yuejü* selection. Tickets were not expensive and cost RM23 and RM32. *Empress Wu* was performed at Kuala Lumpur Performing Arts Centre on a *t'ien t'zu* basis where familiar *yuequ* was used with new text. In these performances, pre-recorded music was used for accompaniment. Therefore, the minus-one music accompaniment acts as a mobile-orchestra. The absence of live musicians eliminates the cost of hiring professional musicians, and performers found that this lessens the risk of key change compared to the performance with live musicians at *Chingay Festival*.

Due to the low demand for *yuejü*, in 2014, KSK Art Crew came up with a new context of performance in the form of a dinner show at a local restaurant with presentation of selected *yuequ*. A ten-course Chinese dinner was part of a ticket costing RM120. This attracted a larger audience and Kam managed to receive ten tables of booking. Various *bong wong* and *siu kuk* was selected. This too employed minus-one music as accompaniment and the absence of a musicians' platform saved space for a restaurant performance. All performances using minus-one music accompaniment were amplified and thus the traditional acoustic aesthetic of *yuejü* faces changes in a modern theatre setting.

## CONCLUSIONS

In a summary, this study shows Kam and KSK Art Crew involves an integration of 1) teacher's verbal instructions, 2) video recording of student's performances, 3) teacher and students' reflexive accounts, 4) karaoke, and 5) minus-one music accompaniment that act as a mobile orchestra in the transmission of Cantonese opera learning and its performance. A few drawbacks of these changes are inevitable. Firstly, the absence of *yuejü* traditional aesthetic is due to the replacement of musicians and live music accompaniment by minus one pre-recorded music accompaniment. This technological advance also becomes another crucial factor in the dying tradition of musicians trained for *yuejü* since they are being replaced with recordings. Secondly, due to the low interest in this traditional art form, most KSK Art Crew participants are senior citizens. It is difficult to employ youth to become apprentices to develop as professional artists. Furthermore, a *yuejü* is supposed to be learned from youth, starting at an older age sacrifices important acrobatic components in *yuejü* such as martial arts movements.

On the other hand, the pros of M-devices in the form of minus-one music accompaniment enable a lower production cost, and music and singing amplified via head-held microphone and sound system adapts to a modern theatre with a larger capacity seated audience. Furthermore, teaching using a mobile device as a video recorder for an immediate reflexive discussion and as a reference in the form of a guided learning away from the classroom forms another improvement in the course of learning. Files of video recordings saved and documented on to smart phone provide an M-learning delivery method in the transmission of *yuejü*. Thus technological advancement has perhaps helped in a certain way in the transmission and sustainability of *yuejü* albeit with the loss of some of its traditional aesthetic.

### Acknowledgement

This study is supported by FRGS (FP035-2014B) and a token of appreciation to Madam Kam Sin Kiew and all members from KSK Art Crew.

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## Modified Explanation Of Java Object Constructs Helping With Their Understanding

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### ABSTRACT

Most textbooks and courses explain the basic object oriented (OO) constructs in a very similar way. Extensive experience with teaching different kinds of courses at various levels, from primary and secondary schools to universities and retraining courses for professional programmers shows that many students have difficulties with this traditional approach to the explanation of basic OO constructs. The paper shows a little modified approach to this explanation that is based on the *Architecture First* methodology and that may lead to a better understanding of these constructs.

**Keywords:** OOP, architecture first, teaching, introductory courses

### INTRODUCTION

The Object Oriented Programming (OOP) is a fundamental paradigm of modern programming languages. Over the last 15 years we have been teaching OOP at computer clubs to students from primary schools as well as from high schools, grammar schools and universities. At the same time we have been teaching industry-based courses to retrain professionals from structured programming paradigm to OOP and to improve their knowledge and skills. As a result, we gained the experience with teaching a wide range of students from complete beginners to students with advanced knowledge of programming obtained from textbooks or other courses.

In our university we use the Java language in the introductory courses. Therefore we concentrate in this article on Java courses and textbooks, although we encounter similar problems in textbooks and courses dealing with other programming languages. Often we can use the modifications we suggest for teaching Java in these languages, too.

Both beginners and advanced programmers experience the problems with mastering certain object oriented constructs. We have succeeded in modifying the typical explanation of OO constructs so that the beginners improve their understanding and the advanced programmers learn how to avoid poor programming habits acquired as a result of incorrect understanding of OOP.

### Summary of perceived problems

Almost all Java textbooks explain the basic object oriented constructs in the way that is more or less borrowed from older C++ textbooks. However, such explanation involves many definitions that are difficult to understand for the beginners. From their point of view these constructs are often inconsistent and confusing.

In addition to these basic constructs several secondary constructs are explained as the new ones, but using a slightly modified explanation, we can explain the secondary constructs as natural extension of those basic ones. Moreover, we can refer to the constructs that students have already mastered. This slight modification can improve the understanding of both sets of constructs. Furthermore, this decreases the number of problems that the students may encounter when using these constructs in their programs.

Our experience has shown that it is useful to explain the following topics in a slightly different way than textbook authors have done so far:

- what the term *object* means,
- the difference between objects and classes,
- the difference between instances and class members,
- the concept of the interface,
- the constructors and the construction of objects,
- the keyword *this*,
- the class inheritance.

In the following sections we deal with each of the above mentioned topics and show the modification of explanation that proved useful in our attempts to improve understanding of the subject matter.

We have compared our method with the following textbooks Arnold, Gosling & Holmes (2005), Barnes & Kölling (2011), Briant (2011), Burd (2014), Deitel & Deitel (2011), Eckel (2006), Fain (2004), Horstman (2007), Horstman

& Cornell (2012), Horstman (2013), Liang (2014), Morelli & Walde (2006), Savitch (2011), Schildt (2011), Schildt (2014), Sierra & Bartes (2009), Winder & Graham (2006), Wu (2009), Zakhour, Kannan & Gallardo (2013) and Zukowski (2002). We can divide these textbooks into three groups:

- Barnes & Kölling (2011), Horstman (2007), Horstman (2013), Sierra & Bartes (2009) and Wu (2009) mainly concentrate on explanation of the best programming practices. They intend to teach how to think and how to program in a *true* object oriented way.
- Arnold, Gosling & Holmes (2005), Eckel (2006), Horstman & Cornell (2012), Schildt (2011), Zukowski (2002) – mainly teaching the language with its APIs. Teaching the art of programming is secondary.
- The remaining texts declare that they teach OOP; however the style of explanation and the discussed topics indicate that they belong to the second group.

We note that the objective of this article is not to review the above mentioned textbooks, but to use them as examples of the traditional way of explanation of object oriented constructs and compare them with the proposed approach. We are not going to enumerate the explanations of the topics in the above mentioned textbooks, but we focus on summarizing these approaches.

### EVERYTHING IS AN OBJECT

The textbooks explain the term *object* in two ways:

- most of them explain it using *real* world examples,
- the others do not explain it and assume that it is a generally known term which does not need a special explanation.

In both cases students meet similar problems. Their general understanding is that an *object* is something tangible; they have not come across the idea that objects are used also for representing abstract ideas (e.g. beauty, size, direction, connection, interruption, calculation, etc.). None of the analyzed textbooks use such objects in early examples.

If the students meet such objects in a program for the first time, it takes some time until they accept the fact that abstract ideas can be also represented by objects.

We have discovered that it is useful to explain to students at the very beginning that in object oriented programming everything that can be expressed by a noun, including the abstract terms mentioned above is treated as an object. Some students may be confused by it for a while, and they find it difficult to describe an abstract term by means of an object. Therefore, we explain that in programs each object is represented with a set of data items (attributes) that describes the object. From the program's point of view the object is just this set of attributes and it does not matter whether the set represents a *physical* object or an abstract idea.

Most students quickly understand that besides the attributes that characterize cars, chairs, animals or other physical objects they can equally define attributes that characterize colors, directions, beauty, connections and other abstract terms. To facilitate this understanding, we have to use objects of this kind often at the very beginning of the course. Among suitable candidates for these *abstract* objects are, for example, the characteristics of graphical objects such as colors or directions.

### CLASSES VERSUS OBJECTS

In most textbooks the class is explained as an abstraction describing some properties of a group of objects, which we call instances of their parent class. Authors often explain that the class serves as a blueprint or a template for the objects that the program uses. Some authors note that we can look at the class as a factory capable of creating objects on demand.

Students sometimes struggle with understanding the difference between classes and objects, especially when we introduce static attributes and methods. Our experience shows that students understand this topic better, when we explain that classes are also objects (we treat everything that can be named by a noun as an object, therefore the classes should also be treated as objects). Students, which have already their first experience with abstract objects, as a direction, color or beauty, have no significant problem with accepting that the classes are also objects.

This concept is (unintentionally) endorsed also by IDE *BlueJ*, which we use in our introductory programming courses. In *BlueJ* we work with classes and objects in a very similar way. Classes as well as their instances are represented by rectangles, whose context menus display all messages that can be sent to the corresponding object (a class or an instance). The only difference is that classes are shown in the class diagram while instances are shown in the object bench. Thus the students find this explanation consistent with their experience.

We explain that several languages (e.g. Smalltalk) classify the classes as standard objects (and therefore they allow e.g. to save these objects in variables), however it leads to a little complicated architecture of the class hierarchy; and therefore the authors of Java and similar languages implement the classes in a different way, which is much understandable for an ordinary programmer. In these languages the classes are special objects with special properties:

- They are the only objects that can create new objects called instances of their mother class. When advanced students complain that other objects can also create new objects, we explain, that these “other objects” can only return objects that are originally created by certain class. A new object can be created only by its mother class.
- In Java language and similar languages the classes are the only objects that are not instances of any class. We should address the classes in programs directly by their names; however, we cannot assign a class to a variable.
- Classes are represented by a special kind of objects – the class-objects. In Java the class-objects are instances of the Class class. When we want to save the class for certain future use, we should save its class-object. However, we should keep in mind that this class-object is not the class itself; it is just the representative of its class.

It is quite astonishing how this small difference in explanation helps to students to understand the term class and how it helps them to solve some more complex problems.

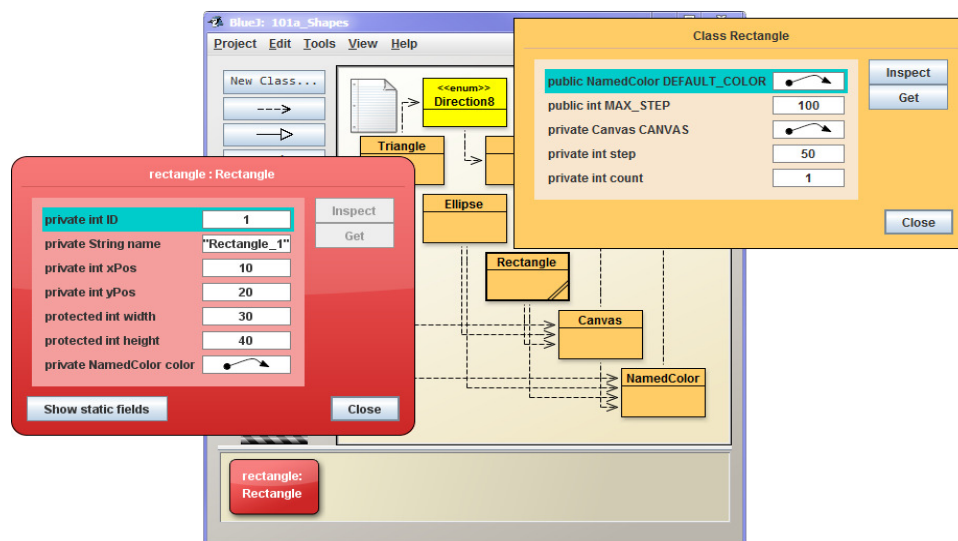
Introduction of classes as a special kind of objects helps also in the explanation of other topics:

- Students have fewer problems with understanding the difference between the class and the instance members (attributes and methods), and they can use both almost from the beginning of the course.
- Students understand more easily the rules for loading a class by a ClassLoader and later on it helps them to understand better the principles of inheritance.

### INSTANCE MEMBERS VERSUS CLASS MEMBERS

Within typical style of explanation many students have problems with understanding the difference between the static and instance members. The textbooks, which try to explain not only the syntax and libraries, but also the art of programming, therefore place the explanation of static members often far behind the first introduction of objects and their members.

However, when we utilize the basic rule that the classes are similar objects as their instances, the students have no problems to accept that the classes need also their members – attributes and methods. Here *BlueJ*, which inspects both kinds of objects in the similar way, helps again (see figure 1). Thus we can start to use both kinds of members very soon.



*Figure 1: Inspection of class and its instance*

During our courses, when we leave the interactive mode, where the code is written by the code generator, and start writing the code “by hand” (Pecinovský & Kofránek 2013), it emerged that it is very useful to split up the source code into two parts: the first one engages in the class members and the second one in the instance members.

The standard conventions split up the code into parts engaging in properties (attributes, fields) and behavior (methods) where the class and instance members are often mixed. However, this organization seems to be very confusing for the beginners. The code is much clearer for them, when it is firstly split up into class and instance sections and only then each of these sections is further split up into subparts for fields, constructors, and methods.

## INTERFACES AND INTERFACE TYPES

Programming groups' managers often complain that most graduates in software engineering and computer science perfectly know how to implement the given interface; however, they are not able to recognize the situations, where certain interface should be introduced in the developed architecture.

It seems that this is a consequence of too late introduction of this programming construct in the courses. Take into mind several facts:

- The classic book Gamma, Helm, Johnson & Vlissides (2005) together with many others instruct: *"Program to an interface, not an implementation."*
- Java language (and many other languages, too) incorporates the programmatic construct interface that can represent the general interface as a kind of the data type in the program.
- The *Early Bird* pedagogical pattern in Bergin (2012) encourages: *"Organize the course so that the most important topics are taught first. Teach the most important material, the "big ideas", first (and often). When this seems impossible, teach the most important material as early as possible."*

Naturally, this leads to a recommendation to incorporate the interface data types and their implementation into the explanation as early as possible. In addition we should explain not only how to implement the interface, but also the reasons why the interfaces are incorporated into the project architecture.

In our courses we explain interfaces together with their purpose and usage in the second lesson, just after the introduction of objects and classes. We also start very soon assigning homework where students should design interfaces of their own to complete the project successfully.

## DESIGN PATTERNS EXPLANATION

The next important subjects, we should explain from the very beginning, are the design patterns. (We can again mention the *Early Bird* pedagogical pattern.) We introduce the basic concept in the first lesson and we start using it and teach how (and why) to use it from the second lesson together with the explanation of the interface.

In fact we start to solve our problem with using the *Servant* design pattern and as a consequence the necessity to use (and therefore also to explain) the interfaces.

Starting from the second lesson we introduce the next design pattern (or several design patterns) in almost each lesson, because we need it (them) for solving the current problem.

Thanks to so early introducing and continuous using of design patterns the students accept them as something common and they naturally use them in their programs from the very beginning.

## THE KEYWORD/PARAMETER THIS

Another topic whose understanding sometimes causes problems is the keyword *this*. The textbooks differ in its explanation. We can divide these explanations into three groups:

- The explanations from the first group do not mention the meaning of the keyword *this* separately. They only explain what does it mean the expression *this.something*
- The explanations from the second group explain that *Java defines the keyword this that can be used inside any method to refer to the current object* or that it is useful when you need to refer to the instance of the class from its method or something similar. Not a mention about the connection of the keyword *this* with the method parameters.
- The explanations from the third group explain that beside the explicit parameters there is also the implicit one. Its name is *this* and it contains the reference to the invoking object.

Only the third group of explanations describes the real nature of *this* and can fluently continue with explanation that the expression

`instance::method`

determines a lambda expression, of which the first parameter is the method's implicit parameter *this*. The others have to introduce *this* in the role of the first parameter as a new programmatic construction.

## CONSTRUCTOR

The next topic causing sometimes problems is the definition and properties of constructors. Almost all textbooks follow the original description published in Strstrup (1991), which says: *"Constructor is identified by having the same name as its class."* The text does not specify if the constructor is or is not a method.

The above mentioned textbooks differ in the explanation of what is a constructor.

- Arnold, Gosling & Holmes (2005) and Horstman (2007, 2013) explain that a constructor is not a method and therefore it may not return anything. Accepting this explanation leads us to assign the responsibility for returning the new object to the new "operator"<sup>1</sup>.
- Others define the constructor as a special kind of a method having the same name as its class. But they still tell nothing about the returning values.

<sup>1</sup>

De iure the new is not an operator, however, many teachers and programmers understand it so.

However, nobody explains why the reflection, exceptions and almost all debuggers use the name `<init>` for the constructor. The approaches to this problem can be again divided into three groups:

- The textbooks from the first group do not contain any mention about the possibility to meet the identifier `<init>` by debugging or in stack trace description (these textbooks do not contain any stack trace with this identifier).
- The textbooks from the second group show this identifier in some stack trace description, but they ignore its strangeness and do not contain any mention what the strange identifier is like.
- The textbooks from the third group reveal, that in debuggers and the stack trace descriptions the constructors are named `<init>`, but they do not discuss the difference between this name and the name introduced in the first explanation of constructors.

When we look at the constructor syntax we can interpret it in two ways:

- as the method identified by its class name and declaring no return type,
- as the method identified by the empty string and declaring its class as its return type.

Taking the constructor as the method with the name equal to its class and not declaring the type of its return value, we should introduce a new construct `this(...)` serving for invoking another constructor and transfer the responsibility for the initialization of the created object to it.

On the contrary when we use the explanation that the constructor is a method with an empty name, we can explain the construct `this(...)` as a natural extension of the known rules. This explanation is closer to the actual implementation. Therefore it appears that it is more efficient to explain constructors in this way and explain them as the methods with special properties:

- In Java the internal name of constructors is `<init>`. However, this name (deliberately) violates the rules for identifiers and therefore in the source code the constructors are declared as methods, the names of which are empty strings (methods with empty names).
- The constructor must return a reference to the newly created object. This reference is obtained from the hidden parameter `this`, which is initialized by the caller. Because the returned value is known *a priori*, the language syntax theoretically does not need the statement  
`return this;`

In fact, we may not write it, it is inserted by the compiler on our behalf to prevent mistakes.

- The constructor can be used only for the initialization of the newly allocated memory and therefore it can be invoked only by the new “operator” or by another constructor of the same class. In the latter case the invocation statement must be the very first statement of the calling constructor body to ensure that the memory is not yet initialized.

After the above explanation the students understand the explanation of the following syntactic rules much better. We explain:

- Constructing of a new object proceeds in two steps:
  - Firstly, the new “operator” is called with a parameter defining the name of the class, whose instance we want to create (the parent class). This parameter determines the size of the memory allocated for the created object and it also specifies other information needed for creating the object (e.g. the reference to the mother class). Additionally, the allocated memory is filled with zeroes and/or compile-time constants.
  - Secondly, the “empty-string” method (constructor) is invoked with the argument `this` pointing to the allocated memory and possibly also with other arguments. The constructors’ task is to initialize this memory so that it would correctly represent the object.

We can outline the described behavior by writing the statement in two lines:

```
new ClassName //Invoking the new "operator", memory allocation
(*parameters*); //Invoking the constructor
```

- As we have noted, the constructor can be used only for initialization of the newly allocated memory. If it is invoked by another constructor, this invocation must be really the first statement in its body. Nothing may precede it, nor an opening brace.
- If the constructor delegates its responsibility for initializing the object to another constructor, it should qualify this invocation by `this` as we are used to do with normal methods. However, in this case we do not write the *dot*. Thus, instead of writing  
`this.(*parameters*);`  
 (we know, that constructor’s source code name is the empty string) we write only  
`this(*parameters*);`

When we explain constructors in this way, the students more easily understand the statement `this(...)` as a tool for delegating the responsibility for initializing the object and they also understand what the `<init>` appearing in exception messages or debugger windows means.



This explanation establishes a good basis for the following explanation of static initializers and invocation of super constructor. Everything fits logically together.

When the above explanation is used the students sometimes complain that the object is not created by the constructor but by the new “operator”. We can use the following analogy: “Who makes cups?” They answer: “A potter.” Then we explain that the allocated memory serves similarly as potter's clay and that the constructor processes this memory similarly as the potter processes the clay. Using this analogy, we regard the constructor as the author of the created object.

## INHERITANCE

The most common problem with teaching inheritance is that it is taught too early. Some textbooks deal with it immediately after the first introduction of objects and classes.

For now we ignore the rule that if we want the students to acquire the knowledge of the OO paradigm well, we should not explain the concept of inheritance until we explain the concept of interface (a general interface as well as the Java construct interface). These problems are discussed in Pecinovský, Pavlíčková & Pavlíček (2006), Pecinovský & Pavlíčková (2007) and Pecinovský (2009a) during explaining the *Design Patterns First* methodology, which was the precursor of the *Architecture First* methodology used now. From the textbooks mentioned at the beginning of this paper only Horstman (2007) explains the interface before the inheritance.

When explaining the inheritance all the above mentioned textbooks clarify that a child should represent a special kind of its parent. However, particular textbooks do not put the same emphasis on it. Mostly, they mention this rule only at the beginning of the explanation of inheritance and then they show only how we could use the inheritance to avoid writing an additional code. Unfortunately, the majority of programming textbooks do not present bad examples of inheritance usage at all. This would warn the reader of using a bad design in proper time. After such explanation the students often remember only that the inheritance serves for reusing the code and they also use it only for this purpose.

We discover that the inheritance should be explained in two phases: firstly the inheritance of interfaces, and only much later the inheritance of the implementation.

When touching the inheritance for the first time, we should explain that there are three kinds of inheritance (Lalond & Pugh (1991)):

- **Inheritance of interface** (in Lalond & Pugh (1991) *subtyping*) occurs when a child inherits the entire interface from its parent, i.e. the signature as well as the contract. As a consequence, an instance of a subtype can stand in for an instance of its supertype.  
However, a compiler ensures the inheritance of the signature only. Maintaining the contract is the programmer's job. Subtype implementation details are totally irrelevant for it; all that matters is that it has the right behavior so that the parent can be formally substituted by the child.
- **Inheritance of implementation** (in Lalond & Pugh (1991) *subclassing*) – it is an implementation mechanism for sharing both code and representation. The subclass inherits all the implementation from its superclass (it is the compiler's job). The subclass can change the behavior that does not fit its requirements, and it can also add new members. Here, the danger is that the overriding code and/or the new members violate the parent's contract.
- **Natively understood inheritance** (in Lalond & Pugh (1991) the “*is-a*” *relationship*) talks about our assumption that one kind of object is a special case of another. An inconsistency may appear at this place when the implementation differs from our inherent assumption. E.g. mathematicians tell us, that a map is a special kind of a set – it is a set of ordered pairs (key, value). However, in the Java standard library the set is implemented as a special kind of a map.

The experience proved that we should postpone the explanation of class inheritance as late as possible. The reason for postponing this explanation is to provide enough time for exercising the usage of interfaces. The students should learn not only how to implement the given interface, but they also should master how to recognize situations, in which incorporating an interface in their design is useful.

At this point it is helpful to introduce the *Decorator* design pattern and to prepare at least one project, where using this pattern is more effective than the frequently (and improperly) used inheritance of classes. There are two reasons why to introduce this pattern:

- The advanced students who mastered inheritance in a previous course (or from a textbook) are provided with situations where the class inheritance is not the best solution. It also helps to improve students' attention to the ongoing explanation.
- We prepare the background for the following explanation of class inheritance.

If our lessons follow the *Design Patterns First* methodology (Pecinovský & Kofránek 2013), an introduction of the *Decorator* design pattern does not present a problem since the students already know several design patterns and they understand their importance.

As the next step we remind to students that in addition to the heretofore used inheritance of interfaces (the language construct) there is also the class inheritance. This inheritance combines the inheritance of the parent class interface with the inheritance of the parent implementation. We explain that the inheritance of implementation is internally handled as if the subclass were designed according to the *Decorator* design pattern. In other words, the inheritance of implementation is *de facto* an application of the *Decorator* design pattern in which the decorator (a child) acquires both the implementation and the interface from the decorated object (a parent). The compiler prepares a hidden constant attribute named *super*, in which a reference to the *decorated object* is held. Additionally, the compiler also ensures the automatic delegation of all inherited methods to the *super*.

For the decorated “*super*” object we introduce the term *parent subobject*. In contrast to the standard decorator the constructor of a child does not take its parent (*super*) as a parameter, but it creates the parent subobject by calling a parent’s “empty-string” method (a constructor):

```
super (/* parameters */);
```

where, similarly to the statement *this()*, we omit the *dot*.

We explain that the parent subobject must be created before the rest of the child object is initialized to allow the rest using the inherited members. Thus the child constructor has two alternatives:

- delegating its responsibility for initialization to one of its peers by the statement *this()* or
- starting with creating the parent object, i.e. calling its constructor by the statement *super()*.

The only exception is the situation, when we want to call the parameter-less parent constructor – then the compiler is able to insert its call for us behind the scene.

So far we did not create the parent subobject in our classes explicitly, because the compiler implicitly has used the parameter-less parent constructor. We may immediately show, that identical behavior can be obtained by adding the *super()*; statement into our original classes.

Our experience shows that the explanation that follows these rules is much comprehensible for the students than using the traditional approach. Especially, the concept of overriding, which was difficult to understand for many students, is now clear and intelligible for most of them. Several programmers attending our retraining courses have commented that thanks to this explanation they finally fully understand the class inheritance.

We should not forget to remind to students that the three kinds of inheritance must not be interfered. They should fit together. In case of class inheritance, the compiler is able to ensure only the inheritance of the implementation and the signature. The inheritance of the contract is the responsibility of the programmer.

## RESULTS AFTER APPLICATION OF THE PRESENTED SUGGESTIONS

This methodology has been tested in several student groups whilst in other groups the introductory programming course was running in the classic way. In the succeeding semester the students of these groups jumbled with the students of other groups when enrolling for new subjects. After passing another semester, all students have been asked to fulfill anonymous web questionnaire. 81 students were willing to fill out the questionnaire which was more than half of the questioned persons.

Inside the preliminary questions there was the question asking for the attended course. According replies to this question we can divide the answering students into three groups:

- The students from the first group attended the courses using the above described methodology and continued in programming courses, where they could meet with students from other courses or even cooperate with them. We will mark this group as 1-1.
- The students from the second group did not attend the above described courses; however, they meet the students from these courses in further semester and cooperated with them. We will mark this group as 0-1.
- The students from the third group attended the courses using the above described methodology, but did not continue with programming courses and compared their knowledge and skills with their colleagues in their companies. We will mark this group as 1-0.

The questionnaire contained 12 questions. Three of them touched evaluation of the described methodology. Answers to these questions are in Tables 1 to 3.

The Table 1 contains answers to the question “*Do you think this kind of explanation can help to students to better understand the relation between the developed program and the simulated reality?*”

Table 1:

	1-1	0-1	1-0	Sum
It will harm very much	0%	0%	0%	0%
It will rather harm	0%	0%	14%	4%
It will neither help, nor harm	11%	17%	14%	12%
It will help a bit	62%	67%	45%	58%
It will help very much	17%	17%	23%	19%
Hardly to assess	9%	0%	5%	7%

The Table 2 contains answers to the question “According to your opinion: Compared to other groups and with regards to the used concept of teaching did the students from the selected groups learn:”

Table 2:

	1-1	0-1	1-0	Sum
Considerably less	0%	0%	5%	1%
Rather less	9%	17%	14%	11%
Approximately equally	8%	0%	27%	12%
Rather more	32%	33%	14%	27%
Substantially more	38%	33%	5%	28%
Hardly to assess	13%	17%	36%	20%

The Table 3 contains answers to the question “Compared to students who attended courses of programming in the classic way, is your ability to formalize the handled problem and design the corresponding architecture of the developed program:”

Table 3:

	1-1	0-1	1-0	Sum
Considerably smaller	2%	0%	9%	4%
Rather smaller	0%	0%	5%	1%
Approximately equal	13%	50%	32%	21%
Rather bigger	49%	33%	27%	42%
Considerably bigger	23%	0%	0%	15%
Hardly to assess	13%	17%	27%	17%

## SUMMARY

This paper was written in response to problems that many students have experienced with understanding the object oriented concepts. It shows that by changing the way of explaining certain OO specific constructs we can improve the comprehensibility of these concepts.

It recommends the use of objects that represent abstract concepts from the very beginning of explanation. Subsequently, the class should be explained as a special kind of object with special features – e.g. that it is the only object that can create new objects – its instances. By writing the source code of the class, it is very useful to strongly separate the definitions of the class members and the instance members.

Further, it recommends to explain the concept of interfaces as the kind of data type at the beginning of the course to allow students to learn not only how to implement them, but also how to incorporate them into the design of the new project. The introduction of interfaces allows early incorporation of design patterns into explanation.

Next it suggests revealing that this is an implicit parameter of constructors and instance methods to make the follow-up explanations easier and more logical. Similarly it suggests explaining the constructor as a method whose name is an empty string and which can be used only for initializing a newly allocated memory. It shows how this change makes some other constructs more logical.

Special attention is paid to inheritance. It suggests postponing the explanation of class inheritance far after the explanation of interface, and simultaneously preceding it by the explanation of the *Decorator* design pattern. The knowledge of *Decorator* design pattern facilitates understanding of the concept of class inheritance. In addition, the paper recommends explaining the three kinds of inheritance and emphasizing that the compiler ensures only

the inheritance of signature, while providing the correct inheritance of the contract is the programmer's responsibility.

Finally, the paper shows that students appreciate the modified explanation and most of them feel that this modified methodology mediates them a better knowledge of OOP paradigm and thus also a better base for the program design.

## ACKNOWLEDGEMENTS

This paper was processed with contribution of long term institutional support of research activities by Faculty of Informatics and Statistics, University of Economics, Prague.

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## Motivation Leading To Eating Disorders Among Young Female Athletes

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### ABSTRACT

A part of teaching of physical education and sports is the issue of certain risks that are related to physical activities. One of those serious issues could be an eating disorder among young female athletes. This topic is focused on the motivational problems that lead to a development of those disorders. Qualitative research used interview, focused on the issue of eating disorders, complete the questions on the evaluation of the relationship of food intake and sport. The subject of our study was a group of 7 girls who have lately actively competed in sports /tennis, athletics-long runs, modern gymnastics and biathlon/.

Our results confirmed that an environment in both sports club and “sports family” itself, had become a decisive factor in triggering the disorder. Those physically active girls began to perceive “modulated” food intake as an essential part of their everyday lifestyle. They feared the increasing weight, because in their minds only a slim/skinny figure, at this age, would be a necessary precondition for achieving better results.

### INTRODUCTION

In a contemporary society, understanding the quality of life of individuals, including their lifestyle, is mostly associated with an “ideal” figure. If some health problems occur, depending on eating habits, in the majority of our population, they are usually associated with an enormous increase of a highly risky obesity. Very often we forget about problems at the other end of the nutritional spectrum - when an individual tries to decrease the required amount of energy intake of food, it results in developing eating disorders such as anorexia nervosa or bulimia nervosa (Ma, 2011; Preti et al., 2009; Rosen, 2012). These disorders affect mainly women with initial symptoms of the disorder in adolescence, but in recent years they have more often started to affect children (Jongenelis, Byrne, & Pettigrew, 2014) and surprisingly men as well (Hudson, Hiripi, Pope, & Kessler, 2007; Reas & Stedal, 2015).

Anorexia nervosa is characterized by the effort to minimize the food energy intake. Firstly, individuals start to reduce the intake of sweets and fat meals, but gradually it leads to a drastic limitation of intake of any kinds of food and eventually even drinks. Usually such “affected” women try to reduce their weight and therefore become extremely emaciated, almost cachectic. It is very interesting that these women seem to be very active, being able to exercise even several hours a day. Speaking of restrictive subtype of anorexia nervosa we don’t find (as a contrary to purgative subtype) any periods of overeating and vomiting or abuse of laxatives and diuretics. The main goal for patients suffering bulimia nervosa is also to reduce the food energy intake, but they are gradually unable to fulfill their goal. These situations lead to eating habits associated with periods of secret overeating, which eventually ends with induced vomiting or, in worse scenarios, with using vomit inducing drugs. The desire to eat is so big for these women, that even repeatedly induced vomiting does not reduce their weight. On the contrary, these patients exhibit normal weight or even overweight. Bulimia nervosa could be divided into two subcategories — one associated with vomiting and the other one without it (Fairburn & Harrison, 2003; Housková, Papežová, & Haluzík, 2010). Some authors describe risk factors leading to eating disorders as parts of psychosocial and

biological fields (e.g. Papežová, 2010; Steinhausen, Jakobsen, Helenius, Munk-Jorgensen, & Strober, 2015). For our study purposes, we find very interesting situational and family factors, risk environment, dissatisfaction of our own body and perfectionism. It is clear, that a repeated pressure at a certain situation, in a family or sports environment, could be a significantly negative impulse. Unfortunately, some studies have shown that even sports environment could be the origin of an eating disorder. Constantly repeated discussions between athletes (sportswomen) and coaches or parents about their weight and an intense determination of a sports environment to bring the girl to excellent achievements at all costs, those two could very well be essential factors in triggering the eating disorder. The relationship between sports activities and a possible development of the eating disorder is described in some studies. Increasing numbers of those disorders among active girls are described by Anderson and Petrie (2012). On the other hand, the relationship is not as clear among boys (DiPasquale & Petrie, 2013; Martinsen & Sundgot-Borgen, 2013) and some studies have even indicated that sport does not affect the development of the eating disorder (e.g. Martinsen, Bratland-Sanda, Eriksson, & Sundgot-Borgen, 2010). If there were any reasons that led athletes to develop eating disorders, it was always about trying to keep specific, for a particular discipline appropriate, figure that could allow them to achieve the best performance (Sundgot-Borgen, 1994; Sundgot-Borgen & Torstveit, 2004)

### THE STUDY

For our data collection, we used qualitative research method that has been proven in the previous research by Staňková (2008). The interview was focused on the issue of eating disorders and was supplemented by questions that helped evaluate the relationship between eating disorders and sports. The entire structure of the interview was based on recommendations from Hendl (2008) and used both open and closed methods of questioning. Anonymously controlled interview was focused on areas, such as general awareness of the girls, awareness of their own bodies, influence of the sports environment and family and media and other aspects of the relationship between eating disorders and sports. The subject of our study was a group of 7 girls who all live in Ustí region and have lately actively competed in sports /4x tennis, 1x athletics-long runs, 1x modern gymnastics and 1x biathlon/. All seven girls have participated in national competitions and two of them stated that they were able to compete with the worlds' best. All the girls faced certain forms the eating disorders during their previous active years /3x anorexia nervosa, 2x bulimia nervosa, 2x both anorexia nervosa and bulimia nervosa/.

### FINDINGS

Questions about risk factors in psychosocial and biological fields have confirmed, that our respondents demonstrated very good awareness of problems about eating disorders and all confirmed, that during their illness they started to show even bigger interest in such issue. During that period of time they perceived and evaluated their bodies as much stronger and had "excessive" demands for the thinness of their bodies. Six of those girls were under negative influence of their parents and friends involving their "alleged overweight".

When evaluating the relationship between eating disorders and sports we found these essential data:

- a) Sports environment, for the majority of respondents, changed the understanding of a "good standard, normal figure". The girls exhibited a shifted perception of a normal figure towards thinness, slenderness. For example, Body Mass Index evaluation proved that two girls, during their active years, showed values, that ranked their figure as normal or even skinny /BMI 22.0 a17.5/, but they thought that for them and for the sports discipline, the optimal value for their performance should be even lower /BMI 19.4 a 17.0/.
- b) We also found a significant risk influence of their social environment. Sports environment with coaches, but in most cases with parents (in one case, father was also a coach) repeatedly motivated or otherwise forced those girls to change eating habits in order to reduce the energy intake, that would lead to their body changes, weight reduces and a better ability to perform better.
- c) The majority of the girls stated, that during sporting activities they subjectively perceived the ongoing weight loss as very positive. Their main goal was to perform better, but also to get a feeling of a prettier body /or a combination of both/. The respondents also stated, that during sporting activities they learned to eat differently and better than general population. They reported, that they learned to control the composition of the consumed food and use certain sports nutrition supplements.
- d) Additional information about a course of treatment of eating disorders are also interesting. During a period of the treatment, athletes were banned from sporting activities, but some of them secretly continued with training. The main reason for such actions was a fear of increasing weigh, where "secretly realized exercises help them burn even more fat on their bodies".

We can therefore say, that sports environment is assumed to be not only one of possible factors, but also one of essential factors, which could trigger eating disorders among young female athletes. The whole social environment in both sports club and "sports" family itself have become a decisive risk factors in triggering the disorder. The perceiving of "modulated" food intake, as an important factor in shaping bodies to achieve better results, has

become a part of their everyday lifestyle. Repeated suggestions, comments as well as mocking from sports environment, coaches and sadly also from parents have all become highly likely a primary factor in development of the disorder. This situation resulted in a different understanding of the “normal figure” in terms of successful realization of a sporting activity. There may be a certain aspect of a perfectionism as an evaluation of their behavior not only in relation to sporting activities, but also to evaluation of their own bodies. This kind of behavior of elite athletes is also mentioned in a study from e.g. Sundgot-Borgen and Torstveit (2004). Based on a study from Maloney and Kranz (1997), perfectionism is understood as a key factor when dealing with bulimia nervosa, because these patients cannot accept a personal failure. In this case, even an evaluation failure of our own physical appearance. These affected women and girls want to be perceived as perfect human beings and great athletes, which eventually develops a vicious circle of a bulimia, so-called “unhappy perfectionism”.

## CONCLUSIONS

Our findings document a close relationship between an intense sporting activity and eating disorders. Basic motivational factor that can trigger this disorder is generally a sports environment, which perceive a certain “suitability” of a body as a necessary precondition for achieving a better performance. This idea is carried out not only by individuals, who influence sports and life activities of young female athletes /especially coaches, teammates and parents/, but also by those very girls. The pursuit of a certain perfection, when evaluating their bodies, still pushes them not only to “modulate” the food energy intake, but often also to increase the energy expenditure by doing other physical activities. These findings lead us to believe that it is necessary to establish certain systems of actions /for example, other forms of education, web presentation about these problems presented by sports clubs/. All this could result in a better knowledge of eating disorders not only among coaches, but also all individuals /including parents/, who influence lives of young female athletes.

It is also appropriate to supplement information about current attitudes of those monitored girls toward sports. We could assume that after a fully recovery, all girls would “condemn” sporting activities, as key factors in developing relatively serious health problems. However, their attitudes toward physical activities prove, that they are currently not only eating properly, but also are “actively engaged” in sports with a great joy.

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## Multi-Media Culture

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### ABSTRACT

Literacy is determined as to know how to write and read in the 20th century and it is one of the development criteria for the countries. Recently literacy includes visual, computer, health, and technology literacy beside traditional literacy. These concepts turn out as ‘media literacy’ Media literacy education helps to develop critical thinking and active participation in our media culture. The goal is to give youth and adults greater freedom by empowering them to access, analyse, evaluate, and create media.

Today information about the world around us comes to us not only by words on a piece of paper but more and more through the powerful images and sounds of our multi-media culture. Although mediated messages appear to be self-evident, in truth, they use a complex audio/visual “language” which has its own rules (grammar) and which can be used to express many-layered concepts and ideas about the world. Not everything may be obvious at first; and images go by so fast! If our children are to be able to navigate their lives through this multi-media culture, they need to be fluent in “reading” and “writing” the language of images and sounds just as we have always taught them to “read” and “write” the language of printed communications.

In the last 40 years, the field of media literacy education has emerged to organize and promote the importance of teaching this expanded notion of “literacy.” At its core are the basic higher-order critical and creative thinking skills e.g. knowing how to identify key concepts, how to make connections between multiple ideas, how to ask pertinent questions, formulate a response, identify fallacies-- that form the very foundation of both intellectual freedom and the exercising of full citizenship in a democratic society. This study presents literature review about determination of media literacy and the process of media message interpretation.

**Keywords:** literacy, culture, media effects

### INTRODUCTION

Contemporarily, people are learning and living interactively within the multimedia environment where words and sound are prevailing. During this process role and significance of media and actors are increasingly changing. All media messages, television shows, newspapers, movies, advertisements, etc. are made or constructed by people. One of the most important media messages, closely examining and “taking part” media messages to understand how they work. Constructing a media message can help us understand who created the message, and who is intended to receive it. It can reveal how the media maker put together the message using words, images, sounds, design, and other elements. It can expose the point of view of media makers, their values. It can also uncover hidden meanings intended or unintended. There is no one “correct” way to deconstruct a media message each of us interprets media differently, based on our own knowledge, beliefs, experiences, and values. Just be prepared to explain your interpretation. Media environment, to make sense of the media messages that bombard us every day, and to express ourselves using a variety of media tools and technologies. We are flooded with messages from the media. We cannot possibly pay attention to all of them or even to a majority of them; we must screen out most of them. To help us do this screening with the least amount of mental effort, we use a default form of processing the messages; that is, we stay in a state of automaticity. While we are in this state, we automatically screen out messages without thinking about the process until a particular message triggers our attention.

No one can deny the influence that television and the electronic media have had on children and young people in contemporary society (Heath and Gilbert, 1996, p. 378). A common person in the city usually wakes up checks the television news or newspaper, goes to work, makes a few phone calls, eats with their family when possible and makes his decisions based on the information that he has either from their co-workers, news, television, friends, family, financial reports, etc. What we need to be aware is that most of our decisions, beliefs and values are based on what we know for a fact, our assumptions and our own experience. In our work we usually know what we have to do based on our experience and studies, however on our daily lives we rely on the media to get the current news and facts about what is important and what we should be aware of. We have put our trust on the media as an authority to give us news, entertainment and education. However, the influence of mass media on our kids, teenagers and society is so big that we should know how it really works (Goffman, 1974).

But who owns the media, which are the companies or people that shape our values, beliefs and decisions? The media is basically dominated by international big companies. They own the major entertainment theme parks,



entertainment movies, television and radio broadcast networks and programing, video news and sports entertainment. They also own integrated telecommunications, wireless phones, video games soft wares, electronic media, the music industry and more. Years ago there was more diversity in companies, but they have merged so now they are just a few and they have the power to shape the opinion and beliefs of us and our kids. So its important to be aware of what your kids are exposed to every day and you should also try to look at things from different perspectives and not just from the one the media gives you (Kimberly, 2007).

### **THE POWER OF MEDIA**

Nowadays, media has become a central and indispensable part of the life. In the last 50 years the media influence has grown exponentially with the advance of technology, first there was the telegraph, then the radio, the newspaper, magazines, television and now the internet. We live in a society that depends on information and communication to keep moving in the right direction and do our daily activities like work, entertainment, health care, education, personal relationships, traveling and anything else that we have to do (Wicks, 1996).

Many political scientists, educators, and criminologists and much of the general public, is that the media do have influence and, in fact, provide our cultural training ground. We learn from the media what our role expectations are in society. Often these role messages are confusing, inaccurate, and distorted. Often they are not counter balanced with an opposing point of view. Media environment is constantly improving. New communication technologies, publishing sector and newly produced technologies are esteemed mostly by the young. In the present day, standard technological skills are not sufficient. Especially, the young are using media message to address adults and peer.

How does mass media influence young people and children? The media makes billions of dollars with the advertising they sell and that we are exposed to. We buy what we are told to be good, after seeing thousands of advertisings. We make our buying decisions based on what we saw on television, newspapers or magazines to be a product we can trust and also based on what everyone else that we know is buying and their decision are also based on the media. These are the effects of mass media in teenagers, they buy what they see on television, what their favourite celebrity advertise and what is acceptable by society based on the fashion that the media has imposed them.

As there are benefits to using the tools of mass media, which the age of science and technology has brought inside our homes; there are also grave negative effects of their overuse, on the physical and mental health of children and adolescents. While the most important physical problems are eating disorders and obesity, the most important psychosocial problems are reduced school performance, learning difficulties, antisocial and aggressive behavior, sexual behavioural problems, desensitisation to violence, nightmares, sleeping disturbances, anxiety, depression, post-traumatic stress disorder and fears of harm coming to them. Time to buy the stuff they buy and look like they look. Another negative influence in teenagers that has grown over the last years are obesity. There are millions of adolescents fighting obesity, but at the same time they are exposed to thousands of advertisements of junk food, while the ideas image of a successful person is told to be thin and wealthy.

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### **EFFECTS OF VIOLENCE IN THE MEDIA**

When we watch television or a movie we usually see many images of violence and people hurting others. The problem with this is that it can become traumatic especially in our children as we see it more and more.

Our kids that are starting to grow and are shaping their personality values and beliefs can become aggressive or they can lose a sense of reality and fiction of what they are seeing. Another problem is that real war is used as a form of entertainment by the media, we should make our kids and teen aware that war is not a form of entertainment and that there is no win or lose like in video games, in real war everyone lose.

### **MEDIA INFLUENCE PUBLIC OPINION**

The media has a huge impact on society and also in public opinion. They can shape the public opinion in different ways depending of what is the objective. The media's influence on shaping perceptions, beliefs and attitudes. While research disagrees on the extent and type of influence, it is unquestionable that media experiences exert a significant impact on the way we understand, interpret and act on our world (Levo-Henriksson, 2007). Other ways to influence are with polls and trends, especially in political campaigns. The candidates that can pay for more television and media exposure have more influence on public opinion and thus can receive more votes.

### WHAT IS MEDIA LITERACY?

As mentioned above, media has a deep negative impact on the society mainly on the young and children. Media literacy is required in order to resist to the negative impact of media, to gain critical thinking ability and mostly to increasingly activating democratic participation. Thus, it is to answer the question what media literacy is. Media literacy is a process to avoid the negative impacts of media. Media education is aiming to reduce the negative impacts of media. Mass media is embodying positives and negatives for children and the young.

Media literacy aims to increase individuals' critical skills of media culture, enhance media resistance, and strengthen active uses of media for a democratic self-expression and participation. Media literacy is concerned with 'cultivating skills in analysing media codes and conventions, abilities to criticize stereotypes, dominant values, and ideologies, and competencies to interpret the multiple meanings and messages generated by media texts' (Kellner & Share, 2005, p. 372). However, according to the National Tele media Council (Silverblatt & Eliceiri, 1997), it also refers importantly to issues of production: 'the ability to choose, to understand within the context of content, form/style, impact, industry and production—to question, to evaluate, to create and/or produce and to respond thoughtfully to the media we consume.

The idea of media literacy emerged in the early 1990s in the US, as a way of improving 'citizenship' and increasing 'citizen' understanding in the political process through greater understanding of media processes. literacy, according to Quigley (1997, pp. 41–42), could affect the capability of audiences to make decisions and make them voiceless. Media literacy, consequently, which had begun as an idea in the education sector, was greatly expanded to include other groups and other fields of studies. According to Silverblatt and Eliceiri (1997, p. 48), media literacy is defined as a critical thinking skill that enables audiences to decipher the information that they receive through the channels of mass communications. It empowers them to develop independent judgement of media content.

For Potter, media knowledge is important for developing media literacy; developed media literacy requires strong knowledge structures that consist of knowledge about effects, content and industries of the media, as well as an understanding of experiences of the real world and the self. Actors need to develop a personal locus of knowledge of the media and real world to participate in meaningful decision making. The personal locus comprises of goals, drives and consciousness dimensions (Potter, 2004, pp. 97–102). At the personal locus, person analyses strengths, weaknesses and options for issues across information sources, in order to determine the best decision. Competency and skills can be seen as a tool that assists people in dealing with a wide range of media information. It also enhances selectivity. Potter (2004, p. 124) suggests that media literacy has seven primary skills: analysis, evaluation, grouping, induction, deduction, synthesis, and abstraction. Media literacy, according to Potter (2005, p. 27), is an active strategy of strengthening media knowledge and increasing the awareness of media exposure to reduce the influence of the media. The more people made choices about the media, the higher level of media literacy the person obtains (Potter, 2004, p. 97).

Livingstone emphasizes that reading and writing abilities and critical analytical ability is still the base for all known Literacy. Livingstone argues for three main objectives with what she called the Media and Information literacy;

1. Democracy, participation and active citizenship
2. Knowledge economy, competitiveness, and choice
3. Lifelong learning, cultural expression, and personal fulfilment. Literacy should, it is argued by these critics, be conceived as both an individual accomplishment or a social and cultural practice (Livingstone, 2007, p.101).

Media literacy contributes to the critical and expressive abilities that are relevant to a full and meaningful life and a skilled, creative and ethical society. This is because, according to Livingstone, our environment includes media with many pictures / symbols that are interpreted, and this provides the framework for our choices, skills and values that are relevant to our daily lives. Livingstone stresses that the aims of media education are what she calls "deliberant framed" to cover both the structure which supports skills but also of individual talents. Skills must be taken both as an individual and in "a social and cultural practices.

Media literacy education helps to develop critical thinking and active participation in our media culture. The goal is to give youth and adults greater freedom by empowering them to access, analyse, evaluate, and create media (Cappello, Felini & Hobbs, 2011).

## CONCLUSION

To be a functioning adult in a mediated society, one needs to be able to distinguish between different media forms and know how to ask basic questions about everything we watch read or hear. As children grow and are able to distinguish the world of fantasy from the real world they live in, they can explore how media are put together by turning the sound off during a cartoon and noting the difference it makes, or even create their own super hero story using a home video camera and easy to use editing software on the family computer. When students begin to use the internet to research school projects, they can compare different websites and contrast different versions of the same information in order to detect bias or political “spin.”

Sometimes a media “text” can involve multiple formats. Uncovering the many levels of meaning in a media message and the multiple answers to even basic questions is what makes media education so engaging for kids and so enlightening for adults (Thoman and Jolls , 2005 , p.16).

In a global media culture, people need two skills in order to be engaged citizens of a democracy: critical thinking and self-expression. Media literacy in stills both of these core skills, enabling future citizens to sort through political packaging, understand and contribute to public discourse, and, ultimately, make informed decisions in the voting booth.

Media literacy teaches the skills we need to navigate safely through this sea of images and messages for all our lives.

We live in a multimedia world. This is reason; the importance of information in society and the need for lifelong learning. Information processing and information services are at the core of our nation’s productivity but the growth of global media industries is also challenging independent voices and diverse views. Media education can help teachers, students and us understand where information comes from, whose interests may be being served and how to find alternative views.

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## Music Teacher's Use Of Technologies In Teaching In State-Funded Schools In Catalonia

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### ABSTRACT

The arrival of technology in music classrooms opened up a whole new horizon of opportunities. Music teachers have at their disposal a pedagogic resource that can be used as much for learning about technology as learning with technology. In this article, we present a part of the results derived from a research project on the digitalisation of music classrooms in state-funded schools in Catalonia. A survey was produced to set out the current state of incorporation of technologies in music classrooms in Catalan schools. The questionnaire was sent to 1,371 schools, of which 35.1% responded. The results are focused on music teacher's use of educational technology in music classrooms, of which we would highlight that only 49,5% of teachers use technology resources in teaching every day; the ICT equipment most frequently used by music teachers is for generic technology rather than specific music educational technology; and the use of technologies in music education processes is focussed mainly on activities in which the teacher defines and controls the learning environment.

**Keywords:** *Specialist music teacher, educational technology, music education, elementary schools.*

### INTRODUCTION

Information and communication technologies are an indistinguishable part of the landscape of modern society. Their presence in all circles of society has influenced the transformation, development and improvement of people's lives (Castells, 2002) and has shaped new paradigms. Proof of these changes can be found in the way in which information and knowledge are accessed, how social and cultural relationships are formed, the way we communicate with people, the manner in which work is conceived and organised and, of course, the means of teaching and learning.

The explosion of technologies in the field of education is leading to the emergence of changes which are inevitably *"turning the world of education on its head - everything from the curriculum and teaching to organisation and interpersonal relationships between the different actors on the educational stage"* (López, 2002, p.10). Educational institutions have not had a reputation for innovation, but the 21st Century school cannot escape the fact that *"technology is part of the modern world"* (Duro & Aguerro, 2008, p.147). Consequently, it is becoming increasingly necessary for schools to incorporate technologies in the classroom in a conscious way, thereby empowering pupils in their acquisition of knowledge, skills and attitudes in the arena of digital competencies (Generalitat de Catalunya, 2010).

### LITERATURE REVIEW

#### Towards a new model of school: digitalising classrooms.

Using technology in learning and teaching processes is nothing new. From a historical point of view, schools have been incorporating many different technological innovations in the classroom, albeit in a fairly informal way, since the beginning of the last century (Novelino, 2008), although it was not until the 1980s, with the arrival of the personal computer and computer-assisted teaching, that most local, regional and/or national education authorities around the world began to include technology integration initiatives in their education policies (OECD, 2009). Spain exemplifies this with the initiation in 1985 of the process of introducing computing into non-university education. Through the Ministry of Education and Science's Atenea plan, the autonomous communities with their devolved educational competencies began to implement their own specific programmes. In the case of Catalonia, the Department of Education initiated the Education Information Technology Plan (Programa d'Informàtica Educativa) in 1986 to promote and co-ordinate the integration of technologies in non-university teaching (Área, 2006; PIC, 2007). However, it is only since the implementation of the Education Act known as LOE (an acronym which stands for Ley Orgánica de Educación) which came into force in Catalonia with the Decree 142/2007 of 26th June - containing explicit references to the development and implementation of technology in all stages mandatory education - that the majority of schools have really started to integrate it into the teaching and learning processes and different governments have instigated classroom digitalisation programmes with the goal of aiding digital literacy among pupils and improving the quality and efficiency of learning in schools. Examples of the latter include the Escuela 2.0 programme, the EduCat 2.0 project and the Cultura Digital en la Escuela plan.

Beyond the educational policies orientated to driving the incorporation of technologies in the classroom, authors such as Hepp (2008), Tedesco (2008), Cabero (2007) and Dirr (2004) have noted a number of reasons why schools must boost the use of technologies in the classroom:

- They constitute an important study tool that helps pupils acquire the skills and knowledge necessary to achieve digital competence. It is worth highlighting that these skills and knowledge are one of the eight basic competencies established in the curricula for the obligatory stages of primary education in Catalonia: *“Information processing and digital competence”*. Development of these competencies is considered essential for pupils to develop as part of their basic education and so form the basis of the Catalan primary school curriculum. Furthermore, in 2013 the Department of Education in Catalonia published a paper entitled *“Basic digital competencies”*, which covered in detail the development and achievement of digital competencies in primary education (Generalitat de Catalunya, 2013).
- They combine the written and spoken word via image and sound, which generates new means of transforming communication codes.
- They open up new opportunities in teaching and learning processes (e.g., communicating, handling and exchanging information with peers).
- They help deepen knowledge of a particular topic and to better understand the material via unlimited access to relevant sources of information.
- They are an aid as much for individual learning as collaborative group learning.

#### Technology and music education: a scene in transformation.

As for the field of music education, it would seem there is a reasonable consensus among the scientific community that *“music technology today is not a passing fad, but an established part of the educational scene”* (Webster, 2002, p.416). *“The evolution of music has occurred in parallel with the scientific and technological developments. Composers and performers of all different stylistic periods have undergone in their performances the technical innovations that the society have put them within reach”* (Fuertes, 1997, p.32). These innovations gave rise to, on one hand, the introduction of technical improvements in the design of the instruments - e.g., the spring-loaded hammer - or the emergence of new instruments - e.g., the Hammond organ -; on the other side, the incorporation of new resources in the equipment of music classrooms - e.g., the laptop or the IWB.

Focussing on the music classrooms, music teachers now have at their disposal a pedagogic resource that can be used as much for learning about technology as learning with technology. In this context, authors such as Torres (2011), Kassner (2010), King (2006), Merrick (2009), Graesser, Chipman and King (2008), Goble (2008), Crow (2006), Savage (2005), Reninger (2000) and Fuertes (1997) have endorsed the importance of using technologies in music teaching and learning processes:

- They are an aid for teaching performances and constitute a tool that improves learning processes and facilitates the management and organisation of the lesson planning (Torres, 2011).
- They afford: (a) to expand the instructional time, (b) to engage students in meaningful and directed instruction, and (c) that each student work at his or her own pace (Kassner, 2010).
- They help pupils to improve learning processes (King, 2006; Merrick, 2009).
- *“Technologies encourage active learning, knowledge construction, inquiry, and exploration on the part of the student”* (Graesser, Chipman & King, 2008, p.211).
- They encourage student participation in creative learning processes (Goble, 2008).
- They open up the possibility that students with a very low level of music theory create music compositions (Crow, 2006).
- They stimulate student’s creativity, imagination and musical innovation (Savage, 2005).
- They open up new opportunities in teaching and learning processes (Reninger, 2000).
- The arrival of these media in educational practices has meant that the teaching of music is now intrinsically linked to the new ways society finds of making and listening to music (Fuertes, 1997).

To sum up, the studies presented in this subsection highlight the major benefits that technologies can bring to music education, not only as support tools for teaching performances, but also for their ability to foster improvements in the quality and effectiveness of learning processes. On the basis of these arguments, the findings of this study may potentially provide insights into improving the implementation of technology in music classrooms in state-funded schools in Catalonia. The information derived from the study could be useful for the education authorities in adjusting their classroom digitalisation programmes and to all music teachers who wish to implement technology in teaching and learning processes.

#### **METHOD**

This study is part of a wider research - entitled *“The Digitalisation Of Music Classrooms In Schools In Catalonia: Study Of And Proposal For A General Framework For Integrating Technology In Music Education”* - that aims to study the digitalisation of music classrooms in state-funded schools in Catalonia in order to set out the current state of incorporation of technologies. With regard to the methodological approach, this study is of a descriptive nature



and so aims to obtain a detailed and exact view of music teacher's use of technologies in teaching in state-funded schools in Catalonia. Díaz (2002, p.6) argues that the purpose of a descriptive research project is to *"provide a definition of reality, examining a phenomenon in order to characterise it in the best way possible and in order to differentiate it from another phenomenon."* Borg and Gall (196, p.175) stated that *"descriptive studies involve a detailed description of the characteristics of an educational phenomenon."*

#### Participants.

The target population in this study was all schools in Catalonia. However, given *"the difficulties - for reasons of both timeliness and accessibility - entailed to carry out a research that considers all possible individuals in the target population"* (Latorre, Del Rincón & Arnal, 1996, p.78), a representative sample was chosen. The sample was selected using a purposive non-probability sampling based on two criteria: (a) accessibility to schools and (b) representativeness of the sample selected. On the basis of these arguments, it was not considered appropriate to include private and co-funded schools in the study since the sample is intended to be homogeneous with regard to investment in technology in music classrooms.

#### Data collection and analysis.

An online questionnaire divided into five sections was produced to gauge the current state of technology incorporation in music classrooms. It was developed using elements from various questionnaires that reflect the aim of the tool. This guaranteed both the suitability of each of the elements making up the evaluation tool (Mertens, 2005; quoted by Hernández, Fernández & Baptista, 2010) and also the validity of the evaluation tool through its conceptual representativeness (Hernández, Fernández & Baptista, 2010):

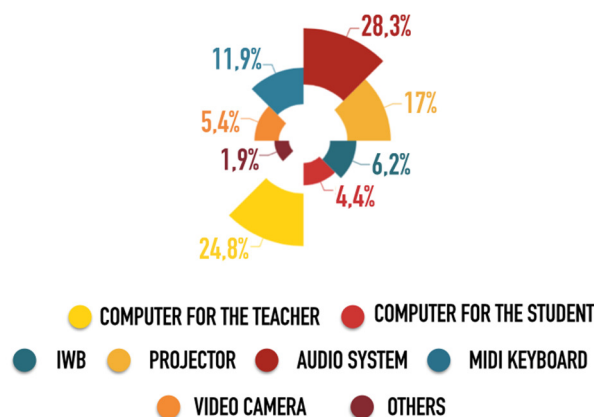
- The first section comprised five items that aimed to characterise the sample of schools.
- The second section included twelve items connected with the identity of the specialist music teacher that works in state-funded schools in Catalonia.
- The third section included seven items relating to the use of technology in the music classroom.
- The fourth section comprised two items that aimed to analyse music teacher's vision regarding to: (a) the investment in technological equipment in state-funded schools in Catalonia and (b) classroom digitalisation programmes instigated by education authorities.
- The fifth section included one item that aimed to offer the opportunity to the specialist music teacher to clarify any of the issues covered in the questionnaire, if necessary.

In addition to these five dimensions, the questionnaire contained an informational section with instructions that referred how to fill in the questionnaire.

Regarding to its execution, a common procedure was established with the aim that all schools had the same conditions when filling in the questionnaire. Equally, an internal test was done before to send the questionnaire to schools with the purpose to check the proper functioning of the online questionnaire. Data were collected over a two-month period (October through November 2011). The questionnaire was sent to 1,371 schools, of which 35.1% responded. Data obtained from the questions of the survey were then analysed by using descriptive statistics.

## **FINDINGS**

### ICT equipment in music classroom.



**Figure 1:** ICT equipment in music classroom.

Music teachers reported that the ICT equipment most frequently found in music classrooms is generic technology which can be used as much for music education as, where necessary, for other subjects in the curriculum [Figure 1]. For example, the three most common devices being a music system (28.3%), a computer for the teacher (24.8%) and a projector (17%). On the other hand, it appears to be much more unusual to find equipment specifically designed for music, such as the MIDI keyboard. In fact, only one in every nine music classrooms are equipped with a MIDI keyboard (11.9%).

#### ICT knowledge and skills.



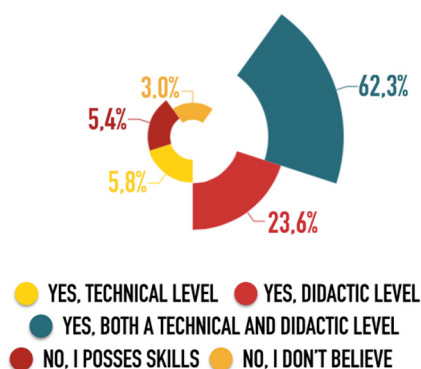
**Figure 2:** Knowledge and Skills in ICT.

55.8% of music teachers reported having a basic level of knowledge and skills in ICT [Figure 2], 38.8% reported having an advanced level, 3.3% reported having an expert level and 2.1% reported having a beginner level. The data obtained echoes the study performed by the Department of Education (Generalitat de Catalunya, 2012), albeit in different investigative contexts to the current study - elementary and secondary school teachers.

#### Training courses in educational technology for music.



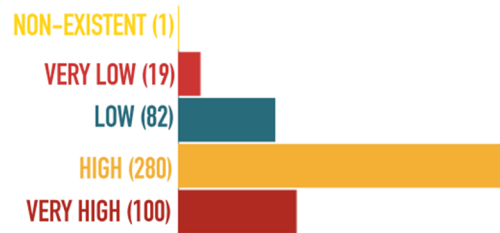
**Figure 3:** Training courses in educational technology for music.



**Figure 4:** Training in the use of music educational technology.

53.5% of music teachers reported having taken a specific course in the use of music educational technology [Figure 3]. However, 62.3% believe they lack training in the use of music educational technology on both a technical and didactic level, 23.6% believe they lack on a didactic level, 5.8% believe they lack on a technical level and 5.4% believe that they possess skills in the use of music educational technology. On the other hand, only 3% of music teachers reported that they do not believe necessary to be trained in the use of music educational technology [Figure 4].

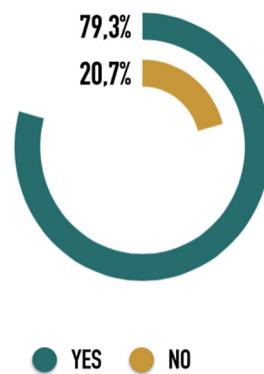
### Predisposition toward integrating technology into their teaching.



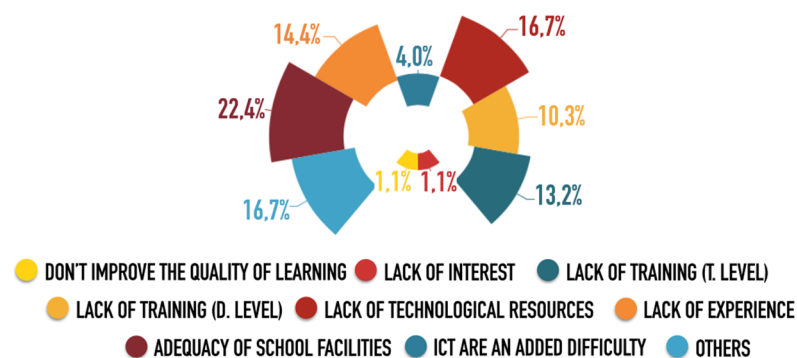
**Figure 5:** Predisposition toward integrating technology into their teaching.

58.1% of music teachers indicated they have a very high predisposition toward integrating technology into their teaching, 20.7% indicated they have a high predisposition, 17% indicated they have a low predisposition, 3.9% indicated they have a very low predisposition and 0,2% indicated they have a non-existent predisposition [Figure 5]. According to Ramírez, Cañedo and Clemente (2012), if a teacher has a positive attitude towards technological resources, s/he will more likely be pre-disposed to integrate them into teaching processes. On the other hand, teachers who view technology as a way of keeping pupils occupied will not implement it in their teaching processes as they do not see the value of using technologies in learning (Ertmer, Addison, Lane, Ross & Woods, 1999).

### Use of technology in music teaching.



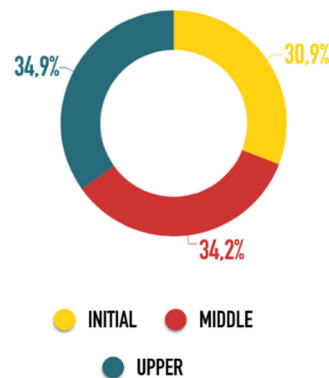
**Figure 6:** Use of technology in music teaching.



**Figure 7:** Reasons why music teachers do not use technology in music teaching

79.3% of music teachers affirm to use technological equipment and 20.7% affirm they do not use them [Figure 6]. Focussing on the reasons why music teachers do not use technology in music teaching, 22.4% reported the adequacy of the school facilities, 16.7% reported lack of technological resources, 14.4% reported lack of experience in the use of music educational technology, 13.2% reported lack training in the use of music educational technology on a technical level and 10.3% reported lack training in the use of music educational technology on a didactic level [Figure 7].

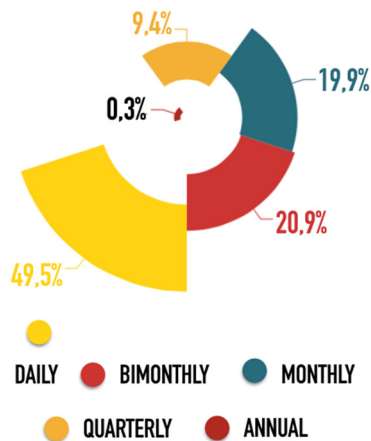
Educational level in that technology is used.



**Figure 8:** Educational level in that technology is used.

There is a slightly upward tendency based on the use of technology resources and the educational level [Figure 8]. 30.9% of music teachers indicated they use technology resources in the initial cycle of the elementary education, 34.3% indicated they use in the middle cycle and 34.9% indicated they use in the upper cycle.

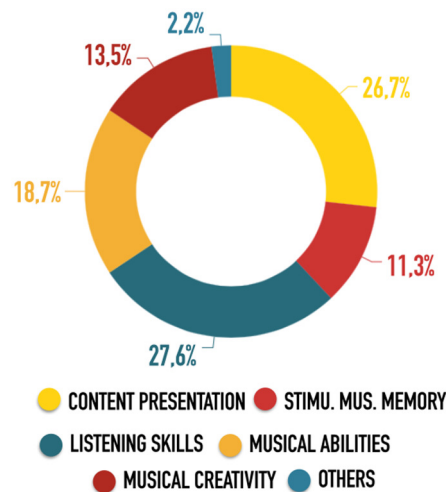
Frequency of using technologies in music classroom.



**Figure 9:** Frequency of using technologies in music classroom.

49,5% of music teachers affirm that use technological equipment every day, 49,5% of music teachers affirm that use technological equipment every day, 20,9% of music teachers use technological equipment bimonthly, 19,9% of music teachers use technological equipment monthly, 9,4% use technological equipment quarterly and 0,3% use technological equipment annual [Figure 9].

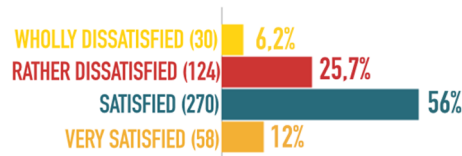
### Musical activities that involve technology.



**Figure 10:** Musical activities that involve technology.

The use of technologies in music education processes is focussed mainly on activities in which the teacher defines and controls the learning environment [Figure 10]. For example, 26.7% of music teachers affirm to use technology during activities of listening skills, 26.7% during the presentation and/or explanation of contents, 18.7% during activities related to training of musical abilities, 13.5% during activities related to musical creativity and 0.2% during others activities.

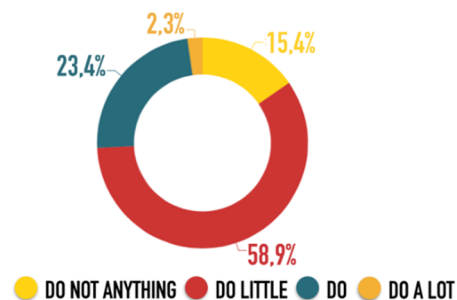
### Investment in technology resources in schools.



**Figure 11:** Investment in technology resources in schools.

56% of music teachers affirm that they are satisfied with the level of investment in technology resources at their school, 25.7% affirm that they are rather dissatisfied, 12% affirm that they are very satisfied and 6.2% affirm that they are wholly dissatisfied [Figure 11].

### Classroom digitalisation programmes instigated by education authorities.



**Figure 12:** Classroom digitalisation programmes instigated by education authorities.

58.9% of music teachers believe that technology promotion programmes do little to encourage effective use of technology in educational processes, 23.4% believe that technology promotion programmes do to encourage effective use of technology in educational processes, 15.4% believe that technology promotion programmes do not anything to encourage effective use of technology in educational processes and 2.3% believe that technology promotion programmes do a lot to encourage effective use of technology in educational processes [Figure 12]. The data obtained echoes the study performed by TICSE 2.0 (2011), which reported that at least two-thirds of teachers believe that technology promotion programmes do little to encourage effective use of technology in educational processes.



## CONCLUSIONS

Educational technology in music classrooms is still an underused resource in many Catalan schools. The data obtained highlight that specialist music teachers working in state-funded schools in Catalonia show a positive attitude to using technology in learning processes despite the fact that technology have been introduced without the teacher being given adequate training, either in how to use them in teaching or how pupils can use them in learning. So, “*it would be a mistake to assume that simply introducing technology into the classroom will lead to innovation and changes in methodology*” (Generalitat de Catalunya, 2010, p.5). In other words, the incorporation of technology in educational processes requires music teachers to adequately meet the challenges arising from the arrival of technology in the classroom (Área, Gros & Marzal, 2008; Salazar, 2005; Canales & Marquès, 2007). Otherwise, theoretical approaches will remain but good intentions (Canales & Marquès, 2007).

Despite the significance of the study, several limitations were detected while conducting this research. Firstly, the complexity of the study has resulted in a rigorous study which is indicative of the state of use of educational technologies in music classrooms in state-funded schools in Catalonia but which is not comprehensive. Secondly, it is possible that certain people were excluded from the research: (a) music teachers with a very low level of digital literacy which may have prevented them from being able to participate in the online questionnaire; (b) music teachers who may have encountered technical difficulties when filling out the questionnaire, despite an internal test being performed prior to execution to ensure it collected data correctly; and (c) music teachers who were either not interested in expressing their opinion or reluctant to do so.

Notwithstanding these constraints, some implications for practice can still be drawn from the results of this study. Firstly, the training courses in educational technology for music currently offered by the Department of Education in Catalonia fall short of the demands of specialist music teachers working in Catalan schools. The data obtained highlight the need for the Department of Education to review and adjust the training programme providing specific music educational technology courses. Secondly, the attitudes, beliefs and previous experiences of teachers play a decisive role in the process of adoption of technology in the classroom. Teachers, after all, play a pivotal role in any process of change in schools (Área, Gros & Marzal, 2008; Salazar, 2005). Thirdly, technology is not an end in itself but a means to aiding and promoting digital literacy among pupils and improving the overall quality and effectiveness of learning. As other authors have pointed out (Bautista, 2004, Generalitat de Catalunya, 2010), technology should be “*at the service of learning and knowledge*” (Generalitat de Catalunya, 2010, p.5). It follows, therefore, that “the specialist music teacher should interpret and develop the curriculum according to his or her own vision of how music ought to be taught and the pedagogic principles underlying music methods, and does not merely act as executor of the decisions of others” (Barniol, 2004, p.26). On this premise, the introduction of technology into the classroom should not be seen as a replacement for traditional methods but as the arrival of a means of advancing and promoting knowledge, abilities and attitudes in the field of musical and digital competencies.

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## New Approach To The Topic Lipids In Secondary Schools

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### ABSTRACT

The article is focused on an issue of Food chemistry and nutrition in secondary school curriculum. We propose a new approach to a topic Lipids in relation to food chemistry and nutrition and process this topic as an educational material for an interactive whiteboard. The topic is seen as a cross-cutting and its content is based on the knowledge gained from analyses of secondary school chemistry and biology textbooks. Analyses showed that textbooks include substantial shortcomings in their content in relation to the food chemistry and nutrition issue. Although textbooks contain enough terms that might be related to the researched topic, their interaction with nutrition and diseases related to nutrition is minimal. The proposed content of the thematic unit Lipids is based not only on analysis of textbooks but also on the results of extensive surveys of the World Health Organization and on recommendations of recognized nutritionists and doctors. Lack of knowledge of secondary schools students about nutrition problems and diseases associated with nutrition was also confirmed by the results of our questionnaire survey conducted among students at the end of third grade grammar schools.

Complete newly designed content of topic Lipids is processed as an educational text for secondary or elementary school teachers. It has three parts: Lipids as an ingredient of food, Digestion and metabolism of lipids and Proper nutrition, diet and diseases associated with nutrition. To each part is processed motivational-educational learning material designed to work with an interactive whiteboard. Each part is also processed as a PowerPoint presentation which can be provided as educational material for students.

### INTRODUCTION

Extensive research conducted by the World Health Organization (WHO) in 53 countries in Europe show that poor diet, overweight and obesity cause many civilization diseases, including cardiovascular disease and cancer, the two leading causes of death in Europe [WHO 2013a]. WHO describes an excessive fat intake, low intake of fruits and vegetables and a growing obesity problem as the biggest problem. 66 percent of an adult population in the Czech Republic are overweight and almost 33 percent are obese. It is the highest of all European countries [WHO, 2013b]. Overweight and obesity problem is not only a problem of adults, but also of children and adolescents. Therefore WHO recommends focusing on schools and improve the health and nutrition of school-age children and adolescents.

Diet and healthy nutrition is nowadays a very popular topic. Children and adults are confronted with this issue practically every day in the ubiquitous commercials and it is discussed in various mass media. For the majority of population can be very difficult to assess, which information is true, which misleading or false. How one of the most popular Czech leading nutritionist and medical doctor professor Svačina [2008] highlights: It is a reality, that in all the bookstores, pharmacies and on Czech internet, the unscientific information prevail over scientific, which makes the whole situation much more complicated. Therefore, the topic of Food Chemistry, Nutrition and diet-related diseases should be regularly added to the school teaching.

The content of education in the Czech Republic is based on Framework Educational Programs (FEP). They are, however, very general and schools precisely speaking teachers create according FEP their own school educational program. Their concrete form is based primarily on textbooks. As part of the completed dissertation titled Food Chemistry and Nutrition in teaching in secondary schools, we conducted an extensive analysis of the most widely used school textbooks of chemistry and biology, which investigates both qualitative and quantitative extent of the inclusion of this theme in their contents. The analysis revealed that while textbooks contain enough terms that are related to the researched topic, their connection with nutrition and diet-related diseases is minimal.

Detailed analyzes have been published in the following articles: Topic Lipids in teaching at secondary schools in relation to food chemistry and nutrition [Třeštíková & Klímová, 2014a]; Food chemistry and Nutrition in biology textbooks of secondary education [Třeštíková & Klímová, 2014b]; Food chemistry and Nutrition in chemistry textbooks of secondary education [Třeštíková & Klímová, 2013]; Food Chemistry and Nutrition in Educational Framework Program for Grammar School and in secondary school textbooks [Třeštíková, 2013].

Because a key factor in the diet are especially lipids, we decided to design and process new topic Lipids in relation to Food chemistry, nutrition and diseases associated with nutrition for secondary schools teaching. Basis for the proposal is the analysis of FEP for Grammar School, analysis of school textbooks of biology and chemistry, demands of modern society and the recommendations of recognized dieticians and doctors and, ultimately, the aforementioned World Health Organization. The topic has been processed newly as an educational text for teachers supplemented by educational materials for teaching of students with using interactive whiteboards and also as teaching materials in the form of PowerPoint presentations.

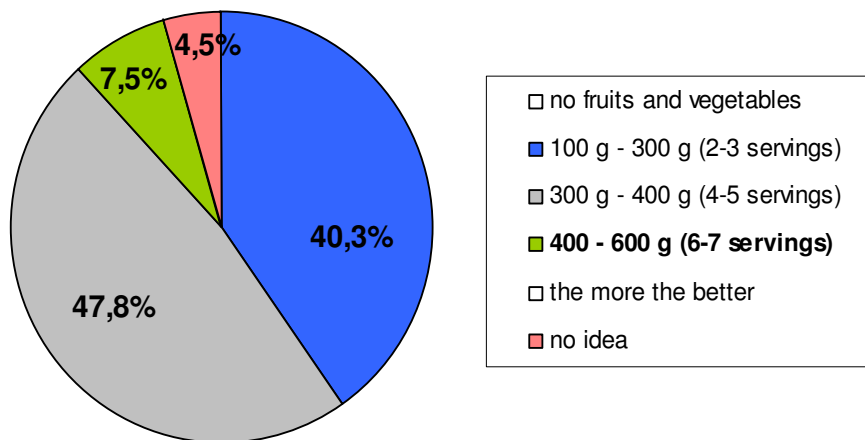
## THE STUDY and FINDINGS

### Research

To get an idea about a knowledge of secondary school students and their interest in the topic of Food Chemistry, nutrition and diseases connected to the nutrition, we have created a questionnaire consisting of 13 questions, some of them are made of more sub-questions. Eight of the questions have tested the knowledge in the field of the Right nutrition, diet and the diseases connected to the nutrition, others were to check, if the high school students have gained any information connected to the nutrition, if so, in which quantity, in which subject and also how highly they are interested in this topic. The questionnaire was handed out to the students of the third grade of grammar school, where it was assumed that these skills should already have. It was also meant to validate our hypothesis, that the grammar school students have a lack of knowledge in the field of Right nutrition, diet and diseases connected to the nutrition, even though there are interested in this topic. We have tested 67 students from 2 various grammar schools. The results confirm our hypothesis. Students of grammar schools have a little and in most cases incorrect knowledge about a knowledge about nutrition and the diseases associated with it. In the following text we are presenting two examples of two quiz questions.

The wording of question: *What is the recommended amount of fruits and vegetables in any adjustment that we should eat every day according to the principles of good nutrition?*

The correct answer, meaning 400-600 grams was chosen only by 7.5% of students questioned, the rest of the other students think that the recommended amount is less, or they do not know at all, see [Graph 1].



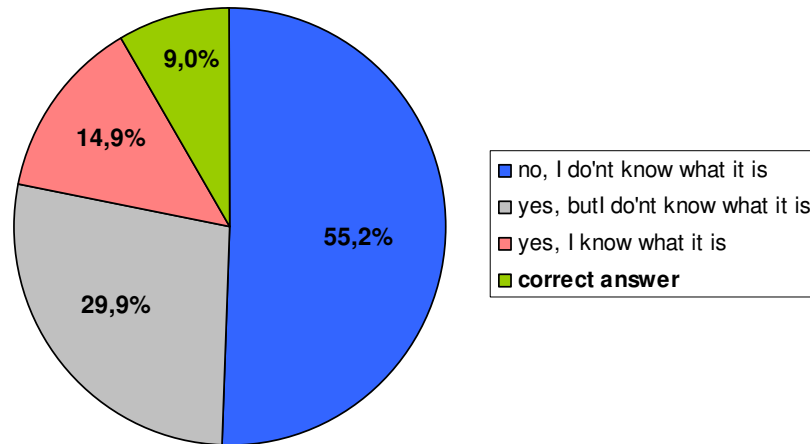
**Graph 1:** Recommended daily intake of fruits and vegetables – answers of students

The second example is a question relating to diseases connected to nutrition.

The wording of question: *Have you ever got in touch with the term metabolic syndrome? If so, briefly explain.*

Only 9 % of all students questioned really knows that metabolic syndrome is a set of diseases (resp. risk factors), which often occur together and lead to the development of atherosclerosis and its associated complications, usually associated with obesity and type 2 diabetes, see [Graph 2].

In the part of questionnaire detecting an interest of a given issue most of the student mention that they are interested in this topic and the find it useful.



**Graph 2:** Do you know what is metabolic syndrome? – answers of students

### Educational text for teachers

As concluded from the analysis of textbooks, teachers do not have a comprehensive source of information on the issue of Food chemistry, nutrition and its related diseases. It is therefore difficult for them to pass on this information to the students in the practical context. For this reason we have created an educational text for teachers, which consists of three basic parts:

- Lipids as an ingredient of food
- Digestion and metabolism of lipids
- Proper nutrition, diet and diseases associated with nutrition

First part, *Lipids as an ingredient of food*, mainly deals with the chemical nature of lipids contained in food. Various types of lipids are given to the association with nutrition connecting chemical knowledge with practice. A significant part is devoted fatty acids being a basic building stone of simple lipids (homolipids). Fatty acids are divided traditionally into saturated and unsaturated, in connection to the Food chemistry an attention is paid to the cis-unsaturated fatty acids  $\omega$ -3 and  $\omega$ -6 and also to the *trans* unsaturated fatty acids. It provides the benefit of these acids for human, their health usefulness or harmfulness, and also examples of foods in which the respective representatives of fatty acids occur. In the case of simple lipids, is given emphasis on triacylglycerols (triglycerides) - solid fats and liquid oils, their chemical, physical and nutritional properties. Composed of heterolipids select particularly phospholipids. Their eminent representative known in the food industry such as E 322 lecithin, which is contained mainly in the egg yolk. Important representative is derived lipid cholesterol, which is also addressed in the second part of the educational text. At the end of the first part includes a chapter on treatment of fat and its effect on food quality. We have included information on refining, hydrogenation or transesterification of lipids.

Second part of the educational text focus on *Digestion and lipid metabolism*. Here is a connection of chemical and biological aspect of these processes. While digestion is being usually part of the grammar school curriculum in a Biology, metabolism is usually a domain of Chemistry. Students often do not see any link between these processes, that is the reason why there is explained the educational text, the metabolism of lipids also includes their digestion as a first stage of lipid catabolism, which follows the absorption and transport of lipids. Further there is included beta oxidation of fatty acids and lastly the Citric acid cycle and Electron transport chain. The sequence of these catabolic pathways leads to the formation of ATP as energy "tender" of organism. In relation to the transport of lipids an attention is paid to the cholesterol and its transportation together with the other lipids in the particles called lipoproteins. It clarifies often erroneously interpreted nature of "good" and "bad" cholesterol, which then relates to the transportation mechanism of cholesterol in lipoproteins and a fact, that cholesterol is just one. A chapter is completed with its own schemes of  $\alpha$ -oxidation of fatty acids, lipolysis or scheme of synthesis of ketone bodies, being an alternative way of energy intake under a certain conditions.

Third part deals with mainly with the biological content and it is dedicated to the proper nutrition, diet and diseases associated with nutrition. It contains an information about how to build a proper diet with the help of food pyramid and the general nutritional recommendations. We get to know the most common diets and their effect in the prevention or treatment of selected diseases. We get an information about alternative nutrition directions, especially vegetarianism, its advantages and risks. In the chapter dedicated to diseases we deal with a Metabolic syndrome and its basic components – obesity, overweight; hyperglycemia, insulin resistance, diabetes;



dyslipidemia, atherosclerosis, cardiovascular disease and hypertension.

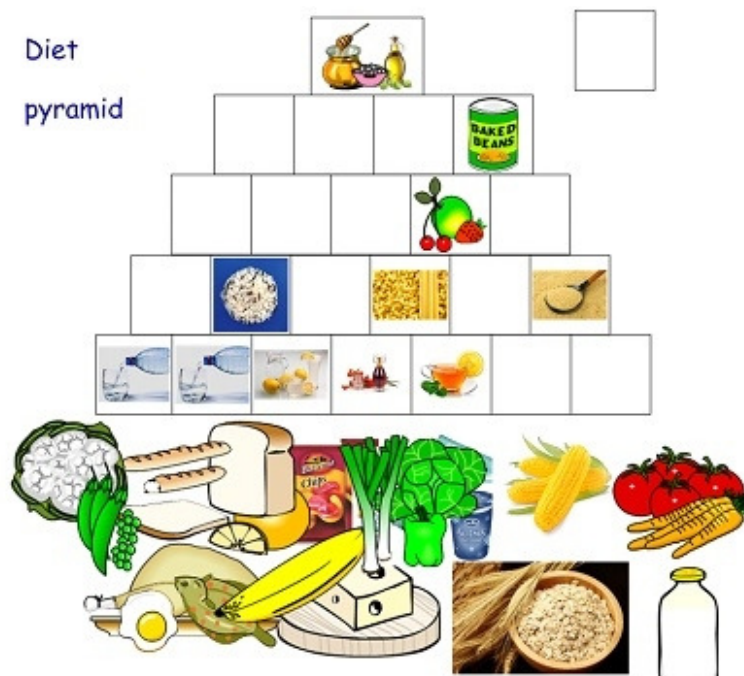
## Digital learning materials

To each of the three basic components of the educational text for teachers was created educational materials for students, designed to work with an interactive whiteboard.

The interactive whiteboard (IWB) is a modern educational technology allowing effective instruction full of various learning activities [Dostál, 2011]. IWB's promising benefits to learning and instruction have led to its increased popularity and attractiveness as expressed by a number of researchers [Smith, Higgins, Wall & Miller, 2005; Türel & Johnson, 2012]. Benefits of using IWBs have been recognized by both students and teachers [Northcote, 2010]. The potential benefits of IWBs for teaching are: flexibility and versatility, multimedia presentation, efficiency, supporting planning and the development of resources, modelling ICT skills and interactivity and participation in lessons [Smith, Higgins, Wall & Miller, 2005]. Using IWBs also increases the motivation of students and improves their attention. On the other hand, using IWBs brings in real-life educational setting also some problems and issues. One of the most frequent issues raised by both teachers and students is the need for adequate training in order to use IWBs to their full potential [Smith, Higgins, Wall & Miller, 2005]. Other commonly difficulties cited by teachers relate to the preparation of a lesson incorporating an IWB. If ready-made products are used, then minimum time is necessary [Dostál, 2011].

In my small survey conducted in two Prague grammar schools among students and by personal consultation with their teachers, the use of IWB is significantly restricted just for the use as a projection screen. Most of the surveyed students said they used the interactive whiteboard interactively in teaching for the first time in the verification of my materials. Teachers have justified this fact especially higher time than a common education and lack of time for creating interactive materials. Several students said that during the same time period they discuss less curriculum using an interactive whiteboard than in normal lessons. However, most of the students evaluated the use of interactive whiteboards as being very positive.

Teaching materials for interactive whiteboards were created in the SMART Notebook program. The examples of interactive pages intended for the student's work during their school lesson we present in the following pictures with the descriptions of activities [see Picture 1 and Picture 2].



**Picture 1:** The example of interactive page in the chapter The proper nutrition – Food pyramid.

Students gradually collect the pictures of the various food and move them to the relevant floor of the food pyramid. Meanwhile they discuss about a structure and content of the given pyramid floors, learning to orientate and understand the pyramid.



**Picture 2:** The example of interactive page in the chapter The proper nutrition – Food composition.

According to the energy content student divide the food ingredients into macronutrients and micronutrients. Student drags a term to one of the vortexes, during an incorrect classification the term is moved back by vortex, when a classification is correct, the term is absorbed by vortex.

Based on the recommendation by teachers, in whose classes were the materials tested on the group of student, the PowerPoint presentations were created. They contain information mentioned in the interactive materials and may be provided to the students as a information background pro the home study instead of textbook. Unlike the educational texts for teachers they are not so detailed and it depends on each mentor, if he chooses to amend it further or to use it in its original form. It can also be used for teaching in case that it is impossible to use an interactive whiteboard or if the teacher prefers this type of learning. If the interactive materials are not used, the PowerPoint presentation can be complemented with the practical involvement of students. For example a creation of Food pyramid from pictures that students cut from ubiquitous advertisement flyers showed a very good result. Students can also bring to school a specific food packages and discuss their composition ore the appropriate inclusion in the diet.

## CONCLUSIONS

Our aim for the creation of analysis focusing on the representation of the Food chemistry issue, proper nutrition and diseases associated with nutrition in the Framework Educational Programs (FEP) and the grammar school textbooks were the recommendations of leading Czech nutritional specialists and doctors, the results of an extensive survey of World Health Organization and, ultimately, almost daily meeting with the students with this issue in everyday life. It turned out that although the information about this field is very actual and needed, it has very limited representation in the student's textbooks. This may also cause detected students' lack of knowledge of this issue. Based on this findings we have proposed and created newly the topic of Lipids for a grammar school teaching. We have connected the usually taught chemical and biological base of this issue in the filed of Food chemistry, nutrition and diseased connected to nutrition. We believe that our materials will be a benefit for education in secondary schools, will give important and interesting information and perhaps become the basis and inspiration for the creation of new school textbooks.

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## New Horizons On Architecture: Creating The Future While Conserving The Past On Historical Peninsula, Istanbul

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### ABSTRACT

Historical Peninsula is not only the historical center, but also it is the commercial center of ancient Istanbul. Four major empires had been ruled from this magnificent point, with a unique Bosphorus view. It is also an open air museum with various historical sites and buildings, such as Suleymaniye Mosque, Topkapi Palace, etc. Thus, the site is chosen for an architectural search on new forms and concepts on an existed historical area while preserving the historical heritage and learning the details of the project management by 14 students of the Faculty of Architecture, Department of Architecture of Yildiz Technical University, The Design Studio 4 has been searched to find the best places and related architectural concepts to create new architectural forms on Historical Peninsula according to the modern project management rules during the winter semester of 2013-2014 educational year. During the semester an atmosphere of professional design office was created to let the project group to understand and to feel the details and necessities of the project management on the real architectural field. Thus the paper will have the long process of the Design Studio 4, with 14 different location and concept proposal projects to Historical Peninsula.

**Keywords:** architecture, historical peninsula, concept, conserve.

### INTRODUCTION

Project management is the brand new title on the architectural field for the last 5 to 10 years, to make the architectural project processes much more powerful and convenient.

As it is known that especially for the last 10 years, parallel to the developments on the market of the neo-liberal economies, project management title became very popular and useful on the *praxis* of the architecture. Thus, with this point of view, during the 15 weeks of the Design Studio 4 a new kind of approach has been carried out. Therefore, the main emphasis of the studio was made on the title of the project management and students were asked not only to design a project but also think on the issues of the project management regarding to their own architectural project designs.

### METODOLOGY:

*A way of designing which is passing through project management*

Within the first 2 weeks of the Design Studio 4, 4 different seminars were given to the group regarding to the title of the project management, which were titled as;

What is project management? How can an architectural project be successful on the world of neo-liberal economies? What is different in between "planning" and "designing"? and Living on the architectural world of competition, as chronologically. So let's see what is the project management. Project management has a point of view from which the architectural world is formulated out of "working stages"; 4 stages plus the control stage as "closing". According to the traditional approach on the *praxis* of the architecture, there are 5 sequence of steps to be completed, which are developmental components of a project can be distinguished. These stages are:

- Initiation,
- Planning and design,
- Execution and construction
- Monitoring and controlling systems,
- Completion (closing)



Fig.1. The Typical development phases of an architectural project, (Sebastian, N)

Here we have a schema on which these “working stages” can be seen. This schema is also called as the typical development phases of an architectural project. On the schema it is seen that after a basic initiation stage, some projects are going through the 2<sup>nd</sup>, 3<sup>rd</sup> and the 4<sup>th</sup> stages multiple times. It is known that architects are generally using some sub-stages on this system as well, such as, analysis as pre-planning, schematically used diagrams showing functional distribution, synthesis as conceptual design, construction drawings as contract documents, and finally construction management issues.

Initiation stage is processing the determining of the nature and the scope of the project.

Planning or design stage includes variations of synthesis of conceptual project.

Executing stage has quality assurance and plan contracting issues.

Monitoring and controlling stage consists of a process, which is performed to observe project execution, so that, potential problems can be identified and it also provides feedback between project stages, in order to implement corrective or preventive actions to bring the project into compliance according to the project management plan.

Closing includes not only the formal acceptance of the project but also the contract closure.

## 2.2. Defining and Using Project Management Process

What is a project?

Understanding the project management process groups

How to scope a project?

How to launch a project?

How to monitor and control a project?

How to close a project?

## CONTENT AND CONTEXT OF THE LECTURE

The project creating process of the Design Studio 4 has 6 main steps:

1.site seeing, 2.making of analysis, 2.a. SWOT analysis, 2.b. Concept Hunt, 2.c.physical analysis, 3.preparing of synthesis, 4.the creating of conceptual background, 5.specifying decisions of making ecological based projects or creating contemporary architectural examples, 6.the design process of the project; preparing of the technical drawings, plans, sections and elevations, 7.creating of details of landscape, 8.making presentations on the auditorium, 9.discussions of each project on final jury.

Moreover then this, during 15 weeks long semester, informative seminars related with the history of the site, the economical and cultural potentials of the site were given to the students on the first 2 weeks, and from the 3<sup>rd</sup> week to 10<sup>th</sup>, three digital programs, which are chronologically photo-shop for architectural representation, sketch up for understanding 3 dimensional modelling quickly and rhino 5 for creating the design of the project, were shown to students on three different workshops. During this process, also 5 seminars about project management, 1 about architectural patterns and geometrical form creating and 2 about light-weight structures were given to the group, as well.

Thus, during the 15 weeks of one semester education on The Design Studio 4 of the Faculty of Architecture, Department of Architecture of Yildiz Technical University, first, it was asked to create one contextual background from each of the 14 students. The project site was Historical Peninsula, Istanbul. Historical peninsula of Istanbul is located on the hearth of the city Istanbul, from where not only Byzantium Empire (East Roman Empire), but also Ottoman Empire has been ruled chronologically. Thus, the Peninsula has a great potential of historical sites and tourism. Also because it has shores surrounded by Bosphorus, there is the main barracks of Istanbulian fishermen and many raki & fish restaurants across the Peninsula. The main line of the central trains is crossing the Peninsula. The historical Station of Sirkeci is also located on this site.

Thus, students searched to find the best places and related architectural concepts to create new architectural forms



on the site while trying to act like real actors on the *praxis* of the architectural field and understanding the process of the project management.

The project group went to the site not only to make analysis of Historical Peninsula, but also to create the best concept and select the most suitable place for their projects according to the analysis on the first three weeks of the semester, two times during the week. Students also made some interviews according to their concepts with the citizens of the Peninsula. From the 4<sup>th</sup> week to the 8, the process had the synthesis period. During this period, each and every student prepared the synthesis of their projects according to the income datas from the site analysis and the interviews that have been done in the site in the early period of the project process. During the whole of the semester in an office like atmosphere every detail related with the project management were created and each and every student acted like being the actors of a real project management actors.

#### 4. PROJECTS AND DISCUSSIONS

There were 14 submitted projects from the group of the Design Studio 4, on which students searched to find the best places and related architectural concepts to create new architectural forms on an office like atmosphere regarding to the details of a project management during the spring semester of 2013-2014 educational year. The best 5 projects of 14 different location and concept proposal projects to Historical Peninsula are:

##### 1. Historic-a Museum, by Okan Karaman

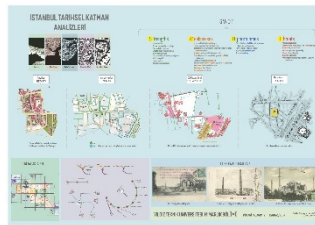


Fig.2. Historic-a Museum

The project has a context, which emphasizes the layers on the memory. Therefore, it shows on its design that there are different levels of the culture through years on the same point of the geography. The museum stands on the right center of the project on which different layers of the city memory is showed with different hint points.

##### 2. Loop- Yenikapi, by Nesibe Kinatas

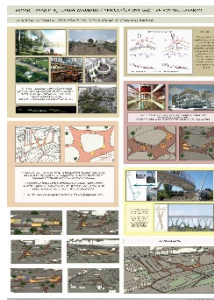


Fig.3. Loop- Yenikapi, by Nesibe Kinatas

The project includes a LOOP, around andinside which the daily life goes on. There is also one building of an institute Yenikapi on the herath of the LOOP project which also was designed by the same student with the similar design criterias.

### 3. Parametric Train Station, by Kadir Kosem



Fig.4. Parametric Train Station, by Kadir Kosem

The central train line of Istanbul is from Eminonu to Halkali and the train station of Yenikapi is the 2nd central station of this line after the Sirkeci Main station. This project emphasizes the importance of the Yenikapi train station as re-designing it according to the contemporary architectural language and thus the new station is an example of the parametric architecture.

### 4. RAKI- The Fishermen's Restaurant, by Orkun Yersel

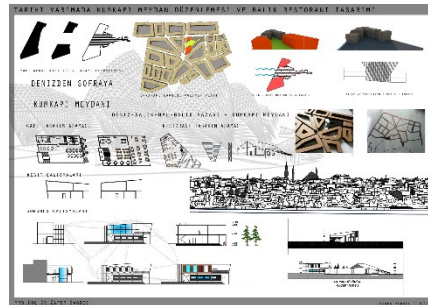


Fig.5. RAKI- The Fishermen's Restaurant, by Orkun Yersel

This project emphasizes to build a new relationship among the fishermen's barracks on the sea shore of the Marmara sea in Yenikapi region, fish restaurants and the fish market. Therefore, just on the center of a triangle of these three already related topics, on a triangular island one parametric fish restaurant has been designed.

### 5. The Music Academy of Yenikapi, by Bilal Kivrak

This is a project de-constructivist music academy on the Yenikapi region by the sea shore of Marmara sea. The project area is located just next to the ruins of the ancient Istanbulian city walls. Thus, the project emphasizes the importance of this city walls as de-constructing and re-creating their forms from the beginning. Here is a music academy for young heads of Gitanos families on the region.



Fig. 6. The Music Academy of Yenikapi, by Bilal Kivrak

## CONCLUSION

Among multiple benefits of the exercise some that stand out are: (1) students participated in solving a creative design problem, (2) students learned to work on an estimated time period, (3) students familiarized themselves with creating designs on a relationship among history and project management while thinking on architecture, (4) students learned to appreciate different point of views on the same project site, (5) students were able to visualize their designs in context, (6) students learned important digital programs for their future designs.

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## Opinions Of Teacher Candidates On The Gender Of Mathematics Teachers

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### ABSTRACT

The objective of this study is to determine how the students of the education faculty perceive the gender of mathematics teachers. The survey prepared for this purpose was applied to 1185 teacher candidates who were enrolled in the department in 2009 and 536 in 2014. It was observed according to the acquired results that 77 % of the participants in 2009 and 74 % of the participants in 2014 replied as “Male” to the question, “what is the gender that first comes to your mind when you think of a mathematics teacher”. It was determined from the statistics of the Ministry of Education in 2012 that 51 % of all the secondary school mathematics teachers in Turkey and 52 % of all the high school mathematics teachers in Turkey are male. It was observed that the percentages of the genders of the teacher candidates who participated in the study both in 2009 and in 2014 are similar to the percentages of the Ministry of Education. In the study carried out to question the reasons for the perceptions of teacher candidates regarding the gender of mathematics teachers, replies given to the questions about their genders, their education programs, class levels, what they wish the genders of their mathematics teachers should be, do they think that makes are more successful in mathematics? were subject to binary comparisons.

**Keywords:** Mathematics teacher, gender, gender differences

### INTRODUCTION

The thought that there are differences between genders has enabled researchers to use gender as a significant variable in many studies. There are also many studies carried out for this purpose regarding the mathematics courses as well. Research assumptions are generally inclined to put forth that males are more successful in the fields of science and mathematics. Many studies carried out during the 80s and 90s have verified these assumptions and it was observed that male students were more successful in science and mathematics courses in comparison with female students. (Becker, 1989; Erickson&Erickson, 1984; Greenfield, 1996; Johnson, 1987; Johnson & Murphy, 1984). Many famous scientists who have carried out studies in the fields of science and mathematics are male. The fact that the first gender that comes to mind when we say science is male has resulted in the saying “man of science”.

When the factors that lead to males being more successful in the fields of mathematics and science are considered, it was observed that males are more active and competitive in comparison with females whereas females are calmer and more inclined to work together with their peers. Family is an important component of society. The attitudes of parents on their children play an important role in the success of the children. Whereas parents of boys give more importance to their children learning mathematics, parents of girls emphasize that their children should study more than boys in order to be successful in mathematics. Such expectations of parents have significant effects on the success of their children (Campbell&Clewel, 1999; Levi, 2000). According to Eccles et.al. (1993), girls and boys have the same level of interest towards mathematics activities but boys have a greater confidence in mathematics in comparison with girls.

Another factor that enables male students to be more successful in mathematics in comparison with female students is traditional education methods. Traditional education methods have negative impacts on both girls and boys (Gurian, 2006, 2011). Geist and King (2008) have stated that girls are more inclined to learn together with their close friends, whereas boys tend to strive to achieve the highest grade in a competitive environment. It can be observed that female students will be at a disadvantageous position in an education program that relies on traditional teaching methods.

Fennema et.al. (1998) stated in their studies that boys and girls have different problem solving strategies. They have put forth that whereas girls are more inclined to modeling and counting strategies while solving problems, boys tend to use strategies of abstraction more. The fact that the mathematics activities carried out emphasize learning via abstraction is a factor that leads to male students being more successful.

Gender discrimination by teachers in the class is another factor that affects success in mathematics. The use of words typical to boys, giving more priority to boys in answering questions, asking male students to respond when no one volunteers to answer a question asked in class or using expressions that emphasize gender roles when addressing the students are factors that cause gender differences to emerge (Gavin and Reis, 2003; Wimer

et.al.,2001). The differences in social structure might also determine the differences of success in mathematics according to gender. Whereas modern education environments provide greater opportunities for female students to be successful, the differences in the success of boys and girls can be eliminated.

Whereas many studies carried out at the international level put forth that there are statistically significant differences between the behavior and success of female and male students (Eccles, Adler & Meece, 1984; Parker & Claxton, 1996), studies carried out during the 2000s shows that this difference is rapidly decreasing and that it has even started to shift in favor of female students.

Even though Dinc, Song and Richardson (2006) think that males in American culture have a greater mathematical performance in comparison with females; their studies carried out in two different states have put forth that there is no difference between the mathematical performance of genders and that there is a difference in favor of females regarding success grade averages. These results indicate that the changes that take place over time creates an environment that enables girls to become successful in mathematics course which decreases the general thought in the society that males are more successful in mathematics in comparison with females.

These differences in thoughts all over the world also affect Turkey as well. Turkey has a conservative society in general and the occupation that is thought to suit girls the most is teaching. When the fields of teaching are considered, it is generally thought that pre-school and primary school teaching are more suited to females, whereas teaching in the scientific disciplines is more suited to males.

The objective of this study was to put forth the opinions of teacher candidates regarding the genders of mathematics teachers. The problem of this study was determined as below:

**Problem:** What are the opinions of teacher candidates regarding the gender of mathematics teachers?

#### METHOD

This is a descriptive study carried out to determine an already existing condition. Survey method was used in this study to determine the opinions of teacher candidates regarding the gender of mathematics teachers.

**Target Population:** The Faculty of Education at the Muğla Sıtkı Koçman University where 3000 teacher candidates were educated in 9 different programs in 2009 and 3100 teacher candidates were educated in 2014.

**Sample:** The participants of this study are 1185 teacher candidates who were enrolled in 9 programs at the Muğla Sıtkı Koçman University Faculty of Education during 2009 academic year and 536 teacher candidates enrolled in the same faculty during 2014 academic year. The number of participants according to the programs are given in Table 1.



**Table 1:** Distribution of Teacher Candidates According to Their Program

	2009		2014	
PROGRAMS	f	%	f	%
SOCIAL SCIENCES	65	5,5	44	8,2
SCIENCE	140	11,8	53	9,9
CLASS	330	27,8	169	31,5
PRE-SCHOOL	189	15,9	43	8
GERMAN	49	4,1	32	6
ENGLISH	90	7,6	37	6,9
TURKISH	183	15,4	124	23,1
MUSIC	61	5,1	11	2,1
PAINTING	78	6,6	23	4,3
<i>TOTAL</i>	1185	100	536	100

The number of students enrolled at the 9 programs in the education faculty is 3000 in 2009 and 3100 in 2014. When determining the sample group, random selection of volunteer participants was made. The sample group numbers quantitatively represent the target population of the study (Yazıcıoğlu and Erdoğan, 2004: 50).

The numbers of teacher candidates according to classes are given in Table 2.

**Table 2:** Distributions of Teacher Candidates According to Classes

	2009		2014	
CLASSES	f	%	f	%
1	328	27,7	240	44,8
2	243	20,5	109	20,3
3	404	34,1	89	16,6
4	210	17,7	98	18,3

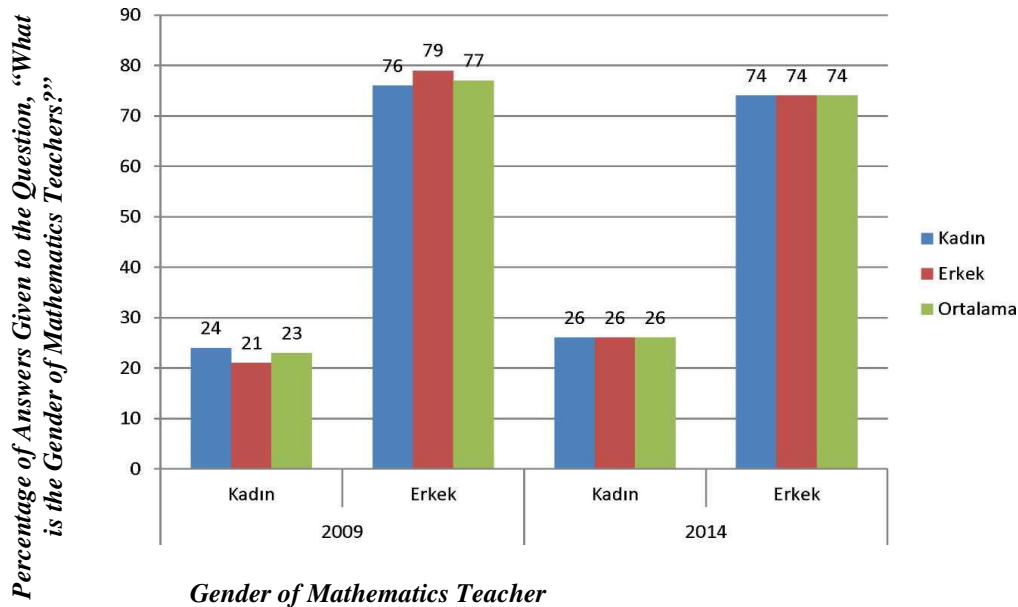
**Data Acquisition Tool:** A survey consisting of open and closed ended questions was used as a data acquisition tool. Relevant literature was examined when preparing the survey and expert opinion was taken regarding the reliability and validity of the survey after the questions were prepared. The final shape was given to the survey following the expert opinion. Data were analyzed via SPSS14 statistics package software.

## RESULTS AND COMMENTS

The results of the study put forth the data related with the problem of what the opinions of teacher candidates are regarding the gender of mathematics teachers?

In Graph 1 below, you can find the data related with the answers of teacher candidates who participated in the study given to the question “What is the Gender of Mathematics Teachers?”

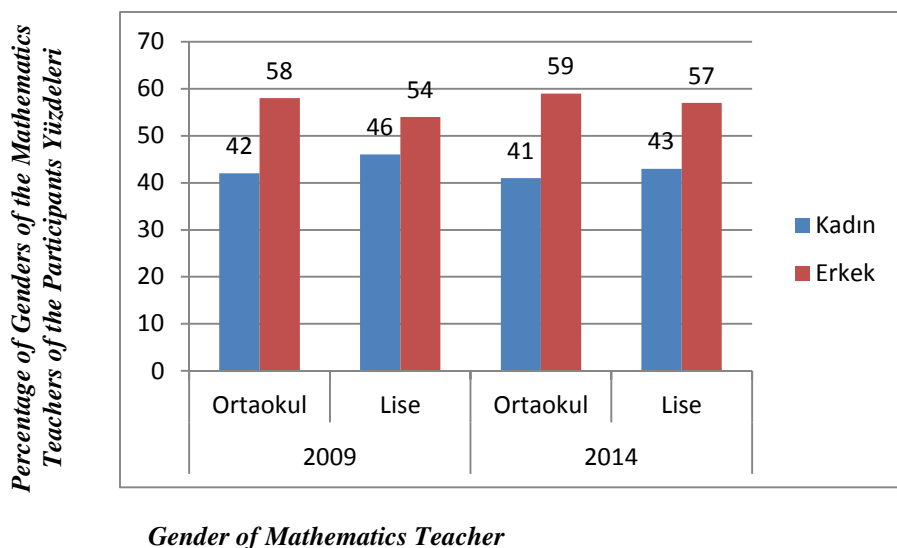
**Graph 1:** Answers Given by Teacher Candidates who Participated in the Study to the Question, “What is the Gender of Mathematics Teachers?”



According to Graph 1, 77 % of the teacher candidates who participated in the study in 2009 and 74 % of the teacher candidates who participated in the study in 2014 put forth that they think the gender of mathematics teachers is male. Even though there was a decrease in the male gender over the years, it can be stated that this decrease is very low. A very small differences is observed between the opinions of male and female teacher candidates. Whereas the opinions of the male and female teacher candidates who think that the gender of mathematics teachers is male is 79 % - 76 % in 2009; no difference was observed between the percentages in 2014 (74 %). The fact that the difference between the responses of teacher candidates according to gender is low might be thought of as an indication that gender discrimination is not observed in the responses.

The genders of their mathematics teachers during primary and high school years were also asked. The responses can be seen in Graph 2.

**Graph 2:** Genders of Secondary School and High School Mathematics Teachers of Teacher Candidates According to Years



When Graph 2 is examined, it can be observed that 58 % of the secondary school teachers of the mathematics teacher candidates in 2009 as well as 54 % of their teachers in high school were male; whereas 59 % of the secondary school teachers of the mathematics teacher candidates who participated in the study in 2014 as well as 57 % of their teachers in high school were male. A statistically significant difference can be observed between the percentage of the secondary school and high school male teachers of the teacher candidates who participated in the study and their thoughts regarding the gender of mathematics teachers.

**Table 3:** Order of Percentages Regarding the Opinions of Teacher Candidates on What is Suited to Women

	2009	2014
<b>1 Pre-School Teaching</b>	49,9	41,8
<b>2 Primary School Teaching</b>	62,7	48,7
<b>3 Turkish Teaching</b>	49,9	41,8
<b>4 Social Sciences Teaching</b>	39,8	37,1
<b>5 Science and Technology Teaching</b>	35,4	32,5
<b>6 Mathematics Teaching</b>	33,4	28,7
<b>7 Computer Teaching</b>	44,8	39,4

The teacher candidates were asked to give numbers to seven different teaching programs from 1 to 7 and list them in order of being most suited to women to those that are not suited to women. Table 3 includes the percentages of the responses given to this question. Accordingly, 49.9 % of the participants in 2009 and 41.8 % in 2014 ranked Pre-School Teaching in the first place thus specifying their opinions regarding the field of teaching that suits women best. Other teaching disciplines are in order; Primary School Teaching, Turkish Teaching, Social Sciences Teaching, Science and Technology Teaching, Mathematics Teaching and Computer Teaching. When the table is examined closely, it can be observed that mathematics teaching is ranked 6 and that science and computer teaching which can be associated with mathematics and science are listed towards the end of the table. This result can be interpreted as putting forth that teacher candidates thinking science and mathematics teaching is more suited to men.

Table 4 below shows the percentage and chi-square results for the responses of teacher candidates gender to the question, “Do you think men are more successful in mathematics teaching?” according to their gender.

**Table 4:** Percentage and chi-square results for the responses of teacher candidates gender to the question, “Do you think men are more successful in mathematics teaching?” according to their gender

	2009			2014		
	Women	Men	Average	Women	Men	Average
<b>NOT AT ALL</b>	28,09	13,80	22,73	33,14	17,20	27,61
<b>I DON'T THINK SO</b>	32,02	21,72	28,16	28,86	24,73	27,43
<b>A LITTLE BIT</b>	16,55	14,93	15,95	12,86	17,74	14,55
<b>I THINK SO</b>	19,54	28,51	22,90	22,57	25,27	23,51
<b>I REALLY THINK SO</b>	3,80	21,04	10,26	2,57	15,05	6,90

Chi-square = 125,4; p=0,000 Chi-square = 41,7; p=0,000

When Table 4 is examined, it can be stated that the participants do not think that gender is important in the success of mathematics teaching (2009: %51, 2014:%55). Female participants (2009: %60, 2014: %62) are clearer in comparison to males (2009: %35, 2014:%41) about whether gender is important for success in mathematics or not. A difference is observed (2009:  $\chi^2 = 125, p < 0,01$ ; 2014:  $\chi^2 = 41,7; p < 0,01$ ) between genders of participants and “opinions about males being more successful in mathematics courses”.

Table 5 shows the percentages of the responses of the teacher candidates to the question, “Which gender do you think has the highest number of mathematics teachers in Turkey?” related with their opinions on the gender of mathematics teachers.

**Table 5:** Percentages and chi-square results of the responses of the teacher candidates to the question, “Which gender do you think has the highest number of mathematics teachers in Turkey?” related with their opinions on the gender of mathematics teachers

	2009		2014	
	Women (%)	Men (%)	Women (%)	Men (%)
<b>Women</b>	23,5	4,7	35,5	11,1
<b>Men</b>	51,1	84,7	40,6	76,9
<b>Equal</b>	25,4	10,6	23,9	12

Chi-Square = 145;  
p=0,000

Chi-Square = 64,8;  
p=0,000

When Table 5 is examined, it is observed that there is a statistically significant difference between the opinions of teacher candidates on the gender of mathematics teachers and their responses to the question, “Which gender do you think has the highest number of mathematics teachers in Turkey?” in both 2009 and 2014. It can be thought that the most important factor that causes this difference is gender bias. Because, whereas female participants in 2009 thought that 51,1 % of the current teachers in Turkey were male (which is actually pretty accurate), male participants estimated this ratio as 84,7 %. This difference can be thought to be due to gender bias. In 2014, it can be observed that the difference has increased and that gender bias has decreased among male participants.

## CONCLUSION AND SUGGESTIONS

When the 2012 data of the Ministry of Education are examined, it was determined that 51 % of the secondary school mathematics teachers and 52 % of the high school mathematics teachers are male. 58 % of the teacher candidates who participated in this study in 2009 stated that 58 % of the secondary school and 54 % of the high school mathematics teachers are male; whereas in 2014 these ratios were 59 % and 57 % for secondary school and high school male mathematics teachers respectively. Whereas there is no statistically significant difference percentage-wise between the MEG data and the gender of mathematics teachers of the participants, the opinions of the participants that mathematics teachers are generally male have decreased from 2009 to 2014 but it is still biased towards the male gender. These results support the opinion determined in other studies that mathematics is a discipline that is suited to males (Hyde, Fennema, Ryan, Frost and Hopp, 1990). The fact that mathematics teaching as an occupation is ranked sixth among the seven teaching areas shows that this discipline is thought to be the occupation of males in general.

Despite the thoughts of teacher candidates that mathematics teaching is suited more to males, some portion of the teacher candidates think that gender is not that significant in mathematics courses. The study carried out by Duru (2011) put forth that female and male teacher candidates do not have any gender prejudices related with mathematics.

Even though male and female teacher candidates think that the highest number of mathematics teachers in Turkey is male, the opinions of male teacher candidates in this manner are much greater in comparison with those of female teacher candidates. This can be interpreted as putting forth that the gender of participants affect their opinions.

One of the factors that cause this perception might be the curriculum. Since the examples given in relations as well as problems are generally suited more to males in mathematics curricula, an opinion might have been formed that knowledge of mathematics is specific to males. Geist and King (2008) have suggested the development of education programs that are suited to both genders in order to get rid of this difference in perception.

This study was carried out using quantitative data. More comprehensive studies that support these findings with quantitative data can be carried out relating the study results with other studies carried out on Turkish society structure. Studies can be carried out that compare the opinions on the gender of mathematics teachers in other societies thus putting forth the social differences in this issue. Combined studies can also be carried out to determine how much these opinions are affected by gender successes.

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## Personalized Context-Aware Recommendations In 3D Virtual Learning Environments

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### ABSTRACT

The employment of 3D Virtual World (VW) platforms in an educational field is an emerging phenomenon that enlarges the concept of learning environments, providing users technology that creates an immersive learning experience. This is one of the main reasons for the selection of a 3D VW platform for the development of an innovative and motivating tool under an umbrella of a V-ALERT project. The project aims to support the establishment of Information Security culture through providing awareness and facilitating learning process using the developed 3D Virtual World Learning Environment (VWLE). The provision of recommendations to users within 3D VWLE is a novel research field and to the best of our knowledge there are no publications in the field. This paper aims to provide an insight into the design and development of a context-aware recommendation in the V-ALERT 3D VWLE that considers available relevant information such as the context, user (learner) individual characteristics and user history to provide personalized content to assist the user during the learning activities. The paper also offers results of pilot usability evaluations which will be taken under consideration in the final, redesigned version of the 3D VWLE.

**Keywords:** 3D virtual world learning environments (VWLE), user individual characteristics, context-aware recommendations, learning experience

### INTRODUCTION

Numerous 3D Virtual Worlds have recently become available, many of which are tuned to specific uses either for socialization and leisure activities or for more "serious" purposes such as commercial facilitation (e.g. sales and marketing or customer support) and education enhancement (e.g. training simulations). The special characteristics and distinct possibilities of the Virtual Worlds (VWs) make them a powerful technological tool towards enhancing the learning experience. This is one of the main reasons for the selection of a 3D VW platform for the development of an advanced, interactive and motivating tool for rising the awareness on Information Security threats and learning how to recognize and avoid unsafe actions in the scope of the V-ALERT project, as teaching and training applications in VWs seem to offer remarkable benefits to students. The V-ALERT project, co-financed by European Commission under the Framework Lifelong Learning Programme, aims to support the establishment of Information Security (IS) culture through providing awareness and facilitating learning process using the developed 3D Virtual World Learning Environment (VWLE).

The aim of this paper is to provide an insight into the design and development of a context-aware recommendation system in the V-ALERT 3D Virtual World Learning Environment that considers available relevant information such as the context, user (student) individual characteristics and user history in order to provide personalized content to assist the user during the learning activities within the 3D VWLE. First, a number of challenges are discussed including the design of a user profile, the presentation of the recommendation, the issue of context in the 3D VW as well as the presentation of the learning material within 3D VW scenarios. Second, due to the nature of the system and the challenges mentioned, a selection and usage of a Utility-Based Function is explained. The Utility-Based Function is an easy, efficient and effective way to compute the utility of the learning content for each user. Considering a particular user task and learning goal, it retrieves information from the user profile and past user actions within the 3D VW in order to determine the level of expertise and experience of the user, as well

as how much (s)he has progressed within the scenario and computes personalized recommendations that are then displayed to the user in a non-intrusive manner. Third, an Information Security awareness scenarios developed in the context of the V-ALERT project are briefly addressed, specifically Identity Theft, Phishing/Spam, Social Engineering and Strong Password. However, for the needs of this paper, the personalised recommendation mechanisms are presented in relation to the Phishing/Spam scenario, which has been designed as an one-player simulation and aims to educate the user on phishing attacks. Within the Phishing scenario three different ways of providing the recommendations to the user are supported: (i) the Head-Up-Display (HUD) as an informational display that may appear at user's will upon her/his screen, (ii) the Phishing Presenter as a personalized slideshow of phishing information that the user is able to observe and interact with within the 3D VW, and (iii) the Quiz Customization Module which updates the content presented to the user through the School Library quiz of the Phishing scenario, as well as provides tips to the user on what to do while interacting with the Inbox Quiz. Finally, the paper brings some results of the preliminary testing with a small number of users to acquire important user feedback on usability issues. Within the final evaluation framework of the 3D VW the recommendation module will be evaluated as a separate module in order to obtain more detailed user feedback on the recommender system.

### 3D Virtual Worlds and Education

Although various definitions of the Virtual Worlds (VW) have been proposed by different authors, one commonly accepted definition does not yet exist. Basically virtual worlds could be considered as persistent virtual environments in which people experience others as being there with them and where they can interact with them (Schroeder, 2008). VW is a computer-based online community environment that is designed and shared by individuals so that they can interact in a custom-built, simulated world. Users interact with each other in this simulated world using text-based, two-dimensional (2D) or three-dimensional (3D) graphical models called avatars.

The 3D Virtual Worlds platforms are innovative and sophisticated ICT technology that provide tools for the creation of highly immersive 3D graphical and interactive on-line environments which can be either replicas of existing physical places or imaginary places, or even places that are impossible to visit in real life due to restrictions such as cost or safety. These VW platforms can be either proprietary or open-source. Currently the most popular VW platforms in the educational community for the development of fully customizable and thematic rich Virtual Worlds in which multiuser interactive educational simulations, serious games and learning activities can take place are Second Life, Active Worlds, Jibe and Unity as examples of proprietary 3D VW platforms and on the other hand OpenSimulator, OpenWonderland and OpenCobalt as examples of open source platforms.

The development and usage of 3D Virtual World platforms in an educational field is an emerging phenomenon that challenges and enlarges the idea of learning environment (Za and Braccini, 2012). The aforementioned characteristics of the 3D VWs could potentially transform these environments to "educational virtual environments". According to Mikropoulos and Natsis (2011) an Educational Virtual Environment (EVE) or Virtual Learning Environment (VLE) can be defined as a virtual environment that is based on a certain pedagogical model, incorporates or implies one or more didactic objectives, provides users with experiences they would otherwise not be able to experience in the physical world and redounds specific learning outcomes. Within this context, a rapidly growing interest in learning and teaching within 3D VWs is observed and a large number of schools and universities own virtual spaces for their educational purposes mainly by extending their campuses to the virtual space. 3D educational VWs are usually being used either as safe simulation environments or as virtual classrooms.

In comparison to other e-learning technologies, 3D VWs can provide learners with a full understanding of a situation using immersive 3D experiences which allow the learner to freely wander through the learning environment, explore it, obtain sense of purpose, act, make mistakes, collaborate and communicate with other learners (Daden, 2014). Indeed, two unique features that the technology of the 3D VWs can offer is the sense of immersion, i.e. the impression of "actually being in there" watching the world through the eyes of the avatar and the sense of presence, i.e. the feeling that the person is an entity of the virtual world, capable of interacting with other entities in the same way as in a physical space. However, it should be considered that the simple use of highly immersive technology alone could not be effective unless it is coupled to specific design strategies, for example "goal-based scenario approach" which intent is to provide motivation, a sense of accomplishment, a support system, and a focus on skills rather than facts (Schank, 1996).

### V-ALERT: Virtual World for Awareness and Learning on Information Security

The V-ALERT project is co-financed by European Commission under the Framework Lifelong Learning Programme / Key Activity 3 – ICT / Multilateral Project (V-ALERT, 2015). The goal of the V-ALERT project is to support the establishment of Information Security (IS) culture through providing awareness and facilitating

learning process using 3D Virtual Worlds platforms. The high proliferation of Information and Communication Technologies (ICT) and everyday use of Internet and computers by majority of people of all age groups for work, learning, entertainment, communication etc. brings a lot of benefits, but also certain risks related to non-informed ICT use. The ICT user should be aware of the basic principles of information security and data protection. This is the reason for the development and implementation of the innovative and immersive e-learning tool in different ICT user target groups (pupils and teachers, ICT students, academics and enterprise employees) in the scope of the V-ALERT project. An on-line 3D Virtual World Learning Environment (VWLE) is being developed which is simulating real-life Information Security threat scenarios, allowing users to gain first-hand experience of different risks and threats, but in a safe manner.

Additionally, the V-ALERT project aims to design and develop/adapt appropriate context-aware recommendation algorithms and methods that will use available user (student) model/profile, the context and any social information (if feasible) to provide personalized recommendations to assist the student during the learning activities within the 3D VWLE. The implemented recommendation algorithms consider the context, both real world context i.e. student's individual characteristics (for example background, competences, different abilities, experience, learning style) as well as VWLE related context i.e. student actions within the 3D environment, virtual character information, interactions with other objects and characters within the 3D environment, and alike.

### CONTEXT-AWARE RECOMMENDER SYSTEMS

Recommender systems have attracted the research community's interest for the past fifteen years. Many techniques have been proposed, as well as many extensions and improvements, but it was not until recently that the research community realized that recommenders have only been using a part of the available information for producing recommendations. The problem was that traditional recommenders do not utilize the context. Instead, they focus on two dimensions, the user and the items (also called two-dimensional recommenders), excluding other contextual data that could be used in the recommendation process, such as the day/time, with whom the user is with, weather conditions, and a like.

Context-awareness is the process of sensing/acquiring information relevant to the user while interacting with a computer system. The information can be about any person, place or object that is considered relevant to this interaction, including the user and system themselves (Dey, Abowd and Salber, 2001). Hartmann and Austaller (2008) note that context characterizes the actual situation in which the application is used; it refers to information as context that can actually be processed by an application (relevant information), but that is not mandatory for its normal functionality (auxiliary information).

Adomavicius and colleagues were among the first to prove that contextual information incorporated in the recommendation process indeed improves recommendations; they proposed that the recommendation procedure should not be two-dimensional but rather multi-dimensional, introducing CARS, the Context-Aware Recommender Systems (Adomavicius, Sankaranarayanan and Tuzhilin 2005; Adomavicius and Tuzhilin, 2008). Context-Aware Recommender Systems cover a wide spectrum of different research areas of computer science and information technology, with the field of e-learning as one of the most important, see for example (Verbert, Ochoa, Wolpers, Drachler, Bosnic and Duval, 2012).

### CONTEXT-AWARENESS AND RECOMMENDER SYSTEMS IN E-LEARNING

In learning, the adoption of context-awareness is not a new idea; it has been demonstrated in relevant systems for quite some time. Classical methods, such as those encountered in early intelligent tutoring systems (Wenger, 1987) and student modelling (Brusilovsky and Schwarz, 1993) can all be regarded as context-aware approaches used as adaptation methods. In order to be effective and usable, at the same time supporting individualization of learning, e-learning applications need to adapt continuously to their users as they gain more domain knowledge and task experience while learning.

In general, adaptive systems commonly implement dynamic adaptation on the basis of system assumptions about the user, inferred by monitoring user's interaction and stored in user model (Kobsa, 1995). While acknowledging that differences among individuals have an effect on learning, as of now, user modelling in the e-learning field has not yet successfully addressed the variety of the learning environment in terms of personalization and individual user profiles, especially at the initial stages of e-learning system use (Granić and Adams, 2011). Even though some user individual characteristics can be assimilated by users' education or by interface redesign, a number of these differences will certainly need to be accommodated through adaptive interface, thus engaging a user model in an e-learning system. In web-based learning student's individual characteristics have a more and more significant role and can even become a crucial factor of student's success or failure (Nakić, Granić and Glavinić, 2015). Recent adaptive educational systems, most of them web-based, promise to offer adaptation with respect to the presentation

of the learning material, the navigation support, the curriculum sequencing as well as problem solving support, see for example (Yang, Hwang and Yang, 2013). Consequently adaptive interfaces can be the starting point for depicting the significance of context-awareness in e-learning applications.

Context-awareness is also used by recommender systems for the e-learning domain. Such systems utilize the context in order to provide personalized recommendations that will assist the user and enhance the learning process. Drachsler (2009) states that two approaches can be followed when developing recommender systems for education:

- top-down approach (facilitating formal learning) where the structure and learning materials are maintained by domain professionals and
- bottom-up approach (facilitating informal learning) in the rest of the cases where learners by themselves interact with information sources shared in the network.

Manouselis, Drachsler, Vuorikari, Hummel and Koper (2011) provide a review on recommender systems in the Technology Enhanced Learning (TEL) domain. Most common approaches however, focus on recommending suitable materials or learning activities without considering the context (Santos and Boticario, 2010). The context in the e-learning domain includes from simple web resources to more interactive activities such as on-line exercise activities, reading messages on forums even running on-line simulations (Zaiane, 2002).

### ENHANCING THE 3D VWLE WITH CONTEXT-AWARE RECOMMENDATIONS

To the best of our knowledge, the provision of recommendations to users within a 3D Virtual World Learning Environment (VWLE) is a novel research field and no relevant works exist in the bibliography. The aim of this paper is to provide an insight into the design and development of a context-aware recommendation system that considers available relevant information such as the context, user (student) individual characteristics and user history in order to provide personalized content to assist the user during the learning activities within the 3D VWLE. First, a number of challenges are discussed including the design of a user profile, the presentation of the recommendation, the issue of context in the 3D VW as well as the presentation of the learning material within 3D VW scenarios. Second, due to the nature of the system and the challenges mentioned, a selection and usage of a Utility-Based Function is explained. Third, the personalised recommendation mechanisms are presented in relation to the Phishing/Spam Information Security awareness scenario. Finally, the paper brings some results of the preliminary usability testing conducted in order to acquire important student feedback.

#### Challenges

Providing recommendations within a 3DVW is very challenging in many aspects. The most important challenge is the limited user information available at the time of recommendation. In V-ALERT, the approach used is that the user registers to the system by providing a limited amount of information in her/his profile and then interacts with the 3DVW through the scenarios. In this aspect, the recommender system within the 3D VW must be able to facilitate the user in learning about information security through her/his first experience with the system, even though limited user information is available. As expected, in subsequent user-system interactions where the user interacts more with the 3D VW and therefore more user-oriented information is available, the recommender system is more able to provide recommendations.

Based on the above, the most important challenge is that the user profile, as well as her/his avatar information is being created and filled with information at the time of user interaction with the system and not at a prior stage (this is the case with the V-ALERT system, however, other 3D VW may follow a different approach). In order to acquire the very basic information about the user, we have designed a user profile that the user fills with information upon registration. The profile is simple, can be filled very easily and quickly even by children, does not demand from the user to write any text and provides interesting information that can later be used by the recommender. Such information includes personal information (age, country, target group, etc.), whether the user has previous experience with 3D VW interaction and on information security matters, along with the level of assistance the user would like to acquire by the recommender. The general idea is that experienced users often do not need to be guided, while inexperienced users do.

Another challenge regards the recommendation presentation. A user within a 3DVW is constantly on the move interacting with objects, bots (system controlled avatars) and other users, giving less attention to traditional learning methods such as a piece of text. Therefore, a learning module that a user could learn by reading a piece of text in a book in the traditional learning method, will not be successful in the case where the learning takes place within a 3D VW because it would be very difficult for the user to concentrate on reading a book within a VW, not to mention that such an approach would oppose to the whole 3D VW concept, since it is basically a 2D approach. We state that the recommendations should be provided in such a manner that the user will not be interrupted from

her/his current task, will not be forced to interact with something that is boring and out of the 3D VW concept, while at the same time the recommendations will assist to accomplish the scenario, as well as facilitate the learning process as much as possible.

The third challenge concerns the user context within the 3D VW. Theoretically, context within the 3D VW is easier to acquire than real world context as everything happening with the user, her environment and the system is already sensed, tracked and recorder by the 3D VW in the database and log files. In practise however, the problem is that the recommender is being asked to perform, i.e. provide personalized context-aware recommendations without having yet a considerable amount of context information on the user and her/his avatar. Therefore, while the recommender can know the places the user has been within the 3D VW, it cannot come to a real, safe conclusion on the places the user prefers until the system is being used by her for an extensive amount of time. This problem is known in the Recommender Systems literature as the “Cold Start” problem.

Finally, another important challenge is that, due to the fact that the scenarios are relatively short and that a large amount of time is spent by the user on interacting with her environment, little time is eventually left for the user to comprehend the learning material of the scenarios. Therefore, the learning material cannot be comprised of large volumes of information, as it would normally be the case in an ordinary class within a classroom where a whole book chapter could have been taught. In the case of presenting learning material within a 3D VW scenario, the learning material must be restricted in volume, more focused on the learning subject and provided in a format that would attract the users’ interest.

### **Scenario-based Simulations**

In the context of the V-ALERT project and according to the results of the user needs analysis, various Information Security awareness scenarios have been developed, specifically Identity Theft, Phishing/Spam, Social Engineering, Strong Password. Some of these are oriented to all envisaged target groups, that is pupils, teachers, ICT students, academics and employees, whereas one scenario is designed as role-play game especially for pupils and teachers.

The conceptual design of the scenarios and their virtualisation approach has been based on the principles of experiential learning, also considering instructional design strategies related to situated learning in immersive 3D virtual world simulations. The “branching scenario” approach has been used as a form of storytelling. The scenario unfolds its narrative as long as the learner uses their critical thinking to decide on their next action in order to move forward along the path or “branch”. All scenario-based simulations of the V- ALERT put the user in a “role”, motivate them to explore the 3D virtual environment, while offering sequences of tasks which the user must complete in order to accomplish the scenario-defined goal and successfully complete their mission. As the simulation progresses, the embedded educational content is presented as part of the plot and the knowledge gained can eventually be used for the completion of the following tasks. The non-completed tasks may either lead to other situations which place the user to experience the negative consequences, or simply prevent them from proceeding. In the end, all scenarios provide the user with general feedback on Information Security threats and preventing actions.

Special attention has been drawn on issues such as user’s meaningful interactivity with objects and computer-driven avatars (bots), level of difficulty and total duration of the scenario, clear feedback on the goal and the reasons of success or failure. To this aim the provision of the personalised recommendations have been of great importance.

### **Recommendation Algorithm and Provision of Recommendations**

The recommendations within the V-ALERT 3D VWLE have two goals: firstly facilitate the user in her/his learning task by offering learning appropriate content and secondly to assist the user in her/his interaction within the 3D VW and offer guide through the scenario by providing tips, summary of tasks and the like.

Due to the nature of the system and the above-mentioned challenges, well known recommendation algorithms such as Collaborative Filtering and Content based Filtering could not be utilized. Instead, we have used a Utility-Based Function that retrieves information from the user profile and past user actions within the 3D VW in order to determine the level of expertise and experience of the user, as well as how much the user has progressed within the scenario and compute personalized recommendations that are then displayed to the user in a non-intrusive manner. The Utility-Based Function is an easy, efficient and effective way to compute the utility of the learning content for each user. Considering a particular user task and learning goal, the Utility-Based Function computes the utility of each piece of learning content against the user and selects the learning content that is more suitable



for the user. Then, the recommender system merges in real time the pieces of learning content with the highest utility into one final learning module that is projected to the user.

For the needs of this paper, the personalised recommendation mechanisms will be presented in relation to the Phishing/Spam scenario. The Phishing/Spam scenario has been designed as one-player simulation (Figure 1) and aims to educate the user on phishing attacks. The user holds the role of investigator whose mission is to investigate, resolve and report the phishing attack incident which emptied the school bank account. According to the scenario, the user must find evidence on what could have happened and get informed on phishing attacks.



**Figure 1:** The virtual area for the Phishing simulation.

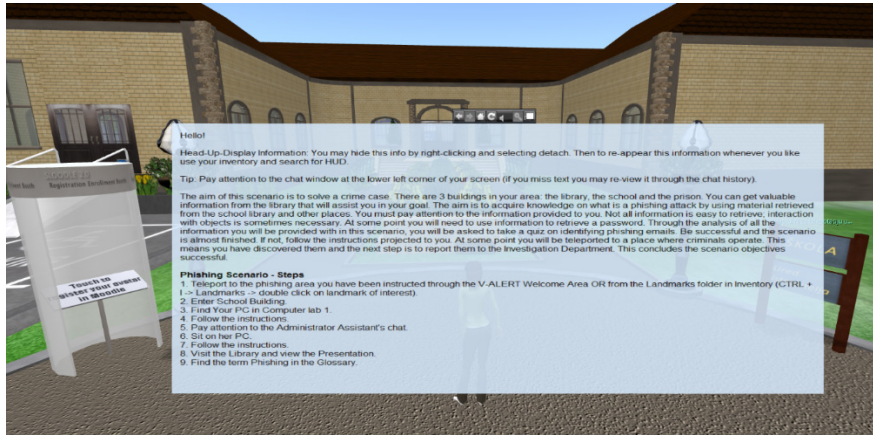
Through the analysis of the evidence and clues collected through their interaction with the virtual environment, the user must discover the attackers' lair and report everything to the Investigation Department (Figure 2). This simulation foresees two "turning points" where the user's gained knowledge is tested through a quiz. Only when the user succeeds in the quiz can proceed to the subsequent "episode" of the story. Within the Phishing scenario three different ways of providing the recommendations to the user are supported:

- the Head-Up-Display (HUD) as an informational display that may appear at user's will upon her/his screen,
- the Phishing Presenter as a personalized slideshow of phishing information that the user is able to observe and interact with within the 3D VW and
- the Quiz Customization Module which updates the content presented to the user through the School Library quiz of the Phishing scenario, as well as provides tips to the user on what to do while interacting with the Inbox Quiz.



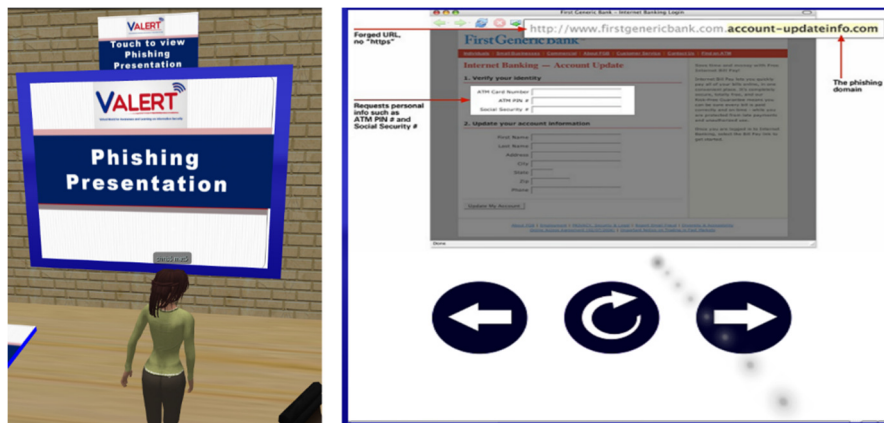
**Figure 2:** The Investigation Department of the Phishing simulation.

The Head-Up-Display (HUD) is an informational display that may appear at user's will upon her/his screen (Figure 3). The HUD aims to assist the user in interaction within the 3D VW and guide her/him through the scenario by providing a summary of tasks and tips on what the user may/should do within the scenario. The information provided is personalized in the aspect that it reflects the experience and expertise of each user. The idea is that experts and experience users require (and often demand) less instructions regarding the tasks in order to find the scenario interesting and challenging. The HUD is projected in a see-through mode on user screen so that the user can be advised while continuing activities within the scenario.



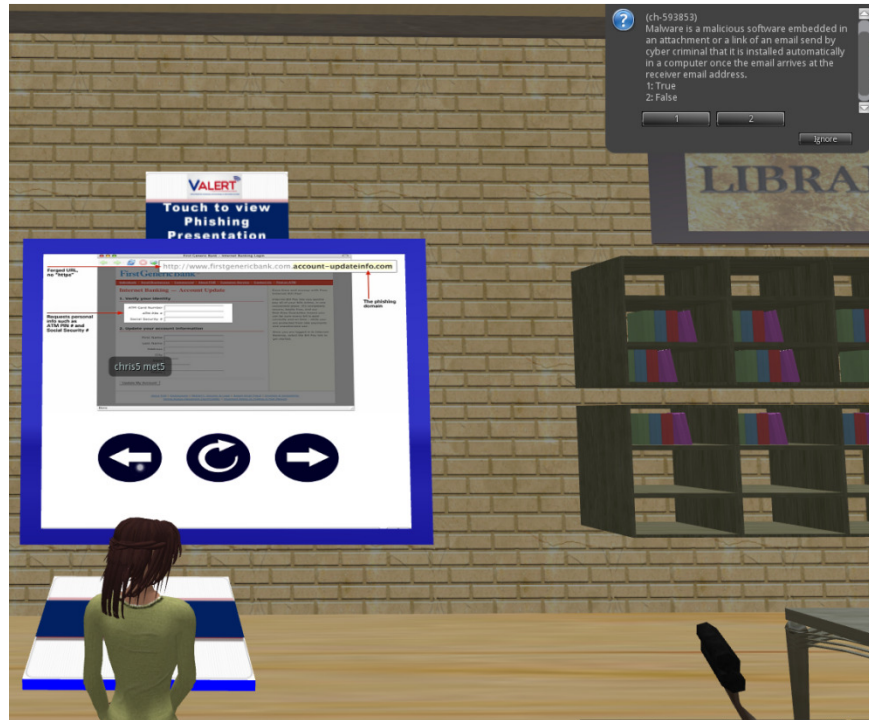
**Figure 3:** The HUD is projected in a see-through mode on user screen.

The presenter is a personalized slideshow of phishing information that the user is able to observe and interact with within the 3D VW (Figure 4). The recommender system updates the content of the presenter according to the user profile information and user actions. In this manner, the user is being projected with learning content that is appropriate to her/his needs and educational level.



**Figure 4:** The Phishing Presenter with which the user can interact to learn about phishing.

This recommendation module updates the content presented to the user through the School Library quiz of the Phishing scenario (see Figure 5), as well as provides tips to the user on what to do while interacting with the Inbox Quiz (Figure 6). More to the point, based on the user's experience, expertise, target group and other personalized information, as well as based on user past actions (if available), the recommender updates the Library Quiz with questions appropriate for the particular user. Since the questions are part of the phishing learning content, by providing questions appropriate for the particular user's needs and educational level, we enhance the learning process of the user.



**Figure 5:** The School Library quiz of the Phishing scenario: each question is presented in the upper right corner of the user's screen.

Moreover, the recommender system monitors the attempts of the user on the quizzes and provides useful tips to her/him while interacting with the Inbox Quiz (Figure 6). The goal is to assist the weak learner with her learning task, ensuring that the user will not get frustrated in case the learning tasks prove challenging for the user.



**Figure 6:** Inside the "INBOX": The emails as numbered boxes, the quiz chair that initiates the quiz and the recommender system monitor which provides the user with personalised recommendation tips.

### USABILITY TESTING OF THE DEVELOPED 3D VWLE

The testing of the alpha version of the V-ALERT 3D VW has been conducted at the premises of University of Cyprus (UCY) and Hellenic Open University (HOU) and aimed primarily to engage a small number of users in interacting with the system for the first time in order to acquire important user feedback on usability issues, such as in-world avatar navigation, movement and interaction with 3D objects, system response, usability of the viewer controls. Since the development was still in progress, this testing would also enable V-ALERT developers to get feedback from real users and understand whether the implemented scenario is easy to use, and whether users would be able to successfully accomplish all learning tasks within the specified time.



In the UCY premises a total of 6 users were engaged, all university students (ages 22-25). In the Software Quality Lab of HOU a total of 16 users, educators and administrative staff, were engaged (ages 25-40). The evaluation however did not concern the recommender system per se. Rather, the users were asked to evaluate the system as a whole as well as their experience in interacting with the 3D VW in order for the development team to detect malfunctions and usability problems. Before the evaluation, the users were offered a 20-minutes training session in-world so as to get familiarised with the basic viewer controls to be able to move their avatar, control the world camera and learn the basic interaction modes. After the training they were asked to enter the Phishing/Spam simulation and follow the steps of the story that they would receive through the Head-Up-Display (HUD) and an infocard (or "notecard") which are both scripted virtual objects and are automatically offered by the platform to the avatar when she first enters the simulation. The HUD and the notecard are stored into avatar's inventory and are always available for further review.

Also, they were advised to explore the 3D virtual environment, interact with objects and pay attention to the received feedback. From then on they were free to act and make decisions in order to complete their mission. Most of the users (19 out of 22) managed to complete the scenario within 30 minutes which was the pre-defined time for the testing. At the end of the evaluation procedure, the users were asked to complete a questionnaire which aimed to investigate their opinion on the aforementioned usability issues, the Phishing scenario simulation as learning mechanism and to indicate any weaknesses.

Regarding the evaluation results for the Phishing/Spam scenario, when users were asked whether the recommender system was helpful and whether it provided added value to the system, the users mentioned that they liked the way they have been provided with the recommended information, although the information presented in the HUD was at some occasions too extensive. They also stated that they liked the idea of being projected with personalized information based on their needs and did not have any negative comments on the recommendations within the Phishing scenario.

## CONCLUSION

The V-ALERT project, co-financed by European Commission under the Framework Lifelong Learning Programme, aims to support the establishment of Information Security culture providing awareness and facilitating learning activities using the 3D Virtual World Learning Environment (VWLE). The paper provides an insight into just one segment of the project, the development of a context-aware recommendation system in the V-ALERT 3D Virtual World Learning Environment. The goal of recommendations within the 3D VWLE is two-folded: (i) to facilitate and enhance the user in learning process by offering learning appropriate content and (ii) to assist the user in interactions within the 3D VW offering guide through the scenario by providing tips or summary of tasks. In the context of the V-ALERT project a number of Information Security awareness scenarios are developed. However for the needs of this paper, the personalised recommendation mechanism is presented in relation to the Phishing/Spam scenario where three different ways of providing the recommendations to the user are supported: the Head-Up-Display (HUD), the Phishing Presenter and the Quiz Customization Module.

According to the preliminary evaluation results, the majority of the users found the phishing simulation challenging and interesting, although, initially, most of them faced difficulties in avatar navigation inside the buildings as well as the camera controls. However, they also admitted that frequent usage definitely would lead to improvement and all of them agreed that the pre-evaluation training is necessary and helpful. Additionally, the results showed that the users did not face problems related to system stability and response, though most of the users were not able to directly identify which virtual objects were interactive and offered crucial information. Also they expressed the need for clearer mechanisms that offer in-world help on navigation, such as labels, arrows, etc. All comments and user feedback will be taken under consideration in the final version of the 3D VWLE of V-ALERT. Our future plan is to include the recommendation module as a separate module for evaluation within the final pilot evaluation framework of the 3D VW in order to obtain more detailed user feedback on the recommender system targeting its improvement.

## ACKNOWLEDGMENT

This work has been carried out within the project V-ALERT - "Virtual World for Awareness and Learning on Information Security", partially supported by the European Commission under the Framework Lifelong Learning Programme/ Key Activity 3 – ICT/ Multilateral Project Number 543224-LLP-1-2013-1-GR-KA3-KA3MP. This document does not represent the opinion of the European Union, and the European Union is not responsible for any use that might be made of its content.

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## Phenomenal Change And Adolescents' Psychological Disinterest In Commitments: A Concern For The Family Traditions

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### ABSTRACT

The phenomenal changes such as biological, physical, social, technological and global changes, vitally affect the psychological uncertainty and pre-occupation in the minds of the adolescents. (Leckman et al., 2002, p.324). A lethargic attitude, avoidance of responsibility creeps into their system during this period, leading them to more socialising and less psychological commitments. (Jakubowski & Dembo, 2004). Researches show that Adolescents who were isolating themselves from family events and desiring only social events outside family tend to develop '*low levels of commitment and self-regulatory resources, and they perceived their parents as being low in trust, openness, and supervision.*' (Berzonsky 2004b; 2007, p.338). This is becoming a serious social concern for the future of the traditional families. "Indeed adolescence can present new challenges to families, as this is a period of many transitions". (Holden et al., 2011. p.139). Hence it calls for a serious global assessment and concern for the family tradition.

**Keywords:** Adolescents and Phenomenal changes, Psychological disinterest for commitments, Parents-teachers role, Social structures and regulations.

### INTRODUCTION

Phenomenal change and behavioral uncertainty in adolescents are symptoms of Psychological disinterest in commitments, a call and concern for conservative family traditions. Adolescents and the problem of uncertainty about many facts of life sprouting from phenomenal changes is one of the several fundamental problems faced by the adolescents. (Park 2007). "Early adolescents with a high risk of externalizing problem behaviors have greater difficulties in developing a coherent sense of identity over the course of adolescence". (Crocetti et al., 2013). As a result of uncertainty of the realities, the Adolescents develop psychological disinterest for commitments to any responsibility. (Alan et al., 2015; Mead 1970). This is becoming a serious social concern for the future of the traditional families. "Indeed adolescence can present new challenges to families, as this is a period of many transitions". (Holden et al., 2011. p.139). The phenomenal changes such as biological, physical, social, technological and global changes, vitally affect the psychological uncertainty of the adolescents. Therefore it is necessary to have the parents' and teachers' indefatigable guiding presence which "tends to have a cumulative or additive effect" in the life of the Adolescents. (Pettit 2001; Van Doorn et al., 2010; Rogers et al., 2013 p.352).

#### Bio – Phenomenological changes

The adolescents encounter a gradual change in their body. 'Growth spurt, menarche, first nocturnal emissions, voice breaking, changes in sexual organs, sexual arousal' are beginnings of biological changes. (Kleop et al., 1999; David et al., 1999, p.401). Girls notice 'breast development, height spurt, pubic hair' widening of waist, and commencing of menses, which become externally evident with the onset of puberty. (Herman-Giddens et al., 1997; Graber et al., 1996). 'The Latin word *pubertas*, meaning "age of manhood", is used to refer to the physiologic and morphologic changes that mark the transition from childhood to adulthood'. (Leckman et al., 2002, p.322). The menstrual cycle becomes a biological recurrence every month (Shelton 2002; Salkind 2002, p.260). This biological activity within the girl is very painful and disturbing (Adams et al., 2003; Gullotta et al., 2005), yet the external changes of pelvic-widening, and breasts gaining a prominent shape (Kapes 2002, p.260) give the girl a distinct appearance of a womanly look (Herman-Giddens et al., 1997; Gullotta et al., 2005). Nature has its own course but the unexpected happenings of these biological nature cause a feeling of uncertainty and pre-occupation in the mind of the adolescent girl. (Leckman et al., 2002, p.324).

As for the boys, onset of puberty ignites the 'penile and testicular growth, and height spurt', and widening of the shoulders, growth of the facial, armpit and genital hair, and muscular formation takes shape in due course of time. (Leckman et al., 2002, p.323) The production and ejaculation of the sperms and wetting the bed (wet-dreams) begin its course from puberty. Wet-dreams are unforeseen biological phenomenon that makes him feel embarrassed at times (Graber et al., 1996). The rapid metabolic and external changes make the adolescents a bit clumsy with their hands and legs and bodily movements that become extremely noticeable. (Leckman et al., 2002; Herman-Giddens et al., 1997; Graber et al., 1996). The uncertainty of the sexual characteristics of the adolescents leads to many other conflicts, 'Often biological change causes emotional disturbances, at times even bring about turmoil and stress. Hence trustworthy external support, assuring the adolescent that someone cares, helps to overcome the turmoil towards maturity'. (Papalia et al., 2004; Lieser et al., 2007).

Phenomenal changes are those that are connected to the appearances. 'Appearance' carries a great deal of impact upon the Adolescents (Papalia et al., 2004). But the appearances seem to be very rapidly changing as well. "changed romantic relationships, gender role identity, and changed relationship with adults, increasing autonomy,

independence and responsibility”. (Kleop et al., 1999; David et al., 1999, p.401). Basically Adolescents become very conscious about their physical appearances (McGregor et al., 2007). They not only become aware of their own body but also keenly observe the others’ appearances as well. They begin to have role models and hero worship and infatuations, yet ‘Adolescents strive for more autonomy and self determination’ (Collins 1990; Laursen and Collins 2004).

### Socio – Technological change

Everyday new fashion, new style, new trends prop up like mushroom. Along with these trends there penetrates also socio-cultural conflicts between existing traditions and the new arrivals. Every super-star of the silver screen and the TV Chanel and internet web-sites, change the lifestyle of adolescents for good or for bad. Gustavo Mesch (2006) points out, ‘use of internet for study purpose is not a concern for the parents as it does not have negative family interaction, but when the adolescents use internet for social purposes which goes out of control and brings about negative effect’ (Subrahmanyam et al., 2008, p.135). Social network and FB and other innumerable social media that influence the adolescents, (Ferguson et al., 2014; Mead 1970), alluring them, twisting and turning, and robbing them of their innocence like a swift storm, and leaving them high and dry, vacant and confused, therefore, “it is necessary to assist children in determining the source and reliability of web-based information.” (Milburn 2002; Salkind 2002, p.219). Researches show that Adolescents who were isolating themselves from family events and desiring only social events outside family tend to develop ‘*low levels of commitment and self-regulatory resources, and they perceived their parents as being low in trust, openness, and supervision.*’ (Berzonsky 2004b; 2007, p.338). The errors of uncertainty gets imprinted in the minds and hearts of the adolescents (McGregor et al., 2007; Krettenauer et al., 2014), maybe noticeable in the early adulthood as the latent impressions in the psyche of the individual from the unresolved problems of the adolescent stage. (Song et al., 2006; Mead 1970).

Adolescents may oscillate in their choice of external allurements because of their own rapid social changes along with biological and physical changes. (Gullotta et al., 2005). External attraction is instinctual for most adolescents. A lethargic attitude, avoidance of responsibility, creeps into their system. (Jakubowski & Dembo, 2004). At the same time they become very choosy about persons to whom they open their secrets and intimate moments. ‘The physical, neurobiological, and cognitive changes herald dramatic shifts in the adolescent’s relationship to his/her own body, appetites, parents, peers, and self-image. (Leckman et al., 2002, p.324). At this juncture they have lots of turmoil, irritation, anger, and uncertainty of almost everything, a *fragmented, unstable, confused sense of self* (Berzonsky 1994).

Technological growth has invaded every nook and corner of the world. Technological infiltration is another phenomenal change that has immense impact on the adolescents. No doubt that there are immense utilities brought about by technological progress. (Milburn, S. S. (2002). Nonetheless the havoc brought about by technological influence on the adolescents is considerably big. Traces of disinterests in hard work and pursuit of serious discipline, (Park et al., 2007), sugar coated by the easy-to-do technology, (Berzonsky 2004a) has become the order of the day. There is a tendency of fast-food-culture, short-cut-methods of doing things than by the natural hard work (Covington 2000). Today the younger generation has lost the zeal (McGregor et al., 2007) and the habit of writing any letter (Mead 1970) due to the invasion of the cell phone chats and messaging. Some adolescents don’t even have the opportunity and possibility of learning through type-writer. The easy wording system that suggests / prompts to coin sentences and words in mobile-phone-messaging (Mesch 2006), reduces the efforts needed to write the word or know the spelling of the words. This phenomenon has become an added reason for the lethargic way of living (Gullotta et al., 2005) that is growing strongly in the cities and not very far from reaching also the villages and towns all over the world.

All these fast-changing-phenomena lead the adolescents to develop a strong feeling of uncommitted life style. (Jakubowski et al., 2004). Adolescents who desire to live without norms and restrictions, only information-will-be-sufficient type of life style run into risk of Psychological disinterest in commitments and for serious responsibilities, (Berzonsky 2004b; Adams et al., 2003).), turning out to be rebellious characteristic feature of the adolescents in the milieu of the phenomenal change. (Ferguson et al., 2014; Collins 1990; Gullotta et al., 2005). The parents and teachers are also stripped of their authoritative right of disciplining the children with any type of sanctioning has made the situation bad to worse, “on a subjective level, for both the parents and adolescents, there are important shifts in the emotional terms of the relationship.” (Steinberg and Morris 2001; Leckman 2002, p.326).

## Integrated Formation for Adolescents

A sincere concern and call for renewed efforts from all quarters of the society including the parents, (Romer 2003; Holden et al., 2011) to reinforce the traditional values and conservative moral code and social joint venture to rebuild the adolescents' zest and vitality of responsible freedom (Covington 2000; McGregor et al., 2007), with reasonable kindness, divine protection and prevention (Don Bosco 1874; Pettit et al., 2002; Rogers et al., 2003). "It's important for children to show obedience and respect versus showing their independence. Family goals and the moral socialization of all these values and other dimensions of family life have powerful influences on the social development of children growing up ..." (Weisner 2011, p.391; Holden et al., 2011).

As they say, '*History repeats itself*', it's apt that the good traditions be brought back to make a balance between ultra-modern and infra-ancient. There should be moderation in every change that is brought into the society, on the contrary uncontrolled use of "social networking is causing parent-child conflict and perceived loss of parental control." (Subrahmanyam and Greenfield 2008, p.138). The family is the basic unit of the society. Therefore respecting the traditions of the family all the legal laws, norms and policies should be in favour of providing the teachers and the parents due credibility in forming the adolescents. Researchers like Vonnie C. McLoyd, Algea O. Harrison-Hale (2002) indicate that the disciplinary methods adopted by the parents produce more positive outcome of their adolescent children than through general societal laws, "parenting characterized by a combination of restrictiveness, extensive rule setting, and warmth appears to be especially beneficial to the cognitive and socio-emotional functioning" (McLoyd et al., 2002, p.17) of the adolescents.

The parents and teachers should be supported by the social laws. They should have the privilege of last word in the disciplinary methods to bring up the children (Berzonsky et al., 2007) with strict constructive measures that is legitimate, family authority and teachers credibility of disciplining. Baumrind's (1973) parenting styles findings show that authoritative parents bring up socially and culturally better adjusted children (Salkind 2002, p.296). Therefore *all legal rights should be bestowed upon parents and teachers* for constructive disciplining actions on their children to uphold the values of the community traditions for the well-being of the individual and the society. The law of the society should not supersede the rights of the parents and teachers over the growing adolescents at least till the completion of teenage (19). This deteriorates the formation of the adolescents and disintegrates the conservative social and family traditions. "emotional stress, social support... may influence qualities of the parent-child relationships" (Martha 2002; Salkind 2002, p.293). Therefore a serious introspection of the educative policies is needed and right of legitimate authority to be bestowed up on the parents and teachers to take any disciplinary actions on the children for their well-being and integral growth without threat of penal action on the teacher and parents.

## CONCLUSION

It's evident from the argument that phenomenal changes greatly affect the psychological commitments of the adolescents (Adams et al., 2003; Gullotta et al., 2005). As a matter of fact, the more the involvement of the adolescents in the family tradition and family norms the better psychological development takes place in the adolescents, "parenting style shields children from noxious elements and bestows them with a positive self-concept that helps deflect negative influences in their extra-familial environment" (McLoyd et al., 2002, p.17), creating in them a sense of commitment, responsibilities, and integral growth, (Romer 2003) nurturing 'autonomy, self-efficacy, self awareness, and self-regulation' (Berzonsky 2004a; McGregor et al., 2007). Authoritative parenting that combines warmth and firmness has the most positive impact on the adolescent's better psychological development, and fewer behavior problems, (Post 2003; Steinberg 2001). Therefore rethinking of the legal rights to be bestowed onto the parents and teachers. Though the International law of the Children Act 1989 defines and upholds the principle of parental responsibility as: '*All the rights, duties, powers, responsibilities and authority which by law a parent of a child has in relation to the child and his property.*' (Partridge et al., 2010, p.21).

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## Prospective Chemistry Teachers' Opinions About Teaching Practice And Its Effects On Attitudes Towards Teaching Profession

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### ABSTRACT

The aim of this study is to determine chemistry prospective teachers opinions about Practice Teaching course and the problems occurred during the applications. Also, it was aimed to determine the effect of this course on the attitudes towards teaching profession. Sample of the study consists of 40 students attending Hacettepe University, Faculty of Education, Department of Secondary School Science and Mathematics Education. As data collection tools "Attitudes towards Teaching Scale" developed by Eroğlu (2011); "Problems Occured During Applications Scale" developed by Davran (2006) and students' diaries were used. In order to evaluate the results, qualitative and quantitative analyse methods will be used and recommendations will be done.

### INTRODUCTION

Teachers are one of the fundamental components of education, which is a social system because the properties and quality of education in a country are largely associated with the quality of teachers. Teaching is defined in laws on national education in Turkey as a profession requiring expertise. In the Basic Law of National Education (1973) bearing number 1739, such statements are available for teaching profession: "Teaching is an expertise profession taking on the educational, instructional and related administrative duties of the state. Teachers have the liability to perform those duties in accordance with the goals and fundamental principles of Turkish National Education."

Since teaching is a profession requiring expert knowledge and skills, people choosing this job should possess certain efficacies (Şişman, Acat, 2003).

Teacher training is addressed in three aspects: field knowledge, general knowledge, and knowledge of teaching profession. Prospective teachers keep up to date, interpret events and can find more effective solutions to contemporary problems due to general knowledge they acquire; they instil in their students the knowledge, skills and values related to the domain of teaching due to field knowledge they acquire; and they teach their subject to their students in the best way possible due to the knowledge of teaching profession (Küçükahmet, 2002, quoted by Özkılıç, Bilgin, Kartal, 2008).

The courses that prospective teachers take in faculties of education and the gains that those courses provide prospective teachers carry great importance in prospective teachers' gaining the relevant efficacies. Prospective teachers are offered- in teacher training programmes in faculties of education- courses related to their branch of study, theoretical courses to shape them pedagogically, and such courses as School Experience and Teaching Practice so that they can get acquainted with teaching profession and so that they can observe the educational applications in place.

"Teaching Practice is an important course transforming theoretical knowledge into practice. The purpose of the course is to make sure that prospective teachers can develop their teaching efficacies by teaching in differing classrooms; they can understand the curriculum of their field, can evaluate textbooks, can perform measurement and evaluation, and can share their experiences with classmates and the course lecturer (Council of Higher Education, 1998). It is expected in this course that prospective teachers perform at least 3 hour a day teaching practice out of 6 hours in the school of practice teaching under the supervision of the teacher responsible, and that they make observations in the remaining time. It is also predicted with 2-hour a week course in the faculty that discussions and evaluations are carried out in relation to the presentations done in practice teaching schools" (Şişman, Acat, 2003).

In this process, the task of educational faculties is to determine the schools for practice teaching in cooperation with the coordinators in provincial directorates of national education and in district national education directorates, and to make sure that the activities in those schools are conducted effectively and efficiently. The duty of the lecturer of practice teaching is to prepare their students- prospective teachers- for practice teaching activities, to plan the activities jointly with school coordinators and with teachers in the schools of practice teaching, and to help prospective teachers at every stage of teaching practice. The duty of the teachers responsible in the schools of teaching practice is to cooperate with the school coordinator and with the lecturer of teaching practice and to ensure that prospective teachers in their school conduct the activities, to guide the prospective teachers, and to make evaluations in cooperation with the lecturer at the end of the practice (Eroğlu, 2011).

As is apparent from above mentioned issues, Teaching Practice course bears great importance in order for prospective teachers to get familiarized with the profession and to internalise it. Research studies conducted have demonstrated these courses influence prospective teachers' expectations of the profession, their self-efficacy, and their beliefs in and attitudes towards effective teaching (Wang, Nicholas, Williams, 2010; Fives, Buehl, 2010; Ekici, 2005).

Teaching attitudes are an issue that needs to be attached great importance and be taken into consideration in teacher training; because teachers' attitudes represent the attitudes of the whole society. The experiences that prospective teachers have during practice teaching cause them to develop positive or negative attitudes towards the profession. Şahin Taşkın and Hacıömeroğlu (2009) found that Knowledge of Teaching Profession course affected the majority of prospective elementary school teachers' and almost half of the prospective pre-school teachers' perspectives of the profession in a positive way. In a similar vein, Gürbüz and Kışoğlu (2007) also found that courses related to teaching practice influenced attitudes towards the profession in a positive way. However, prospective teachers may occasionally develop negative attitudes towards the profession owing to the environment, the teacher responsible in the school of practice teaching and the lecturer of practice teaching, or there may be decreases in their levels of attitudes (Saracoğlu, 1992; Güdek, 2007).

Therefore, it is important that the problems prospective teachers encounter during practice teaching be determined and that research in which prospective teachers evaluate the self and the process be performed and thus solutions be sought to the problems. In a study conducted by Kale (2011), where the problems that prospective elementary school teachers of five different branches encountered during practice teaching were researched, it was found that the prospective teachers faced problems in such issues as being informed by school administration of administrative issues, being informed by their lecturer, communicating with the teachers responsible in the school of practice teaching, receiving help related to classroom activities, and being accepted into teachers' room. Kyriaccou and Stephens (2010), on the other hand, described the problems that prospective teachers encountered as not being considered as real teachers in classes, the difficulties stemming from the responsibilities of classroom management and planning, workload, inexperience, and the stress caused by the fact that they were being assessed.

This research also aims to determine prospective teachers' views of Teaching Practice course and the problems they encounter in teaching practice as well as the effects of the course on attitudes towards the profession.

Thus, answers are sought in this study to the following questions:

1. Are there any significant differences between the Attitudes towards Teaching Scale pre-test and post-test scores given before and after teaching practice?
2. What is the level of prospective teachers' views of teaching practice?

## **SAMPLE**

The research was conducted with 40 prospective teachers attending the Secondary School Science and Mathematics Education Department of the Educational Faculty of Hacettepe University.

## **DATA COLLECTION TOOLS**

### **Attitudes towards Teaching Scale**

The scale developed by Eroğlu (2011) in order to measure prospective teachers' attitudes towards teaching profession is composed of 23 items, and is a five pointed Likert type scale. The maximum score receivable from the scale is 115, and the minimum score receivable is 23.

### **The Form for Questionnaire of Problems Encountered during the Practice**

The form was developed by Davran (2006) so as to identify the problems prospective teachers encountered during teaching practice. The questionnaire contained 20 items and 4 dimensions. The dimensions are the teacher responsible in the school of practice teaching, the lecturer of teaching practice, the coordinator of the school of practice teaching, and the prospective teachers. The questionnaire was designed to measure the problems encountered on these dimensions. The extent to which participants agreed to the items on the questionnaire was graded as "Never", "Rarely", "Sometimes", "Often", and "Always"; and the participants were asked to state their views accordingly.

### **Reflective Diaries**

In order to determine the problems prospective teachers encountered during practice teaching, unstructured reflective diaries in which prospective teachers wrote their feelings, thoughts and experiences were used. Throughout the practice, a total of 220 diaries were used as the tool of data collection each participant wrote 4 diaries for the overall process and 1 diary for their experiences, feelings and thoughts about their own presentations.

## STAGES OF IMPLEMENTATION

The study was conducted for 14 weeks within the framework of the Teaching Practice course. Coordination was established with three schools in Çankaya district of Ankara. The prospective teachers made observations six hours a week in the schools of practice teaching under the supervision of teachers responsible in those schools. Discussions and evaluations were made with the participation of the lecturer of teaching practice – which was taught two hours a week in the faculty- and the prospective teachers on presentations and observations and applications in the schools of practice teaching. At the end of the semester, the prospective teachers prepared their files related to teaching practice, and they made a presentation in a class at the presence of both the lecturer and the teacher responsible in the school of practice teaching, and thus they were assessed accordingly.

## FINDINGS

In relation to the sub-problem “Are there any significant differences between the Attitudes towards Teaching Scale pre-test and post-test scores given before and after teaching practice?”, the dependent sample t-test analyses were performed for the answers the prospective teachers gave to the items of the Attitudes towards Teaching Scale; and the findings obtained are shown in Table 1.

Table 1. Dependent Sample t-test Results for the Attitudes towards Teaching Scale (ATTS) pre-test and post-test Scores

	Mean	N	Std. Deviation	t	df	p
ATTS(pre-test)	84,43	40	15,75	-,795	38	0,432
ATTS(post-test)	86,38	40	11,92			

On examining Table 1, it was found there were no statistically significant differences between prospective teachers’ pre-test and post-test scores ( $X_{(pre-test)}=84.43$ ;  $X_{(post-test)}=86.38$ ;  $p>0.05$ ).

Table 2: In relation to the question “what is the level of prospective teachers’ views of teaching practice?” the descriptive analysis of the prospective teachers’ responses to the Questionnaire of Problems Encountered during the Practice was performed, and the analysis results are shown in Table 2.

1- THE TEACHER RESPONSIBLE IN THE SCHOOL OF PRACTICE TEACHING (The teacher in whose class you have done teaching practice)	Mean	Never		Rarely		Sometimes		Often		Always	
		f	%	f	%	f	%	f	%	f	%
1-He/she helped me find the reference book for the course.	4,20	2	5	1	2,5	5	12,5	11	27,5	21	52,5
2-He/she helped me prepare my daily plans.	3,22	5	12,5	8	20	8	20	11	27,5	8	20
3-He/she was with me throughout the practice.	4,35	1	2,5	0	0	1	2,5	20	50	18	45
4-When he/she needed to leave the classroom, he/she was in a place easy to find.	4,35	0	0	1	2,5	1	2,5	21	52,5	17	42,5
5-He/she regularly made evaluations on my performance.	4,02	3	7,5	0	0	8	20	11	27,5	18	45
6-He/she had positive influences in developing my teaching skills.	4,25	1	2,5	0	0	7	17,5	12	30	20	50
7-He/she guided me in out-of-the-class activities.	3,60	4	10	3	7,5	10	25	11	27,5	12	30
8-He/she contributed to my establishing good relations with students.	4,22	3	7,5	0	0	2	5	15	37,5	20	50

<b>2-THE LECTURER OF TEACHING PRACTICE (the lecturer at university)</b>		Never		Rarely		Sometimes		Often		Always	
9-He/she informed us of teachers' efficacies.	4,35	1	2,5	2	5	5	12,5	6	15	26	65
10-He/she informed us of evaluations on the practice.	4,35	2	5	1	2,5	6	15	3	7,5	28	70
11- He/she informed us of the rules to obey.	4,57	1	2,5	0	0	2	5	9	22,5	28	70
12-He/she served as a guide and an advisor.	4,57	2	5	0	0	1	2,5	7	17,5	30	75
13-He/she supervised my presentation in the school of practice teaching.	5,00	0	0	0	0	0	0	0	0	40	100
14-He/she negotiated with the teacher responsible in the school of practice teaching, and made sure I took precautions to promote my success.	4,05	4	10	0	0	7	17,5	8	20	21	52,5
<b>3- THE COORDINATOR OF THE SCHOOL OF PRACTICE TEACHING (school administrator)</b>											
15-He/she assured that we observed different teachers.	3,05	11	27,5	5	12,5	7	17,5	5	12,5	12	30
<b>4-THE PROSPECTIVE TEACHERS (the final year students of the faculty of education)</b>											
16-I enjoyed attending the practice classes regularly.	4,52	0	0	2	5	1	2,5	11	27,5	26	65
17-I had healthy communication with the teacher responsible in the school of practice teaching.	4,72	0	0	0	0	2	5	7	17,5	31	77,5
18-I had healthy communication with school administration.	4,20	1	2,5	4	10	4	10	8	20	23	57,5
19-I observed that the lecturer and the teacher responsible in the school of practice teaching had healthy communication.	4,42	0	0	2	5	3	7,5	11	27,5	24	60
20-I enjoyed obeying the rules and regulations in the school of practice teaching.	4,30	2	5	1	2,5	5	12,5	7	17,5	25	62,5

On examining the prospective teachers' responses to the "Questionnaire of the Problems Encountered during the Practice", it was found that the prospective teachers gave responses above average to all of the items. Only in the item "he/she helped me prepare my daily plans" in relation to the teacher responsible in the school of practice teaching, 80% of the participants chose "Never", "Rarely", and "Sometimes". In item 7, regarding "he/she guided me in out-of-the-class activities", only %30 chose the option of "Always". In item 15 also regarding "he/she assured that we observed different teachers", only 30% chose "Always". Apart from those, the rate of choosing the options of "often" and "Always" in relation to the support of the teacher responsible in the school of practice teaching was 70% or above. In the items related to the lecturer and the coordinator in the school, the rate of choosing the options of "Often" and "Always" was 70% or above.

The problems encountered by prospective teachers during the practice stated in their unstructured reflective diaries were as what follows:

- The prospective teachers stated the fact that they could not receive support from the teacher responsible in the school of practice teaching in parallel to their answers to the items in the questionnaire form.

"I was offended when the teacher said 'there is nothing you can do, you can go!' in response to my question 'are there things that I can do?'"



“... It seemed as if the teacher escaped from us”.

“When we first entered the classroom the teacher did not introduce us to the class, neither did he/she tell us to take a seat. This causes lack of authority for us.”

- Another problem that the prospective teachers had was related to classroom management.

“The more flexible my behaviour was the more demanding they were.”

“I am discouraged. We first need to teach how to learn, then how to love learning and lastly chemistry to a generation unwilling to learn. This is a frightening thought. “

“9<sup>th</sup> graders show extreme interest to us. They even exclaim “Yippee! Here comes the trainee teacher!.”

“The majority of the students are busy with their mobile phones. I do not know how to deal with this problem.”

- They stated that teaching in a real classroom made them too excited or nervous.

“I made a small presentation in today’s class. I don’t remember feeling so excited before. I was trembling with excitement. Thanks God, the classroom was not very crowded, and I did not faint.”

“I was so excited until I came to school that I thought I would die of my intense feelings. Before the class, I found the teacher and I talked about the topic of my presentation. The teacher uttered sentences supporting me and told me to be calm and not to panic. But I was still too excited.”

## CONCLUSIONS AND DISCUSSION

A close examination of the research findings showed that prospective teachers had positive attitudes towards teaching profession. Statistically significant differences were not found in prospective teachers’ attitudes towards the profession before and after teaching practice. This is a finding parallel to the one obtained by Saracaloğlu (1992) in research conducted with prospective physical education teachers. It was claimed in the study that courses related to teaching practice were not influential in developing positive attitudes towards the profession. In the study conducted by Can (1992) analysing the effects of educational faculty graduate programmes and of teaching certificate programmes on prospective teachers’ attitude, it was stated that teaching practice did not affect prospective teachers’ attitudes in a positive way and that it even caused a decrease in their attitudes. Eroğlu (2011), in research where the effects of teaching practice courses offered to prospective physical education teachers on their gaining occupational efficacy and on their attitudes towards the profession were investigated, found that prospective teachers had positive attitudes towards the profession, but that at the end of the teaching practice course a decrease occurred in their attitudes.

Such diverse findings might have stemmed from prospective teachers’ concerns about not being appointed to a teaching post, from classroom management problems due to inexperience, and from the excitement caused by the first teaching experience. Moreover, the negative attitudes displayed by the teachers responsible in the schools of practice teaching, and their comments on the profession might be among the reasons for the results obtained.

According to the results obtained in the Questionnaire of Problems Encountered during the Practice, the prospective teachers stated that they did not receive sufficient support from the teachers responsible in the schools in such matters as helping to prepare daily plans and guiding in out-of-the-class activities. These findings are parallel to the ones obtained by Gökçe and Demirhan (2005), who also found that the cooperation between university lecturers and teachers responsible in schools of practice teaching was not at the desired level and that those teachers did not offer sufficient support in developing course materials. These might have been the result of too much workload on the shoulders of those teachers and of prospective teachers, of the fact that those teachers had limited time or did not want to spare much time to prospective teachers, or that they felt being watched and controlled.

## RECOMMENDATIONS

- The quality of teacher training programmes should be revised in parallel to changing world and to changing youth profile, and be renewed accordingly. Although prospective teachers are the young individuals to graduate soon, they should be trained as informed of classroom management, compatible with the needs of changing new generation.
- Feedback concerning the practice should be given to prospective teachers by both university lecturers and teachers responsible in the schools of practice teaching.
- Teachers responsible in the schools of practice teaching should be chosen from those who are experienced and who are willing to act as mentors.
- The time allocated to and the number of courses such as Teaching Practice and School Experience in which theoretical knowledge is transferred into practical fields, and in which prospective teachers gain more detailed and livelier knowledge about the profession and also gaining experience may also be increased.

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## Prospective Chemistry Teachers' Reflective Diaries And Reflective Thinking Levels In Basic Chemistry Laboratory

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### ABSTRACT

Within this study, it was aimed to investigate the reflective diaries written by prospective teachers taking Basic Chemistry Laboratory II and their Reflective Thinking Levels. And it was also aimed to determine the effects of reflective diaries on students' Reflective Thinking Levels. Sample of the study consists of 14 students attending Hacettepe University, Faculty of Education, Department of Secondary School Science and Mathematics Education. Students' reflective diaries and Reflective Thinking Questionnaire, developed by Kember et al (2000), and was adapted into Turkish by Çiğdem (2012) were used as data collection tools. This questionnaire was applied at the beginning and in the end of the study. Students wrote 4 diaries during 7 experiments. In order to evaluate the results of reflective diaries, descriptive analyses and for analysis of quantitative data descriptive analyses and Wilcoxon test will be used.

### INTRODUCTION

Classroom discourse has been recognized as important to the educational experience of students. "Speech Reflective thinking is a concept which overlaps with the views held in progressivism based on pragmatic philosophy, which keeps evolving, and which is constantly emphasised in teacher training (Ünver, 2003; quoted by Güvenç, 2012). Reflective thinking is defined as thinking on any piece of knowledge in an effective, constant, and careful way. According to Dewey, "we do not learn from our experiences. We learn from reflections we make on our experiences". Experiences alone do not ensure learning. The main factor promoting learning is the reflections made in relation to experiences.

"Reflective thinking requires that teachers and students think about what they actually do while doing something, and thus revise what they have done accordingly. In this way, students can question during a class what they will learn and why they will learn it, and they can be more conscious and active in the learning process. Teachers, on the other hand, revise carefully after the class what they have done. Students can set their own learning objectives in reflective system of education, they can feel the responsibility of their learning, they can correct their mistakes, they can motivate themselves by noticing their positive behaviours, and they can reveal their views freely (Ünver, 2003).

In order for learning to occur through reflective thinking, individuals should be ready to consider diverse opinions, and they should be able to evaluate the self critically so that they can make significant modifications (Clinefielter, 2010).

One of the aims of teacher training programmes is to ensure that students can make evaluations concerning their own applications. As was emphasised by John Dewey (1964), if we - teachers - equip learners only with theoretical knowledge and if we do not give them the opportunity to see the relations between their own applications and their theoretical knowledge, they – as prospective teachers – will be inadequate in some respects, and thus children's education to occur in the future will be harmed (Alkan, Gözel, 2013).

Diaries are frequently employed in teacher training as a strategy developing reflective thinking, and they are regarded as one of the most widespread and successful instruments through which prospective teachers can perform reflections (Wesley and Buysse, 2001; Berg, Woody and Bauser, 2002; Yeh, 2004; Parsons and Stephenson, 2005; Artzt, 1999). Lab diaries, which are also regarded as an educational technique in lab applications, are the vehicles through which students can state what they have done and what they have observed as well as the topics they have difficulty with and they wonder, the conclusions they have arrived at, and their impressions (Dolapçioğlu, 2007). This strategy of teaching provides learners with opportunities to determine their individual learning needs and to design their learning experiences accordingly (Stark in Riley-Doucet, quoted by Kok, Chabeli, 2002).

Although research studies in which prospective teachers perform reflective thinking in their courses such as teaching practice, school experience, and special teaching methods, and in which their reflective diaries are evaluated from different perspectives are available in the literature; studies concerning prospective teachers' reflections during their classes are more restricted in number. Yet, developing prospective teachers' reflecting skills in relation to their field of study, and analysing those skills is extremely important.

In research conducted by Güven (2013), where prospective elementary school teachers' reflective diaries and their epistemological beliefs are analysed during their lab applications, improvement was found in prospective elementary school teachers' reflective diaries in a 7-week study performed within the framework of "Science and Technology Lab Applications II" course. It was also found in the same research that there were interactions between prospective teachers' reflective diaries and each sub-dimension of their epistemological beliefs. Erduran-Avcı (2008), in their research conducted with seventh graders in science and technology education, asked the students to write a diary each week. It was pointed out in their research that the diaries written in later weeks received higher scores than those written in the earlier weeks. It was found through student interviews that the majority of the students liked writing diaries, that their teachers understood them better thanks to the diaries, and that they were able to share their feelings and thoughts more easily. Moreover, it was also emphasised that diaries contributed to make students' learning permanent. Şahin (2009), who studied prospective science teachers' reflective thinking abilities with the help of their diaries, found that their descriptive reflective thinking skills were prominent; but that they failed to display reflective thinking.

## PURPOSE

Within this study, it was aimed to investigate the reflective diaries written by prospective teachers taking Basic Chemistry Laboratory II Course and their Reflective Thinking Levels. And it was also aimed to determine the effects of reflective diaries on students' Reflective Thinking Levels. In line with these aims, answers were sought to the following questions:

1. What is the level of prospective teachers' reflective thinking prior to and after the application?
2. What is the effect of writing reflective diaries on prospective teachers' levels of reflective thinking?

## METHOD

Descriptive analyses were employed in evaluating prospective teachers' diaries. Descriptive analyses and Wilcoxon test were used in order to evaluate the results of reflective thinking questionnaire.

## SAMPLE

Sample of the study consists of 14 first year students attending Hacettepe University, Faculty of Education, Department of Secondary School Science and Mathematics Education, and taking General Chemistry Laboratory II course.

## DATA COLLECTION TOOLS

Students' Reflective Diaries, and Reflective Thinking Questionnaire developed by Dolapçioğlu (2007) were used as data collection tools.

### Reflective Thinking Questionnaire:

Reflective thinking scale is a five-point Likert type scale, and it contains such alternatives as Never (1), Very rarely (2), Occasionally (3), Very often (4), and Always (5). The scale was developed by Kember et al (2000), and it was adapted into Turkish by Çiğdem (2012). The scale includes four dimensions such as habits, understanding, reflecting, and critical reflecting. Four items in the scale (1, 5, 9, and 13) are about habits, four items (2, 6, 10, and 14) are about reflecting, and four items (4, 8, 12, 16) are about critical reflecting. The Cronbach Alpha coefficients for the sub-scales of Reflective Thinking Scale (RTS) were found as .54 for habits, .66 for understanding, .80 for reflecting, and .72 for critical reflecting.

### Reflective Diaries:

Reflective diaries may be written in different forms and sizes. Structured diaries were used in this study.

"Structured reflective diaries have a restricted structure. They are beneficial to both teachers and students. Teachers can obtain easily the knowledge that they intend to get in a certain format or in a certain way. Those diaries provide teachers with feedback and enable teachers to focus on knowledge related to learners' thinking and learning processes. Such diaries facilitate teachers to compare students' answers and reflections and to identify how students learn and reflect in groups" (Güven, 2013).

Prospective teachers were asked to write diaries containing their views of the sub-headings of

- What questions emerged in your head while doing this experiment?
- What knowledge and concepts have you learnt with this experiment?
- Which stage made you think in this experiment?
- What concepts did you have difficulty in understanding during this experiment?

after they had done the experiment that they were required to do. Totally 64 diaries were investigated.

### Stages of Implementation

The study was conducted along with four experiments within the framework of General Chemistry Laboratory II course, which was taught 2-hours a week. Prospective teachers included in the study were offered basic knowledge on reflective thinking, the importance of reflective thinking and its place in teacher training, reflective diaries, writing reflective diaries, and the effects of reflective diaries on reflective thinking; and the process was explained to them in details. Reflective Thinking questionnaire was given to them as the pre-test. Following this, experiments on Chemical Equilibrium, Acid-base Titration, Redox Titration, and Copper Covering through Electrolysis” were done. After each experiment, prospective teachers wrote their diaries and then handed them in to their teacher. Having checked the diaries, the ones with inadequacies and needing correction were returned the next week for feedback. At the end of the application, Reflective Thinking questionnaire was given again as the post-test.

Table 1: The Experiments Done During the Application, and their Goals

Experiment	Goal
Chemical Equilibrium,	To investigate the existence of equilibrium in the reaction between KSCN and $\text{Fe}(\text{NO}_3)_3$ solutions according to the change of colour, and to comprehend the working principle of Le Chatelier principle
Acid-base Titration,	To titrate sodium hydroxide solution with an acid whose concentration is unknown, and thus to determine the titration of the acid; and to acquire the skill of titrating by using the necessary laboratory aids and materials.
Redox Titration	To understand Redox reactions and to determine the $\text{Fe}^{2+}$ amount in an aqueous solution through redox titration.
Copper Covering through Electrolysis	To cover a piece of metal with copper by applying the principles of electrolysis. To calculate the mass of the copper covered metal using Faraday’s Laws.

### DATA ANALYSIS

In order to evaluate the results of reflective diaries, descriptive analyses and Wilcoxon test were used.

### FINDINGS

Descriptive analyses were done in relation to the sub-problem “What is the level of prospective teachers’ reflective thinking prior to and after the application?”, and prospective teachers’ responses to the items of reflective thinking questionnaire were descriptively analysed. The findings are shown in Table 2.



Table 2: The Pre-test and Post-test Descriptive analysis Results for Reflective Thinking Questionnaire

	Items	$\bar{X}$ (pre-test)	SS (pre-test)	$\bar{X}$ (post-test)	SS (post-test)
1.	I do not think what I am doing while doing some activities.	3,50	1,22	3,93	1,27
2.	This course requires that we learn the concepts taught by the lecturer.	<b>4,36</b>	,84	<b>4,42</b>	,85
3.	I sometimes question how others do something, and I try to find a better way to do it.	3,93	,92	<b>4,28</b>	,82
4.	I changed my perspective of looking at myself at the end of this course.	3,78	1,12	3,93	1,14
5.	We repeat some of the things in this course so often that I have begun to do the things without thinking about them.	3,57	1,22	<b>4,07</b>	1,07
6.	We need to understand the course content in order to pass the exams.	<b>4,71</b>	,47	<b>4,78</b>	,42
7.	I like thinking about the things I am doing and then considering different ways for doing it in a better way.	<b>4,07</b>	1,14	<b>4,28</b>	,91
8.	This course conflicts with ideas which I stick to.	3,21	1,25	3,64	,93
9.	As long as I have lecture notes for the exams, there are no problems to think about.	2,86	1,17	3,07	1,27
10.	I have to understand the things that the lecturer taught so that I can fulfil the applied tasks.	<b>4,57</b>	,75	<b>4,57</b>	,75
11.	I frequently revise what I have done, and thus check if I have made any progress	3,78	,89	<b>4,21</b>	,80
12.	As a result of this course, I changed the ways I had followed when doing things.	3,07	,92	3,21	1,05
13.	If I apply what the lecturer says in this course, I don't need to think about anything else.	2,78	1,31	2,78	1,31
14.	We need to constantly think about the subject taught in this course.	3,43	1,16	3,43	1,16
15.	I take lesson from what I do, and I frequently assess my activities in order to do them better the next time.	<b>4,07</b>	,83	<b>4,07</b>	,83
16.	During the course, I discovered that I had mistakes which I had previously believed they were correct.	3,36	,84	3,36	,84

On examining the pre-test and post-test descriptive analysis results for reflective thinking questionnaire on item basis, it was found that prospective teachers had quite high levels of reflective thinking. A close examination of the pre-test results made it clear that the average was above 4 in items 2, 6, 7, 10 and 15. It was also found that the average was above 4 in items 2, 3, 5, 6, 7, 10, 11, and 15 for the post-test results.

In relation to the sub-problem “what is the effect of writing reflective diaries on prospective teachers’ levels of reflective thinking? , the Wilcoxon Signed Rank Test results for Reflective Thinking Questionnaire pre-test and post-test scores are given in Table 3.

Table 3: The Results for the Wilcoxon Signed Rank Test conducted for the Reflective Thinking Questionnaire pretest- posttest Scores

Posttest-pretest	n	Rank average	Rank total	z	p
Negative rank	1	1,50	1,50	-2.953*	0.003
Positive rank	11	6,95	76,50		
Equal	0	-			

\* Based on negative ranks

As it is clear from Table 3, a significant difference is available between prospective teachers' Reflective Thinking Questionnaire pre-test and post-test scores ( $z=2.953$ ,  $p<05$ ). Considering the rank averages and totals of the difference scores, it is found that the difference is in favour of the positive ranks- that is, in favour of the post-test scores. Accordingly, it may be said that the practice of writing reflective diaries leads to a rise in prospective teachers' levels of reflective thinking.

Some of the statements that the prospective teachers wrote in response to the questions they needed to consider while writing their diaries were as in what follows:

- **What questions emerged in your head while doing this experiment?**

For the experiment on chemical equilibrium:

"I wondered what changes would occur in colours in the reactions." I thought about why colour changes occurred while doing the experiment and when colour change occurred, I thought about why the balance was achieved."

For the experiment on acid-base titration:

"I had problems in reading the burette, in reading the volume as the first volume and the last volume." I wondered what colour we needed to see."

For the experiment on copper covering through electrolysis:

"why did we wash the metal with diluted NaOH and HNO<sub>3</sub>?" "I mean, how copper would cover the metal was not clear to me." "I thought about how electron would be released from copper." The solution used in this experiment was different, and what changes this would cause in the experiment?"

- **Which stage made you think in this experiment?**

For the experiment on chemical equilibrium:

"The stage I had difficulty in understanding was definitely stage 4. I couldn't understand the reaction occurring after adding crystals. I interpreted only by making guesses about the direction of the balance.

"I was confused about the stages that Le Chatelier's principle was about."

"I thought about the question "if the test tubes had waited a little more, how would the colour have changed?"

For the experiment on redox titration:

"Determining the moment of colour change made me think. I am not sure whether it was the exact time".

"I wondered why change occurred colour a bit late."

"Continuously shaking the erlenmeyer while titrating made me think."

For the experiment on copper covering through electrolysis:

"I wondered why we connected the coin to the negative pole and the copper cord to the positive pole. "

"I thought about how to do the calculations".

"I thought about how to find the current."

- **What concepts did you have difficulty in understanding during this experiment?**

For the experiment on chemical equilibrium:

"The concept I found difficult to understand was the addition of a catalyst. But later I learnt that the catalyst did not have any effects on balance, but that it accelerated the reaction so as to reach the balance."

For the experiment on acid-base titration:

"I had difficulty in understanding the concepts of equivalence and turning point."

For the experiment on redox titration:

"I had difficulty in understanding reduction, reducer, and oxidizing agent."

For the experiment on copper covering through electrolysis:

"I had difficulty in calculations with Faraday's Laws."

## CONCLUSIONS AND DISCUSSION

This study, which aimed to analyse students' diaries written in the Basic Chemistry Laboratory II course as well as their levels of reflective thinking, and to determine the effects of diaries on reflective thinking, found that prospective teachers had quite high levels of reflective thinking. These are the findings parallel to the ones obtained in Good and Wang (2002), and in Lee (2000).

On examining the diaries written by the prospective teachers, it was found that they were able to do evaluations about themselves, that they were able to think again on the experiments they had done in the laboratory and re-focus on the learning process, and that they were able to determine the aspect they needed to improve.

It was found in this research that there was a significant difference between Reflective Thinking Questionnaire pre-test and post-test scores in favour of post-test scores. Based on these results, it may be said that the practice of writing reflective diaries led to a rise in prospective teachers' levels of reflective thinking. These results are

compatible with the view stated by Moon (1999) as “... reflective capacity changes from person to person, and it improves along with age, and it improves even more in educational environments”. In a similar vein, in their study conducted by Schweiker, Holmes and Pula (2003) so as to find whether or not reflective thinking skills improved, it was found that there was a significant difference between the experimental group’s and the control group’s post-test scores.

## RECOMMENDATIONS

- Emphasis may be placed on reflective thinking, its importance, and the ways of promoting it during the training of prospective teachers beginning with the first year.
- Prospective teachers may be made accustomed to thinking about their learning experiences and to doing self-evaluations.
- The number of research studies concerning the methods, vehicles and techniques to develop reflective thinking and to be used in teacher training programmes may be increased.

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## Reflections From Lesson Study: A Perspective To Promote Students' Metacognitions In The Problem Solving Environment

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### ABSTRACT

The aim of the study is to reflect the lesson study cycles, applied with middle school mathematics teachers, to promote students' metacognitions in the problem solving environment. Four mathematics teachers participated this research. The lesson study cycles were carried out two different groups separately. Five lesson study cycles were carried out. Interviews used as data collection tools. In conclusion, it is determined that the lesson study has positive effects on the behaviors of mathematics teachers and on promoting the students' metacognitions, in the problem solving environment. However, the teachers' belief is an effective issue on the behaviors.

**Keywords:** lesson study, problem solving, metacognition, teacher training

### INTRODUCTION

Metacognition is defined as rethinking of thinking. Thus, the people, having superior metacognition ability, display better performance during the problem solving process (Artzt & Armour-Thomas, 1992; Gardner, 1991; Karmiloff-Smith, 1992; Montague, 1998; Pugalee, 2001; Veenman, Kok & Blöte, 2005). Furthermore, teachers' caring about metacognition leaves positive impression on students' learning (Hacker, Dunlosky & Graesser, 2009). Thus, it is essential to answer what to be done to promote the students' metacognition in the problem solving environment by teachers. Therefore, in this study, the behaviors of teachers promoting students' metacognition are tried to be developed.

Although the studies with teachers about metacognition become more necessary, those studies are not, generally, discussed in the literature so far. As Capraro (2000) stated before, the beliefs and the applications inside the classroom of teachers affect the achievement of problem solving. Among the few studies about metacognition with teachers, (Houtveen & van de Grift, 2007; Kramarski, 2008), it is seen that the teachers were given the theoretic information directly and the application of the information and the discussion of those applications were given no chance.

However, the teachers require an education for applications and after that, for discussion (Fernandez & Yoshida, 2004; Lewis, Perry & Hurd, 2009). So, lesson study becomes an important and promising approach for teachers' vocational education. There are some steps while application. These steps are to plan the lesson together, observing the lessons, and the discussion of the lesson.

After these steps, if it is necessary re-planning, the application of the new plan, and the discussion of the new plan can be exchanged. These are different from the inservice courses. Nonetheless, none of the studies in the literature touched upon the effort to develop the teachers' professional competence oriented problem solving process, and by this means none of them could help the students. Thus, in this study, it is aimed to reflect the lesson study to develop the behaviors of teachers which promote the students' metacognition in the problem solving environments. The study will contribute to teachers who direct the application on the problem solving.

### METHOD

In this chapter, the information has been given about the method of the study, the design, the participants, data collection and analysis.

#### The Method of the Study

To reveal some parts of the lesson study obliges, it becomes necessary to use qualitative research method.

#### The Design of the Study

The aim of this study has been tried to be achieved with three stages. The stages are preparation, pilot study and the main application.

### *Preparation Stage*

To give education about metacognition concept to teachers has been seen to be insufficient in literature. Furthermore, it was understood that it is possible for teachers to promote the students' metacognition and the students to be successful in the problem solving process in a good learning environment. In this regard, the guidebook, thought to be used in lesson study, has been composed with the related literature and the interviews with the experts of this field. Thus, the content of the guidebook are; the definition of the problem, the type of the problem, the stages of problem solving, problem solving strategies, the definition of the metacognition, the relation between metacognition and problem solving, the metacognitive behaviors during the problem solving process, forming the problem solving environment, the titles and the activities about the titles.

### *Pilot Study and the Preparation for the Main Application*

The pilot study took part before the main application, according to the guidebook after the pilot study, some changes were decided to be made with the experiences gained. Moreover, the interviews were listened again during the pilot study, the answers were reanalyzed and the questions thought to be used for the main application were tried to be decided how to be asked.

### *Main Application*

At the beginning, the teachers' applications, in the classroom, were observed and the interviews were done with them. Because with the lesson study, the teachers were tried to improve the behaviors prompting the metacognition of students in the problem solving environments, and thus, the lesson study were examined. Then, in the last months of second term in 2011-2012 academic year and in the first term of the next academic year, the lesson study were carried out with the teachers. This study was carried out to two groups separately; two teachers working at the same school with the researcher, and two teachers working at the other same school with the researcher. In this regard, 5 lesson study were carried out with two groups independent from each other. During these studies, every meeting was held with the gathering the participants together once in a week about 150 min. out-of-lesson hours.

### **The Participants of the Study**

The participants were all male. Burak and Emre teacher were working at the same school, on the other hand, at a different school, Gökhan and Barış teacher were working together.

### **Data Collection**

In this study, the data were collected with interviews. These interviews were held during the lesson study for stating the teachers' feeling and opinions.

### **The Analyzes of the Data**

The data collected from the study were analyzed with the qualitative data analyzing methods. The interviews with the teachers, transcribed and tried to be analyzed.

### **FINDINGS**

The reflections of the lesson study is summarized as follows for each of the teachers.

#### **Burak Teacher**

In the first study lesson cycle, Burak teacher emphasized that problem solving is very important in the education of mathematics. During the information session of the second lesson study cycle, he stated that he enjoyed to know problem solving strategies and to prepare the questions about these strategies. But, later, the teacher used those sentence "we have to use the time efficiently to prepare the students for the exam and to complete the curriculum". The third lesson study cycle, he expressed those opinions. During the information session for the fourth lesson study cycle, he participated the process more actively. During the application, the teacher show more effort to promote the students' metacognition. For sure, there are some behaviors that the teachers did not act. This situation was reminded in the discussion part with the views of the other teacher. In the last lesson study cycle, the teacher realized that the completed cycles were just the ground fort his cycle. But the teacher always complained about the exam system, the time problems, the exeditions of parents and the school. The expressions are as follows:

*Burak teacher: I saw that the metacognition of fourth application assisted the students problem solving. But the exam system and the time problems cause troubles.*

*Researcher: You may be right, but which one is the correct? To ask the students more questions or to upskill about thinking of students?*

Generally, Burak teacher did not give a place to problem posing activities because he believed that this activity taked a lot of time. Furthermore, there is no positive effect on the importance of the ability to predict of the teacher.



**Emre Teacher**

During the first lesson study cycle, it is confirmed that, although, the teacher tried to upskill the abilities of process and there were few students answering the questions correctly, he, almost never, formed a behavior promoting metacognition of students. For this reason, in the discussion part, Emre teacher was talked about this situation. During the information session of the second lesson study cycle, he stated that he enjoyed to know the problem solving strategies and to prepare the questions about these strategies like Burak teacher. During the application session of the third lesson study cycle, he asked the students to be interested in working sheets as a group work. In the discussion session after the application, Emre teacher stated that he saw the advantages of the group work by means of the assistance of students to each other. In the information session of the forth lesson study cycle, the teacher accepted the important role of the metacognition in problem solving but he said that there is lack of time. The expressions are as follows:

*As far as I understood, metacognition is a situation upon thinking. I think this situation will help the individuals to solve the problems . But the time prevents the process during application.*

In the fifth lesson study cycle, the teacher tried to give more place to behaviors promoting metacognition. However, the teacher was told that he was more attentive in planning and application of the plan for promoting the students' metacognition. On the other hand, Emre teacher did not believe the importance of predicting abilities like Burak teacher. Furthermore, Emre teacher was confirmed that he did act the essential behaviors in the problem posing part.

**Gökhan Teacher**

Gökhan teacher was willing to attend the lesson study because he wanted to provide learning by reaching the whole class and he wanted his students to express their opinion when they confronted a problem. In the information session of the first lesson study cycle, the teacher stated some expressions on the importance of the problem solving and the steps of it. But, he is the most disgruntled teacher for the affluence of the subjects in the curriculum. Gökhan teacher was willing to prepare problem with knowing different strategies in the second lesson study cycle. In the information part of the third lesson study cycle, Gökhan teacher expressed that "We did not know the names of these strategies like in the previous meeting. But sometimes, we applied them. However, the curriculum affected the applications in the classroom". As seen, the teacher still complained about the curriculum. In the information session of the forth lesson study cycle, Gökhan teacher was more interested in the concept of metacognition which he had not heard before. During the application, the teacher tried hard to promote the metacognition of the students. In the discussion part, it was seen that Gökhan teacher started to change his mind about time using. In the fifth lesson study cycle, the teacher was seem to adopt the role of the metacognition in the problem solving process. However, because of some beliefs and the differences in the success rates of different classrooms, he did not give place to some behaviors promoting metacognition. For example, the teacher still did not do the activities of problem posing like other teachers because of shortage of the time.

**Barış Teacher**

The teacher took short the problem solving process as taking the answers, discussion on the answers, and problem solving. The attitude of the teacher was effective for students' to promote metacognition. In the application of the first lesson study cycle, the teacher gave instructions in the working sheets one by one. Thus, in the discussion part, during the group work, it was discussed how a teacher was supposed to behave. In the information session of the second lesson study cycle, Barış teacher was willing to prepare and solving problems. The third lesson study cycle, generally was the same like that. In the fourth lesson study cycle, according to Barış teacher, metacognition is one of the main factors affecting the metacognition process but as others stated before, he thought that it was time consuming. Therefore, the teacher was told that, actually, the main application was not time consuming. Hence, the teacher was determined to increase the behaviors to promote the metacognition of students, in the problem solving environments, in the application of the fifth lesson study cycle. When analyzed the duration of the Barış teacher, he act less behaviors to promote the metacognition of students unlike the others. Moreover, like the other teachers, Barış teacher thought that problem posing activities were time consuming.

**DISCUSSIONS AND RESULT**

In this study, the teachers, in the problem solving environment, in order to promote the students' metacognition, could see the difference of both their behaviors and the applications of the other teachers. As stated by Crawford and the others (1998), due to realizing the differences, the teachers could get a chance to change the methods of teaching. Hence, all teachers tried harder to promote the students' metacognition compared to the past.

Sarkar Arani, Keisuke and Lassegard (2010) argued that lesson study may not be concluded with positive changes every time. Thus, it is determined that the beliefs of teachers are effective to state the behaviors to promote the metacognition of the students in this study. On the other hand, Barış teacher continued to think that the

communication among students creates chaos. However, Nathan and Knuth (2003) expressed that the discussion inside the classrooms has important role during the teaching of the mathematics. Thus, it was emphasized, several times, to teachers that this situation would not create any chaos.

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## Reflective Practicum Class: Somebody's Watching You

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### ABSTRACT

Reflective teaching is a contemporary issue in foreign language teacher education. This paper reports on the use of video-taped lessons as a tool for reflective practices. Two full-length lessons taught by the prospective teachers of English that are enrolled in the practicum program were recorded by the researchers, and the reflections of the participants were examined through a qualitative approach. The results showed that the prospective teachers' attitudes and in-class practices changed significantly after video-taped reflection feedback. Furthermore, it has been suggested that teacher candidates learn to make analogies by watching entirely different models. In this respect, reflective video-taped activity can be defined as a step-by-step process and at the same time an active element for critical thinking.

**Key Words:** Reflective Teaching, English prospective teachers, practicum, video-based reflection

### INTRODUCTION

Reflective teaching is an approach to second language classroom instruction in which current and prospective teachers collect data about teaching, examine their attitudes, beliefs, assumptions and teaching practices, and use information obtained as a basis for critical reflection about their efforts in language courses (Richards and Lockhart, 1994:1). Accordingly, it is a critical exploration of one's own teaching practice and is essential to life-long professional development (Wallace 1998). Dewey (1910) defines reflection as the ability to interpret a task or problem from a number of standpoints rather than a single view determined by a person's assumption and tacit personal theories (Roberts, 1998, p.47).

The purposes of reflective teaching are defined in three-fold: (1) to expand one's understanding of the teaching-learning process; (2) to expand one's repertoire of strategic options as a language teacher; and (3) to enhance the quality of learning opportunities one can provide in language classrooms (Murphy, 2001, p.499). According to Gebhard and Oprandy (1999) a central reason to be interested in reflective teaching is to gain awareness of our teaching beliefs and practices and to learn to see teaching differently (p.4). Farrell (2004, p.27) identifies the following fundamental questions that a teacher should reflect on:

1. What am I doing in the classroom?
2. Why am I doing this?
3. What is the result?
4. Will I change anything based on the information gathered from answering the first three questions?

Brookfield (1995, p.72) outlines six additional points of entry for teachers to enter in self-reflection:

- Teaching Logs: Recording weekly events of teachers' lives that have impressed themselves most vividly on their consciousness.
- Teacher Learning Audits: Responding to questions that are expressly designed to probe how the teachers have changed over the previous 12 months.
- Role Model Profiles: Talking to colleagues that teachers admire and outlining their qualities and abilities that could be emulated.
- Survival Advice Menus: Advising future teachers about how they can survive in a job such as their own.
- Videotaping: Viewing one's own teaching to see how much teacher talk occurs instead of student talk.
- Peer Observation: Inviting colleagues to view their teaching

Video-taping has special value for non-native English speaking trainees because it enables them to focus not only on the nonverbal aspects of their teaching but also to reflect on their communicative competence. As opposed to the limitations of text-based case studies Diaz and Smith (2002) praises the use of technology for examining actual classroom settings. All in all, using digital recordings of practice for analysis and reflection, teachers can engage with their peers to develop a shared understanding of excellent practice. It not only helps trainees notice and respond to both strong and weak aspects of their teaching but also allows trainees to view a DVD immediately and re-examine it many times (Murphy 2001; Barlett, 1990).

One of the main advantages of videotaping provides observation of paralinguistic features such as facial expression, intonation, gestures and other visual clues (Harmer, 2001) This is also essential in adding extra dimension to the reflective teaching.

## **THE STUDY**

### **RESEARCH QUESTIONS**

1. What are the teacher candidates' opinions about video-based reflection sessions
2. How do you reflect on your current professional practice?
3. Is the reflecting practice helpful for determining the future goals of the teacher candidates?

### **PARTICIPANTS**

The purposive sampling was used to select the subjects of 36 teacher candidates of English as they were expected to have unique ability to explain, understand, and yield information about the problematic discourse. According to Denzin and Lincoln (1994:202) qualitative research employs this technique when they seek out groups, settings and individuals where the processes being studied are most likely to occur. All of the participants were graduated from the department of English Language and Literature and applied for 'The Pedagogical Formation Program' in spring semester of 2014-2015 academic year.

### **METHODS**

Students participated in this study were required to videotape a lesson and sent a copy of the tape to the corresponding supervisors. After viewing the videotape, the supervisors arranged a post-lesson conference with the student. Two semi-structured group interviews were conducted with the students.. All interviews were audio-taped for analysis.

### **DATA COLLECTION**

The data were collected during the spring semester of 2014-2015 academic year. The data collection instruments included; video-taped samples; interviews and the self-evaluation journals kept by the teacher candidates during the practicum.

#### **a) Video-taped Samples:**

Participants recorded two consecutive lessons in the same language class. They brought the samples to the class. All of the participants watched the videos and made written records of the teaching practice in general.

#### **b) Interview**

The researcher conducted semi-structured interviews with participants after the video-taped discussion so as to gain deeper insights. Each of the interviews has been tape-recorded. The purpose of the interview questions was to understand whether the use of the video-taped lectures influenced their teaching experience. Examples of the questions are: What are the weak and strong aspects of your teaching? How did video analysis influence your teaching practices? What do you think about the teaching profession?What did you like about being a teacher?What are the advantages of video-taped lessons?

#### **c) Self-evaluation Journals**

The participants kept a diary of their own language teaching for six weeks. The diaries were analyzed categorized.

### **DATA ANALYSIS**

The qualitative research design is used to examine the video-taped reflection activities for the teacher candidates. The interview reports and the self-evaluation journals were examined separately. Then the data were coded and categorized via constant comparison method (Glaser & Strauss, 1967). All of the participants debriefed with the practicum supervisor immediately after teaching their lesson. They later wrote about critical incidents that occurred during their teaching. Each interview was transcribed and the transcriptions were sorted to seek patterns that emerged from the data. A framework including two categories was generated. These were; the reflections on the teaching performance and the reflections on the teaching profession, the psychological effect of the teaching procedure

### **FINDINGS**

The findings indicated that after watching their performances on the video the teacher candidates evaluated themselves more critically. They defined the video-based reflection sessions as useful and practical. Furthermore, they put forward that this practice shed light on their future goals. The findings are categorized into three themes. The first one is about the participants reflections on their teaching performance during the practicum sessions, and

the second one is about their reflections on the teaching profession in general. The third one is about the psychological effect of the video-taped sessions.

### **1. Reflections on Teacher Candidates' Opinions on Their Video-taped Teaching Performance**

Recent developments in digital video technologies permit teacher candidates to collect, review, and manipulate video to demonstrate their growth as a professional and as a reflective practitioner (Cunningham and Benedetto, 2002). In this study video-taped tool is used during the process of teacher training. The findings revealed that the participants of the study regarded it as a kind of feedback method that has a positive outcome. The participants indicated their comments on the issue as follows:

**R1:** I think limited time affected negatively all of us. After watching my previous practicum lesson, I realized that this was worse than the others. I had very difficult in managing the class.

**R1:** After the lesson, I watched the video, and something surprised me. There were very simple mistakes while I was teaching. I couldn't believe myself in making such simple mistakes. However, it was very helpful for me to see my mistakes and correct them, and this assured me to see my body language as well. I can say it was not bad, but it could be better. This video turned out to be a very useful feedback for me.

**R1:** Thanks to the video, I get it what I need to do and not to do. Making a video and monitoring and employing self-evaluation after watching the video is quite a useful method.

### **2. Reflections on the Teaching Profession**

Research on teachers' knowledge, beliefs, and thoughts has shown that teacher candidates approach teaching with a plethora of initial beliefs and ideas about teaching. Reflection enables teacher candidates to construct knowledge through asking questions, critiquing, evaluating, etc., helping them bridge the gap between imagined views and the realities of teaching (Lee, 2008). The teacher candidates of this study, conveyed their thoughts on the teaching profession as follows:

**R2:** Looking back on my teaching experiences I learned that the teacher is the motivator and the most important task is the responsibility. The teacher is the mirror of the class, what she gives, reflects on her back

**R2:** After watching my performance on the video, I started to believe that it would be very good to be a teacher in the future even though I have never wanted to be a teacher up until now. I think there is only one important reason that makes me love this job. I believe that the only one thing that makes this world livable is the pure and innocent children.

**R2:** I have always had a positive impression about being a teacher but after the video-taped discussion, I became aware that there are some hardships of being a teacher, but it can be enjoyable too.

**R2:** I realized that being a teacher is not an easy task, you should give your soul and heart. There exists no more 'you', all your thoughts are your teaching and your students. Your aim is to get the best out of your students. When you do not see the improvement, you get upset. You have to know what type of a student stands in front of you and which methods suit the student best. As a teacher your best way is important as well. You have to be creative and sacrifice your time. You must know what is going on in the world. There are so many responsibilities, so I think one has to be ready for all of that as being a "real" teacher means this. As for me whether I am ready is a mystery I will see this in time.

**R2:** Previously, I assumed that being a teacher was simple, and everyone can do this job if they try it. However when I started to teach in my practicum school, I realized that it was not as easy as it was seen. Every step of teaching need a great importance and knowledge. If you don't have plans while you are teaching, it would be the hardest job in the world. While I was teaching I understood that being a teacher requires so many responsibilities. Each student is a kind of a product of a teacher and this product will build the future generation. So being a teacher includes many wonderful aspects behind it. I believe that if I work harder and love this job much more, I would be one of those people whom they won't be forgotten.

**R2:** I had a positive impression about being a teacher but I also realized that being a teacher is not just being a teacher at all. Being an English teacher is not just teaching English. Being a teacher is to manage the class, being on the true track to teach, teach the students how to behave, when to talk, what to talk etc. I have my hope to be a good English teacher since I have my belief about that. Believing is the half of the way.



**R2:** I had worries about becoming a teacher, but now, I honestly feel that I have no hesitation to become a teacher. After watching the videos, I came up the idea that I had prejudices against this profession and myself. Indeed, teaching is something else, beyond my previous thoughts.

### 3. Reflections on The Psychological Effect of The Video-taped Sessions.

Some of the researchers are on the idea that having someone film you when you are teaching can be a challenging experience. Related to this, the findings of a recent study (Coşkun, 2013) revealed that the idea of videotaping during the teaching practices, watching and critiquing the lessons together with classmates and the supervisor are defined as a stressful requirement of the practicum by the English teacher trainees. However, it can extremely be valuable if it is not taken solely as a self-criticism. In the following reflection, one of the participants reveals her ideas on this matter explicitly:

**R3:** Watching the videos of myself or my peers gives a clue about how to behave when there is a new profile of students with different schools. Seeing what they did wrong or good was a useful experience, I'll try to do it better or at least not to do it worse. Also, one cannot see oneself, during lecturing so it is a good visual material to see oneself and it is exciting as well as embarrassing. It is better to see a video than being told of the wrongs and getting embarrassed. One day after ten years of time, one could watch the video and say “Oh, my GOD!”. Nonetheless, it would be a good memory.

**R3:** When I watched the video, I realized that I was very nervous during the lesson. I think it was out of the students. They forced me to yell at them because they never listen to me and do anything during the class. This made me feel upset.

**R3:** After watching the videos I changed my mind. I was too strict during my lecturing. My ideal teacher type is rather more friendly, motherly and friendly. I hope I can reach my goals.

### CONCLUSION

Research studies in second language learning and teaching clearly indicate that attitude, motivation, and interest of the learner are factors of crucial importance in determining the achievement. Accordingly, visual instructional materials such as video-tapes might be used to promote and sustain motivation and to reinforce language learning or teaching skills. The present study has supported that video-taped lesson can be an alternative model of reflective teaching. Video-taped lectures give opportunity for precise observation. Furthermore, it enables teachers to measure the performances of their students objectively. At this point, we should keep in mind that videotape activities are tools for keeping records of the students and evaluating their performances in turn. In order to promote autonomous learning, teachers may also use this activity as a stimulus for discussion. Consequently, teachers can have students reflect on the various aspects of the learning experience by employing visual aids that can help in the process. To determine the effectiveness of the videotapes on the reflection practices, the evaluation of the types of their future use should be studied in diverse settings.

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## Religiosity Element In Young Muslim Profesional Accountability

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### ABSTRACT

Accountability issues have attracted worldwide discussion, particularly with respect to the contribution of Western scholars. In addition, the existing theories failure to assess the suitability of the existing accountability issues, lead the higher probability to evaluate the accountability in religiosity (Islamic) view which are holistic (*syumul*). Therefore, this paper reviews the relevant of religiosity element in influencing the young Muslim professional performance in the workplace. It also intend to the existence of various negative elements in the young Muslim professional's accountability. A number of discussions have been highlighted and it is a hope that it can contribute fresh ideas to the existing literatures.

### INTRODUCTION

Young Muslim professionals play a major role in the national development related to the social, economics and political. According to Bandar N.A. (2009), young professional's development is directly influenced by the individual self-development, globalization issues and their level of professionalism at the workplace. Therefore, it is vital for young professional characterized by aspects such as competence, integrity, altruism, intellectual, neutrality, creative and innovative, possessed a leadership and efficient time management skill (Bandar N.A., 2009). The religiosity practice such as honesty, trust and respect is the "backbone" to the efficient work practices and emphasized it based on the religiosity elements (Young, 1999). Yet, positive practice and inner strength concomitant with the Islamic philosophy encouraging the potential in spurring ethics and durability enhancement during encounter the challenges and dilemmas to deflect workplace pressure, to gaining the value-based success and interpreting accountability concept. However, the unethical behavior issues existence related with the lack of religiosity strength. The existence of scandals and competition in the workplace (Hyatt, 2005; Marschke, 2008) provide the impacts for the need to internalize religiosity elements (Connolly & Myers, 2003; Milliman, Czaplewski & Ferguson, 2003). This issue also gains attention in academic writing as its influence to the unethical issues that occur in the workplace and influencing the professional workforce's accountability (Kaptein, M., & Schwartz, M., 2007)

### THE STUDY

Unethical behavior issues received attention from the government and academicians in recent decades regarding from various scandals that occurred in the workplace. When the young professional's self-interest is the main factor and being information accessibility on his or her profession, lying would be the priority when conflict appeared (Holstrom, 1979; Grover, 1993; in Beu D., 2000). In fact, Becker (1976) in Beu D. (2000) believe that human is pure egoists and designed the own utility maximizing. For example, bribes chosen by individuals when has the opportunity and possibility to be uncaught.

This present scenario lead the young professional that have the potential to partake in workplace's unethical behavior. Young employees image as "problematic" has been dominant in public, social sciences and professional discourse even the applied work theory emphasis the young professional employees impact as an important resource in an organization. Furthermore, unethical behavior occurs in society areas, covering business, government, religion, education and has become *taboo* in the society (Baucus & Baucus, 1997). In addition, the self-interest motive affects every human behavior. Jeremy Bentham (1780) in *"Introduction to the principle of*

*morals and legislation*" stated that "what one does, says and thinks generally govern one's behavior." This showed self-interest motive affected the professional code and the regulations form, causing scandal in injustice, corruption and misuse of power.

Besides that, the unethical behaviors occur when the morality values declined and influenced the public sector accountability (Siddiquee, 2010 in Salleh D. and Abdul Khalid S.N., 2011). For example, in year 2012, Malaysian was ranked 49<sup>th</sup> and increasing to 53<sup>th</sup> out of 180 countries in year 2013 on the Corruption Perception Index released by Transparency International. In reality, unwilling to compromise with the personal values and the importance of the accountability, lead the difficulty in resolving ethical dilemmas occur (Jones, 2001). Therefore, young Muslim professional is expected to study the differences in ethical behavior from one situation to another due to the malfunction in self-accountability that simultaneously unethical behavior (Millage, 2005; Ross, & McClung, 2006).

The existence of religiosity aspect concomitant with the world and human civilization history (Professor Frederick Max Muller, 1823-1900). The evidence include artifacts and documents written by Johann Gotfried von Herder (born in 1744) regarding the importance of cultural and religiosity (Sulaiman M., Abdul Mutalib M.M., Mohd Ramly R. and Wan Razali W.M.F.A., 2011) shows that religious emphasize a high standard of element such as trust, honesty and reliability concerning overall accountability, conducted by the strictest obedience to Allah S.W.T. commandments. As instance, Bryan D. Burks (2006) stated people in the United States believe in God and the "golden rule", significantly mean that young professional performance with high accountability when working would receive same performance from others in actual scenario. While in Islam, young Muslim professional efforts to increasing the accountability level based on religiosity element strength as Islamic law is unbiased, preaches justice without discrimination and requires stability between the world and the hereafter.

Religiosity element being the dominant and comprises interconnected relationship between young Muslim professional beliefs and accountability actions in decision-making process. Young Muslim professional make accountable decisions every day while working and various aspects will affect the final result, involve a difficult situation and constraints, as not all the involved colleague see it as a positive decision. However, young Muslim professional decisions based on al-Quran and as-Sunnah need to ensure this anomalous situation does not affect the accountability but assessed in accordance Allah S.W.T. pleasure. Therefore, individual that work hard tend to successful (Ali, 2001) when exploring the elements, understand and affiliation on religiosity practice thus apply it to reach a professional level (Mohamad Juoi P., 2010). Consolidating and strengthening the integrity, efficiency, excellence in the world and in the Hereafter was the catalyst to young Muslim professional.

There are six characteristics contained in religiosity elements recognized as *hisba* (self-learning), aims to realize the cultivation of excellence in the world and in the hereafter. It is for young Muslim professional accountability awareness through strong religious affiliation, parallel with the nature and based on the Islam requirements. *Hisba* evaluated through six *muhasabat al-nafs* process involving *musyaratah*, *muraqabah*, *muhasabah*, *mu'aqabah*, *mujahadah* and *mu'atabah* practice (Makhsin M., Tamuri A.H., Che Noh A. and Elias M.F., 2012).

#### 1. *Musyaratah* (Heart Agreement)

Intends to create the conditions through agreements in the heart or build determination in life. Based on the conditions stipulated by individual, he or she perform its duties as prescribed. *Musyaratah* vital to prevent conflict and internal conflict that exists in human beings. In conclusion, *musyaratah* process initiated with the intention or ambition, then embedded into the heart to be applied by the body (Muhammad Jamaluddin al-Qasimi, 1990; Makhsin M., Tamuri A.H., Che Noh A. and Elias M.F., 2012). It would produce sanctity of life that brings happiness, safety and profitability. Allah S.W.T. says in surah al-syams, 91:9-10 :

"He has succeeded who purifies it, And he has failed who instills it [with corruption]."

#### 2. *Muraqabah* (Behavioral Observation)

Significantly mean vigilant and wary of the negative attitude that exists in human beings and aims to maintain decorum themselves. *Muraqabah* is capable to overcome young Muslim professional accountability weaknesses by performing obedience to Allah S.W.T., the Almighty and regulate the inclination to perform vices (Hamzah Jacob, 1985; Makhsin M., Tamuri A.H., Che Noh A. and Elias M.F., 2012). These properties can be sown through the belief that God is always seeing and observing human behavior. Allah says in surah al-An'am, 6:3:

"And He is Allah , [the only deity] in the heavens and the earth. He knows your secret and what you make public, and He knows that which you earn."

### 3. *Muhasabat* (Self-consideration)

Significantly mean to calculate or analyze individual against all behavior. It requires an assessment by analyzing every action to identify errors that have occurred. As a result, adjustments and improvements can be implemented. It also aims to develop self-discipline to constantly make an assessment in determining behavior in life (Lutfi, 2000; Makhsin M., Tamuri A.H., Che Noh A. and Elias M.F., 2012). Allah S.W.T., the Almighty says in surah al-Hasyr, 59:18:

*“O you who have believed, fear Allah . And let every soul look to what it has put forth for tomorrow - and fear Allah . Indeed, Allah is Acquainted with what you do.”*

These three characteristics describe how *muhasabat al-nafs* process was conducted in young Muslim professional accountability. The process begins with self-assessment through behavioral review and the results of the behavior assessment as an evasion guide from continuing. Next, choose favorable decision to the future for errors rectified immediately.

### 4. *Mu'aqabah* (Affirmation)

Assess the young Muslim professional decision in the workplace to against shortcomings and mistakes. Therefore, initiatives will be taken to rectify past mistakes and need to ensure that it unrepeat.

### 5. *Mujahadah* (Resistance Temptation)

Means had fought hard in Allah S.W.T. and regardless of trepidation (Lutfi, 2000; Makhsin M., Tamuri A.H., Che Noh A. and Elias M.F., 2012). It aims to avoid laziness. The nature of *mujahadah* encourage individual excited in the struggle of life.

### 6. *Mu'atabah* (Soul-Purification)

The process of self-criticism, giving rise to resentment against offenses committed (Sa'id Hawwa, 1998; Makhsin M., Tamuri A.H., Che Noh A. and Elias M.F., 2012). It aims to create peace of mind, confronted with the test and believe that Allah S.W.T., the Almighty observing and regulatory affairs.

In conclusion, *muhasabah* level is the key against religiosity and self-discovery journey. While *musyaratah* and *muraqabah* stage is a preparatory self-measure. Meanwhile, *mu'aqabah* and *mu'atabah* level as self-evaluation measures and purification. Finally, *mujahadah* level is the mirror that determines the individual persistence to foster the young Muslim professional accountability.

## FINDINGS

Young Muslim professional is the important source in promoting the country development, generally espoused the ideals themselves, enthusiastic and possess commitment to improving the performance. They require in working with a set of self-prediction, resulting from the religiosity enhancement, educational experience and understanding on the importance of the accountability philosophy. The young Muslim professional development objectives is to shift the paradigm from the significant unethical behavior issues to arouse the self-development comprehensive approach as effort in increasing the understanding and practicing religiosity level, simultaneously assist the ethical self-contained development. On the other side, accountability able to generate the young Muslim professional disciplined with a high work performance due to dignity as employee for organization and servants to Allah S.W.T., the Almighty (Agil S.O.S., 1994)

The young Muslim professional accountability emphasizes the avoidance unethical behavior misconduct in the workplace. Muslims who believe and practice Islam are more committed and assumed higher satisfaction dealing with to their tasks than non-believers of religion (Yousef, 2001). Collectively, the accountability concepts inspire confidence in the workplace, reinforce positive transition and motivate young Muslim professional to focus on their primary responsibilities (Ali, 2005). By accepting a task, it indicates young Muslim professional acceptance of the *amanah* (trust) to perform work with accountability, honesty and perfection encouragement. Besides that, young Muslim professional that stress accountability in the workplace view the decision-making activities as an obligation. As a result, the young Muslim professional able to utilized their ability and inherent the efficiency and effectiveness.

Through the understanding of religiosity-based program and accountability implemented able to create positive ethical behavior culture. The development approach of young professional progressed with the human development potential perspective in an attempt to changes systematically self-attitude (Theokas & Lerner, 2006). Young Muslim professional accountability enhancement aims to create an environment and ability to increase the



confidence and competence to meet the productive needs, according to the substrate and regulations from Allah S.W.T.

#### The type of Accountability

##### i. Personal accountability and relationship with Allah S.W.T.

Individual has different execution work but need to be responsibility and accountability as mentioned in the al-Quran and al-Hadith. Therefore, the statement regarding behavior were caused by others is unacceptable because the sense given by Allah S.W.T. is adequate to distinguishes the unethical behavior. Islamic law that determined the established principles and be obeyed by individuals indicates each young Muslim professional is accountable for compliance with all the *halal* and *haram*, which has been established by Allah S.W.T. (Agil S.O.S., 1994)

The accountability will be tested in an environment where young Muslim professional does not feel accountable to the people due to human greed and selfishness continued. Experience in the workplace shows the changes from young Muslim professional external only in temporary period. In other words, the change must come from within. It requires internal transition as correct intention to produce external action accountable. The accountability will be built when human spirit is enhanced in accordance with the purpose of creation, to worship Allah S.W.T. and apply the faith in each decision-action making process. The attitude that emphasizes accountability is the result of spirit increasing and formed by God-conscious feeling (Omar S.A.S., 1994).

##### ii. Employee Accountability

Young Muslim professional responsible to carrying out its duties based on job specifications outlined. In this context, they must comply to achieve an organization goal. Besides accountable to Allah S.W.T., young Muslim professional has accountability in the workplace by knowing the policy, regulatory and organizational performance targets. Any failure of accountability during the final decision-making process requires a continuous process of self-improvement (continuous improvement), which was responsible for carrying out the work with full trust and evade from involved in behavior that contrary to Islamic law such as bribery, breach of trust and fraud (Agil S.O.S., 1994)

Furthermore, reconcile religiosity element to form and firm the young Muslim professional accountability with the practical reality workplace involving Islamic law concept and decision-making processes to build empowering individual, become and act as a genuine Muslim. Therefore, young Muslim professional need to be awareness regarding their accountability and responsibility not only to the organization, but its ultimate to Allah S.W.T. The reward and punishment concept and caution regarding the world and in the hereafter as the main guidelines during the current conflict, dilemma or ethical considerations, drafted by Allah S.W.T. is suitable practiced by each individual. Meanwhile, the concept of reward and punishment, drafted by humans just a complement or as an adjunct in the plan of making any final decisions.

## CONCLUSIONS

Islam is a comprehensive lifestyle and accountability is an Islamic regulations foundations. While accountability enhancement defined as constructive character, personality and behavior with the goal of a civilized, intellectual, moral and viable. Individual should strive and willing to change themselves that lead to greater transformation. Personal values and individual personality will also influence accountability standards. Through encouragement and a sense of obedience to Allah S.W.T, people will comply with moral regulations and represents individuality characteristic without any external pressure, from situating a professional mindset and changed attitude to measure results creatively and learning to cultivate and followed the best instincts. The properties of trust at work, honesty, accountability, responsibility and integrity should be established by continued in the religious affiliation and education. Level of consciousness and practice must be nurtured and enhanced in preparing the young Muslim professional as the major leader to the workforce. Moreover, personality accountability needs commitment and patience and ethical practices will give positive impact on families, communities, countries and ultimately to achieve the pleasure of Allah S.W.T.

## ACKNOWLEDGEMENT

The presentation of this paper was made possible through the financial support of the Ministry of Education Malaysia. Many of the findings reported in this paper were based on a study commissioned by the Ministry of Education Malaysia. The opinions and conclusions documented in this paper are of the author's and might not necessary represent that of the Ministry of Education Malaysia.

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## Role Of DNA Styling: The Creation Of Local Brand Identity Recognition Framework

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### ABSTRACT

This paper reviews the significance of current design practice and its future contribution for establishing product DNA Styling of brand identity based on Malay culture influences. In the paper, we suggest to explore the design DNA of product that could represent brand and identity, especially for the establishment within a Context of Malaysian Design. In regard with the lack of clear theory exist in current literatures pertaining to characteristics of product DNA in design embedded, based on the representation of mind by designers' from the perspective of culture influences in Malaysia. An advanced theory regarding the design DNA of Malaysian design will be produced. The research framework was developed based on DRM, to uncover 3 Level of gaps beginning with sampling design research methodology and inquiry, consumer expectation & expert designer about cultural influence and the gap between abstract-semi concrete-concrete design levels. Thus, the objectives of this framework is to propose a future study to uncover the method use by designers interpret styling DNA based on Malaysian culture influences. This theory will benefit local designer and researcher to further study on local brand identity recognition by exploring it to other domain of research.

### INTRODUCTION

The brand identity is tangible and appeals to the sense, which is u can touch it, see it, touch it, hold it, hear it, and watch it moves. Brands identity fuels recognition, amplifies differentiation, and makes big ideas and meaning accessible. This research is exploratory with intention to develop Malaysian brand and identity embodied agent through design methodologies that can be used as a unified point of reference for product design. Traditional design methodology recommends that design should be moved from existing problem descriptions to an abstract solution model. The abstract models are then developed towards concrete solutions via functional principles and principle structures. In product design, especially in the interpretation of visual appearance, concepts such as form and shape are used when describing the form of object. Here, the researcher want to explore whether the designer is using some kind of Malaysian brand and identity embodied agent characteristics structure principles in designing a product. Items that represent the characteristics of Malaysian brand and identity can based on (1) Icon, sign and symbol; (2) Object and artefact; (3) Building and architecture; (4) Art, culture, heritage, decoration and costume; and (5) Nature resources. However, there is no clear evidence exist in current literatures relating to characteristics of Malaysian brand and identity in product design embedded through the representation of mind by designers' from the perspective of Malaysian items influences in Malaysia. Thus, the objectives of this framework are: (i) To uncover designers' interpretation of product "deoxyribonucleic acid" (DNA) based on Malay culture influences, (ii) To understand the influence of incremental radical design that changes respective to brand identity, and (iii) To confirm the similarities of characteristics of product DNA representation in the context of syntactic that can be generalized as a visual brand recognition for Malaysian product design.

### AN OVERVIEW OF DESIGN THEORIES

How and what is the differences between research conducted and research investigation was defined by Frayling (1993), Cross (1999) and Falman (2008). There is a finding from Frayling 1993, which he defined a PhD student. Based on his research and respondents of a 6 PhD student, he defined that every student especially in design field, they was conducted a research, they are using a 3 approaches which is a research into design, a research through design and a research for design, which determine to design history in industry method and through practice. Dis

is how the PhD student investigating their research, it means that how the PhD student conducted their research, But in 1999, cross, he agreed with Frayling, but based on cross finding, he defined the activity to see what was the focus of investigation, and he defined that all the PhD student, even though they conducted the research with 3 approaches but it always have a focus group which is, to the people to the process and to the product. However, Fallman in 2008, he found out that even though Frayling and Cross mentioned about how the research conducted and what of the focus group research, but every activity has been done by those PhD student can divided into three design area which is design practice, design studies and design exploration. This is current trend of the design activity especially in art and design, but this kind of research actually from this scholar is using a design research based on engineering design studies. So this is the overview how this research investigation activity influence my research activity.

#### LITERATURE REVIEW: A FOUNDATION OF DESIGN RESEARCH MODEL

This research explores the notion that product DNA is fundamentally a sign of human embodied mind in product design. There is “no clear theory” exist in current literatures pertaining to characteristics of product DNA in design embedded based on the representation of mind by designers’ from the perspective of Malay culture influences in Malaysia. However, Toni-Matti Karjalainen (2004) has mention that - three examples of topics recently become popular for product design research in Malaysia

- The first topic is about *brand image and identity*;
- Second, *visual recognition of brand and*
- Third, products has become a *central competitive factor within various product categories*.

Abidin in his discussion mentioned about the comprehension, the second mode, is about making ‘sense of things’, such that products are “understandable to their users” (Krippendorff & Butter, 1984). Through comprehension, we understand characteristics such as level of quality and nature of the product; the product describes its operation, expresses its properties, and exhorts certain types of action or even non-action; it informs and advises about itself. In comprehension, perceivable references in the product point towards the product itself, providing meaning related to the nature, behavior, properties and essential physical characteristics of the product. Semiotically, indexical and symbolical signs create references for comprehension of the product. For example, a typical door handle is an example of an indexical sign, describing operation and function. The hard and shiny quality of a stainless steel surface or the sturdiness expressed by a Jeep, are examples of symbolic references, referring to the nature of the product (Abidin, 2012).

In product design, especially in the interpretation of visual appearance, concepts such as form and shape are used when describing the form of object. Traditional design methodology recommends that design should be moved from existing problem descriptions, which is the problem, described depends on an individual perspective of a person. And abstract solution model, which is abstract functional representation and concrete form representation – to open up new solution space (Blessing and Chakrabarti, 2009). The abstract models are then developed towards concrete solutions via “functional principles” and “principle structures”. The argument on the Malaysian identity establishment is always referring on the three dominant races (Malays, Chinese and Indian). Which in our point of view, there is a big gap of similarity and very difficult to be align as local design representative. In this case, we agree with The Brand Meaning by Keller (2001) introduces a comprehensive new approach (See figure 2), the customer-based brand equity (CBBE) model. We will reframe the steps for building a strong brand:

- establish the proper brand identity
- create the appropriate brand meaning
- elicit the right brand responses
- forge appropriate brand relationships with customers

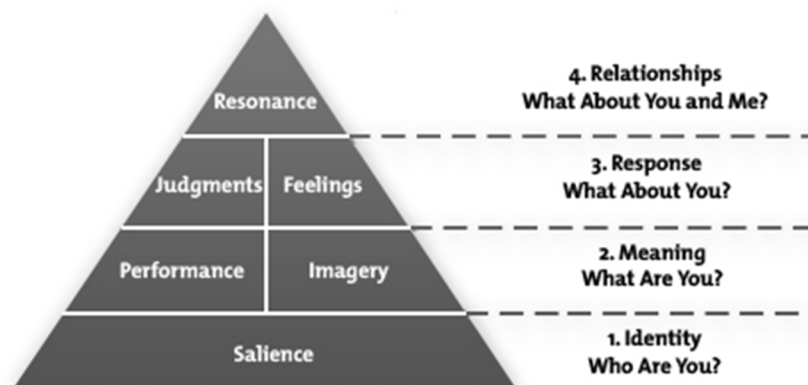


Figure2. The Brand Meaning developed by Keller (2001). A. Customer-based brand equity pyramid, B. Sub-dimensions of brand-building blocks, C. Customer-based brand equity pyramid



### EXPLORATORY INVESTIGATION

The study will restrict to the product design industries and academia. The selection of respondent is within three hundred respondents will be involved as samples to answer the questionnaires based on a descriptive study and empirical research through design activities. It seeks answers to questions, which were formulated on literature reviews and on what is often practiced by designers in product industry and academia by focusing on three elements such as product design, form development and design thinking. These three different levels involve: 1) Different level of form development level such as explorative, explanatory and persuasive; 2) Different level of career development such as expert, senior, intermediate, novice and student; and 3) Different level of learning/work such as product design art-based and science-based. The process of investigation is expected to be iterative. There is a continuous need to re-look at the research questions and sources of data and to refine them after verifications from new findings.

This study is based on a descriptive study and empirical research through design activities. It seeks answers to questions, which were formulated on literature reviews and on what is often practiced by designers in product industry and academia by focusing on three elements such as product design, form development and design thinking. The process of investigation is expected to be iterative. There is a continuous need to re-look at the research questions and sources of data and to refine them after verifications from new finding. As a multivariate procedure, it is used when there are two or more dependent variables, although statistical reports provide individual p-values for each dependent variable in order to test for statistical significance. Consisting of six levels of brand identity. Consisting of six levels of brand identity (Freling and Forbes, 2005):

- Product information only (i.e. no brand identity).
- Product information + a sincere brand identity.
- Product information + a competent brand identity.
- Product information + an excited brand identity.
- Product information + sophisticated brand identity.
- Product information + a rugged brand identity.

### DESIGN RESEARCH FRAMEWORK

There are several model of design to approached sampling of design research methodology Traditional design methodology recommends that design should be moved from existing problem descriptions to an abstract solution model (Blessing and Chakrabarti, 2009). Blessing who develop Design Research Methodology (DRM) mention to stresses the need “to facilitate the research development of appropriate means to support design in DNA styling related with identity and its management based upon a fundamental to understanding of design. As mentioned in the introduction section, no clear evidence exist in current literatures relating to characteristics of Malaysian brand and identity in product design embedded through the representation of mind by designers’ from the perspective of Malaysian items influences in Malaysia. Thus, we have to search the research question, which is; First, HOW do designers assess product DNA through their sketching assignments with respect to proposed ideas? Second, WHAT types of important elements exist in designers sketch and what is the characteristics of these elements? And third, HOW, then, are elements product DNA by designers with respect to completeness of brand identity?

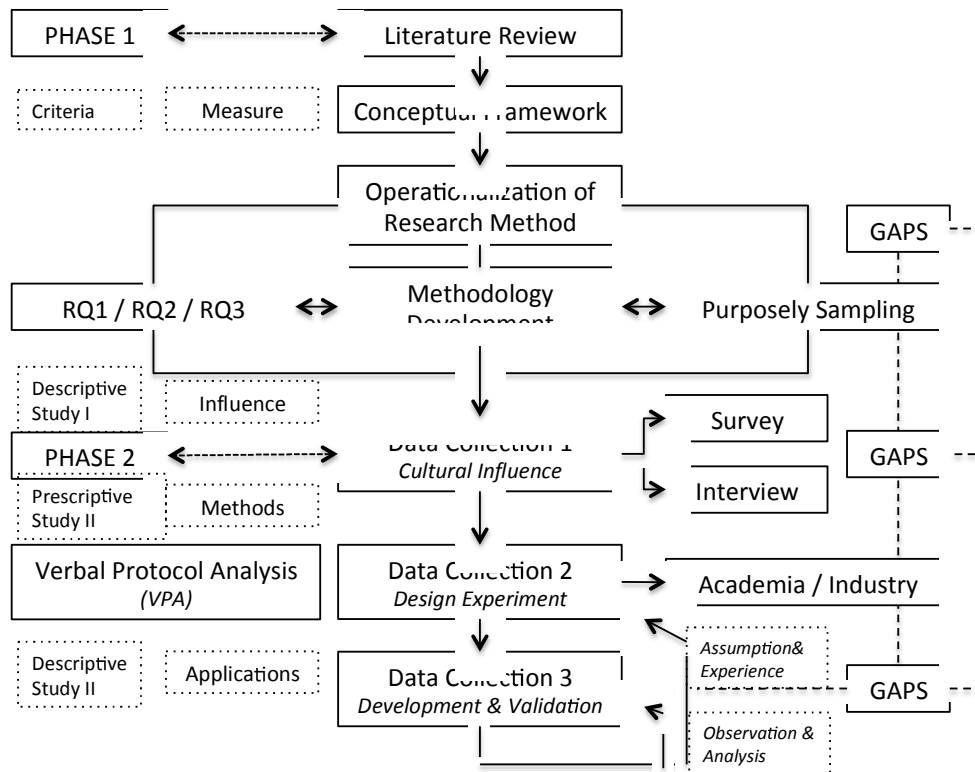


Figure 4. DNA Styling for Local Brand Recognition Research Framework

To confirm the research question we come out with the objectives of this study are: First, to uncover designers' interpretation of product DNA based on Malay culture influences; Second, to understand the influence of incremental radical design that changes respective to brand identity and; Third, to confirm the similarities of characteristics of product DNA representation in the context of syntactic that can be generalized as a brand identity for Malaysian product design. For these reasons, three different levels of form development level such as explorative, explanatory and persuasive put in practice. In order to conduct the investigation of DNA styling to the establishment of local brand identity, we suggest a design framework (see Figure 4) and define three research gaps as an agreement to develop a solid line of argumentation (Blessing and Chakrabarti, 2009). The gaps divide into; Level 1, the gap of sampling design research methodology and inquiry; Level 2, the gap between Consumer Expectation & Expert Designer about cultural Influence; Level 3, the gap between abstract-semi concrete-concrete design levels. A local brand identity should going through the different phase in research methodology, in this framework, we designed the verification a research approached into four level, considering the research Descriptive study, continue with Prescriptive Study ii, and repeat by Descriptive Study ii. The reason why we do the process is too explore whether the designer is using some kind of Malaysian brand and identity embodied agent characteristics structure principles in designing a product in furniture. Items that represent the characteristics of Malaysian brand and identity can based on Icon, sign and symbol it also can be object and artefact, building and architecture, art, culture, heritage, decoration and costume, nature resources.

We develop mixed methods through qualitative inquiry and quantitative inquiry to uncover the designer's think aloud. A kind of protocol suggested by Yin (1994) adapt with the inclusion of four sections: (1) Overview of the case study project; (2) Field procedures; (3) Case study question; and (4) Guide for the case study report. A video observation based on verbal protocol analysis (Abidin et. al., 2009) of designer sketching activities at several design academies and practitioners in Malaysia will be conducted. It will be strengthened by semi-structured interview on experts on evaluation of selected sketches in the analysis of syntactic representation (Warel, 2001) in relation to Malaysian brand and identity embodied agent characteristics in product design (Abidin et. al., 2014). At the end of the studies, Malaysian brand and identity embodied agent for product design will be produced. This finding will benefit local designer and researcher to further study by exploring it to field of research. In this stage, a different level of career development such as expert, senior, intermediate, novice and student and different level of learning/work such as product design art-based and science-based (Anwar et. al., 2014). For sampling, there is no rule on the amount of respondent and the quality of the respondent is important to gain an accurate data (Openheim, 2014 and Patton, 1990). Unless it is very clear that a sample is randomly drawn from the very population it is supposed to represent, the external validity of a large group study cannot be inferred from the

sample. External validity can only be addressed by judging the logical probability that other populations share the germane characteristics of the individuals who did not participate in a given study (Ninnes et. al., 2002). Therefore, we suggest a total of 400 respondents from university's students contribute with product design course from North Coast, South Coast, West Coast and East Coast University will participate in the study.

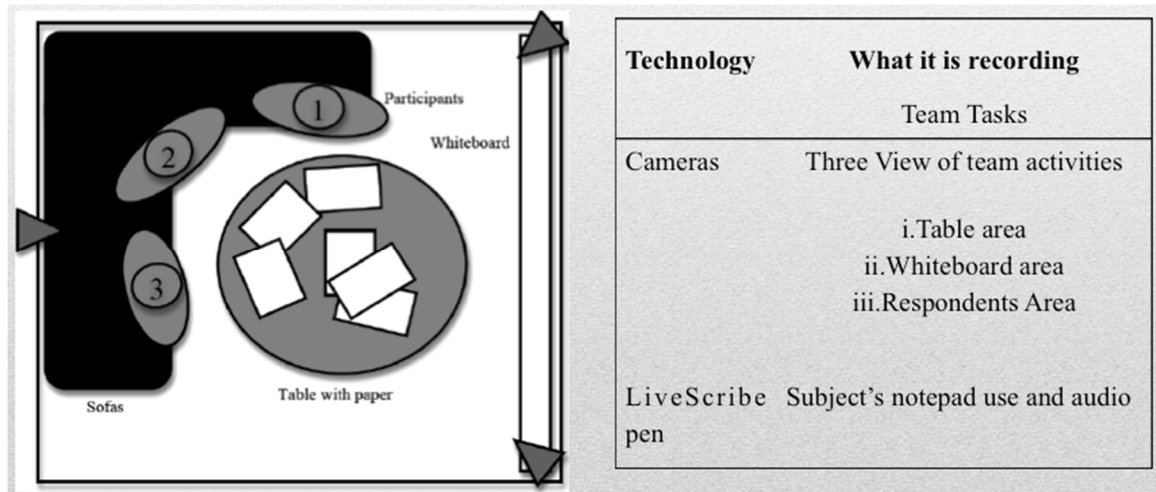


Figure 5. Artificial set up by Cash (2012) for VPA group observational set up.

Recommendations in the form of guidelines, theories, and tools will be generated to establish and improve systematically in the areas of brand identity based on product DNA in design based on Malay culture influences, at the end of the studies, an advanced theory regarding the styling DNA of Malaysian design will be produced. This theory will benefit local designer and researcher to further study by exploring it to other field of research. Initiative should be taken by Malaysians designers to promote Malaysian product design identity. Researches on brand image and identity, design in relation to DNA investigation and user perceptions of local products should be carried out at the largest setting. This should be supported by the education, which is academia and research industry in terms of opportunities and recognition (Karjalainen, 2007). The future challenging in Malaysian product design identity will be on the reliability, verification and validation (Abidin et. al., 2014). Reliability is the quality or state of being and the extent to which an experiment. Test or measuring the procedure yields the same results on repeated trials (Abidin et. al., 2009). Verification of results is concerned with establishing the truth or accuracy and the predictive and explanatory power of proposed theories, methods and models. Verification can look into the concepts of logical verification and verification by acceptance. Validation of research results is concerned with established the relevance and meaningfulness of theories, methods and models. This is how the structured research conducted with phase one, follow by phased two and three. The first issue will be resolved by the first phase which is the gap of sampling design research methodology and inquiry, follow second phased is the gap between consumer expectation and expert designer about cultural influences and third phased is the gap between abstract –semi concrete design levels (Anwar et. al., 2015).

## RECOMMENDATION FOR FUTURE WORKS

The research could give and impact in establishing the product DNA in introducing the Malaysian brand identity designers will benefit from the usage of product design DNA that will include Malaysian brand identity. This research is an innovation of Malaysia product design in terms of research and development as well as academia in product DNA. We recommend in the form of guidelines, theories, and tools will be generated to establish and improve systematically in the areas of brand identity based on product DNA in design based on Malay culture influences. The establishment advanced theory regarding the styling DNA of Malaysian design will be produced. This theory will benefit local designer and researcher to further study by exploring it to other field of research. Initiative should be taken by Malaysians designers to promote Malaysian product design identity. Researches on brand image and identity, design in relation to DNA investigation and user perceptions of local products should be carried out at the largest setting. This should be supported by the education which is academia and research industry in terms of opportunities and recognition (Anwar et. al., 2015). The future challenging in Malaysian product design identity will be on the reliability, verification and validation. Reliability is the quality or state of being and the extent to which an experiment. Test or measuring the procedure yields the same results on repeated trials. Verification of results is concerned with establishing the truth or accuracy and the predictive and explanatory power of proposed theories, methods and models. Verification can look into the concepts of logical verification and verification by acceptance. Validation of research results is concerned with established the relevance and meaningfulness of theories, methods and models.

## ACKNOWLEDGEMENTS

We would like to acknowledge the generous participation of the interaction designers in the research. This study was conducted in Formgiving Design Research Lab established by research Management Institute, Universiti Teknologi MARA. This issue has finalized in collaboration with the contributing authors, and with support of Malaysia Ministry of Education under the RAGS. In addition, two anonymous reviewers provided insightful and of an earlier abstract of this paper.

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## Satisfaction Of Individuals With Blindness From Use Of Audio-Tactile Maps, Tactile Maps And Walking Experience As Means For Spatial Knowledge Of A City Route

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### ABSTRACT

The aim of the present study was to examine the level of satisfaction of individuals with blindness after the use of three different means for knowledge of a space: audio-tactile maps, tactile maps and independent movement. Moreover, this study aims to compare the level of satisfaction resulting from the use of these three means. Fourteen adults with blindness took part in the research. Their age ranged from 20 years to 52 years. The subjects participated in three experiments. During the first experiment the subjects read an audio-tactile map of a city route and then they answered questions regarding the safety, satisfaction, pleasure, comfort, confidence and preparedness/adequacy they felt for using audio-tactile maps as a means of spatial knowledge. In the second experiment the examination consisted of reading the tactile map of a similar city route and answering the same questions and in the third experiment the participants answered the questions after they first walked in a city route. The findings of the present study reflect the preference of individuals with blindness in audio-tactile maps as means for spatial knowledge and support the advantages resulting from their use.

### INTRODUCTION

Maps contribute to the handling of daily living problems inducing autonomy, independence and a better quality of life for individuals with visual impairments (Espinosa, Ungar, Ochaita, Blades, & Spencer, 1998; Jacobson, 1998; Papadopoulos & Karanikolas, 2009). Mobility aids such as tactile maps or audio-tactile maps are passive mobility aids, according to the categorization of Lahav and Mioduser (2008), and as such they help individuals with visual impairments explore and code spatial environment before they actually reach real environment.

Previous research demonstrated the usefulness of tactile maps on blind individuals' spatial knowledge (Ungar, Blades, & Spencer, 1993; Espinosa & Ochaita 1998). However, there seems to be a series of limitations accompanying tactile maps. Jacobson (1998) mentioned that fingertip resolution is lower than eye's resolution, cartographers face the problems of simplification, generalisation, classification and symbolization of the information included to a visual map, extended Braille labelling is required, which leads to overload and is prohibitive for those who do not know Braille reading. The abundance of the information and the complex graphics entail greater memory load (Ungar, Blades, & Spencer, 1993), while an increased amount of spatial information clearly influences spatial coding and representation (Papadopoulos, Koustriava, & Kartasidou, 2012). Moreover, separate legends restrict immediacy and interaction with the map.

Verbal assistance can help to overcome many of the obstacles mentioned above by substituting Braille labels and legends, as well as by providing guiding information, such as spatial relations, descriptions of buildings (Habel, Kerzel, & Lohmann, 2010) or significant landmarks, for instance, traffic lights with auditory assistance (Wang, Li, Hedgpeth, & Haven, 2009). Information provided through speech in combination with touch can be quite helpful overcoming the restrictions of touch to serial information gathering (Wang, Li, Hedgpeth, & Haven, 2009). Research results prove that individuals with visual impairments use auditory cues to create cognitive maps (Papadopoulos, Papadimitriou, & Koutsoklenis, 2012). For this reason auditory cues have used in combination with haptic feedback in an audio-haptic map. Multimodal maps form the context for these solutions and specific audio-haptic devices, such as touch pads represent the tools for using audio-tactile maps.

Touchpad offers at the same time access to the benefits of tactile maps and verbal aids. The combination of auditory and tactile information may result in a more complete concept (Landau, Russell, & Erin, 2006). Landau and his colleagues (2006) found that individuals with visual impairments can enjoy control and independence coming from the ability to make choices between tactile and auditory information used through a touch pad.

Moreover, touch pads give the ability to use environmental auditory cues, incorporating, in a way, the soundscape into the tactile map. Including auditory cues in a map may promote an individual's orientation, since individuals with visual impairments are proved to use auditory cues to determine and maintain orientation within an environment (Jansson, 2000; Koutsoklenis & Papadopoulos, 2011) and to associate the soundscape with the

structural and spatial configuration of the landscape and create cognitive maps (Papadopoulos, Papadimitriou, & Koutsoklenis, 2012).

Psychological and social factors can influence the performance of any physical, cognitive or perceptual skill (Welsh, 2010). As far as individuals with visual impairments are concerned, the above statement is confirmed particularly on practical life skills carried out in real-world circumstances, as in orientation and mobility (Welsh, 2010). Apart from motor-perceptual and cognitive elements, psychological factors and social aspects of traveling independently must be included in the case of individuals with visual impairment (Welsh, 2010). Traveling without vision depends on someones developed confidence and courage (Welsh, 2010).

The impact of motivation on Orientation and Mobility is reflected in the stated need to travel (Weinläder, 1991). However, a more extended research is needed concerning different types of motivation such as achievement versus affiliation motivation, intrinsic versus extrinsic motivation, motivation by hope for success versus fear of failure versus fear of success (Weinläder, 1991).

Stress has been mentioned as a cognitive factor impeding Orientation and Mobility. Stress can be explained as a kind of mental preoccupation and/or as a result of emotional problems and fears which are linked or not with Orientation & Mobility (Weinläder, 1991). Stress remains an important factor as an individual progress in Orientation and Mobility, because of the expansion of his/ her life space into more unfamiliar and dangerous surroundings (Weinläder, 1991).

Thus, it is important to examine whether and to what extent the different means for spatial knowledge of a city route have a positive impact on the psychology of the users with blindness.

## STUDY

The aim of the present study was to examine the level of satisfaction of individuals with blindness after the use of three different means for spatial knowledge of a city route: audio-tactile maps, tactile maps and independent movement. Moreover, this study aims to compare the level of satisfaction resulting from the use of these three means.

## Participants

Fourteen adults with blindness took part in the research. The sample consisted of 10 males and 4 females. The age ranged from 20 years to 52 years ( $M = 36.6$ ,  $SD = 11.06$ ). Twelve participants were blind or had severe visual impairments and 2 had the ability to detect very large objects. An essential criterion to include a participant in the study was not to have a hearing impairment or other disabilities, apart from visual impairments. The visual impairment was congenital for 11 participants and acquired for the rest 3 participants.

The participants were asked to indicate the main reading media which they used (i.e., Braille, TtS systems, recorded material). Moreover, the participants stated how many years (overall) they had used TtS systems. Eleven out of 14 participants used TtS systems as the basic reading medium. In addition, 9 participants declared that they have at least a ten-year experience in using TtS systems, 3 participants stated that they have been using TtS systems for 2 to 10 years, while two participants stated that they started using TtS systems two years ago.

The participants were asked to state the way of their daily move in outdoor places, by choosing one of the following: a) with the assistance of a sighted guide, b) sometimes myself and sometimes with the assistance of a sighted guide, and c) myself, without any assistance. Moreover, the participants were asked to indicate the frequency of their independent movement using a 5-point likert scale: always, usually, sometimes, seldom, or never. In addition, these two questions were answered from a orientation & mobility (O&M) specialist, who were familiar with the participants and could assess the latter's ability of independent movement. Table 1 present the answers of the participants and O&M specialists.

Table 1

*Ability and frequency of independent movement according to the answers of participants and O&M specialists - the score represent the number of participants in each group*

	With or without sighted guide			Frequency of independent movement			
	with	with & without	without	seldom	sometimes	usually	always
Participants	1	4	9	0	1	9	4
Specialists	3	1	10	2	5	6	1

### Procedures - Instruments

The main research instruments were audio-tactile maps and tactile maps of city routes. Moreover, a 6-items self-constructed questionnaire concerning the level of satisfaction after the use of different means for spatial knowledge of participants was used. The questionnaire concerning the safety, satisfaction, pleasure, comfort, confidence, and preparedness/ adequacy they felt for using the different means (audio-tactile maps, tactile maps and independent movement) of spatial knowledge.

The subjects participated in three experiments. During the first experiment the subjects read an audio-tactile map of a city route. In the second experiment the procedure consisted of reading the tactile map of a similar city route and in the third experiment the participants walked in a similar city route. After the participants completed the use of every mean provided (audio-tactile maps, tactile maps and independent movement), they were given a questionnaire consisted of 6 items where they were asked to indicate, using a 5-point likert scale (1 = not at all, 2 = slightly, 3 = neutral, 4 = very, 5 = extremely), whether they: felt secure to move independently (Q1), felt satisfied with the mean they just used (Q2), felt pleased (Q3), was the procedure relaxing (Q4), felt confident (Q5), and felt adequate/competent to move independently (Q6).

The sequence of the experiments was not the same for every participant. Moreover, a circular design of experiments' implementation was applied with reference to routes. For instance, the first participant walked down the first route during the first experiment, while he/she used the audio-tactile map of the second route during the second experiment and the tactile map of the third route during the third experiment. In the same way, the second participant walked down the second route during the first experiment. He/she used the audio-tactile map of the third route during the second experiment, and the tactile map of the first route during the third experiment and so on. This design was applied in order to avoid any error resulting either from differences in the areas' degree of difficulty or from previous learning of the area structure.

The choice of the routes was based on the following criteria: a) they had approximately the same length b) they all had the same number of turnings c) they had different shape and d) they were suitable for/accessible to people with visual impairments. In order to achieve the accessibility objective, researchers walked around the areas and examined whether they are accessible to blind people. The main concern was to avoid obstacles which would prevent blind people from passing through.

Researchers visited each route, recorded the spatial information (as far as absolute location and kind of information are concerned) and selected 30 of them to be mapped out. Moreover, sound recording for each route was made at a certain time, during evening hours and for 20 seconds at each point. Sound was recorded at the beginning and the end of each route, at all intersections and at some places with special auditory information, such school, café, car wash etc. For the recording a Telinga Stereo Dat-Microphone was used with the recording system Zoom H4n-Handy Recorder.

Adobe Illustrator CS6 was used for the creation of digital tactile maps. These maps were then printed in microcapsule paper, and consequently 3 tactile maps were developed.

In the first experiment, the participants moved along the route independently using their white cane. Each time the researcher moved with the participant maintaining a short following distance from him/her and guiding him/her using verbal instructions (e.g. "in this point you should turn right"). In case of emergency where a participant could set him-/herself in danger, the researcher asked him/her to stop (uttering "stop").

In the second experiment, the participants read the audio-tactile map through the touchpad device. The procedure was carried out individually in a quiet environment. Initially, participants were informed about the procedure of the experiment. A laptop, a touchpad device and headphones through which participants listened to audio information (street names, spatial information and sounds) were used. Each participant read via touch the audio-tactile map that was placed on the surface of the touchpad device, and by tapping the streets he/she listened to their name, by tapping the dots he/she listened to the information they represent, and finally by tapping the small vertical lines he/she heard the sounds of the particular area. The maximum time that was offered for the map reading was 15 minutes.

The following procedure was used for audio-tactile map construction. On each tactile map dots were placed at the locations of spatial information (e.g. trees, pillars, stores) and short length vertical lines were placed on the locations where sounds was recorded. Moreover, a speech synthesizer was used for the presentation of spatial information and street names. The software application Ivey Creator pro 2.0 together with the device touchpad, were used to develop the audio-tactile maps. Both of them are products of "ViewPlus® Technologies" company.

The touchpad device is a pointing device consisting of specialized surface that can translate the position of a user's fingers to a relative position on the computer screen. When used in combination with a tactile image, this device has the potential to offer tactile, kinaesthetic and auditory information at same time (Jansson & Juhasz, 2007).

In the third experiment, the participants read the tactile map. Adobe Illustrator CS6 was used for the creation of digital tactile maps. These maps were then printed in microcapsule paper, and consequently 3 tactile maps were developed. On each tactile map dots were placed at the locations of spatial information and braille labels for the representation of streets names and kind of spatial information. The procedure was carried out individually in a quiet environment. The maximum time that was offered for the map reading was 15 minutes.

## RESULTS

Initially, the scores of each question of every single mean of spatial knowledge (audio-tactile maps, tactile maps and independent movement) were calculated. The means and standard deviations (SD) of scores are presented in Table 2.

Table 2

*Mean (M), and standard deviation (SD), of answers in each question/ item (1 = not at all, 2 = slightly, 3 = neutral, 4 = very, 5 = extremely)*

	Independent move		Tactile map		Audio-tactile map	
	M	SD	M	SD	M	SD
Q1	3.57	1.22	3.21	1.05	3.93	.92
Q2	3.50	1.16	3.14	.77	3.79	.80
Q3	3.79	1.12	3.00	1.11	3.93	.92
Q4	3.86	1.03	2.93	1.38	4.14	.66
Q5	3.86	1.03	3.57	.94	3.93	.92
Q6	3.79	1.05	3.36	1.00	3.86	.66

As shown by the means of answers for each item, the audio-tactile map is the mean of spatial knowledge prevailing in the preferences of the participants in all items without any exception. Participants indicate more satisfied using the audio-tactile map in comparison with the use of tactile maps and independent movement in route.

Furthermore, repeated-measures ANOVAs were conducted to examine the differences regarding the level of satisfaction of individuals with blindness after: a) the independent movement b) the reading of audio-tactile map and c) the reading of tactile map. Repeated-measures ANOVAs were conducted for each of the 6 items presented in Table 2.

The implementation of repeated-measures ANOVAs revealed no significant differences regarding the items Q1, Q2, Q5, and Q6. However, the implementation of the LSD post-hoc test ( $p < .05$ ) indicated significant differences between audio-tactile and tactile maps regarding the items Q1, Q2, and Q6. Participants felt more satisfied, secure and competent to move independently when using the audio-tactile map compared with the use of the tactile map. Moreover, the implementation of repeated-measures ANOVAs revealed significant differences regarding the items Q3 [ $F(2, 26) = 4.075, p < .05$ ] and Q4 [ $F(2, 26) = 5.231, p < .05$ ]. Concerning Q3 item, the implementation of the LSD post-hoc test ( $p < .05$ ) indicated significant differences. Participants felt more pleased using the audio-tactile map compared with the use of the tactile map. Regarding Q4 item, the implementation of the LSD post-hoc test ( $p < .05$ ) revealed significant differences between audio-tactile and tactile maps as well as between independent movement and tactile map. Participants felt more confident when using the audio-tactile map or with independent movement in compared with the use of the tactile map.

## CONCLUSIONS

The findings of the present study reflect the preference of individuals with blindness in audio-tactile maps as means for spatial knowledge and support the advantages resulting from their use. Considering that the satisfaction of users with blindness from an orientation & mobility aid could lift the suspensions for autonomous movement, the above findings could be particularly valuable for the development of such aids in the future. The results of the study have implications for both educators and orientation & mobility specialists, suggesting a more frequent use of audio-tactile maps as orientation and mobility aids as well as aids for spatial knowledge.

The findings raise a disadvantage of tactile maps in the participants' preferences, which should not be connected with a questioning of the usefulness of tactile maps as an important Orientation and Mobility aid for individuals with blindness (Espinosa & Ochaita 1998; Papadopoulos 2004; Papadopoulos & Karanikolas, 2009). Obviously the comparison of tactile maps and audio-tactile maps favors the second mean, as it combines tactile and auditory information. On the other hand, the direct experience of moving in an area provides the participants with a sense of competence since individuals do not face the insecurity into the unknown. Finally, it should be mentioned that almost all participants have not used orientation and mobility aids (tactile maps) in the past which highlights the prejudice regarding this mean.

A limitation of the present study is the small number of participants as well as the participation of individuals with no experience in the use of tactile maps and audio-tactile maps. Future research should be conducted in such way in order to overcome these limitations.

## Acknowledgements

This research has been co-financed by the European Union (European Social Fund – ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) under the Research Funding Project: "THALIS - University of Macedonia - KAIKOS: Audio and Tactile Access to Knowledge for Individuals with Visual Impairments", MIS 380442.

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## School Administrators' Level Of Using Scientific Problem Solving Skills In Organisational Problems Based On The Views Of Inspectors

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### ABSTRACT

This study was designed to identify high school administrators' level of using scientific problem-solving techniques in organisational problems based on inspectors' views. The population of the study was the inspectors working in the city of Kırklareli in 2014-2015 school year. No sampling method was used since the whole population was reached within the study. Survey model was adopted, and the "Scale of School Administrators' Level of Using Scientific Problem-Solving Processes and Techniques in Organisational Problems" developed by Sağır and Göksoy (2011: 1-11) in 5-point Likert type was used as the data-gathering instrument. The scale was adapted to the Kırklareli sample and the Cronbach's Alpha coefficient was 0.95. According to the findings, the inspectors stated that school administrators differed in their level of using scientific problem solving techniques in terms of various variables. In overall, the inspectors indicated that school administrators properly defined the organisational problems they encountered, but did not apply the solutions developed to solve these problems. The study suggests that in-service training should be organised to enable administrators to use the necessary techniques to solve organisational problems, and policies including requiring them to do a master's degree in areas that focus on these issues should be developed to enhance administrator effectiveness.

**Key Words:** Inspector, School Administrator, High School, Problem-Solving, Organisational Problems, Scientific Problem-Solving Processes and Techniques

### INTRODUCTION

The concept of problem has many different definitions in the literature. According to Dewey, problem is "anything that confuses and challenges human mind, and obscures belief" (Gelbal, 1991: 167). For Morgan, problem is a conflict situation in which individuals face inhibition in achieving a goal (Morgan; 1999, p: 149). Bingham defines problem as an obstacle in front of individuals' strengths that they have to achieve a goal. (Bingham, 1998, p: 1, cited in Güner; 2013, p:1022). In the Turkish dictionary of Turkish Language Association, problem is accepted as an issue that needs to be searched, learned, analysed and solved (TDK, 1992, 1200).

Considering that the concept of problem is associated with trouble, individuals need to know problem-solving techniques. There is no absolute way of problem solving techniques, but it is known that there are different ways that take individuals to the solution (Gülşen & Turhan, 2015: 207-2016; Morgan; 1995, p: 149)

As in the past, people encounter problems in their lives and produce various alternatives to cope with these problems. People produce alternative techniques in their individual problems as well as organisational problems. Using scientific methods to solve problems, either individual or organisational, has now become more important.

Because various problems can also be encountered in educational organisations, scientific methods should be used in solving problems in educational institutions. Organisational goals in educational institutions cannot be expected to be achieved without solving the problems (Gülşen & Turhan, 2015: 207-2016; Sungur, 1992: 129).

In educational organisations, schools are systems that operate under public oversight and where students are taught in a programmed and systematic way by staff who are experts in their subject areas to achieve a set of educational goals (Ada & Ünal, 1999: 67). From the perspective of schools, a problem is a situation that inhibits, slows down or disrupts achieving the school aims. As the school administration starts trying to eliminate such obstacles, the problem-solving process begins. School administrators are expected to keep the individual-institution dimensions of the social system in balance with a sense of mission, and operationalize the elements around them for achieving the school aims. To do these, they should do their job effectively and perform successful administrative behaviours. However, they should not try to solve problems without gathering accurate, reliable and sufficient data on the problems. In all schools, problem-solving methods should be determined based on scientific criteria, and solutions should be implemented by using scientific methods. Using scientific problem-solving techniques to solve problems

is of great importance in high schools that have significant effects on the future of individuals, and it is perhaps more important in this level than it is in other levels of education. Solving problems in institutions that have an effect on individuals' future by using scientific techniques is closely related to the administrators in these institutions. For this reason, knowing the attitudes of high school administrators in scientific problems, and the ways they follow in solving organisational problems would enhance the success of these institutions. It was thought to be of significance to identify high school administrators' level of using scientific problem-solving techniques in organisational problems based on the views of inspectors who know them closely, inspect their work, and advise them as a professional coach for their professional development. In this regard, this study was designed to identify high school administrators' level of using scientific problem-solving techniques in organisational problems based on inspectors' views. The stages and techniques of problem solving should be firstly analysed to identify high school administrators' level of using scientific problem-solving techniques in organisational problems. Therefore, the stages of problem solving and scientific problem-solving techniques are explained in the following sections.

### Stages of Problem Solving

To educate 21<sup>st</sup> century individuals who have adopted constant development as their philosophy of life, think analytically, have developed problem-solving and decision-making skills, are open and flexible to team work, seek information and can access to it, have high qualifications and try to develop themselves, believe, are assertive and confident, and have national and universal values, each school should be turned to a high-quality school. This requires changes that would improve education, and thus, the participation of families, school administrators and all other relevant members of the society in addition to students, and coordination of constant development efforts (Gülşen, 2003: 68-69). However, ensuring changes can reveal various problems. Problem situations are solved through certain stages. In the literature, these stages are briefly described as follows: (Büyükoztürk, 2013: 24-26; Gülşen & Turhan, 2015: 207-2016; Karasar, 2012: 29-30; Yıldız, 2003: 29):

1. *Realisation and Definition of the Problem:* Defining the problem is the first stage of the problem solving process. A realistic definition of the problem with all its aspects considering various variables is of great importance.
2. *Analysing the Problem:* The first task after realising the problem is fully analysing it before moving on to the solution stage. This analysis requires the limits, dimensions, reasons and necessities of the problem situation to be thoroughly analysed.
3. *Developing Alternative Solutions:* After analysing the problem, ideas and possibilities regarding the solution should be put forward. Here, it should not be forgotten that creative thinking is active. Possible solutions are offered after revising the information related to the problem, and the appropriate solution is aimed to be found by examining the positive and negative aspects of these solutions.
4. *Implementing the Solution Chosen:* One of the importance aspects of solving the problem is the process of applying the solution for the problem. This process should be carefully followed, and whether the solution yielded the desired results should be monitored.
5. *Evaluation the result:* To identify the effectiveness of the solution and whether new problems have arisen, the results should be evaluated in a realistic way. For the evaluation to be successful, it should have standards.

### Problem Solving Techniques

There is no absolute way of solving problems. There are various alternatives that exist and are tested to solve problems. Solving problems in accordance with scientific principles and effectively is a kind of art. Many techniques are used in solving problems, either individual or organisational. School administrators are expected to use these scientific techniques in solving organisational problems. These techniques are usually divided into six groups: "a) *Techniques for producing ideas*, b) *Constant development techniques*, c) *Problem analysis techniques*, d) *Techniques for prioritising suggestions/reasons*, e) *Decision-making techniques* and f) *Data gathering, data analysis and evaluation techniques*". Some of these techniques are described below (Arcaro, 1995: 108; Çalık, 2003: 178; Çetin, Akın & Erol, 1998: 339; De Bono, 2008: 1-20; Efil, 1999: 202; Erdoğan, 2000: 27; Ernest, 1992: 143; Gülşen, 2000: 44-53; Gülşen & Turhan, 2015: 207-2016; Ishikawa, 1997: 142; Koray, 2004: 3; Langfort & Cleary, 1995: 96, 177; Schermerhorn, 1989: 142; Turhan, 2015: 24-50; Yüksel, 2004: 1).

- a) *Techniques for Producing Ideas* 1. Brainstorming Technique, 2. Six Thinking Hats, 3. Power Field Analysis, 4. Focus Groups, 5. Interview,
- b) *Constant Development Techniques* 1. Plan-Do-Check-Act (PDCA) Cycle, 2. Wh questions technique,
- c) *Problem Analysis Techniques* 1. Flow Diagram, 2. Fishbone, 3. Pareto Analysis, 4. Decision Analysis, 5. Affinity Diagram, 6. Time Sheets, 7. Force/Power Field Analysis,
- d) *Techniques for prioritising Suggestions/Reasons:* 1. Affinity Diagram, 2. Priorities Matrix/Effectiveness Analysis (Matrix Diagram),
- e) *Decision-Making Techniques:* 1. Nominal Group Technique. 2. Priorities Matrix/ Effectiveness Analysis, 3. Multiple Voting Technique, 4. Benchmarking

- f) *Data Gathering, Data Analysis and Evaluation Techniques:* 1.Pareto Diagrams, 2.Survey, 3.Teamwork, 4.SWOT Analysis, 5.Similarity Diagram. 6.Affinity Diagram, 7.Control Schema, 8.Histogram, 9.Scatter Plot, 10.Timetable, 11.Control Tables.

*In the scope of this study, not all the techniques were included in the evaluation. Some of the scientific problem-solving techniques were considered in the evaluation. The scientific problem-solving techniques that were included in the evaluation and questioned within the study are presented in Table 2.*

## METHOD

### Research Design

In general, survey model was used in the study. It was designed to identify inspectors' views on high school administrators' level of using scientific problem-solving techniques in organisational problems.

### Population and Sample

The population of the study consisted of all the inspectors working in the Department of School Inspectors in the city of Kırklareli in 2014-2015 school year. No sampling method was used since the whole population was reached within the study. 78,57% of the surveys distributed to the participants were returned and included in the evaluation.

### Data Gathering, Analysis and Interpretation

In the study, literature review was firstly conducted, and then the views were identified through a scale. Survey model was adopted, and the "Scale of School Administrators' Level of Using Scientific Problem-Solving Processes and Techniques in Organisational Problems" developed by Sağır and Göksoy (2012: 1-11) in 5-point Likert type was used as the data gathering instrument. The scale was adapted to the Kırklareli sample and the Cronbach's Alpha coefficient was 0,95. The weights assigned to the extent of agreement for the propositions in the scale and the limits of these weights are as follows: "Never: 1.00-1.80", "Rarely: 1.81-2.60", "Sometimes: 2.61-3.40", "Usually: 3.41-4.20", "Always: 4.21-5.00".

In data analysis, SPSS was used, statistical analyses were performed, and frequencies, percentages and arithmetic means were determined. To determine the relationship between the level of using scientific problem-solving method and the administrators' experience, Kruskal Wallis Test was performed. Since all of the inspectors participated in the study were male, no evaluation could be done based on the gender variable, and the evaluation results based on experience was interpreted by means of the tables.

## FINDINGS AND INTERPRETATION

In this section, the data obtained related to the inspectors' views on the school administrators' level of using scientific problem-solving processes and techniques were interpreted by the help of the statistical information presented in tables. In the interpretation of the data, package programs were used in the computer environment. The tables formed by the help of the data obtained, and the evaluations based on the data in the tables are presented below. The data related to the inspectors' views were firstly tabulated, and the frequencies, standard deviations and arithmetic means are presented in Table 1.

**Table 1.** Data Related to the Inspectors' Views on High School Administrators' Level of Using Scientific Problem-Solving Processes in Organisational Problems

No	"School Administrators ....."	Never	Rarely	Sometimes	Usually	Always	$\bar{\chi}^*$
		%	%	%	%	%	
1	Define organisational problems.	0	0	9,10	45,45	45,45	<b>4,36</b>
2	Identify solution alternatives for organisational problems.	0	0	45,45	54,55	0	<b>3,55</b>
3	Choose the most suitable possible solution for organisational problems.	0	9,10	0	90,90	0	<b>3,82</b>
4	Take into account the importance of the chosen solution for the school/organisation.	0	0	45,45	9,10	45,45	<b>4,00</b>
5	Do planning for implementing the solutions for organisational problems.	0	0	54,55	9,10	36,37	<b>3,82</b>
6	Implement the solutions developed for solving organisational problems.	0	81,82	9,10	9,10	0	<b>2,27</b>
7	Are creative in solving organisational problems.	0	9,10	36,37	54,55	0	<b>3,45</b>
8	Consider the contribution of the solution to the school community.	0	27,27	27,27	0	45,45	<b>3,64</b>
9	Prepare reports of the practices implemented in the problem-solving process.	0	0	36,37	54,55	9,10	<b>3,73</b>
10	Evaluate the problem-solving process.	0	0	27,27	54,55	18,18	<b>3,91</b>
<b>General Arithmetic Mean</b>							<b>3,65</b>

\* "Never: 1.00-1.80", "Rarely: 1.81-2.60", "Sometimes: 2.61-3.40", "Usually: 3.41-4.20", "Always: 4.21-5.00"

The inspectors agreed on the propositions related to the high school administrators' level of using scientific problem-solving processes in organisational problems at the level of "usually" with a mean of  $\bar{\chi}=3,65$ . When the agreement levels were examined based on the propositions, it was found that the inspectors thought that the high school administrators always defined organisational problems. The proposition on which the inspectors had the highest agreement rate was "School administrators defined organisational problems". The inspectors agreed on this proposition at the level of "always" with an arithmetic mean of  $\bar{\chi}=4,36$ . The proposition on which the inspectors had the lowest agreement was "They apply solutions to solve organisational problems" at the level of "rarely" with an arithmetic mean of  $\bar{\chi}=2,27$ . It can be argued that based on the inspectors views, the school administrators were able to define organisational problems, but could not apply the solutions developed to solve organisational problems. The inspectors perceived the high school administrators as mostly sufficient in "identifying solutions for organisational problems, choosing the most suitable possible solution in organisational problems, considering the importance of the solution for the school/institution, making plans to apply the solution for organisational problems, being creative in the solution of organisational problems, considering the contribution of the solution to the school community, reporting the works implemented during the process of solving the problem, and evaluating the process of solving the problem".

**Table 2.** Kruskal Wallis Test Results Between the Inspectors' Scores Regarding Their Views on High School Administrators' Level of Using Scientific Problem-Solving Processes in Organisational Problems, and Their Experience

No.	"School Administrators ....."	Chi-Square	df	Significance (Asymp.Sig).
4	Take into account the importance of the chosen solution for the school/organisation.	9.220	4	,056



A significant different was found only in the proposition "They take into account the importance of the chosen solution for the school/organisation." between the inspectors' views on the high school administrators' level of applying scientific problem solving processes in organisational problems, and the experience variable. No significant differences could be found for other propositions.

In this section of the study, the inspectors vies on the scientific problem-solving techniques that high school administrators use in organisational problems, and interpretations regarding these views are presented.

**Table 3.** Data Related to the Inspectors' Views on Using Scientific Problem-Solving Techniques That High School Administrators Use in Organisational Problems

No.	Scientific problem-solving techniques that school administrators use in organisational problems "In solving organisational problems, school administrators ....."	Never	Rarely	Sometimes	Usually	Always	$\bar{\chi}^*$
		f	f	f	f	f	
1	Use the cause-effect diagram technique.	0.00	0.00	72.73	9.10	18.18	3.45
2	Use the tree diagram technique.	0.00	0.00	45.45	45.45	9.10	3.64
3	Use the Six Thinking Hats technique	0.00	0.00	54.55	45.45	0.00	3.45
4	Use the survey technique.	0.00	27.27	45.45	18.18	9.10	3.09
5	Use the brainstorming technique.	0.00	0.00	18.18	45.45	36.37	4.18
6	Use the 5N1K (wh questions) technique.	0.00	0.00	18.18	72.73	9.10	3.91
7	Use the similarity diagram technique.	0.00	0.00	36.37	63.64	0.00	3.64
8	Use the force-field analysis technique.	0.00	0.00	9.10	54.55	36.37	4.27
9	Use the relationship diagram technique.	0.00	0.00	18.18	63.64	18.18	4.00
10	Use the nominal group technique.	0.00	54.55	36.37	9.10	9.10	2.73
11	Use the case study technique.	0.00	0.00	36.37	63.64	0.00	3.64
12	Use the team work technique	0.00	0.00	0.00	54.55	45.45	4.45
13	Use the PDCA cycle.	0.00	0.00	54.55	45.45	0.00	3.45
14	Use the SWOT analysis technique.	0.00	0.00	0.00	100.00	0.00	4.00
15	Use the Pareto diagram technique.	27.27	54.55	0.00	18.18	0.00	2.09
<b>General Arithmetic Mean</b>							<b>3.60</b>

\* "Never: "Never: 1.00-1.80", "Rarely: 1.81-2.60", "Sometimes: 2.61-3.40", "Usually: 3.41-4.20", "Always: 4.21-5.00"

As is seen in Table 3, the inspectors agreed on the propositions related to the scientific problem-solving techniques that high school administrators use in organisational problems at the level of usually with an arithmetic mean of  $\bar{\chi}=3,60$ . Based on this result, it can be stated that high school administrators mostly used scientific problem-solving techniques in organisational problems they encounter according to the views of the inspectors. According to the inspectors, high school administrators use the teamwork technique at most in terms of the arithmetical means in solving organizational. According to the inspectors, high school administrators use the teamwork technique in solving organisational problems at the level of always with an arithmetic mean of  $\bar{\chi}=4,45$ . The inspectors also stated that the least used technique by the high school administrators in organisational problems is the Pareto diagram technique. According to the inspectors, high school administrators use the Pareto diagram rarely in organisational problems. As for the rest of the problem solving techniques, they are used by the high school administrators in varying levels.

**Table 4.** Kruskal Wallis Test Results Between the Inspectors' Scores Regarding Their Views on High School Administrators' Level of Using Scientific Problem-Solving Techniques in Organisational Problems, and Their Experience

No	Scientific problem-solving techniques that school administrators use in organisational problems "In solving organisational problems, school administrators ....."	Chi-Square	df	Significance (Asymp Sig)
1	Use the cause-effect diagram technique.	9.521	4	,049
6	Use the 5N1K (wh questions) technique.	10.060	4	,039
12	I use the team work technique	13.645	4	,009

A significant difference was found between the inspectors' views on high school administrators' level of applying scientific problem solving processes in organisational problems, and the techniques of cause-effect diagram, wh questions and teamwork in terms of the experience variable. No significant differences were revealed apart from the these three techniques.

## RESULTS AND SUGGESTIONS

### Findings:

*The following results were revealed based on the findings:*

1. Based on the inspectors views, the school administrators were able to define organisational problems, but could not apply the solutions developed to solve these problems.
2. The inspectors stated that high school administrators mostly used scientific problem-solving techniques in organisational problems they encounter.
3. The inspectors also indicated that the most used technique by the high school administrators was teamwork while the least used one was the Pareto diagram technique.
4. A significant different was found only in the proposition "They take into account the importance of the chosen solution for the school/organisation." between the inspectors' views on the high school administrators' scientific problem solving processes in organisational problems, and the experience variable, whereas no significant differences were found between the views in terms of other processes.
5. A significant difference was found between the inspectors' views on high school administrators' level of applying scientific problem solving processes in organisational problems, and the techniques of cause-effect diagram, wh questions and teamwork in terms of the experience variable. No significant differences were revealed between the views on levels of applying other techniques.

### Suggestions

*The following suggestions can be offered based on the results of the study:*

1. Considering that high school administrators could identify organisational problems, but could not apply solutions, a set of academic trainings including in-service trainings to enable high school administrators to apply problem solving techniques and solutions should be organised.
2. It would be of significance to reach other stakeholders (e.g. inspectors, teachers, students and parents), obtain their views and make comparisons with the results in this study.

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## School Integration Of Adolescents With Mental Disease: Attitudes Of The Group Before And After Inclusion

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### ABSTRACT

This paper is a report on the findings of a project conducted on high school students and on two adolescents with mental disease included in their class. The project lasted a year and intended to evaluate the effects of the integration work on the students without mental disease.

In particular, the objectives of the project were:

- Evaluating the efficacy of a task aiming at making high school students aware of the issues involved in mental disability to favor inclusion of classmates with disability;
- Planning an intervention protocol which could be extended to other schools.

The evaluation was done through the administration of a questionnaire to the students of the classes where the two adolescents with mental disorders were included. The research followed a quasi-experimental design.

Results were evaluated by using the Q-Sort techniques, the chi squared analysis and the Analysis of Variance.

The analysis of the answers shows different profiles of attitudes toward mental disability. Comparison between the two administrations reveals that during the school year changes occurred in some students' opinions on the personal resources and competencies necessary to interact with individuals with mental disorders and also on the likelihood of their integration.

**Keywords:** mental disease, integration, Q-Sort

### INTRODUCTION

The integration of adolescents with mental disease is one of the most interesting challenges that psychologists and psychiatrists, but also teachers and other education specialists, have to face. The school is one of the main channels through which projects of integration and raised awareness of mental disorders can be promoted from a conscious perspective and with the help of trained personnel.

This type of projects must necessarily take into account and evaluate the receiving group's attitudes to mental disorders and beliefs about them. The class integration process of a student with disability can be evaluated based on the changes that occur both in the class and in the student with disability. This paper examines the effects of inclusion on the class as we think this perspective can provide valuable ideas for the operators of this sector and for future projects of school inclusion.

### THE STUDY

Throughout the school year the students taking part in the project had the support of a psychologist in order to encourage in-depth discussion on disability and help the students acquire new instruments to cope in the best possible way with the inclusion of the two new classmates.

An *ad hoc* questionnaire was devised to evaluate changed attitudes toward mental disability. The first section of the questionnaire asked participants to express their agreement with a number of statements on mental disability and on the society and school inclusion of individuals with mental disability. The second section – drafted according to the Q-sort technique – consisted of statements on participants' relationship with individuals with mental disability, paying particular attention to daily life events and to situations experienced by the students in the school year.

The first administration of the instrument for data collection and analysis was done in the initial phase of the project and the second in the final phase.

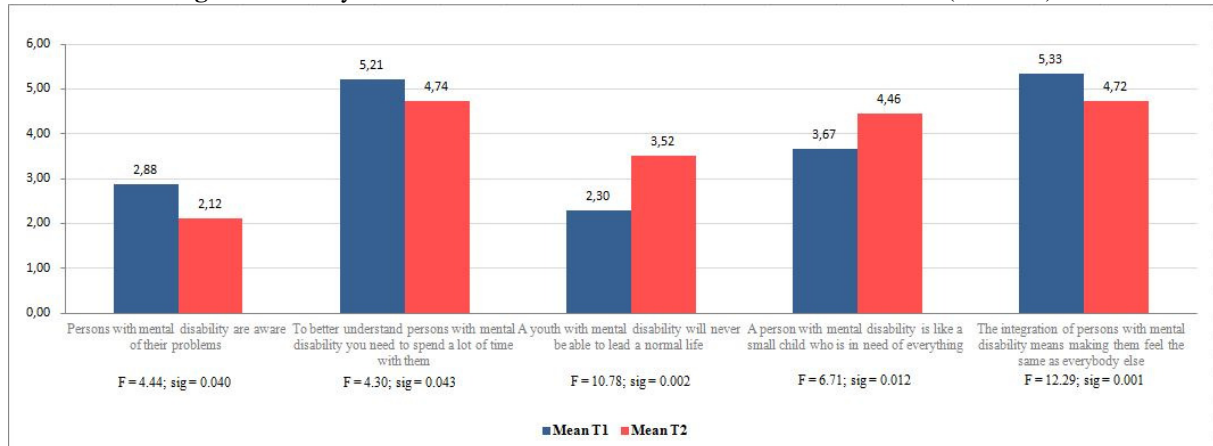
### FINDINGS

#### Attitudes to relationships with a person with mental disease

The comparison of the answers given in the two administrations shows increased awareness of the difficulties encountered in relationships with persons with mental disease and a more problematic and less idealized

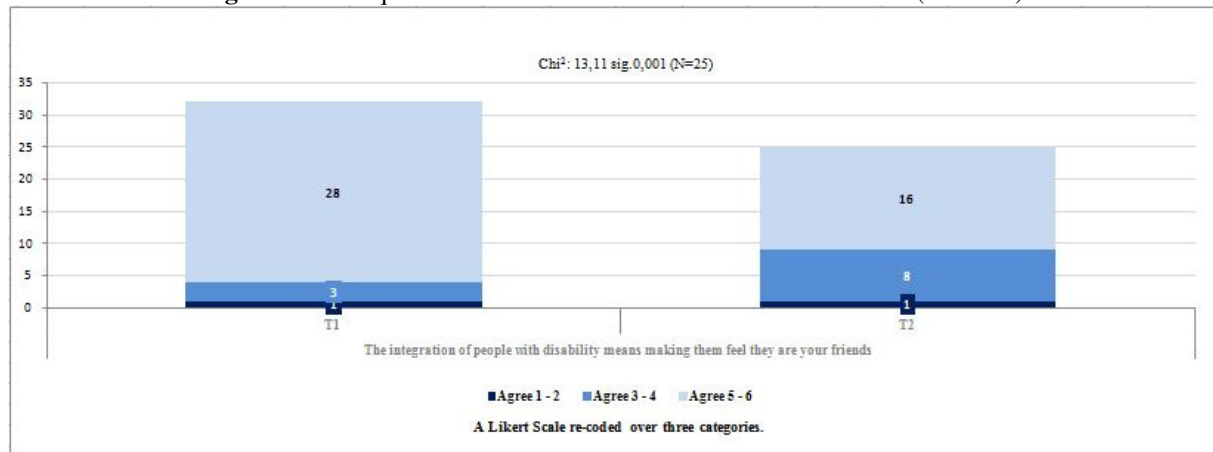
conception of disability. In support of this interpretation at the end of the school year some statistically significant variations can be seen in the attitude variables: increased agreement about the lack of awareness persons with disability have of their problems (item 2); lower confidence in the belief that these people can lead the same life as anybody (item 8), and greater agreement about the strong help that they need (item 15). In addition, the significant variations found for items 7 and 17 show more thoughtful reflection on the complexity of the integration processes of these persons. The values of the answers go from 1 (totally in disagreement) to 6 (totally in agreement).

**Figure 1 - Analysis of variance between first and second administration (attitudes)**



In more detail, "The integration of people with disability means making them feel they are your friends" (item 18) shows that there are fewer students who believe that the way toward integration must necessarily involve a friendly relationship. Though the result is interesting, caution must be used, given the low numerosity of the sample.

**Figure 2 - Chi square test between first and second administration (attitudes)**



### Affinity with statements on mental disease

The second section of the questionnaire focuses on the students' closeness to, or distance from, statements on daily life situations where the interaction with a person with mental disability may create problems or embarrassment. The items included in the Q-sort have been ordered according to their semantic valence (negative, neutral, positive) toward disability.

Negative-valence items:

1. Sleeping with a person with mental disease would worry me
7. Taking a friend with intellectual disability that the others don't know to a birthday party would make me feel uncomfortable
9. I find it a bit hard to spend time with a person with mental disease
11. When I am with a person with mental disease I don't feel free to behave as I would like to
15. I would get worried if an object that's very dear to me was entrusted to a classmate with mental disease



Neutral-valence items:

2. Becoming the reference point for a person with mental disease would be too difficult for me
3. When I am with a person with mental disease I am afraid I may treat them too abruptly
4. When I am with a person with mental disease I happen not to understand what they really want to tell me

Positive-valence items:

6. Spending time with people with mental disease makes me a more mature person
8. I would lend my clothing to a person with mental disease
12. I would drink from the same glass as a person with mental disease
13. Spending time with people with mental disease helps me understand what life is really like

Although confining ourselves to the description of the variations of the means between the two administrations, independently from statistical significance, interesting points for reflection do emerge. In particular, an increase in the mean disagreement with the majority of negative-valence items (items 1, 7, 9), that is, statements that represent distancing attitudes toward individuals with mental disease. At the same time, an increase can be seen in the agreement with items that point to the integration of these persons. In particular, there is increased agreement with the items that underline the importance of the experience as a time of personal growth (items 6 and 13).

These results notwithstanding, the students think it is quite demanding to have a closer relationship with classmates with mental disease: exchanging dear objects, lending clothing, drinking from the same glass (items 15, 8, 12). This is the result of greater awareness of what mental disease means.

In the same way, we could explain with greater awareness of relational problems the increased agreement with neutral-valence items (items 2, 3, 4) and the decreased agreement with one negative-valence item (item 11).

The Q-sort items triggered discussion in the class.

**Figure 3** –Mean differences between first and second administration (Q-sort)

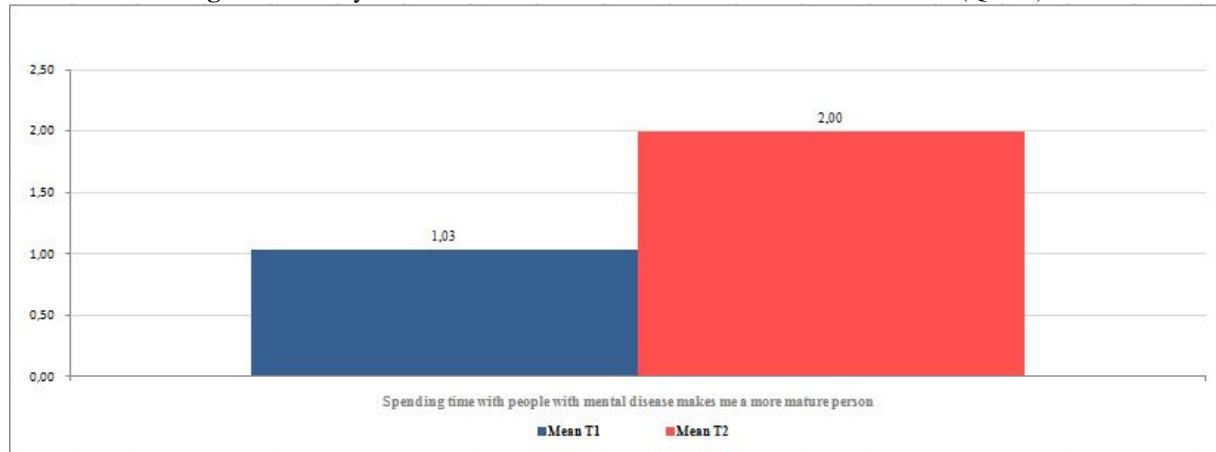


#### **A relationship with a person with mental disease seen as a step toward maturity**

Among the items processed with the Q-sort, the one recording a statistically significant difference ( $F=8,12$ ;  $\text{sig}=0.006$ ;  $N=30$ ) is: “Spending time with people with mental disease makes me a more mature person” (item 6).

This result emphasizes the significance of classroom experience with a classmate with mental disease.

**Figure 4** - Analysis of variance between first and second administration (Q-sort)



## CONCLUSIONS

The analysis of the answers carried out when school broke up, at the end of the project, shows some interesting variations in the conception of intellectual disability. Increased awareness of the criticalities typical of mental disease can be observed. Comparison between the two administrations reveals that during the school year changes occurred in some students' opinions about the personal resources and competencies necessary to interact with individuals with mental disease and also about the likelihood of their integration. In particular, there is increased perception of greater personal maturity and also increased awareness of the serious problems experienced by individuals with mental disease and how difficult it is to interact with them. These results encourage the promotion of projects aiming at increasing sensitization on the issues of disability.

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## Science In A Changing World: A Generalization Of Science And Politics And Their Impacts On Knowledge Societies

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### ABSTRACT

In recent years, a profound structural change has taken place in science and research. Science is a field of study that tries to reveal dark secrets. The mass media reports extensively about scientific subjects. Besides helping design the environment, science also aims to develop reliable explanations of phenomena with the assistance of diverse experiments, trials or observations. The objective of science is to produce and systemize knowledge so that societies can benefit. In this context, science is the basic element of modern societies called “knowledge societies.” Scientific knowledge is transmitted through people (e.g., professors, teachers and scientists) or literature which should be objective, verifiable and pursuable. But who determines which questions are asked and which answers are accepted as valid? And how are scientists affected by this? In theory, science and research are free of all governmental influences but it is interesting to see how scientists are able to influence politicians with predictions and, conversely, how politicians influence them with their power. From this point of view, the main purpose of this paper is to analyze the relationship between science and politics and to present the current situation of science in a changing world.

**Keywords:** science, knowledge societies, politics, changing world

### INTRODUCTION

In times of globalization, it is impressive to observe how the world has been changed because these changes are not foreseeable; at the same time, scientists work across disciplines on research projects. But it is clear that the relationship between science and society has become profoundly distorted. The gap between science and the people has increased significantly, and in recent history, people’s judgment on research topics such as climate change, genetic engineering or stem cell research has deteriorated. Science sometimes accuses the public of being under-informed on scientific-political issues (Bojanowski, 2014). The globalization of the economy and the radical change in modern natural sciences in the 1990s led to an uncertainty among the general public. It is not surprising that nowadays the remarkable effort and progress of science are regarded with suspicion by the public while up until the sixties, science relied on a public which trusted science (Beck, 1986, p. 278).

What is science? What does politics mean? Strictly speaking, science and politics are two different systems operating within their own rules and norms. The work of scientists is based on the idea of “objectivity” and “impartiality”. In contrast, politicians pursue the goal of enforcing their own interests by means of strategic action. In addition, one of the primary tasks with which science is entrusted is to produce and transmit knowledge. However, the main task of politics is to make binding decisions for society (Hickmann, 2012, p. 9).

In this context, science is the basic element of modern societies called “knowledge societies”. Scientific knowledge is transmitted through individuals (e.g., professors, teachers and scientists) or literature which should be objective, verifiable and pursuable (Dahinden et al., 2006, pp. 25–27). But who will determine which questions are asked and which answers are accepted as valid? And how are scientists affected in this way? In theory, science and research are free of all governmental influences, but it is interesting to see how scientists are able to influence politicians with predictions and, conversely, how politicians can influence scientists with their power. From this point of view, the main purpose of this paper is to analyze the relationship between science and politics and to highlight the current situation of science in a changing world.

### RESPONSIBILITY OF SCIENTISTS

The best way to understand the increased complexity of societal phenomena and processes and thus, to portray how scientists today have become more oblivious in a material way to powerful groups is to accept the fact that scientists are a part of a social system. Their material position, social class, political attitude, dependency on the state or to principals also bind them as members of the society. In that sense, their material conditions influence their interests and aims, which in turn have a decisive influence on their scientific work. Moreover, each scientist is surrounded by various support groups which may have an enormous impact on their work. Their colleagues, friends, family, the public and political groups are relevant for them. The assumption is that the objectives of a scientist will be influenced by the level of dependency and importance of such groups. Basically, these groups usually have different expectations of scientists and alter the objectives of a scientist accordingly (Friedrichs, 1990, p. 16).

The question of whether a scientist should do everything that science allows is something that has been considered since the invention of the atomic bomb. If we talk about the responsibility of science, it should be noted that each and every scientist is meant in this context. Each scientific researcher bears much of the responsibility and cannot simply escape the consequences and risks. And so society holds scientists to a higher than acceptable ethical standard (Berka, 2005, p. 70). Scientists are expected to work with diligence and not to manipulate results. Furthermore, the scientist has no permission to falsify the outcomes in favor of political, ideological or personal interests. The fact is that the virtue of truthfulness is the highest premise of science, and for this reason, science remains an incomplete process in the search for the truth (*veritas*) (Honecker, 1995, p. 564).

For a long time, research has been pleading for more international competitiveness and has been promoting economic growth. This position does not reflect the responsibility for the consequences of scientific action, but, rather, a set of outside expectations that is brought to science (Berka, 2005, p. 70).

The assumption is that scientists should freely decide which priorities they need to set, which subjects they will emphasize more, or which unethical methods they will avoid. Scientists are expected to perform scientific work and they owe it to society to define the truth (*ibid.*, p. 71).

The fact remains that good science or research that is conducted by scientists needs time and space to be creative and to deal with issues. The history of science shows how scientific research can be planned within limitations and even pursue wrong tracks which can lead to scientific innovation.

### THE CORRELATION BETWEEN SCIENCE AND POLITICS

As Max Weber (1995) pointed out in his essay “Science as a Vocation”, science is without preconditions and creates clarity for different systems. Furthermore, he made a strict distinction between science and politics by defining a scientist as a great teacher and not as a great leader (Weber, 1995, pp. 32–37). Weber also highlighted in his work that science uses words as a means of scientific analysis, while politics uses words as weapons (Pohle, 2009, 24).

Another famous example of the distinction between a scientist and politician comes from Henry Kissinger (2008). According to him, scientists or researchers analyze international systems, but political leaders are dealt with establishing these systems. He saw fundamental differences between the viewpoints of scientists and political leaders. One important difference the author highlighted is that the scientist will search the possible issue to make a profound analysis, whilst a political leader is rather confronted with issues. A scientist has the opportunity to spend as long as he needs on the analysis to solve the problem and to come to a final outcome. Nevertheless, political leaders do not have enough time, they must act rapidly. In other words, a scientist never tries to take risks. If an outcome is wrong, the scientist is able to conduct another investigation. In contrast, a political leader can only make a prediction and he cannot escape wrongdoings. In short, scientists hold and keep all information and will be judged on their intellectual power. A political leader only makes decisions which have not already been verified (Kissinger, 2008, pp. 19–20).

But with the expansion of government activities and development of new policy fields, it would be wrong to divide these two phenomena. They are in mutual relationship and are dependent upon each other (Schmoll, 2011). Scientists are more dependent on government funding whilst politicians are more reliant upon scientific recognition and expertise and new solution approaches in complex policy areas such as environmental policy and health policy, etc. In recent years, these two functional systems have grown much closer. Today, scientists are not purely objective, indifferent experts; when giving policy advice, they commonly leave the area of scientific knowledge. Politicians often involve scientific recognition to legitimate their political decisions.

One of the key features is that the link between science and politics seems to be very complex, as it is characterized as two different systems of behavior (Skodin & Underdal, 2000, p. 22). In recent years, scientists have been playing an active role in policy making (Jasanoff, 1990, p. 4). Policy advice is not a new phenomenon. But an increased consulting need and demand for advice is apparent. Today, political advisers have an informal communication function beside the “classical” analysis and advisory function. There are indeed varied reasons for rapid consulting needs, as the pressure on politics grows to optimize governmental controllability and to demonstrate the capacity to act (Glaab & Metz, 2006, p. 161).

In scientific debates, Habermas (1964) underlined the complex relation between politics and science and showed the link between politics, policy advice and public opinion in mass democracies by offering three models of the “scientization of politics”: With the decisionist model, Habermas suspects that political practice can serve technical or bureaucratic expertise, but only the public sphere has the function to make valuable-based and power-oriented decisions. In the model of technocracy, politics appears as an executive agency for constraints. Thus, rationalization of political power is in the center which can depoliticize the public sphere. The model of

pragmatism abolishes the separation between the functions of expertise and politicians. Here, a reciprocal relationship of counseling and commissioning does exist (ibid, p. 163).

### SCIENTIFIC POLICY ADVICE: A CHALLENGE IN THE CHANGING WORLD

In recent theoretical approaches concerning scientific advice give to politics, doubts and criticism about the quality of science and this policy advice still exist, and debates about the failure of scientific experts continue in the public and are also emphasized in the media. Nonetheless, the main characteristic of science is that it is able to promote politics and in this context, the importance of scientific policy advice is growing, particularly in policy issues (Lentsch & Weingart, 2011, p. 3). This is why scientific policy advice seems to be a precarious undertaking. In the same way, science of knowledge is a vital factor both for designing the public life and politics. However, such knowledge undergoes more in a political dispute, although science and notably advice depends on searching for the truth based on the reliability and transparency (Reich, 2012, p. 29).

Questions about the importance of scientific political advice are nothing new. Concerning the institutional part of scientific policy advice, mention must be made of the fact that more political institutions such as Think Tanks employ scientific advisors who prepare expert opinions for politicians. But it should be emphasized that their impacts could differ. Politics strives for generalist solutions, while science becomes more incomprehensible due to varied perceptions and suggested solutions. Nevertheless, there is a certain consensus among scientists and politicians, starting with the need for science during the evaluation process. In view of the impact of science on scientific policy advice, it can be said the impact of science is very high during the process of preparing decisions. On the contrary, in the planning stage of program design - when starting to look for solutions to crucial issues - the impact of science becomes weak. Traditionally, the offered scientific knowledge of political advisors is rarely used for political decision-making as it is expected from advisors (Essouso, 2008, pp. 21–22).

As pointed out, the nature of policy advice to politics or the correlation between scientific experts and policymakers have been discussed intensely for many years in various academic disciplines. Since the 1960s, the range of critical approaches to scientific policy advice has expanded considerably (Maasen & Weingart, 2005, p. 1). Policy advice is the provision of information and recommendations by scientists and experts from economics and society for actions (scientific policy advice) which policymakers and decision makers might take. Internal policy advice means that political decision makers are being advised by different administrative bureaus and experts (Wollmann, 2007, p. 413).

In some respects, politics needs competent advice which can be obtained from science given a specific problem or also through the establishment of advisory bodies. Ironically, the growing focus on the need for scientific advice in politics brings about serious concerns from a democratic-theoretical perspective (Möllers, 2012, p. 20). It could be precarious if scientific policy advice does not deal with predetermined issues but includes new settings on the course for a prospective social action. Certainly, different opinions will exist concerning science, if the future development in different fields, for instance, in biology or in the medical field should be simultaneously predicted and judged in social impacts. In this light, new scientific academies are founded in every country to reach an objective judgment (Reich, 2012, p. 29).

When dealing with the relation of politics as a science or a political practice, as Weber did, it is clear that we may be confronted with two main reference: First, the important role that scientists occupy and second, the other part, the so-called “professionals” (e.g. ministers, bureaucrats, government secretaries, decision makers in associations and international boards) play a significant role. Beyond the scientific advice to politics, some may agree that in practice no political decisions are reached on national and international levels that do not require information and advice from experts on particular issues. Finally, policy advice is challenging because current difficulties need to be managed and applicable strategic answers need to be found. In other words, policy advice seems to be an extraordinary and helpful means of correcting many investigations which emerge from the ivory tower.

On the contrary, the advantage of applied politics is, in its broadest sense, to describe a given problem with the assistance of scientific policy advice with a look at solutions. Without a doubt, however, there is an unavoidable risk of a language barrier between advisors and those who take advice. In addition, involved scientists are being exposed to the threat of goodwill arguments. At this point, a seduction of “power” should not be underestimated (Mols, 2009, pp. 30–32).



## CONCLUSION

From the 1990s onwards, the question of the relationship between science and politics dominated scientific research. Some philosophers shared the opinion that science and politics should be strictly divided. Science should not get involved in politics and should be free. It can only serve as an information resource and contribute to decision-making. Robert Merton (1973), a sociologist of science offered a distinctive critique of the relationship between science and politics. He brought politics closer to science with the assumption that decisions pertaining to the subjects that should be analyzed are influenced to a greater extent by politics. Also, scientific institutions are affected differently by politics where scientific subjects, problems and questions get more political (Sørensen, 2012, p. 195–197).

What is the current situation of science? We should bear in mind that we are experiencing a time of technological change, and it cannot be denied that society has long since grown accustomed to technological improvements. Besides, at the same time, the awareness of environmental impacts such as nuclear powers or genetic engineering has developed. The desire to “return to nature” already dominated the 1980s. A renunciation of technology was intended, but in contrast, many people shared the view that technology would offer advantages and modern conveniences as well. The globalization of the economy and, of course, the transformation in the natural sciences in the 1990s, followed by risks, led to an uncertainty among people which has been widely discussed in the public and media. One of the most influential models in genetic engineering was the birth of “Dolly” the cloned sheep in 1996 which caused fear amongst many people in Europe. It is remarkable how important progress has been made in medical research due to information and communication technology. Furthermore, researchers and scientists are able to share their knowledge and last but not least, cooperation with many competent research groups is reinforced. This could lead to an overall high quality of life and also to a long life in western countries (Regenass-Klotz, 2005, p. 157).

In this sense, science should be unbiased and various disciplines are questioning what it is, and not what it is supposed to be. What is ethically permissible for scientific research is alone the responsibility of the scientists (Kromrey, 2009, p. 7). How science is applied and research is conducted depends, as Weber formulated, on its sense, value and profession. Thus, the progress of science will continue endlessly.

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## Secondary School Administrators' Opinions On The Prevention Of Violent Behaviours In Schools

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### ABSTRACT

Violence is an important issue in our country just as it is in the societies worldwide. Violence in schools as an interdisciplinary issue of sociology and psychology disciplines affects the school climate and students' learning processes negatively. It slows down students' development while defining aggression and sort of crime behaviors. In this study, the frequency of violent behaviors occurring in middle schools and school administrators reviews and precautions on this matter were analyzed. The study group of the present research consisted of 21 school administrators serving in Istanbul-Esenyurt district , public middle schools, in 2013-2014 academic year. A qualitative method was used and asked to the school administrators open-ended questions on how they manage violent behavior in their schools. The results were evaluated by 3 experts and were classified into 5 themes. According to the results, types of violent behaviour that were seen in schools were physical, verbal emotional and sexual.

**Key Words:** Secondary school administrators, violence, the causes of violence, coping with violence

### INTRODUCTION

Since the beginning of early history, the term “violence” has been defined by scientists as a social issue which damages the connection, the settlement and the system between groups, people and institutions (Eisenbraun, 2007). Humiliating, ridiculing or pressuring another person simply because he is not liked or well fit are included in the definition of “violence” (Altınok, 2014). Violence can also be identified as acts that may end in deadly consequences, acts that are threatening and the use of physical, verbal or symbolic pressure towards others. (Doğan, 2002). The World Health Organization has defined “violence” as, “the intended act of pressure on others or on oneself which end in physical harm, psychological damage or decline in growth.” (Bulut, 2008).

**Types of Violence :** (“WHO” n.d.)

**Self-directed violence:** Injuring of oneself, addictive detrimental substance use or suicide attempts.

**Interpersonal violence:** Act of violence between family members, within the society, during work or school and among peers.

**Collective violence:** Act of violence planned for a social purpose or aim. Types of this violence are; social violence, economic violence and political violence.

**Violence towards Children:** (Yenibaş & Şirin, 2007; Koç,2006 in Çubukçu & Dönmez, 2012)

**Physical Violence:** The intended act towards children, which end with an injury, poisoning, a burn or a fracture in the body.

**Verbal-Emotional Violence:** Acts which damage the child emotionally, lack of affectionate towards the child or neglecting the child. Verbal-emotional violence is usually applied along with physical violence.

**Economic Violence:** Making children work at tasks and jobs which prevent the child's personal growth and neglects the child's rights by paying very low wages in return for hard work. It is forbidden for children who are 15 years old or under to work.

**Sexual harassment or Abuse :** When an adult approaches a child for sexual purposes or needs.

**Child Neglect:** When the legal guardian of the child fails to feed, shelter, cloth, clean, entertain, educate, protect or care for the child in a convenient way.

**Bullying:** Use of force, intimidation, threat or power on somebody in order to dominate them. These acts occur frequently and eventually become a habit. (Wikipedia, 2015).

#### **Violence Fields:**

**Violence and the Media :** 4 Theories have been developed about the effects of violence in the media. (Levin,1994; İldeş, 2002 )

- **Purifying theory:** It suggests that a person can break lose from his aggressive impulses by watching violence on TV.
- **Aggression theory:** It suggests that a person will imitate the violent acts seen on the media and will apply it in his daily life.
- **Reinforced aggression theory :** When the person argues that the portrayed violence acts on TV normalizes violence and makes it acceptable. According to this theory, the individual prone to violence takes the violence portrayed in the media as an experience.
- **Empirical learning theory:** It argues that the violence portrayed on media imposes aggressive behaviour and shapes the child's character.

**Violence in the family :** Violence in the family takes place when violence occurs between the bilateral relations inside the family (between the spouses or between the parent and the child) and results with physically hurtful or damaging consequences. Throughout history violence occurring within the family was regarded as a privy. Help or production of solutions was avoided because it was believed to be left alone and untouched (Polat, 1997; Yenibaş & Şirin, 2007).

#### **Violence in schools**

In today's world, it is seen that violence is one of the main issues faced within the countries as well as in educational institutions. When healthy relationships aren't formed between the parents and the children, and when school regulations are not taken into account, security threats and incidents in the school environment may emerge (Gülşen, 2014: 183-186, Karal,2011; Koçyiğit, Gündoğdu & Bay,2010). During the middle school period which is regarded as the commencement of puberty in children, rebellion towards family members and school regulations will occur. It leads to strict restrictions and eventually sets ground for violence incidents. However, discipline is not punishment, on the contrary it helps students learn acceptable behaviours (Tosun,2002).

Studies on violence in the school environment, show that physical violence come forward as the most common type of violence (Karal,2011). According to the research results violence between the students occur within the school buildings commonly (Pişkin, 2002 ; Bulut, 2008). The historical research done by Bulut (2008) in 2001-2005 shows that %75 of the students enforce violence on each other in school. Violence occurs during breaks between classes rather than during classes.

A study about the frequency of crime and violence in schools in Istanbul was applied to 3483 students by Ogel and his friends (2004 in Karal, 2011). In this study, it was recorded that half of the group was involved in a physical fight at least once a year. The percentage rate of students who have injured someone at least one time in their lifetime was %26.3.

Violence in schools is seen to take place between teacher-student, student-teacher, parent-teacher and student-student. The customary type of violence which was frequently observed was teacher-student violence but this has recently changed to peer to peer violence, parent to teacher or violence between the student and the teacher.

#### **Aim of The Study**

The purpose of this study is to examine middle school administrator's awareness towards students' behaviours that contain violence and their point of view on what could be done to prevent violent behaviour.

#### **Sub- Goals :**

What are the school administrator's reviews on the violent behavior that they observed in their schools? What are the school administrator's reviews on ways on how to prevent violent behaviour?

#### **METHOD**

##### **Study Design :**

In this study qualitative research was applied. Qualitative research is the type of research that is a qualitative process for the revealing of the events and the perceptions that take place in a realistic and a holistic environment through ways of qualitative data collection such as observation, interview and document analysis (Yıldırım & Simsek, 2008).

### Participants:

The study group is composed of 21 school administrators who serve in Istanbul-Esenyurt district, in National Education Ministry connected public schools in 2013-2014 academic year. 3 group members were females and 18 were males. 19 group members were married and 15 of these participants had children. 12 of them had an 11-20 years of work experience, 4 of them had 6-10 years of experience, 3 of the group members had 21+ years of experience and finally 2 of the participating members had 1-5 years of work experience in their field.

As observed, the majority of the group was male, married, had children and has been serving as a school administrator for 11-20 years. The majors of the administrators were mostly liberal arts such as social studies, philosophy, religion etc. The group had no administrators who were specialized in Mathematics, sciences or related majors.

### Instruments :

The personal information form that was prepared by the researchers, were handed to the school administrators. The researchers asked the participants open-ended questions about the violent behaviours they have been observing in their students, along with questions interrogating what they have done to prevent these violent behaviours.

### Procedure

In this qualitative research, the data that was collected was evaluated through the use of descriptive analysis technique. After the data was inserted into the created thematic framework, the findings were identified and reviewed. (Yildirim&Simsek, 2008) Relying on Le Compte and Goetz's positive view on direct quoting, some direct quotes were taken from the administrators speeches.

### FINDINGS

Findings on the sub goals of the study are as follows;

#### *a.The school administrators opinions on the violent behaviour they have observed in their schools:*

The violent behaviours of students observed by school administrators in the schools were categorized as physical, verbal-emotional and sexual violence.

**Table 1.** Physically violent behaviours of the students

Violent behaviour	Frequency (n)	Percentage (%)
When students :		
- Push each other	21	100
- Kick each other	19	90.4
Pulling each other's hair, ear or spitting at each other	19	90.4
- Damaging each other's personal belongings	17	81
Vandalizing school desks	14	66.7

The type of physical violence that was observed to be the most frequent was students pushing each other (%100) while vandalizing school property (%66.7) was observed to be the least frequent behaviour among students.

**Table 2.** Verbal-Emotionally and sexually violent behaviours of the students

Behaviour type	Frequency (n)	Percentage (%)
- Threatening each other	17	81
- Mocking	16	76.1
- Verbally harassing	16	76.1
- Gossiping	16	76.1
- Cursing and use of bad language	14	66.7
- Harrassing by hand	17	81
- Use of sexual language	18	85.7

Among students the most frequent emotionally violent behaviour was observed to be "threatening" (%81). On the other hand the least frequent behaviour observed was cursing or the use of bad language (%66.7).

#### *b.The school administrators opinions on ways of preventing violent behaviour that take place in schools.*

The school administrators opinions on ways of preventing violence were categorized into 5 themes. These are education, school, student, teacher and the parent.



### Education and implementations in schools

**Table 3.** Education and Implementations in schools for preventing violent behaviour

Education and Implementation types	Frequency (n)	Percentage (%)
Parent education	9	42.9
Teacher education	9	42.9
Student education	3	14.3
Cooperation between school and the parent	10	47.61
Legal applications	10	47.61
Dispatch of the student to disciplinary board	7	33.4
Social Activities	5	23.8
School regulations	4	19.0

Regarding suggested solutions for preventing children's use of violent behaviour, it was observed that parent and teacher education (%42.9) was %14.3 more compared to student education.

Legal procedures to decrease violent behaviour in schools, such as applying rules and regulations (%47.6), dispatching students to the disciplinary board (%33.4) and inspection on the compliance with school regulations (%19) were all in predominance. Humanistic procedures such as parent-school cooperation (%47.6) and organizing social activities for children (%23.8) were also included in the list of violent behaviour prevention solutions.

### The approach to students

**Table 4 :** Ways of approaching the students in the prevention of violent behaviour

Type of approach	Frequency (n)	Percentage (%)
Referring to counseling services	9	42.9
Communicating and alerting	6	28.6
Affectionate and Tolerance	5	23.8
Giving responsibilities to students	5	23.8
Rewarding	4	19.0
Observing and monitoring the student	3	14.3
Fair treatment	3	14.3
Change of place	1	4.8

The most frequent way to prevent violent behaviour, suggested by the administrators was referring to counseling services (%42.9). On the other hand the least used and frequent solution seemed to be the change of place for the student (%4.8).

### Teachers and Parents

**Table 5 :** Contribution of teachers and parents on prevention of violent behaviour

Contribution of teacher and parent	Frequency (n)	Percentage (%)
Seeking help from the school board	6	28.6
Acting in union with the school board when solving issues	4	19
Avoiding the misuse of school grades	2	9.5
Avoid enforcing emotional violence on students	2	9.5
Taking guard duty seriously	2	9.5
Parent informing meetings	9	42.9
House visits	6	28.6
Constant contact with the parent	4	19.0

School administrators believed it is possible to avoid violence by working in cooperation with the teachers (%28.6) in addition, they called for teachers to fulfill their duties.

House visits and parent teacher conferences were also considered to be effective ways to involve parents in the procedure of preventing violent behaviour.

## RESULTS AND DISCUSSION

Violence incidents occurring in schools have been a serious concern in Turkey over the last few years.

Violence in school doesn't only harm the school environment but also hinders learning and damages the student's growth through anger and feeling of guilt. This view proves that violence in schools can set ground for the feeling of guilt in the child (Eisenbraun, 2007).

### Violent behaviours in students:

According to administrators, almost in every school observed, children tended to push, kick each other or pull each other's ears in order to show that they were irritated with each other. Children with anger also tended to damage school property as well as their friends. Physical violence can easily be detected and analysed therefore researches done in schools tend to mostly focus on physical violence (Kara, 2011). Unal and Cukur (2011) have concluded through their research, that students who are faced with physical violence are more likely to also apply physical violence.

Verbal-emotional and sexual violent behaviour is more difficult to detect compared to the physical violent behavior (MEB, EARGED, 2008). Violence between peers affect the growth and the learning of the students in a negative way (Everett, Price & Price, 1995 ; Jull, 2000). Among the factors that affect violence, The Center for Disease Control & Prevention (CDCP) has mostly emphasized on verbal emotional violent behaviour. Examples; poor cognitive & social abilities, antisocial attitudes, rejection by peers. (Rullado, 2011)

In this study sexual violent behaviour types were short in number however largely quantitative, therefore it was predicted for adolescents who were in transition period to puberty, to have much interest in sexuality matters.

### Impact of education on violent behavior:

To prevent violent behaviours, school administrators have mostly emphasized on parent education rather than student education.

School administrators say, "It is very difficult to educate the child if the parents are not well informed therefore parent training should be taken very seriously and the school should be working cooperatively with parents." They also emphasized on the training and informing of the students and the parents about this issue through various activities and seminars.

Students learn about violence through observing other's behaviours, what is actual is the behaviour itself. (Rullado, 2011) Behaviours of the role models, such as the teacher's, the parent's and the school administrator's, play a more effective role on informing the children rather than educational seminars or activities. On the other hand, informing teachers and parents while raising awareness can be considered as an important step taken towards the prevention of violence (Howard & Flora, 1999; MEB, EARGED, 2008).

### Implementations in school for the prevention of violent behaviour

School is responsible for the child's adaptation to social norms while preparing them for life. (Tosun, 2002). Jull (2000) suggests that customary teachers and directors try to stop unwanted behaviour of children by applying in-school implementations only however, in modern society, the duty of preventing unwanted behaviour does not just belong to the school and teachers, in addition it belongs to the people of that society. The violence outside of the school (in society) is parallel with each other and have a strong impact on one another. If violence increases in one, it will also increase in the other (Eisenbraun, 2007 ; Reining, Castro & Frisancho, 2013).

School administrators are accountable with the rules and the regulations in their schools therefore it is their natural right to use these regulations when it is necessary. In addition to this, school administrator who were participants in the present study, emphasized and focused on school-parent cooperation and social activities just as much as on social rules and regulations. Applying this proved their humanistic and modern characteristics. School- parent cooperation item had the most frequency in the school implementations theme. A school administrator's words about legal enforcement on this matter were as follows; "I apply legal regulations, work in union with the parent, refer to school counseling services, dispatch the student to the disciplinary board if necessary and keep a consistent record of student's behaviour in order to prevent violent behaviour among our students."

### Approaching the students in the prevention of violent behaviour

It is difficult to handle abused children because they are constantly on the move. Their use of language can be more offensive than their behaviour (Polat, 1997). It is observed that in schools, violent behaviour is most likely to take place at times and places in avoid of adult control like breaks between classes (Bulut, 2008). Referring students who apply violent behaviour and students who are victims of this matter, to counselors and counseling

services is considered to be an affective part of both preventive guidance and developmental guidance. Another school administrator stated his opinion on this matter as follows; “It is without doubt that keeping a consistent track of students and their behaviour will prevent violence.”

#### **Contribution of teachers in the prevention of violent behaviour:**

School administrators believed that working in union with teachers and teachers fulfilling their duties as fair and well observing instructors would lead to the prevention of violent behaviour. A administrator’s words on this matter, “Teachers should act fair with the grades they give their students and work carefully with them.”

Teacher-student communication have been accepted as an affective way of preventing violent behaviours by administrators. It is important for the health and the safety of the school, that teachers are well informed on how to control their students without looking down or exerting emotional pressure on them. Violent behaviours in schools usually occur in classes, corridors and restrooms (Bulut,2008). This finding supported the administrators’ suggestion on teachers that they should be on guard duty at all times.

In the research done in USA by Mertoglu and Dogutas (Kara, 2011), with 11 schools and 884 students participating, it was observed that teacher’s negative attitudes and student’s violent behaviours were strongly linked. According to the research results, when teachers have high expectations and qualified relations with their students, there is a decrease in aggressive, violent behaviour and an increase in their academic achievements (Fowler, Banks, Anhalt, Derv e Kallis, 2008 in Unal & Cukur, 2011). In addition to this, expertise, openness, reliability, neutrality, and consistency are important factors in student- teacher relations (Teasley, 2013).

#### **Parents contribution in prevention of violent behavior:**

It was clear that participant school administrators requested to be in continuous cooperation with parents. It was highly beneficial for school-family relationship that school administrators considered house visits.

Students are with their teachers and instructors at their schools and they are with their parents at home. Therefore it is important and beneficial for the students that they work together. Generally it is an accepted fact that single parent students and students financially weak are more prone to violent behavior (Howard & flora, 1999; Kırbay, Taşmektegil, & Ustun, 2007; Cubukcu & Donmez, 2012). On the contrary, Polat (1997) claimed that child abusive acts in the middle and high SES families can be seen due to the domestic incompatibility and having a sibling of the child and turning the child can exhibit violent behaviors.

It is very natural for the students at school to refer to aggressive behaviour for resolution if he has got accustomed to behaving aggressively at home. Education begins at home, continues at school. Due to this reason with the right cooperation between the school and the parents and the right guidance of school counselors, aggressive behaviours can be prevented both in schools and in the society.

Students relationships with their peers, teachers, school directors and the society play an important role in creating a safe and a violence-free environment.

#### **Suggestions**

- Help of counseling and guidance services for the prevention of violence in schools.
- A school committee can be formed with the help of the parents and the students.
- Close contact with all students
- Informing the students about the consequences they will face in case of violent behavior
- No tolerance for the violation of school rules and regulations.
- Pairing of students and teachers for close care for students who are under risk.

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## Self-Mention And Identity Construction In Statement Of Purpose

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### ABSTRACT

This exploratory study examined the role of self-expressions in graduate school application essays (i.e. statement of purpose, SoP) and the different academic identities constructed by these expressions. Using a mixed methods research design, the research analyzed both qualitatively and quantitatively a sample of 20 SoP written in English across various disciplines. The results revealed that identity construction presents a major challenge for SoP writers regardless of their English proficiency: they tended to construct themselves only as “narrator of personal experience” or “communicator of self-evaluations”, rather than more desired roles such as “conveyor of general knowledge” and “evaluator or originator of knowledge”. Based on the findings, the paper argues that in the case of SoP, the challenges of academic writing for advanced L1/L2 writers are mainly the difficulties associated with establishing a voice of expertise in an unfamiliar and limited discursive space, instead of the lack of literacy skills or genre knowledge. As such, the paper ends by proposing that more attention should be paid to self-representation issues in advanced EAP/ESP teaching.

**Keywords:** academic identity, self-mention, statement of purpose, promotional genre

### INTRODUCTION

While identity is expressed or implicated in every daily interaction, identity-related expressions tend to be discouraged in scholarly writings. Style guides and textbooks, for instance, constantly portray scholarly writing as a kind of impersonal and objective discourse that aims at revealing the truth of nature and human society. Commonly known as “voice” in academic writing literature, identity-related expressions have been primarily viewed from the perspective of individual or personal quality in writing (Mastuda & Tardy, 2007). In general, academic writing tends to be recognized as “voiceless” since academic publications, especially in science fields, have been primarily characterized as impersonal and objective. Ramanathan and Atkinson (1999), for instance, linked self-expressions in academic writing to what they called “the ideology of individualism”, arguing that self-expressions essentially highlight the notion of “private and isolated inner selves”.

Yet, over the past decade or so the notion of identity has begun to attract increasing attention from applied linguistics researchers, especially in the field of L2 writing. A growing body of research recognizes the inevitability of identity in discourse: self-expressions are not only about individualist opinions; they are also closely associated with surrounding social relations (Mastuda & Tardy, 2007). This trend essentially reflects a socio-cultural approach to “identity” (Bakhtin, 1981; Fairclough, 1992; Ivanič, 1998), which demonstrates that voice is not necessarily tied to the ideology of individualism; rather, voice reflects intentional or unintentional uses of socially available yet ever-changing linguistic repertoires for expressing social identities (Matsuda, 2001).

From a pedagogical perspective, a student’s emerging mastery of a discipline is a complex process, which involves not only learning relevant knowledge, but also developing a specific disciplinary identity. An interesting research topic highlighting the complex identity construction work in academic literacy development is effective pedagogies for graduate writing. In their highly successful book, Kamler and Thomson (2014) address how doctoral writing involves complex text/identity work and many graduate students struggle with their writing not because grammatical incompetence, but due to their lack of confidence of making effective arguments without revealing their positionality.

Then, how do we conceive identity? By and large, the research on identity has a long and rich tradition across many disciplines (sociology, psychology, education, etc.), which points to the centrality and complexity of this notion in the humanities and social sciences. Briefly speaking, identity should be understood as a multifaceted concept with multiple effects on human life. It is highly complex and there is no ironclad boundary between different identities of one person. Identity has been increasingly recognized as a desire for affiliation and recognition rather than a simple phenomenon of private experience (Norton, 1997). This recognition connects identity to the practices and structures of social communities and discourses, and in this regard, are cultural resources that align us with certain values and beliefs associated with particular identities (Hyland, 2002).



The growing discussions on the necessity of voice have received criticism as well. Stapleton (2002), for example, argued that the importance of voice has been overstated and such a message may let language learners pay more attention to their identities than ideas. Admittedly, such concern highlights the pedagogical difficulty of teaching the interrelation between objectivity and subjectivity in academic writing; however, it should not deter voice-related discussions in writing classes, especially for genres that encourage arguments, discussions, and interpretations.

This exploratory study adopts the framework of genre identity roles in academic writing. This framework proposes an expanded view on voice in academic writing, viewing voice as a form of self-representation that is inevitable not only in writing, but also in all human activities (Invanič & Camps, 2001).

The study seeks to demonstrate the importance of voice in academic writing through a genre analysis of a less-studied academic genre: statement of purpose. Statements of purpose (SoP), or personal statements, are self-promotional essays written for graduate school applications in many Western countries, which serve as an important assessment tools for admission committees to evaluate potential candidates. This genre of writing is usually remarkably short (approx. 500-1,000 words), fairly open-ended, and, in most cases, exceedingly daunting. Compared with other mandatory components in a typical graduate application for a university in Western countries, SoPs tend to be the only “discursive space” that an applicant has full control of how he/she is represented. SoP, in this regard, is the initial “gatekeeper” of one discipline’s discourse community and arguably the most significant piece of writing in the beginning of one’s academic career. Despite SoPs’ importance in one’s academic career, however, the specific features of SoP as an academic genre have been scantily researched. While there have been a few studies addressing the rhetorical features of SoP and exploring what commonalities are shared by successful essays (e.g. Brown 2004; Ding, 2007; Samraj & Monk, 2008), little research has focused on the issue of identity representation in SoP. That is, how SoP writers utilize various self-expression strategies to demonstrate their academic potential.

To be specific, the purpose of the present study is to examine the role self-mention plays in SoP writing through analyzing sentences containing first person pronouns (I, me, mine, we, us, and ours) and determiners (my and our) in 20 SoP samples. The use of first person pronouns and determiners is perhaps the most prominent way of making identity roles visible in discourse. As suggested by a growing body of research on voice in academic writing (e.g. Hyland, 2002; Invanič & Camps, 2001; Mastuda & Tardy, 2007; Zareva, 2013), the use of first person pronouns and determiners is, on the one hand, discipline-specific (with the humanities having the highest frequency) and, on the other hand, a valuable rhetorical strategy that can help both text producers construct and text receivers decode, the multiple academic identities required in effective scholarly communications. Moreover, the present study also seeks to explore what potential challenges writers may experience when conducting intensive self-promotion in a relatively short and high-stake writing task.

For the above purposes, the following three research questions were formulated:

1. What are the major academic identities constructed through self-mention in SoP?
2. Are there any potential challenges writers may experience in this identity construction process?
3. Can SoP offer a valuable discursive space for pedagogical interventions that promote disciplinary identity construction and academic genre mastery?

## RESEARCH METHOD

A total of 20 SoP samples were collected for the present study, including 10 SoPs written by non-native English writers from China (CEAL-SoPs) and 10 SoPs written or edited by native English writers (EL1-SoPs). These samples were randomly selected from a set of 60 SoPs samples that were collected for an earlier study on politeness strategies in SoPs (Chen & Nassaji, 2015). These SoPs were written for various disciplines (e.g. biology, engineering, linguistics, etc.). For the CEAL-SoPs, their authors were all advanced EAL writers as indicated by their TOEFL or IELTS test results. Following the solicitation of these SoP samples, two corpora were compiled for data analysis: the CEAL-SoP corpus (9,888 tokens) and the EL1-SoP corpus (8,628 tokens).

The current study adopted a mixed-methods research design for data analysis. The corpus analysis program WordSmith Tools (Scott, 2008) was used to locate sentences containing first person pronouns and the determiner across the solicited SoP samples. Then, each sentence was coded according to a typology of academic identities that can be delivered by first-person expressions built by previous research (Invanič, 1998; Invanič, Camps, 2001; Sheldon, 2009; Starfield & Ravelli, 2006; Tang & John, 1999; Zareva, 2013). Table 1 shows the details of this typology, which distinguishes different rhetorical roles of self-expressions in terms of their relative authoritative power represented on a continuum. While the first three categories (“I” as conveyor, guide, or conductor) tend to be used in descriptive expressions, the use of latter three (“I” as evaluator, originator, and reflexive) tends to be

argumentative and more personal. After the coding is completed, each category's frequency is calculated and the results were compared between the CEAL-SoP corpus and the EL1-SoP corpus.

Table 1

Typological variations of academic identities constructed by first-person expressions (examples are taken from the analyzed SoPs)

1. I as conveyor of common knowledge (often realized by using plural pronouns) Example: Progress <b>we</b> make in this field will contribute to the future of Texas, America, even the world.
2. I as guide or navigator of the text (rhetorical use) Example: Please let me know if <b>I</b> can provide additional information in support of my application.
3. I as narrator of personal experience Example: What was more, due to the limitation of our university curriculum, <b>I</b> had few chances to participate in practice related to usability research.
4. I as communicator of personal feelings or self-evaluations Example: <b>I</b> was somehow terrified by the huge number of man-made rules in chemistry and almost equal number of exceptions to them.
5. I as predictor of future academic/professional paths, or direct appeal for favourable considerations Example: I am looking forward to discussing the interesting economic topics with my preeminent and patient professors and my excellent classmates at X university.
6. I as evaluator or originator of (abstract) academic knowledge (e.g.) Presently, <b>I</b> am engaged in a research project regarding the applications of integrated marketing communications in China service industry. <b>I</b> hope to soon have an article published based on the outcome of my research

## RESULTS

To address our research questions, we first calculated the frequencies and percentages of both singular and plural self-expressions in both CEAL-SoP corpus and EL1-SoP corpus. As shown in Table 2, self-expressions were frequently used in the analyzed SoPs, with a total frequency of 7.016/100 tokens. The most frequently used lexicons to make self-expressions are "I" and "my", with frequencies of 3.57/100 tokens and 2.382/100 tokens respectively. Another observation is that the CEAL-SoPs contained more first-person expressions (7.191/100 tokens) than the EL1-SoPs (6.810/100 tokens), which was mainly caused by the two groups' difference in sentences containing "I" and "my".

Table 2

The frequencies of self-expressions in the analyzed SoPs

	Raw Freq. (CEAL-SoPs)	Freq. per 100 tokens (CEAL-SoPs)	Raw Freq. (EL1-SoPs)	Freq. per 100 tokens (EL1-SoPs)	Freq. per 100 tokens (Total)
I	379	3.830	280	3.245	3.570
me	61	0.617	64	0.742	0.675
mine	0	0	2	0.023	0.011
my	241	2.437	200	2.318	2.382
we	16	0.162	19	0.220	0.189
us	4	0.040	2	0.023	0.032
ours	0	0	0	0	0
our	10	0.101	21	0.243	0.167
Total	711	7.191	588	6.810	7.016

In order to examine what academic identities were constructed by these solicited self-expressions, concordances containing these singular and plural first-person pronouns and determiners were qualitatively coded according to

the typology of academic identities introduced in Table 1. The results showed a mixed pattern, with “I (we) as narrator of personal experience” as the most frequent constructed self-identity in the text (54.18% in both CEAL-SoPs and EL1-SoPs), followed by the category “I (we) as communicator of self-evaluations” (28.35% in CEAL-SoPs and 21.74% in EL1-SoPs). Although, the dominance of both categories are somewhat expected since SoPs are primarily based on personal experience, the lack of diversity in self-identity construction as shown in the low frequencies of other categories (esp. Categories a. b. & f.), still needs further consideration since both rhetorical use of self-expression and explicit academic identity construction efforts are expected by admission committees as well as in future academic writing.

Table 3.  
Different academic identities constructed by solicited self-expressions

	Academic Identities	Freq. (CEAL-SoPs) Total: 395	Freq. (EL1-SoPs) Total: 299
“I” or “we” as	a. Conveyor of common knowledge	2 (0.56%)	0 (0%)
	b. Guide of the text	4 (1.01%)	2 (0.67%)
	c. Narrator of personal experience	214 (54.18%)	162 (54.18%)
	d. Communicator of self-evaluations	112 (28.35%)	65 (21.74%)
	e. Predictor of future paths	49 (12.41%)	54 (18.06%)
	f. Evaluator or originator of knowledge	14 (3.54%)	16 (5.35%)

What key patterns of academic identity construction can be observed from the above results? Overall, the above results suggest that academic identity construction presents a major challenge for SoP writers regardless of their English proficiency. More specifically, the major challenges as shown in this study are constructing “I” as being directly involved in academic conversations and effectively using self-narrative as a rhetorical tool to guide SoP readers. In this regard, the analyzed SoPs demonstrated that, instead of lacking literacy skills or genre knowledge, the major challenge of self-promotional writing for advanced EAP writers is mainly the difficulties associated with establishing a voice of expertise in an unfamiliar and limited discursive space.

## DISCUSSION AND CONCLUSION

The purpose of this study was to examine self-identity construction in a less-studied academic genre and the results clearly showed that in the case of SoP, the major challenge experienced by native and advanced EFL writers is establishing an “expert” voice in a limited space. Although SoP seems to be a less-important genre in the universe of academic literature, we argue that the issue of self-identity construction implied by this exploratory study has wider pedagogical implications for both undergraduate and graduate writing instruction. Counter to the general perception, promotional writing is a vital component in today’s increasingly competitive academia and throughout one’s academic career. Thus people need to learn how to deal with promotional genres such as job application letters, grant proposals, and applications for promotion. Current writing curricula at both undergraduate and graduate levels, however, seem to be unable to accommodate the increasingly professionalized academia that requires academic writers to make more confident self-promotion. Thus, we propose that more attention should be paid to issues related to self-representation in advanced EAP/ESP teaching.

Meanwhile, from a pedagogical perspective, SoP, as a genre packed with high-stake writing tasks, offers a valuable discursive space for pedagogical interventions that promote disciplinary identity construction and academic genre mastery. This genre provides not only genre knowledge that can be conveniently applied in both academic and professional settings, but also a valuable writing scenario encouraging students’ self-awareness and reflective thinking. Although developing SoP as an effective pedagogical tool for academic writing still requires further explorations, the current study implies the possibility of developing an effective genre-based approach for teaching promotional genre writing.

Admittedly, our study has limitations that need to be taken into consideration when its findings and implications are considered. Given the small-scale nature of the study, the findings are not meant to be conclusive; instead, it aims at opening further conversations regarding potential pedagogical interventions for dealing with the challenges of text/identity work at both undergraduate and graduate levels. A larger-scale study is definitely needed. In addition, future research may go beyond the SoP genre and take other promotional academic genres into consideration.

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## Social-Inclusive Competencies Among Slovak Teachers And Future Teachers

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### ABSTRACT

The paper focuses on presenting the findings mapping the social-inclusive competencies among Slovak teachers and future teachers. The study presents an analysis of semi-structured interviews undertaken with teachers and future teachers (N = 8). The dialogues were the basis for the scale measuring the socio-inclusive competencies of teachers. This was a part of the questionnaire method created to measure the social-psychological competencies of teachers (Sokolová, 2015). The findings pointed to four key areas associated with the view of inclusiveness in the school environment: *school atmosphere*, *personality of teacher*, *personality of student*, *lifelong learning*. The present study is a part of the project VEGA 1/0562/13 Social-psychological competencies in undergraduate preparation program and early teachers career.

### INTRODUCTION

Knowledge is a key factor supporting equality of opportunities as well as the social inclusion. The social-inclusion is understood as a process in which an individual fully participates on life of society without any restriction of either his/her own civil and political rights and also by bad health condition, lack of knowledge, or absence of employment and income (Robinson, 2000). A person with disability has restricted or absent skills required for doing activities which are, by majority of society, considered a standard. For social inclusion is needed not only an acceptable and supporting environment, but it also needs to be an advanced one. In this process, it is important for teachers to be prepared for the social-inclusive education at schools according to the UN convention, which was accepted on the 13<sup>th</sup> of December 2006 in New York as “Convention on the Rights of Persons with Disabilities” (Feuser, 2009). It says about the setting of social protection, education and health care in order to prevent the social inclusion. The successful inclusive process positively reflects into the overall involvement of persons with disabilities into social and economic social life. Inclusion, thus, includes physical (there are students with and without physical disability), social (students of various social groups) and instructive (education according to the needs of students) level. The inclusive process can be summarized into 4 main principles according to the Centre for the inclusive education (Booth, Ainscow, 2002):

1. Inclusion is a process of finding ways of life with variety and how to draw on that. It is an effort to find individual answers on constantly changing diversity in society and schools.
2. Inclusion is connected with identification and elimination of barriers.
3. Inclusion means presence, participation, success and happiness of all children.
4. Inclusion includes especial attention on those target groups which are exposed to the threat of marginalisation, exclusion and to be below-average in education.

The named principles are found in self-evaluating tool, which can be used by every school to find strong and weak points of the inclusive process.

Acceptation of diversity assumes to work on elimination of negative attitudes (stereotypes, prejudices, discrimination) (Šramová, 2013). According to Lechta (2010), it is not just about a tolerant attitude, as in integration, but it is the whole acceptance process which comes from the internal convince of a person. In other words, it is an unconditional acceptance of special needs of all children. That is why the attitude towards the inclusion of all units of education – headmaster, teachers, students, parents and school stuff is so important. They create the social school climate and therefore form values and attitudes of the students. School is a place where should be created and offered conditions, inputs for development of all children, no matter how old they are. Thus, it is important to know attitudes and views of the teachers who significantly influence the inclusive process at schools.

For education, the inclusive approach means that children are not divided into the ones with the special needs and the ones without them. It is one heterogenic group of students with individual needs (Lechta, 2010; Cabanová, 2014). In this approach, it is needed to eliminate all obstacles in connection with practice. It is important for teachers to have special-pedagogical as well as psychological practice to enable them to work with the classes in which there are socially disadvantaged students. It is also important for schools to be equipped with special tools. Unfortunately, authors (Boyer & Mainzer, 2003; Hodgson, Lazarus & Thurlow, 2011) say that majority of pedagogues are afraid of working with students with disability because of lacking of practice. One option is to focus on the inclusive process in the teachers’ practice. It is needed the theoretical knowledge of various disabilities as well as social-pedagogical training which raises social-communicative competencies of teachers. Adventure education becomes more and more attractive and effective. A teacher working in the inclusive education needs to cooperate with more specialists to coordinate his/her activity on students. We can find in literature a suggestion for a teacher to cooperate with the special pedagogue who would positively influence results of students with



disability as well as their self-evaluation and self-confidence (Garderen, Stormont & Goel, 2012; Vernarcová, 2012).

Our research aim was to map and analyse teachers' attitudes in practice and students of Faculty of Education to the inclusion. The aim was to find out what forms their attitudes towards the inclusive education.

Research questions:

1. What is the main information source that teachers use to get informed with the inclusive education?
2. What is the future teachers' idea of inclusive education and what is their experience with the inclusive education during their practice in connection with teachers, students and school management?
3. What are the strong and weak points of teacher's personality when working with students in the inclusive education?
4. What are the main positives of the inclusive education?
5. What are the dangers/negatives of the inclusive education?

## 2. METHODS

### 2.1 Participants

The participants of the research were teachers and future teachers (students of the Faculty of Education UMB Banská Bystrica) (N=8). Teachers had 2 years practice (N=4; 3 women and 1 man) and the students (N=4; 2 women, 2 men) (Table 1)

Table 1. Characteristic of the research sample.

	Gender	Age	Approbation	Practice (years)
Interview 1	Man	24	Psychology-Ethics	Student/future teacher
Interview 2	Woman	23	Psychology-Music education	Student/future teacher
Interview 3	Woman	23	Psychology-Pedagogy	Student/future teacher
Interview 4	Man	23	Psychology-Pedagogy	Student/future teacher
Interview 5	Woman	29	Psychology-Pedagogy	2
Interview 6	Woman	29	Informatics-Pedagogy	2
Interview 7	Woman	26	Geography-Maths	2
Interview 8	Man	26	Music education	2

### 2.2 Measures

We used semi-structured interview with every participant as the research method (Miovský 2006; Hendl, 2005). Interviews were individual, with prepared questionnaire. The questions focused on the following topics: interpersonal and intrapersonal competencies of teacher, class management and the inclusive education. Attitudes towards the inclusive education are analysed in the report. In this part, we focused on five areas corresponding with our research aims: Main information source which teachers use to get information about the inclusive education; Future teachers' idea of the inclusive education and what is their experience with the inclusive education during their practice; Strong and weak points of the inclusive education. Interviews were recorded in order to make a transcription important for future analyses and interpretation. The length was approximately 60 minutes. Respondents were informed about the research aims. To determine the target areas we chose an exploratory research with the emphasis on capturing the range of relevant topics concerning the researched issue in view.

## 3. RESULTS

Results of the research were processed by thematic content analyses (Krippendorff, 2004). During the analyses, we followed the adjusted method of the grounded theory (Stauss, Corbin, 2008). Final results, focused on attitudes of teachers/future teachers towards the inclusive education, pointed out 4 key factors: atmosphere in school, personality of teacher, personality of student, lifelong learning.

### 3.1 School atmosphere

The participants agreed that **several factors influence a successful realisation of the inclusive education – personality of teacher, personality of student, personality of parents and school stuff**. Cooperation and coincidence of the factors was pointed out. *“Schoolmate who knew more than a teacher left the school which bothered other teachers and they made the teacher left the school, too.”* P4, a future teacher). Stress was put also on the importance of mutual support from school management as well as emphatic approach of their colleagues. *“If I need help, I turn to the school management. Support from my colleagues helps, too.”* (P5, a teacher). *“If I need help, I will turn to elder colleagues.”* (P1, a future teacher). *“I think that it is the easiest to make a good*

*relationship with colleagues.” (P3, a future teacher). **The teachers criticised integration which does not lead to positive atmosphere in class, it rather leads to interferes relationship between integrated and non-integrated children.** “If they had some paper about the integration, they would not have to do some things, which leads to bad atmosphere in the class.” (P5, a teacher). “At high school we had a visually challenged classmate with her assistant. Teachers gave her various relieve which rather slowed her than helped.” (P3, a future teacher). It is another aspect which must be taken into consideration by teachers, e.g. to inform and explain to students disabilities, to raise toleration by pointing out the importance of the social inclusion.*

### 3.2. Personality of teacher

Personality of teacher is another key category. The participants agreed that key areas are:

1. **Personal abilities and qualities** (mainly empathy, assertiveness, frankness, creativity)
2. **Motivation** (interest in profession, in students)
3. **Social-psychological competencies** (communication, stress handling).

According to the participants *“a teacher must be the one who wants to do it. Interest and wanting are essential.”* (P8, a teacher). Also, a stress is put on self-management, which *“must be good to not make teacher show that a student with ADHD upset him.”* (P8, a teacher). The future teachers consider empathy, humaneness and understanding as important factors for handling inclusion in schools. *“Empathy, humaneness, understanding of requirements and claims of students are the most important for teachers as well as professionalism.”* (P1, a future teacher). *“Empathy, self-reflexion, self-evaluation are important for teachers to handle the social inclusion.”* (P8, a teacher). *“A teacher should have well-developed empathy and should know how to work with children.”* (P3, a future teacher).

### 3.3 Personality of student

The next category which the participants mentioned is **personality of student. Here, their openness, readability, individual abilities are pointed out.** The future teachers are afraid of the ability to handle conflict situations in classroom as well as administrative stress connected to learning process. *“to catch students’ attention is the hardest.”* (P1, a future teacher), *“school administration is the hardest”* (P1, a future teacher), *“the time spent for administration could teacher used for preparing for the lesson”* (P2, a future teacher). Communication with students based on the empathic approach was pointed out by the teachers as well as the future teachers. *“I had a good contact with students. I can communicate with students despite I am an introvert.”* (P1, a future teacher).

### 3.4 Lifelong learning

The category of lifelong learning has developed from the teachers who have **a high need for developing their personal and professional abilities.** Information is gained mainly from books, the internet as well as from experience and advice from colleagues. *“They teach me nothing at school. Theories only. Training and education are important.”* (P5, a teacher). **The teachers and the future teachers agreed that it is important to use adventure education and to attend trainings for development social-psychological abilities of teachers,** which prepare them for handling conflict situations and to develop their creativity. *“Empathy and assertiveness are needed to be developed by trainings, adventure activities are important for practise.”* (P8, a teacher).

## 4. CONCLUSION

Inclusive education is one of declared priorities of the educational system. Thus, it is logical that we are interested in preparedness for the process, experience and fears of teachers and future teachers. By the analyses of the interviews we got these conclusions:

1. The main information sources, which are used by teachers to get informed about the inclusive education is literature, the internet, personal experience, experience of their colleagues.
2. Ideas of the future teachers about the inclusive education are not very different from the ones of the teachers. Both stress its importance as well as concern connected with not understanding students, parents, colleagues and school management.
3. According to the participants, strong points of teachers in the inclusive education are: empathy, creative approach, patience. Weak points are administration and obstacles from parents.
4. They see the main positive of the inclusive education in elimination of the social exclusion of persons with disability and in the raise of tolerance.
5. The negative of the inclusive education is bad handling of the process which can come up from the stereotypes and prejudices of society.

It shows that teachers and future teachers welcome the process of the inclusion, but they do not feel ready to handle it. They put stress on making a good atmosphere in school (Brunclíková, 2011), on competence of teacher (personal

and professional) on personality of student (bio-psycho-social area), as well as continual learning of teachers by social-psychological trainings (Hamranová, 2003) and exchanging experience between colleagues.

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## Specifics Of Innovative Teaching

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### ABSTRACT

The study deals with the problem of modernization through the application of innovative teaching methods applied in schools. In connection with this issue, we have defined the most common factors of effective ineffective teaching. In the present contribution we analyse the attitudes of students in the context of the application of innovative methods in their learning process.

### INTRODUCTION

The secondary schools adapt the methods and its forms to grow knowledge in a current school environment. Constant penetration of science and technology became increasingly demanding on students. Teachers are continually learning how to influence students and activate them to work. Therefore, the innovative teaching methods are getting at the forefront. They are largely based on the activity of students. The schools are increasingly faced with working in pairs; group and frontal teaching is not only the one. The students become actors and not just teacher's audience.

Although amount of modern teaching methods are used effectively in the educational process, it is impossible to apply the only classical methods. There is much more suitable to use the classic method in certain specific interpretations of complex or abstract subject. On the other hand, the modern methods are heavily focused on the development of creativity of students, evoke curiosity and independence. It is necessary to realize the possible problems during applying the modern activating methods in teaching. Teacher can be a reluctance to adapt to modern times; another problem is lack of experience, but also the unavailability of literature on modern teaching methods or the resistance to the new methods for students. The problems can also be on material hand or time-consuming (Krajčová, 2013).

### THE STUDY

Use of teaching methods is strongly influenced by the professionalism of teachers. The teacher is in fact the one who chooses the method according to the difficulty of a particular subject. The creative climate is essential for innovative teaching methods. The teacher should lead students to make them more responsive to impulses from the environment or encourage them to experiment with objects and ideas. The teacher should also teach pupils every new idea to systematically evaluate and get the maximum from the most it; to guide students in creative problem solving; to dispel fears of students if they think that their work is not perfect; to allow students to have enough space for self-fulfilment, but also to have a space for peaceful creative thinking. Teacher's attitude greatly affect the creative climate in the classroom, therefore, the teacher should be especially friendly to students and try to guide their activity (Veteška, 2008).

Teacher in choosing the method does not consider just how mediates pupil curriculum, but it is especially interested how the students will engage actively in this process. Correctly chosen teaching method for teaching students causes a reaction which positive mobilizes a teacher. The methods should be chosen so that their use for teacher and pupils try to achieve the goal of teaching process. Content of learning process should be in accordance with the chosen methods. On the other hand, the schools should be to strive to provide the teacher manifold means to do their work and to enable it adequately convey the new curriculum for students. Undoubtedly the most percentage use of teaching methods in practice affects both a teacher and pupils (Balogová, 2007).

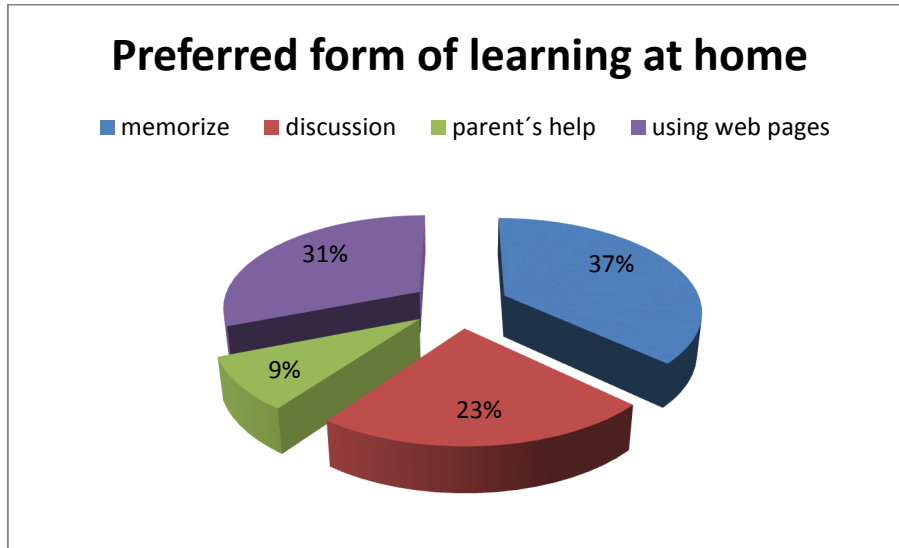
Students most often prefer to brainstorming as one of the innovative teaching methods. Brainstorming was as first implemented in the USA in 1938 and its founder is Alex F. Osborne. Brainstorming assumes that people have many ideas but they are not saying them loud. They think that their ideas are bad, impractical, foolish, especially, they feel fear the negative reaction of their environment. Osborn claimed that it is necessary to remove all barriers that prevent the creation of new and unconventional ideas. This method has not been in the early days of its occurrence associated with education of all. The first application was applied in the trade, advertising and later it was applied in the classroom.

Innovative methods are focused on various forms of activation of students (Dupkalová, 2013). In conjunction with this problem we conducted a survey where we focused on detecting forms of cooperation work of students, the possibility of efficient learning and the didactic technique, which are combined with an appropriate innovative method what can greatly facilitate students learning. The aim of the survey was implemented thus point to

innovative methods and their application in the teaching process. Survey sample consisted of 220 students of vocational schools in the east of Slovakia. The survey was conducted through a questionnaire that we created for this purpose. The most used method in the survey is quantitative method questionnaire, especially because of the larger sample. In the present survey, we have also used this method.

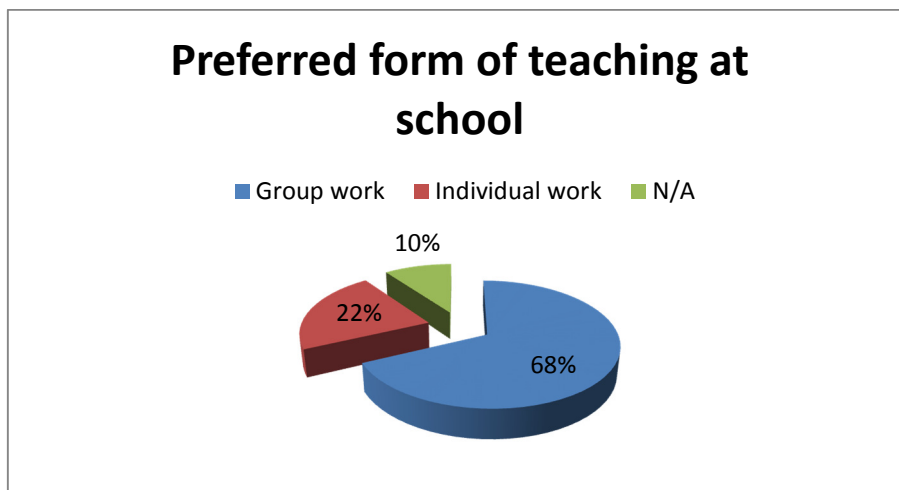
### FINDINGS

The new innovative methods are focused largely on the activity of pupils. If the students during class are active and they solve the problems of the new curriculum, then they can also seek the additional information alone at their home.



**Figure1:** Preferred form of learning at home

According to the survey findings, 37% of students prefer to learn the curriculum by memorizing, 23% of pupils prefer a discussion on the topic with a friend, 9% ask for the help of parents and 31% of the new issue are searching and finding on the web. These results show that most students still prefer the traditional learning by memorizing. Pupils are usually mediated with traditional methods of curriculum in the frontal form. Through the survey, we focused on ascertaining the preferences of forms of teaching pupils.



**Figure 2:** Preferred form of teaching at school

According to their responses, we can conclude that up to 68% of pupils prefer work in a group; independent work is suitable for 22% of respondents. According to their answers, if pupils work in groups, they feel very good – 76%; 89% of them like working in groups; 69% of respondents said that it is extremely useful if teaching techniques are used during the teaching process. Clarity as a teaching method is justified very high and also it is effective during the educational process. Teaching methods are used in two ways in the education process, both as



a form or mean. From the achieving the object of the lesson perspective, it is a mean for the purpose of fulfilment for a teacher. The teacher must respect the rules of the learning process itself, during the choosing methods, but at the same time, it is essential to inspire students for independent creative work and activity through them (Kominarec, Kominarecová, 2005). The key task of teaching methods is to regulate pupils' learning so that they acquire knowledge, but also to know use them in practice. It's also a kind of tool with the help for the pupils so they will be able to acquire their own curriculum (Maňák, Svec, 2003).

The curriculum is probably the most associated with the oversized word. Students learn at school the facts what are not probably necessary for their professional implementation. In connection with the teaching methods of the curriculum we should consider adequate in terms of layout and selection methods. Students should be in school to learn, how to learn and then they should be able to apply for the actual preparation of the lesson at home environment (Darák, 2007). The fundamental difference between traditional and modern teaching methods is in their understanding of the method as a tool in teaching. Traditional teaching methods emphasize the function of the teacher as organizer and coordinator of the whole learning. The methods only help teacher to fulfil the goals in all three areas. On the other hand, the modern teaching methods are aimed to activate the student.

## CONCLUSION

The context of theoretical and empirical analysis, concludes, that the application of innovative methods in teaching is to secure a constant active involvement not only for students, but all without distinction. It is suitable prefer effortless selection of the pupils themselves to groups, so they can decide themselves in which group they want to cooperate. Teachers should apply more teaching methods in one lesson, and it is also important to avoid stereotypes; it is important adapted methods to individual needs. It is also important to adapt teaching methods into topics covering individual options in a class as whole, then in a preparation for the lesson, and the technical background of a class. In this context, it is necessary to create an environment that would be very motivating and activity-enhancing for pupils all together with help of the school management. The school management should pay attention to class amenities with modern technical facilities which will be in accordance with the teaching methods and enable a more effective education.

The success of students largely depends on how teachers manage and effectively use a variety of teaching methods in their work. The structured and planned activities are currently proved to be more effective than routine and conventional methods. Teaching methods are an essential part of the learning process. It is very important to adapt teaching methods into selected covered topics for teachers. It is necessary to cooperate within the relationship between teacher and pupils for innovative teaching methods. The teacher should encourage his pupils to experiment with ideas. Pupils should learn systematically evaluate new ideas. It is also necessary to ensure pupils with enough space for self-fulfilment, and with a space for peaceful creative thinking. Teachers using innovative teaching methods should be especially friendly to students and try to guide their activity. Teaching methods should be the pillar that supports education and communication.

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## Spiritual Education Module For Out-Of-Wedlock Pregnant Adolescents

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### ABSTRACT

Out-of-wedlock pregnancy among adolescents has become a social issue in today's global society. In Malaysia, statistics (Department of National Statistics of Malaysia) show that in the years 2000-2008, there were 257,000 births registered without father. In the context of the Muslim community in Malaysia, pregnancy outside of legal marriage is something contrary to the norms, moral values, culture and religion of society. Such pregnant adolescents would be placed in a shelter and rehabilitation centre run by the government or an NGO. The aim is to give protection, moral and spiritual support, so that the adolescents may be psychologically restored and they would not repeat the same mistake after the intervention. The purpose of this study is to examine the syllabus of the spiritual education module that has been implemented by a shelter home, the Harapan Secondary School Rehabilitation Centre. An Islamic Practice Instrument (IPIfariza) Questionnaire was administered to 38 pregnant adolescents at the rehabilitation centre which conducted this spiritual education module. Data was analyzed to assess the spiritual level of adolescents after undergoing the intervention process through learning and training in this module. The results of this study show that the level of spirituality among adolescents improved in three categories namely faith, worship and morality. The study also finds that adolescents' knowledge relating to religious and moral values also increased. Overall, the study finds that the spiritual education module has a positive impact on the adolescents' psychology and spirituality.

**Keywords:** *Pregnant out of wedlock, adolescents, spiritual education, religious, moral values*

### INTRODUCTION

In the context of a Muslim nation such as Malaysia, out-of-wedlock pregnancy is something against the norms, values, culture and religion. This issue becomes more critical when youth is involved. They are at risk legally and healthwise (Salasiah, al-Adib & et al, 2012). According to statistics (National Statistics Department of Malaysia), in the years 2000-2008, there were about 257,000 births registered without father. This matter is very worrying for a Muslim society which adheres to the Islamic religion, as illicit sexual relations including pre-marital sex are legally forbidden. According to previous studies, there are some factors which cause adolescents to be sexually involved leading to out-of-wedlock pregnancy (Moni Sheela, A 2013). Among the causes are personal factors, peer pressure, mass media and family (Salasiah, al-Adib & et al, 2012). In addition, there are factors such as free sex, uncontrolled socializing, family problems, environment, peers and media (Mohd Syamil and Adriana Balqis 2010; Ali Mohamed and Sardar Baig 2010; Moore 2001; Brandt et al. 1978; Dev Raj et al. 2010; Weisz and Earls 1995). In Malaysia, there are several local studies which examine the issue of out-of-wedlock pregnancy, such as research by Sarnon et al. (2012), Khadijah et al. (2012), Rusilawati & Khadijah (1995), Salamatussaadah & Nor Bahyah (2009), Salasiah (2012) and Nazirah (2015). Most of them focus on causative factors and rehabilitation through the process of conventional counseling. Only a few touch on the Islamic spiritual approach in the context of prevention

and psychological rehabilitation of unwed pregnant adolescents, whereas the Islamic spiritual approach is essential to restore adolescent psyche with repentance and peace of mind so as not to repeat the mistake (Salasiah, 2012 and Nazirah, 2015). Therefore, this research focuses on the implementation of the Islamic Spiritual Education Module already put into practice in the shelter home for unwed pregnant adolescents, namely, Harapan (hope) Secondary School Rehabilitation Centre in Malacca. This objective of this module is to strengthen spirituality and enhance religious knowledge of the adolescents.

### ISLAMIC SPIRITUAL EDUCATION

The Islamic Religious Department of Malacca (JAIM) established the Harapan (which means Hope) Secondary School for unwed pregnant adolescents to give them protection until they give birth. In this school they are given spiritual guidance and knowledge of religious teachings. In addition, they are also given academic education to enable them to take government examinations. Besides that, they are also given training in sewing and culinary skills for future prospects. The objective of the Islamic Education Module is to build spiritual strength in adolescents who really need it. Based on research, it is found that they need systematic input to build spiritual and intellectual strength. Islamic spiritual education is important to restore their psychological strength which they need after leaving the shelter home so that they will not repeat their mistake. Balance between intellectual and spiritual strength is needed so that they can make sound decisions for their future and enhance their self-esteem. Spiritual and intellectual strength in adolescents based on faith and adherence to religious teachings may be constitute as a protection for adolescents to resist getting involved in social problems (Fariza, 2005). This view is globally affirmed in studies such as Ivztan, Chan, Gardner and Prashar (2013) which find that spirituality and religion correlate positively with life well-being. Thus, the purpose of this research is to understand the psychology of pregnant adolescents and how the Islamic spiritual approach implemented may enhance their intellectual and spiritual strength.

In the Islamic perspective, spirituality is the inner or psychic aspect of man which cannot be seen, felt or heard by the senses. Spirituality is the inner dimension which is part of religion. The relation between religion and the inner element of man is clear according to the view of al-Qaradawi (2001: 13) who explains that religion is something naturally felt by humans as an inner need or urge to affirm that they and their environment have an Almighty God. This feeling is present in the soul. The soul is full of hope, fear, submissiveness and pleading for divine help. Thus, humans surrender their souls to Allah SWT for peace of mind and tranquility.

The characteristic of good spirituality in man's life is equilibrium between physical and spiritual (body and soul). In psychological terms, the creation of man covers both physical and spiritual elements which require to be balanced. Thus, religious consciousness functions to shape man's spirituality in everyday life (H. M. Arifin, 1977: 61). The balance between the two external and internal dimensions results in good behaviour. Due to life based on true religious consciousness, the soul or psyche will gain peace or tranquility. According to al-Ghazali (2000), spirituality is a combination of the components *al-qalb*, *al-ruh*, *al-nafs* and *al-aql*. These four components need to be in equilibrium so that man can achieve peace of mind. Even though spirituality and religion are recognized as a source of psychological strength to overcome psychological disturbances, avoid unhealthy behavior and encourage resilience, they are neglected in psychological training and practice. A qualitative study involving 15 registered psychologists and data analysis using Tesch model, finds that religion and spirituality, though difficult to measure, are assessed and recognized as a mechanism in facing life challenges. (Elkonin 2014: 124).

There are some studies which find that Islamic spiritual education may be used as an approach in psychologically restoring adolescents with problems (Azzyati & Fariza, 2013). According to al-Muhasibi, spiritual education is based on *taqwa* (awe) to Allah and the method of training the psyche, *tazkiyah al-nafs* (Gavin Picken, 2011). *Tazkiyah al-nafs* through *riyadah* al-nafs and *mujahadah* to Allah, cultivates positive aspects in man's self such as *khauf* (fear) and *raja'* (hope), reminds of death and distinguishes between good and evil as well as establishes accountability to Allah SWT through *muraqabah* (self-monitoring). Further according to al-Muhasibi (Gavin Picken, 2011), a good man is one whose soul develops in compliance with Allah's Will. The al-Muhasibi concept of spiritual education offers an alternative method of handling adolescents with psychological issues.

In addition, spiritual education is important for academic achievement. A study by Salasiah Hanin Hamjah et.al (2012) has explained the relation between spiritual practice and student academic achievement. Spiritual practice such as *salatul-hajah* (prayer of need), *qiyamulail* (night vigil), recitation of al-Quran and also congregational prayers are some forms of spiritual practice frequently performed by students which led them to perform very well academically. Hence, this research is for the purpose of studying spiritual education which focuses on practices such as *salah* (prayers), *zikr* (remembrance), *qiyamulail* (night vigil), *tawbah* (repentance) and also teaching of

religious knowledge as applied in the Harapan Secondary School Rehabilitation Centre in Malacca, as well as examining the effect of such education on the level of Islamic knowledge for unwed pregnant adolescents.

### RESEARCH METHODOLOGY

This is a quantitative research with a survey study design. Questionnaires are used as data collection tool. Research respondents are 38 unwed pregnant adolescents at the shelter home, Harapan Secondary School. Selection of respondents is by convenience sampling. A pilot study was done to assess reliability through the method of internal consistency by using Cronbach alpha coefficient and mean score.

Questionnaires distributed used the Islamic Practice Instrument (IPIFariza) developed by Fariza (2012). On the whole, the value of Cronbach alpha obtained for each construct is at 0.986 and mean score in the range of 3.48-3.80. The reliability value for this item is good and acceptable such as discussed by Gliem A. & Gliem R. (2003) and Petterson et al. (2004). As the Cronbach alpha value for all variables exceeds 0.8, and the mean score range exceeds 3.00, this research instrument has acceptable internal consistency and reliability. Analysed data from the questionnaires are analysed and presented in the form of percentage, frequency and mean.

### RESEARCH RESULTS AND DISCUSSION

In terms of respondent background, the minimum age is 15 years (23.7 %, 9 persons) and the maximum age is 21 years (13.2% ,5 persons). Most of them at the shelter are aged 17 years (23.7%, 9 persons). This shows that the unwed adolescent became pregnant as early as 15 years old and most of them became pregnant at age 17 years (Table 1).

**Table 1: Age of Respondents**

Age	Frequency	Percentage
15	3	7.9
16	3	7.9
17	9	23.7
18	6	15.8
19	7	18.4
20	5	13.2
21	5	13.2
<b>Total</b>	<b>38</b>	<b>100.0</b>

Source: Questionnaire 2014

Most of the respondents at the shelter are at secondary school level of education (76.3 %, 29 persons). This shows they were still in secondary school when they were involved in illicit sexual relations leading to out-of-wedlock pregnancy (Table 2).

**Table 2: Respondents' Level of Education**

Highest level of education	Frequency	Percentage %
Secondary school	29	76.3
Technical/Vocational secondary school	2	5.3
Religious secondary school	1	2.6
Institute of higher learning	6	15.8
<b>Total</b>		<b>100.0</b>

Source: Questionnaire 2014

As the purpose of this research is to study the effectiveness of spiritual education implemented at the shelter home, therefore the level of Islamic practice is examined. Mean analysis finds that the highest value of mean score is the practice of *Zikr* (remembrance) and learning religious knowledge (both with mean =4.50), daily saying the *Shahadah* (declaration of faith) (mean=4.42), 5-times daily obligatory prayers (mean=4.20), followed by performance of *Salatul-hajah* (prayer in time of need) (mean=4.10), being trustworthy and accountable when discharging responsibility (mean=4.10), reciting *Bismillah* before doing something (mean=4.00), fasting in month of Ramadhan (mean=3.9) and reciting al-Quran(mean=3.7).

This finding shows respondents agree that spiritual practices such as frequent saying of *Shahadah*, praying 5 times daily, reciting al-Quran, *salatul tawbah, hajah and tahajjud*, making *dua'a*, *zikr* and reading religious books lead to repentance so as not to repeat past mistakes and also help them to be better practicing Muslims. This shows that the spiritual practices emphasized in the shelter home, Harapan Secondary School in Malacca are suitable and should be continued to return adolescents to the true Islamic path and gain peace of mind to carry on life in the society.

This research finds that the studies by Salasiah (2012) and Nazirah(2015) which find that the spiritual practice approach may help adolescents to feel remorse and repent and not repeat the same mistake. Other studies prove that a spiritual approach may help in dealing with adolescent social problems, such as studies by Siti Labibah 2008, Fariza, 2005 and Azzyaty 2013). Ahmad Hisham (2009) in his study also finds that spiritual education, specifically prayers, are effective in overcoming the problem of anxiety among students. The same finding is obtained by Fatimah Ibrahim et al. (2008) in their study which finds that the *ibadah* (act of worship), i.e., *salah* (prayers) result in calmness in the human brain. This calmness reached its maximum just before a person moves to prostrate position in prayer. A study by Nor Azah (2011) on 50 tahfiz (al-Quran memorization) students also show reduced blood pressure after performing obligatory prayers compared to before prayers. The blood pressure is at normal level and represents a peaceful stress-free state after performing obligatory prayers. Likewise, in a study by Asmah Bee(2001) which finds that the practices of *dua'a* and *zikr* help to reduce the level of depression in school adolescents. All the related previous studies clearly show that spiritual education helps in management of adolescent emotional stress such as anxiety, disappointment, stress, depression and sadness.

Research results prove that Islamic spiritual practice bears the same concept as applying Islamic teachings in life. The only difference is that spiritual practice is more focused on individual practice and is specifically related to building peace of mind. It is also related to the process of developing confidence for interrelations in life. In summary, religion is a tradition of certain teachings, whereas spirituality is the result of experience which arises from self-exploration of inner values in the quest for truth and peace. This is also proven in a study by Linda K.& et.all (2000 : 105) which shows that scientific research on religion and spirituality uncovered both cultural similarity and differences in meaning. Both spirituality and religion focus on sacred beliefs, sacred treasury, effect of belief on behavior, and practice used to achieve or enhance virtuosity in life. The difference is that religion is associated with formal religious institution, whereas spirituality does not depend on the collective context or institution. Most issues of spirituality in the West also discuss religious practice as synonymous with spiritual practice ( Galanter, M 2011). Therefore, this clearly shows that spiritual education for adolescents becomes increasingly important and relevant in the present time to build psychological strength in facing challenges of adolescence.



ITEM	FREQUENCY AND PERCENTAGE					MEAN
	1 STB	2 TB	3 TP	4 B	5 SB	
I say <i>Shahadah</i> (declaration of faith) daily in my life.	1 2.6	0 0	4 10.5	10 26.3	23 60.5	4.42
I study religious knowledge to practise in my life.	2 5.3	0 0	0 0	11 28.9	25 65.8	4.50
I do <i>Zikr</i> (remembrance in meditation) for peace of mind.	2 5.3	0 0	1 2.6	9 23.7	26 68.4	4.50
I do 5 times daily prayers wherever I may be.	4 10.5	3 7.9	6 15.8	14 36.8	11 28.9	3.6
Every day I get up for <i>Subh</i> prayers.	2 5.3	2 5.3	4 10.5	9 23.7	21 55.3	4.1
Every day I perform <i>Zuhr</i> prayers.	2 5.3	2 5.3	3 7.9	9 23.7	22 57.9	4.2
Every day I perform <i>Asr</i> prayers.	2 5.3	2 5.3	5 13.2	8 21.1	21 55.3	4.1
Every day I perform <i>Maghrib</i> prayers.	2 5.3	2 5.3	2 5.3	10 26.3	22 57.9	4.2
Every day I perform <i>Isyak</i> prayers.	2 5.3	4 10.5	3 7.9	9 23.7	20 52.6	4.0
I frequently pray in congregation.	4 10.5	0 0	7 18.4	8 21.1	19 50.0	4.0
I frequently perform <i>Tahajjud</i> when I feel not so good.	3 7.9	4 10.5	11 28.9	17 44.7	3 7.9	3.3
I perform <i>Sujood ul sahw</i> (prostration for forgetfulness) for the missed <i>Rakaat</i> (units of prayer).	4 10.5	5 13.2	7 18.4	10 26.3	12 31.6	3.5
I recite Al-Quran daily for peace of mind.	2 5.3	2 5.3	12 31.6	9 23.7	13 34.2	3.7
I fast in <i>Ramadan</i> even though exhausted.	3 7.9	0 0	8 21.1	12 31.6	15 39.5	3.9
I fast <i>Sunnah</i> (recommended) on Mondays and Thursdays.	4 10.5	3 7.9	12 31.6	13 34.2	6 15.8	3.3
I perform <i>Salatul-hajah</i> (prayer in time of need) to request from Allah.	3 7.9	0 0	7 18.4	8 21.1	20 52.6	4.1
I have performed <i>Umrah</i> (recommended lesser pilgrimage) in Mecca.	1 23.7	13 34.2	11 28.9	2 5.3	3 7.9	2.1
I obey Allah's commandments in any situation.	4 10.5	1 2.6	15 39.5	9 23.7	9 23.7	3.4
I say <i>Bismillah</i> ( in the name of Allah..) before doing something.	2 5.3	0 0	6 15.8	17 44.7	13 34.2	4.0
I fear committing matters that religion forbids.	1 2.6	2 5.3	9 23.7	16 42.1	10 26.3	3.84
I practice religious teachings to avoid social ills.	2 5.3	2 5.3	6 15.8	15 39.5	13 34.2	3.92
I do everything conscientiously (with full trustworthiness and	2 5.3	2 5.3	4 10.5	12 31.6	18 47.4	4.1

accountability) because each act is an <i>Ibadah</i> (worship) to Allah S.W.T						
I make <i>Wudu'</i> (partial ablution) as a habit in my daily routine.	1 2.6	3 7.9	10 26.3	9 23.7	15 39.5	3.89
I answer <i>Adhan</i> (call to prayer) while it is being recited.	2 5.3	4 10.3	9 23.7	9 23.7	14 36.8	3.76
I perform <i>Eid</i> (Muslim festivals) prayers every year.	6 15.8	9 23.7	14 36.8	4 10.5	5 13.2	2.81
I recite <i>Dua'a</i> (supplicatory prayers) each time I go out of the house.	5 13.2	9 23.7	14 36.8	6 15.8	4 10.5	2.86
I recite <i>surah Yasin</i> regularly.	1 2.6	4 10.5	8 21.1	12 31.6	13 34.2	3.84
I implement <i>Jamak wa Qasar</i> (combining and shortening) prayers when I travel.	4 10.5	9 23.7	14 36.8	7 18.4	4 10.5	2.94
I participate in slaughter and <i>qurban</i> (means of approaching Allah through sacrifice of animal) activities.	8 21.1	7 18.4	12 31.6	7 18.4	4 10.5	2.78
I help in funeral services when a death occurs.	7 18.4	10 26.3	15 39.5	5 13.2	1 2.6	2.55

**Table 3: Islamic Spiritual Practice of Unwed Pregnant Adolescents**

Source: Questionnaire 2014

## CONCLUSION

This research finds that the spiritual education practised by unwed pregnant adolescents at the shelter home, Harapan Secondary School Rehabilitation Centre in Malacca are 5-times daily prayers, frequent saying of *shahadah*, reciting of al-Quran, *salatul tawbah*, *salatul hajjah*, *salatul tahajjud*, *dua'a*, *zikr*, reading religious books, fasting in the month Ramadhan and cultivating *akhlaq* (good moral character) traits such as *amanah* (trustworthiness). Spiritual education is admitted by respondents as making them repentant, and providing peace and emotional stability. Research results also show that practice of spiritual education has positive effects on respondents in vigilantly keeping up spiritual practices such as obligatory and *sunnah* prayers, *zikr*, fasting and reciting al-Quran. In addition, respondents feel encouraged to strive in keeping up good behaviour. Thus, research results show that the spiritual education module implemented at Harapan Secondary School Rehabilitation Centre has positive effects on unwed pregnant adolescents.

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## Sport Risk Management Competence Coaches Institute Of Teacher Education

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### ABSTRACT

It is important to risk management in the sports industry to provide and ensure a safe environment for every sports programme. Sports risk management seeks to control, prevent and minimise the risk of accidents and injuries. Developed countries such as Australia and the United Kingdom have adopted a standard risk management model. The model shows an organisation that offers programmes or sports activities, requires a coach or instructor who has basic knowledge of the theory of competence and a clear philosophy, is skilled and has a proper attitude to handle the programme. This study was conducted to identify risk management competencies among sports coaches at the Institute of Teacher Education. Respondents (N=159) completed a questionnaire and data analysis of this pilot study were completed using the Rasch measurement model by implementing four diagnosis for the purpose of examining the functionality of the item. Findings of the pilot analysis show that Cronbach alpha reliability and trustworthiness of individuals was 0.99 (very good) and reliability of the items was 0.75 indicating a good level of reliability. Responses were also analysed using the Rasch model. The results of this model show competent coaches of Risk Management Practices and Dominant agreed that sports are composed of knowledge, skills, and attitudes.

**Keywords:** sport; risk management; competence;

### INTRODUCTION

In Malaysia there are thousands of students in schools and institutions of higher education involved in sports as well as exposed to risk. Nohr (2009) notes that every sport and recreational activity is risky. Athletes, coaches, officials, spectators and innocent bystanders may be injured by hazards such as balls, slippery floors, and In addition, risk management is a decision-making process and involves implementation in order to reduce injury and loss and its impact on the organisation of sports (Nohr, 2009). Therefore, students need competent sport coaches to mitigate the risk management venture.

The literature review revealed that the implementation of sports programmes is very effective when the instructor or programme manager has a basic knowledge of the theory of competence and a clear philosophy, is skilled and has the characteristics of an appropriate attitude to run the programme (McKenzie, 2000; Neill, 2004). Even in some countries, especially in the United States, Australia and the United Kingdom, qualifications and accreditation for the sports programme leader is very important. So much so that almost all major organisations that have sports and recreation programmes require all coaches or facilitators of sports programme to be accredited before being hired (Priest and Gass, 1997). Moreover, leaders who have competent knowledge and understanding of basic theory and possess a clear philosophy, positive attitude for various skills and an enthusiasm for the sport are essential to ensure that an exercise programme can be successfully managed. This is what secures the sports programme at the Institute of Teacher Education.

Sports risk management is important for providing a safe environment for sports programmes and sports organisations can reduce legal liability and improve the organisation's reputation by appropriately managing their sport programmes. Sports risk management is used to prevent and minimise accidents in sports. (Rejda 2011, Hsiu-Chin and Chao-Chein 2010; dan Ang 2007). Developed countries have adopted a standard risk management model. For example, beginning in 1999, Australia created a model of risk management standard *Guidelines for the Safe Conduct of Sport and Physical Activity in Schools* (Sobski 1999). The United Kingdom also has a special standard of risk management including *Safety in Sport: Guidance for UK National Governing Bodies* which was adopted in 1999 (Fuller 1999). In April 2005, The Management of Safety in Physical Education and Outdoor activities was adopted by WHO; the Risk Management Guide for Community Sport Organisation adopted from 2010 (Laroche and Corbett 2010). It shows an organisation that offers programmes or sports activities, values sports risk management model and shows that there should be a standard model (Mustaffa 2013). However, in educational institutions in Malaysia, there is no standard sports risk management competency model that can be used by teachers, lecturers and administrators to create zero-risk in sports and increase community involvement in sports. This study was conducted to identify risk management competencies of sport coaches at the Institute of Teacher Education. Sports risk management competence involves knowledge, skills and attitudes.

### PROBLEM STATEMENT

In preparing competent coaches for sports risk management, a reference to the criteria of aspects or characteristics of risk management competencies appropriate for sports is required. In risk management, the risk of negligence and concerns may often be the main issue for parents and guardians filing a suit against the teacher and the school. In the case of being sued, teachers will usually serve as the main defendant in a case brought by the plaintiff's parents, principals serve as the second defendant and the Malaysian government as third defendant. (Tie, 2004). This requires that all parties at the school especially school administrators and lecturers, are involved in practice risk management (Zimmerman, 2007) and are sensitive to the regulations, acts and circulars from the Ministry of Education for the purpose of protection.

According to Comer (1998), among the methods to prevent and protect the risk management problem, the design model of risk management practice can be used as a guideline. The planning model is geared toward the aspects of prevention, protection and security for the school to be free of negative elements (Abdul Razak, Ismail and Panting 2009; Che Lah 2009) such as injuries during sports programmes.

Practicing safety risk management is an approach that focuses on employee behaviour as a cause of work-related injuries and illnesses. According to Shaw (2005), 80-96% of workplace injuries are caused by behaviour or unsafe practices. In Australia, the employees behaving in an "unsafe" manner are identified, and persuaded, advised and asked to behave "safe" at work or face dismissal (Thatcher, 2006; Sekendiz, 2011).

According to Ehsani and Version (2012) risk management practices is a new problem that requires a competent coach who possesses aspects of knowledge, skills and attitudes to achieve good performance in risk management for the organisation. Sports leaders and coaches must be educated in the field of sports and have the training and experience to competently manage the risks, and implement sport risk management practices (SRMP) in terms of identification, evaluation, election operations, and implementation.

### THE PURPOSE OF THE STUDY

This study was conducted to identify risk management competencies among sport coaches at the Institute of Teacher Education. Sports Risk Management competence involves knowledge, skills and attitudes.

### THE OBJECTIVE OF THE STUDY

This research aims to achieve the following objectives:

Identify the level of risk management competency among sport coaches.


Identify the dominant competence for risk management of sports coaches

### THE RESEARCH METHODOLOGY

This study is a review done by identifying research problems and determining the objectives and scope of the study. The research instrument was a questionnaire and data analysis for this pilot study were conducted using the Rasch measurement model implementing four diagnosis for the purpose of examining the functionality of the item. The findings of the pilot analysis show that Cronbach's alpha reliability and trustworthiness of individuals was 0.99 (very good) and the reliability of the items was 0.75 indicating a good level of reliability. In addition, the dominant factors for risk management competencies was analysed using the Rasch model approach.

### THE FINDINGS OF THE STUDY

Table 6.1 Overall Analysis Coaches Level Agreement Concerning SRMP Construct

Construct	Mean Measurement	Mean Score	Level	Mean Sequence	Factor
Attitude	-0.16	4.29	High		
Knowledge	-0.15	4.28	High		
Skill	0.16	4.17	High		

Based on an analysis of the level of competence of *knowledge* for SRMP coaches, Table 6.1 shows the overall size of the mean measure of -0.15 logit and the mean score was 4.28. This finding suggests that having a working knowledge based on Maslow's hierarchy of needs (KP1), the ability to explain the role to be performed by each member of the group (KP2), having knowledge of conflict resolution (KP3), an understanding of the procedure of action during the activity (KP4), being knowledgeable about the appropriateness of activities undertaken within their means (KP5), having a trainer who explains the methods to reduce the risk (KP6), and the activity skills taught in proper progression (KP7) were affirmed by respondents with high SRMP.



Label	Competence Knowledge	Mean measure (logit)	Mean score	Level
KP1	Have a working knowledge based on Maslow's hierarchy of needs	0.02	4.226	High
KP2	Be able to explain the role to be performed by each member of the group	-0.22	4.314	High
KP3	Have conflict resolution knowledge	-0.03	4.245	High
KP4	Understand the procedure or action during activity	-0.33	3.956	High
KP5	Be knowledgeable about the appropriateness of activities undertaken within their	-0.18	4.302	High
KP6	Trainer explains the methods to reduce the risk	-0.06	4.258	High
KP7	Activity/skills taught in proper progression	-0.24	4.321	High

Analysis of the level of competence of SRMP is displayed in Table 6.2. Respondents with the highest level of contribution to practice had a mean measure of 0.02 logit and minimum score of 4.226, agreed that it was important to have working knowledge competency and knowledge based on Maslow's hierarchy of needs. Furthermore, having competent knowledge and capable of explaining the role to be performed by each member of the group had a mean measure of 0.22 logit and a mean score of 4.314. Having knowledge of conflict resolution (mean measure equal to 0.03 logit, mean score of 4.245), understanding the activities carried out during the procedure or action (mean measure of 0.33 logit, mean score of 3.956), being knowledgeable about the appropriateness of the activities undertaken based on ability (mean measure of 0.18 logit, mean score of 4.302), having the trainer explain the methods to reduce the risk (mean measure of 0.06 logit, mean score of 4.258) and having activity/skills taught in proper progression (mean measure of 0.24 logit, mean score of 4.321) also had high levels of agreement.

Table 6.2: Level of Competence Knowledge coaches Against the SRMP.

Based on an analysis of the level of competence skills for SRMP coaches, Table 6.1 shows the overall size of the mean measure 0.16 logit and a mean score of 4.17. This finding (Table 6.3) indicates that there is a maturity of judgment in managing risks appropriately. This finding also indicates that respondents with a high level of SRMP agreed that having a maturity of judgment in managing risks appropriately (KK1), demonstrating specific skills related to activities conducted (KK2), being skilled in the techniques of regulation of body temperature (KK3), having the skills to obtain feedback (KK4), being skilled at designing forms of activity with different intensity. (KK5), the ability to plan activities according to the abilities of each participant (KK6), having the skills to consider the resources available in schools and communities (KK7) and modifying abilities of regulatory activities by skill level for joint activities (KK8) are important for risk management in sports.

Table 6.3: Level of Competence Skills Coaches Against the SRMP.

Label	Competence Skills	Mean measure (logit)	Mean score	Level
KK1	Having the maturity of judgment in managing risks appropriately	0.25	4.138	High
KK2	Demonstrating specific skills related to activities conducted	0.04	4.220	High
KK3	Skilled in the techniques of regulation of body temperature	0.40	4.075	High
KK4	Having the skills to obtain feedback	0.14	4.182	High
KK5	Skilled in designing forms of activity with different intensities	0.14	4.182	High
KK6	The ability to plan activities according to the abilities of each participant	0.07	4.208	High
KK7	Skilled in considering the resources available in schools and communities.	0.26	4.139	High
KK8	Modifying abilities of regulatory activities by skill level for joint activities	-0.01	4.239	High

The results of the analysis of the level of competence of SRMP skills is displayed in Table 6.3. For competence having mature judgment in managing risks appropriately, was affirmed by respondents at the highest level of practice (mean measure of 0.25 logit, mean score of 4.138). Next, respondents agreed that competence skills can show specific skills related to activities undertaken (0.04 minimum measure and mean score of 4.220), skilled technical competence in regulation of body temperature (mean measure of 0.40 logit, mean score of 4.075), having the skills to obtain feedback (mean measure of 0.14 logit, mean score of 4.182), the ability to plan activities according to the abilities of each participant (mean measure of 0.07 logit, mean score of 4.208), being skilled considering the resources available in the school and community (mean measure of 0.26 logit, mean score of 4.139) and modifying abilities of regulatory activities by skill level for joint activities (mean measure of 0.01 logit, mean score of 4.239) were important for risk management in sports.

Based on the analysis of the competence of the coach's *attitude* toward SRMP, Table 6.1 shows an overall mean measure value of -0.16 logit and a mean score of 4.29. A detailed analysis of the level of competence regarding attitudes towards SRMP is displayed in Table 6.4. The finding (Table 6.4) indicates that respondents agreed that being physically fit to manage risk (KS1), the ability to provide meaning to risk management (KS2), being capable of motivating the control programme (KS3), always being rewarded for performance (KS4), the opportunity to improve performance in carrying out one's duties (KS5) and always being positive with workload (KS6) can have an impact on SRMP.

Table 6.4: Level of Competence Attitude Toward coaches SRMP.

Label	Competence Attitude	Mean measure (logit)	Mean score	Level
KS1	Be physically fit to manage risks.	0.06	4.214	High
KS2	The ability to provide meaningful risk management.	-0.06	4.258	High
KS3	Be capable of motivating the control programme	0.01	4.233	High
KS4	Always being rewarded for performance	-0.33	4.352	High
KS5	Opportunity to improve performance in carrying out one's duties	-0.13	4.302	High
KS6	Always being positive with workload	-0.42	4.384	High

Competence analysis regarding attitude toward SRMP is displayed in detail in Table 6.4. Respondents agreed that most important for an attitude of competence was being physically fit to manage risk (mean measure of 0.06 logit and mean score of 4.214). Next, competence and attitude are capable of giving meaning to risk management (mean measure of -0.06 logit, mean score of 4.258), capable of motivating the control programme (mean measure of 0.01 logit, mean score of 4.233), always rewarded for performance (mean measure of -0.33 logit, mean score of 4.352), the opportunity to improve performance in carrying out one's duties (mean measure of -0.13 logit, mean score of 4.302), and always being positive with the workload (mean measure of -0.42 logit, mean score of 4.384) as well as a high degree of consensus.

## 7.0 Discussion

Risk management practices adopted by the Institute of Teacher Education coaches can have implications for their competence in risk management. The implication is that this study provides a good impression of the problem, namely knowledge, skills and a positive attitude. Based on the analysis carried out, the role of SRMP in providing implicationtasks for coaches involves several steps.

### 7.1 Knowledge competencies coach to SRMP.

The analysis was carried out to shed light on how respondents felt about the implications of risk management in their practice. Results show that knowledge affects SRMP; this statement parallels Berlonghi (1990), Clement (1998) and Kaiser (1986) who recognise the importance of knowledge as a key contributor to SRMP. Stephen and James (2012) emphasise the importance of coaches that have personal knowledge through training, professional qualifications and work experience of at least 6 months in the field of sports and safety. Aaron (2004), Vaughan (1997) and Gray and Crowell (1993) describe that personal knowledge of the sport and risk management will help with SRMP implementation. According to Bezdicek (2009) and Vaughan (1997) previous studies have shown that lack of knowledge to performance risk management exercises in a particular programme, activity or sport can lead to negligence lawsuits. Zimmerman (2007) explains the inconsistent SRMP, will not protect the personnel exercise of a lawsuit from applicable risks. Therefore, these knowledge competencies can be great contributions for the coach in the SRMP.

### 7.2 Competence skills coaches to SRMP.

Trainer skills in implementing risk management can be improved in parallel with sports competence to practice their skills through practical observation and imitation of the behaviour of others. These statements are based on the results of the analysis carried out. Respondents agreed that competence skills can improve RMP in doing practical work. This statement is in line with Attarian (2012) and Dimitriadi and Dimitriad (2007) states only personal qualifications and skills required to manage sports equipment technically and different activities to ensure a safe exercise programme.

According Attarian (2012) and Nohr (2009), through competency skills, implications for practice said to be very big task in developing human resources that are skilled and skilled workers. Therefore SRMP adopted and implemented by the coach can have a big impact on the competence of their skills in mastering risk management practices.

### 7.3 Competence attitude coaches to SRMP

Respondents in this study agree with giving their perceptions of a more positive attitude change at a high level of SRMP practiced. SRMP through constructs such as identification, evaluation, selection, operation, and implementation can contribute to change coach's attitudes. According to Bezdicek (2009), stated attitudes towards risk management practices are positively increased towards more knowledge and experience in the field of risk management tasks. Miller and Rushing (2002) also describe that one's attitude towards risk management is more positive when the individual has knowledge of the legal action that may be taken against those who are careless in developing and implementing risk management in sports programmes and activities in their organisations.

The findings of the study conducted by Hann (2006) found that attitudes toward the safety of individuals will be positive if the organisation creates a continuous and systematic process of risk management to improve the attitudes of employees in risk management practices. According to Dewey (1993), positive thinking should be outward, through the act of facilitating the teaching and learning process. Therefore, attitude can have a significant impact on SRMP.

## 8.0 Conclusion.

In this study, the construct of coach's competence is more prominent for risk management exercise as identified through an attitude of competence, knowledge and skills. Sports organisations require competent coaches who possess knowledge, skills and attitudes to achieve good performance in risk management. Coaches who are able to appropriately manage sports risk can ensure a safe environment and sports programmes can improve athletic performance.

## 9.0 Acknowledgement

- a) University of Tun Hussein Onn Malaysia.
- b) Research, Innovation, Commercialization & Consultancy Office
- c) Vot E047

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## Student's Perception About Online Interaction, Access And Publishing Content For Academic Use

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### ABSTRACT

In this document we show preliminary results of the Students's perception about their level of ICT competencies in public secondary schools in Veracruz, Mexico. It was a quantitative study using a survey applied to 979 students from two schools. Survey was composed of 72 items. Preliminary results indicate a low level of ICT use in the students of secondary schools in the city of Veracruz related with online interactions, access and publishing content for academic use.

**Keywords:** ICT, secondary schools, teaching-learning, online interaction, ICT skills, digital divide, digital natives.

### INTRODUCTION

In recent years, ICT has taken an important role in our society and are used in a multitude of activities. ICT are already part of most sectors: education, robotics, public administration, employment, business, health.

The use of Information Technology and Communication (ICT), leading to our current information society, represents one of the most refreshing proposals for current education systems, through which key project elements around the transformation of various processes in traditional formal education (Galindo, 2011).

The technological advance developed in the last two decades in terms of communication / information, makes clear that social life is changing significantly the degree of also get involved in educational institutions despite the strength of its integrated systems on them (Galindo, 2011).

In this article, we particularly deal with gaps in competencies or skills using ICT, analyzing the factors that explain the skills and characteristics that may determine different levels of ICT competencies.

### THEORETICAL FRAMEWORK

#### ICT and secondary education.

The case of ICT also raises an issue of particular relevance: the so-called digital divide. This term is used when considering the differences between different groups of people, in their knowledge and mastery of new technologies. These differences may be influenced by socioeconomic factors (for example, there is strong contrast between the developed countries and third world), or other issues such as age and gender. Regarding the latter, it may be of interest exposed by Prensky 2001, who speak of the natives and digital immigrants. So, we can say that Information and Communications Technology (ICT) is an educational tool unprecedented (Pantoja, & Huertas, 2010). Never before, the students had received such a volume of information. However, information is not equal to knowledge, so ICT only can help to improve education for students if teachers know how to take advantage. The problem is that ICT are an underutilized resource in teaching and their integration could open the door to a new era of education. ICT has only just come to the classroom, but it point the way to a profound transformation of the educational model that will involve both students and teachers (Pantoja, & Huertas, 2010). Therefore, an increasing number of countries have accepted the need to introduce compulsory education in a formative dimension that provides young people with the necessary keys to understand the technology.



### Factors explaining the gaps in ICT skills.

Digital Divide concept is not only related to ICT access, but also with the ability to use these technologies; ie, skills or abilities that the population need to acquire for the use of ICT and their effective use in different areas such as: entertainment, communication, education, etc. (Matamala, 2015). The gap is not only limited to physical access, but also to how people use ICT. Such gaps, is what has been called gaps second order (Matamala, 2015), so this refers to the proper use of ICT in all areas. Generational changes have shown that not all human beings are able to incorporate the order of the material discourse that build ICT: they are not just teachers, to name a collective considered central to our society who refuse to arrival at use and application of ICT in the classroom or your life. It has been already shown that generational changes do not always get along with technologies, especially if they affect significantly on the processes of socialization and training of human beings (León & Caudillo, 2014). Today in Mexico, the digital divide is made up of about 70% of the total population with large asymmetries depending of ICT penetration in urban and rural areas; whereas in 630 major urban areas 30% of its population has Internet access in rural areas only 6% of its population (5.9 million households) have a computer and 3% are connected to Internet. According to the National Statistical Institute of Mexico (INEGI), these data are due primarily to the lack of financial resources (INEGI, 2013). We can establish that there are gaps in ICT competencies of secondary school students as socioeconomic level, years of computer use, frequency of computer use and level of confidence in the use of computers, coinciding with the factors that have been identified in previous studies about gaps in the use of ICT (Matamala, 2015). Some key elements to promote ICT competencies and also reduce Digital Divide could consider including computers in the early years of teaching and promote students' confidence in using computers (Matamala, 2015).

### Digital natives.

The popular concept of "digital natives" came in 2001 when a new media analyst wrote an article titled "Digital Natives, Digital Immigrants". The purpose of this study was to analyze the changes among college students due to influence of technology. Prensky, the author, proposed a distinction between citizens who were born after the digital revolution and those who had done before (Crovi, 2010). His proposal evolved and eventually led to the digital natives identify with those who were born and raised in times of internet (Crovi, 2010). The young generation has been born immersed in the development of new technologies, produced during the last decades of the twentieth century, is the generation of digital natives. Those people is clearly identified by the use of social networks, computer games, Internet, cell phone or instant messaging as an integral part of their lives (León & Caudillo, 2014). In addition, the uses of ICT is altering people in many ways, the mindset of this generation has changed and is different from their elders. By contrast, people who are not born immersed in this environment of new technologies, but they are forced to use them, are called technological immigrants. This is a generation that, we could say they naturally not speak the language of the new technologies (León & Caudillo, 2014). If for these technologies are digital native mother tongue, for the digital immigrant is a foreign language, and hence multiple times prove a certain accent. These differences between the native and digital immigrant pose a challenge from an educational point of view and protector, because often parents and teachers are overwhelmed by smaller in handling new media (Crovi, 2010). So, it means there are huge differences between the current generations, because the teachers who are teaching to the students do not born with these technologies. And the new generation of teachers should learn how to use ICT to teach. In this sense, also the digital native should learn how to study using this technology. Therefore, it is very important to study the situation that we are experiencing in the schools about the process of incorporating ICT in the teaching-learning method. Also is relevant to take in consideration new studies dedicated to understanding the forms and processes to operate in environments characterized by teachers who were forced to adapt to the use of technology with students who were born with it. In this sense, the analysis of ICT competencies in students and teachers was established as a mechanism to help understand and define strategies for improving the quality of education strategies and thereby reduce the digital divide.

### METHODOLOGY

The origin of this report came from a research project between two Mexican universities: Technological Institute of Sonora (ITSON) and Veracruzana University (UV) in order to make comparative analysis between the perceptions of students at the secondary level. For this reason was considered secondary schools in Sonora and Veracruz. In Table 1 shows detail information about the sample of 979 students. The quantitative instrument was composed by 178 items. However, in this document we will show the preliminary results of just 72 items of the secondary schools in Veracruz City. In this document we present the results of two dimensions: On line interaction and Access and Publication of Contents. The results were obtained using the statistical program SPSS 21. The analytic strategy used was to show the descriptive statistics of the overall results with respect to the frequencies in selected dimensions

**Table 1. Statistic by gender**

Name of institution	Gender		Total
	Male	Female	
<b>Industrial Technical School # 1 (ITS #1)</b>	<b>264</b>	<b>323</b>	<b>587</b>
<b>Secondary General Miguel Alemán #5</b>	<b>188</b>	<b>204</b>	<b>392</b>
<b>Total</b>	<b>452</b>	<b>527</b>	<b>979</b>

## RESULTS

### Online interaction

In Figure 1 and Table 2, we show the results about online interaction (OL) dimension. By type of activities used by students regarding the dimension of online interaction in the first item related to use of e-mail and virtual forum to exchange academic views with peers and teachers, the perception of the students about the competencies level, showed 43.1% consider themselves as no competent, meanwhile 56.9% of the students consider themselves as competent students. Referring to the item of use social networks to exchange academic information considered 42.8% students consider themselves as no competent and 57.2% of students consider themselves as competent students. The item using discussion forums to ask questions and research problems, was selected by 49.3% students consider themselves as no competent and 50.7% of students are auto considered as competent students. On the other hand, operating working groups to develop research online, in terms of the range of percentages as in the previous case the results are very similar and that this time the results were more balanced, with 49.1% students consider themselves as no competent and 50.9% of students consider themselves as competent students. Referring to use software for sharing information on the network with peers and teachers, the result obtained was by 43.3% students consider themselves as no competent and 56.7% of students consider themselves as competent students. Regarding using the Chat and online discussion forums to discuss academic papers, the results show 47.3% students consider themselves as no competent and 52.7% of students are auto considered as competent students. In item, use telecommunications for interaction, publishing and collaborating with other students, an incidence of 46.3% students consider themselves as no competent and 53.7% of students consider themselves as competent students. As to online Work collaboratively with other students, the frequency of percentages presents results of 46.6% students consider themselves as no competent and 53.4% of students consider themselves as competent students. In the case of communicate information through digital media as Chat, online forums, among others, the range of percentages exhibits behavior of 40.2% students consider themselves as no competent and 59.8% of students consider themselves as competent students. To connect with students from other parts of the country itself and other countries, showing a full turn to all results, with 64.7% students consider themselves as no competent and 35.3% of students consider themselves as competent students. For the Item about manage platforms for interaction with peers and teachers, 62.2% students consider themselves as no competent and 37.8% of students consider themselves as competent students. In the other hand, about the item using technology platforms where doubts with teachers and classmates are clarified, I got the same incidence of the above two cases showing some degree of non-competition this time represented with 61.5% students consider themselves as no competent and 38.5% of students consider themselves as competent students. About the item of using digital formats to communicate information to various audiences, 56.1% students consider themselves as no competent and 43.9% of students consider themselves as competent students. Use free software to work with teachers and students in learning, was selected by 54.2% students consider themselves as no competent and 45.8% of students consider themselves as competent students. Finally, the item use using social networks to collaborate with students and teachers in sharing videos, comments, Chat, among others, returning results to the frequency on the above results favoring competition among students, with 42.3% students consider themselves as no competent and 57.7% of students consider themselves as competent students.

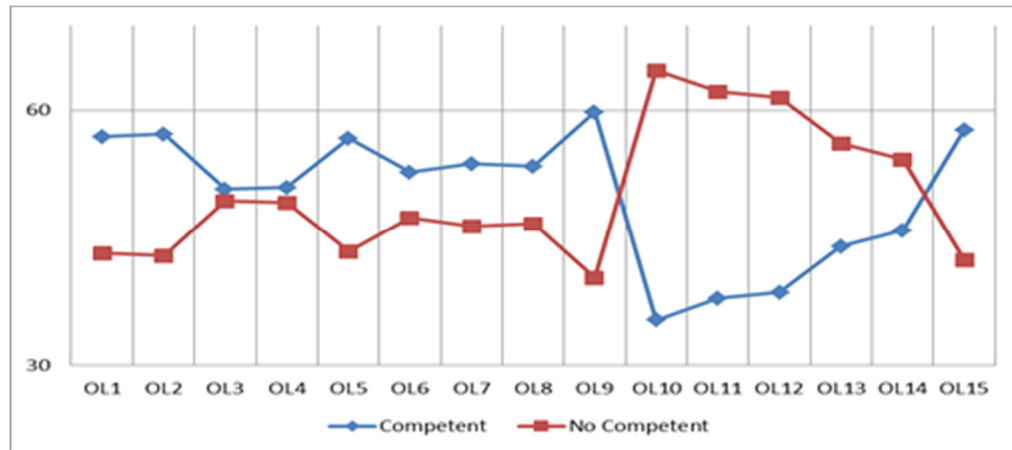


Figure 1. Competencies Online Interaction.

Table 2. Competencies On-Line Interaction.

	No Competent	Competent
OL1 Use of e-mail and virtual forum to exchange academic views with peers and teachers.	43.1%	56.9%
OL2 Use social networks to exchange academic information.	42.8%	57.2%
OL3 Using discussion forums to ask questions and research problems.	49.35	50.7%
OL4 Operating working groups to develop research online.	49.1%	50.9%
OL5 Use software for sharing information on the network with peers and teachers.	43.3%	56.7%
OL6 Using the Chat and online discussion forums to discuss academic papers.	47.3%	52.7%
OL7 Use telecommunications for interaction, publishing and collaborating with other students.	46.3%	53.7%
OL8 Online Work collaboratively with other students.	46.6%	53.4%
OL9 Communicate information through digital media as Chat, online forums, among others.	40.2%	59.8%
OL10 Connect with students from other parts of the country itself and other countries.	64.7%	35.3%
OL11 Manage platforms for interaction with peers and teachers.	62.2%	37.8%
OL12 Using technology platforms where doubts with teachers and classmates.	61.5%	38.5%
OL13 Using digital formats to communicate information to various audiences.	56.1%	43.9%
OL14 Use free software to work with teachers and students in learning.	54.2%	45.8%

OL15 Using social networks to collaborate with students and teachers in sharing videos, comments, Chat, among others.	42.3%	57.7%
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#### 4.2 Access and publishing content

In Figure 2 and Table 3, we show the results about access and publishing content (AP) dimension. For the dimension access and publishing content, in the item related to evaluate academic content and electronic bibliography from Internet in the distribution percentages detail the results with 48% students consider themselves as no competent and 52% of students consider themselves as competent students. While using technology platforms for accessing content, presents a similar balance with 47.6% students consider themselves as no competent and 52.4% of students consider themselves as competent students. Continuing with the analysis of results in the item of publish academic content in educational blogs, is represented by a corresponding result to 57.5% students consider themselves as no competent and 42.5% of students consider themselves as competent students. Referring to organize, process and discriminate the information gathered from the Internet to communicate results indicates that there are similarities with respect to the degree of competitiveness and incompetence with only 49.8% students consider themselves as no competent and 50.2% of students consider themselves as competent students. On the other hand the same way as above in item publish academic work through some means: website, slideshare, etc. showing slight similarity 49% students consider themselves as no competent and 51% of students consider themselves as competent students. Use educational platforms to send jobs mark the same features as the previous results only marking contrary no difference favoring competition, shows a result of 50.6% students consider themselves as no competent and 49.4% of students consider themselves as competent students. As for handle virtual communication channels (messaging, forums, Weblogs, Wikis, etc.) to share content denotes a different distribution of results obtained with 45.9% students consider themselves as no competent and 54.1% of students consider themselves as competent students. Finally the next representative for the item web pages operated to upload academic papers value was different from the previous case due to the difference that most percentage was not competent for the option with 53.2% students consider themselves as no competent and 46.8% of students consider themselves as competent students.

Figure 2. Competencies Access and Publishing Content

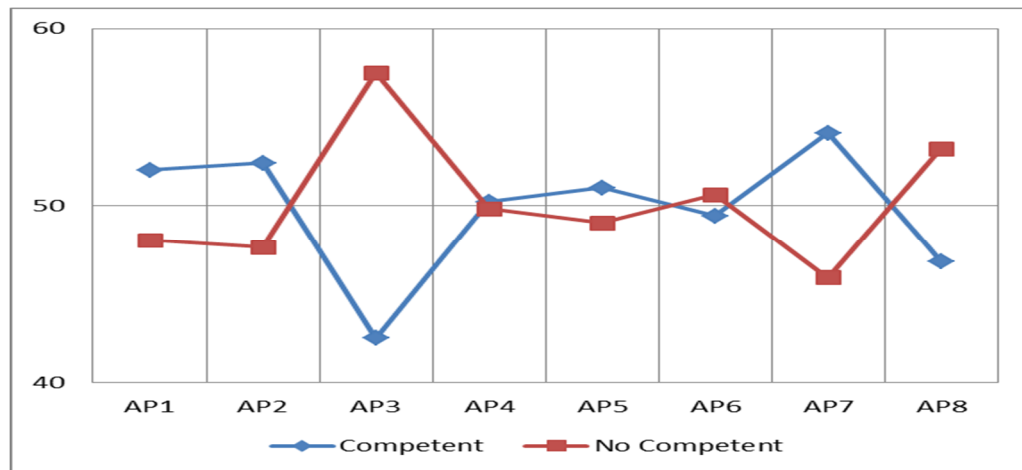


Table 3. Competencies Access and Publishing Content

	No Competent	Competent
AP1 Evaluate academic content and electronic bibliography from Internet.	48	52
AP2 Using technology platforms for accessing content.	47.6	52.4
AP3 Publish academic content in educational blogs.	57.5	42.5
AP4 Organize, process and discriminate the information gathered from the Internet to communicate.	49.8	50.2
AP5 Publish academic work through some means: website, slideshare, etc.	49	51
AP6 Use educational platforms to send jobs.	50.6	49.4
AP7 Handle virtual communication channels (messaging, forums, Weblogs, Wikis, etc.) to share content.	45.9	54.1
AP8 Web pages operated to upload academic papers value.	53.2	46.8

## CONCLUSIONS

Today ICT is fundamental to improving the quality of teaching tools, but only if students know how to take advantage, have the proper training and have the necessary resources.

Children and adolescents who currently entering educational institutions were born in the digital age; in it the development of ICT has led to the emergence of novel communication styles and cognitive skills, facilitating the creation of new dimensions in the categories of author and reader that have enabled the construction of a new subject of knowledge (Navés, 2015).

There is a low level of ICT competencies in the students of secondary schools in the city of Veracruz. Apparently the students are in the process of developing of these skills. However, they require increase the frequency and forms of ICT use for academic purposes, greater interaction between peers and teachers in the exchange of views and dissolving of doubts, as well as increasing the use of educational platforms, blogs, web pages, etc., for the publication and exchange of educational content.

In this sense, we find that, students still do not have a high level in the use of ICT for education purposes, which implies a deficiency in the cost-benefit ratio for society. Technological change globally has become a paradigm that appears to regulate the growth of countries; the level of ICT use in education represents a great opportunity for individuals to the path of knowledge and its inclusion in the Current society characterized by a self-learning management supported by the application of digital skills.

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## Students' Perceptions Of Their Competencies In ICT: The Case Of Óbuda University And J. Selye University

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### ABSTRACT

The purpose of this study is to identify the levels of ICT Competencies of university students from two universities, one in Hungary and the other in Slovakia. The research type is quantitative and exploratory. The instrument consists of 14 items related to three types of competencies: Basic, Application and Ethical. The sample was of 418 students from the Óbuda University in Budapest, Hungary and 149 students from J. Selye University in Komarno, Slovakia.

The quantitative data analysis was performed with SPSS software using descriptive statistics and Mann-Whitney independent sample U test. The situation of education in Hungary and Slovakia is not so very different although each country has taken different paths in the field. The results referring to Hungarian and Slovakian students' perceptions of their competencies in ICT indicate that they perceive themselves as having high levels of competencies in ICT. These results suggest the need to develop strategies that promote the effective use of technology resources by both students and teachers.

**Keywords:** Competencies; ICT; Perception; Hungary; Slovakia; University

### INTRODUCTION

The purpose of this study is to identify the level of ICT Competencies of university students from Slovakia and Hungary.

The research type is quantitative. The methodological strategy used was the replication of the instruments used by one of the authors in another international research project where perceptions of teachers and students from two Mexican universities (Veracruzana University and Chihuahua University) and one Spanish university (Salamanca University) were compared (García-Valcárcel & Arras, 2011). However, in this paper the results of an exploratory study comprising just one dimension of the instruments that were applied are shown: Students' levels of ICT competencies.

The instrument for measuring students' ICT competency is composed of 14 items. The reliability of the questionnaire obtained by the Cronbach technique was 0.81. The design of the instrument included the Likert scale with four categories: "Not at all, A little, Quite a lot and A lot". For the purposes of this study it is assumed that students having a certain level of competency fit into the categories "Quite a lot" and "A lot" while, the absence or deficiency in competencies is represented by "Not at all" and "A little".

Table 1 contains the types of competencies and their associated items following the analytical proposal of García-Valcárcel and Arras regarding the division into three types:

- (1) Basic Competencies;
- (2) Application Competencies; and
- (3) Ethical Competencies (García-Valcárcel & Arras, 2011).

The sample consisted of 567 students. Of these, 418 students belonged to the Bachelor's at the Óbuda University located in Budapest, Hungary, and 149 students were from the Bachelor's at J. Selye University in Komarno, Slovakia. Inclusion criteria for the sample were: (1) Public universities; (2) Students of careers related to systems; (3) Students close to graduation.

**Table 1:** Types of competencies

Basic competencies	<p>You use the main informatics and network resources.</p> <p>You use the applications in a productive way.</p> <p>You apply the digital tools to obtain information from varied sources.</p> <p>You make use of models and simulations to explore complex topics.</p> <p>You interact and collaborate with your partners, using a variety of digital recourses.</p>
Application Competencies	<p>You communicate in an effective way the information and ideas, using a variety of media and formats.</p> <p>You participate in groups that develop project for the production of original works or solve problems.</p> <p>You solve problems, and make decisions using the appropriate tools and digital resources.</p> <p>You plan and organize the required activities to solve a problem or make a project.</p> <p>You create original works as a medium of personal expression.</p>
Ethical Competencies	<p>You select, analyze, and make ethically correct use of the information obtained.</p> <p>You make rational, legal and responsible use of information using ICT</p> <p>You value ICT as an instrument of permanent learning.</p> <p>You value ICT as a medium of collaboration and social communication</p>

## ICT COMPETENCIES

The training process of college students focuses on developing a set of competencies in order to acquire their college degrees. In this sense, we can point to at least two large blocks which are common at the international level: generic and specific competencies (Aypay, 2010).

Within the preferred generic competencies that apply in most of the university educational programs on the international level, we find ICT competencies identified by various international education programs (UNESCO, ODM, EPT, DNUA, DEDS).

In this sense, according to Fuentes (2007), we could say that competency is: A set of knowledge, skills, attitudes, and values that is needed to effectively perform an occupation or a productive role. In a similar way Yañez-Galecio (2005) affirms that competency could be seen as an attribute of a person: specifically competency can be related to his/her success in the performance of a task. In this way failure is seen as the absence or low level of development of one or several competencies associated with a specific activity.

Meanwhile, Tobón (2013) defines competency as the integrated actions performed by a person in order to carry out activities and solve problems, based on certain eligibility criteria, continuous improvement and ethics. So, it can be said that ICT competencies are a group of skills, knowledge and attitudes that are applied to the use of information and communication systems, as well as the devices that the activity involves and, according to NETS for Students (NETS, 2007a, NETS, 2007b), also the knowledge that people should have and be able to learn and transfer, effectively, in order to live productively in a digital world.

Thus, these ICT competencies are being taken into consideration in the educational standards that various countries have developed in the form of profiles, such as NETS (NETS, 2007a, NETS, 2007b) in the United States, the Official certificate in Computing and Internet (B2i) in France, the incorporation of ICTs indicators in the National Curriculum in England, as well as the transversal integration of the ICTs in schools, in Belgium (Aypay, 2010).

Also in Hungary and Slovakia national policies have even been working on increasing the development of these ICT competencies in their teachers and students. But the results are quite different as we will discuss later. We could say that Hungary has developed its own standards for developing ICT competency, but Slovakia followed a little bit other way to give more free hand for the teachers.

Hence many international authorities describe key points of the educational development of ICT-literate students. For instance, NETS (NETS, 2007a, NETS, 2007b) includes: the ability to make Web designs, presentations, databases, and the ability to use graphics software, spreadsheets, databases, online applications, e-mail, chat applications and word processors, among others. Moreover, UNESCO (2008) has presented the ICT competency standards for teachers, which combines the requirements for teachers and students in today's world and emphasizes the current importance of ICT for all countries, including the members of the OECD (2013).

Finally it is relevant to say that according to UNESCO, Competencies in ICT can be classified as: (a) digital literacy competencies, (b) application competencies and (c) ethical competencies. So, the core competencies of digital literacy (a) are related to the use of ICT in classroom presentations and activities, and involve the use of digital tools to obtain information, and the use and development of materials obtained from various online sources. Meanwhile, application competencies (b) are related to the use of skills and knowledge to create and manage complex projects, solve problems in real-world situations, collaborate with others, and make use of information and networks of experts. Finally ethical competencies (c) are related to the ethical, legal and responsible use of ICT (UNESCO, 1997).

### INFORMATION TECHNOLOGY EDUCATION IN HUNGARY

IT education is based on a national curriculum in Hungary (Ministry, E. H, 2003). According to the National Basic Curriculum (NBC) of Hungary the use of IT is to be demonstrated in the first four school grades since 2003 (e.g. search on the Internet, painting with computers etc.) and is taught in 1 class weekly. According to the Information Technology curriculum the following subjects are taught from the 5th grade to the 12th grade at the schools of Hungary in 2 classes weekly:

- Word processing
- Spreadsheet calculation
- Presentation
- Algorithm and programming
- Database management

Generally the Microsoft Office packet is taught and it can be seen that teaching Word processing takes 4 years in Hungary (Table 2). Basic algorithms or rather programming appears in Information Technology sooner, but recursion, list and tree data structures are only selectable part of the curriculum. Database management begins in the 9th grade. In grades 11-12 CS is just selectable. At basic level it is taught 2 hours weekly, on a higher level 3 hours weekly and a final exam can be taken.

**Table 2:** The subject of IT by grades in Hungary.

Subject	Grade							
	5.	6.	7.	8.	9.	10.	11.	12.
Word processing		✓	✓	✓	✓			
Spreadsheet calculation				✓	✓			
Presentation						✓		
Algorithm and programming			✓	✓	✓			
Database management					✓			

### INFORMATION TECHNOLOGY EDUCATION IN SLOVAKIA

The education of Informatics from the 2nd grade has been compulsory since the school year of 2008/2009, since the introduction of the school reform but it also appears in the 1st grade as well as in the nursery school curriculum though not as a compulsory subject. It is compulsory to have 1 Informatics lesson a week in the junior section and 0.5 lessons a week in the senior section that can be raised by the schools' own programme. Some schools took the opportunity and increased it to 1 lesson a week. The National Educational Programme does not assign precisely what teachers have to teach in the various grades but announces the school leaving standards to reach at the end of the senior section. So it does not matter if programming is taught in the 6th grade in one school and in the 8th grade in another school; the aim is to reach the school leaving standards. It is part of the educational programme of the school how its students should reach these standards, how many lessons they have a week and at what pace they learn the material; this programme is accepted by the management of the school and its teachers together .

The National Educational Programme divides Informatics into 5 topics (it does not specify the number of lessons):

- Information around us
- Communication with the help of the means of the ICT
- Problem solving, thinking with the help of algorithms
- Basic principles of the operation of the ICT tools
- IS society

These 5 topics are then to be divided into the school leaving standards (Kiss, 2012).

## RESULTS OF THE ICT COMPETENCIES LEVELS

The competencies that students have for using technological tools productively and ethically in the search and organization of information, in problem solving and collaborative work, as well as in improving their communication processes, are vital for efficiently responding to the demands that arise in teaching contexts that significantly integrate ICT.

The 14 items that integrate ICT competencies were divided into three main dimensions: Basic Competencies, Application Competencies and Ethical Competencies. Fig. 1, 2 and 3 show that most of the items are in the categories “Quite a lot” (3) and “A lot” (4), which indicates that the majority of the students considered themselves competent in the use of ICT. The levels of ICT competencies in which the students recognize the need for further training (with equal and higher mean values of 3.00, on a scale of 1-4 points) and which could be considered as strengths are: (a) You apply digital tools to obtain information from varied sources, and (b) You value ICT as a permanent instrument of learning.

Meanwhile, the questions on ICT competencies rated the lowest (with mean values below 2.5) and which could be recognized as weaknesses, are: (c) You make use of models and simulations to explore complex topics, and (d) You create original work as a medium of personal expression.

The remaining 10 questions have values of between 2.5 and 3.0, which can be considered satisfactory since the mean value of the competency level is around 2.75. It is relevant to note that these data were obtained with respect to student’s self perceived competency level.

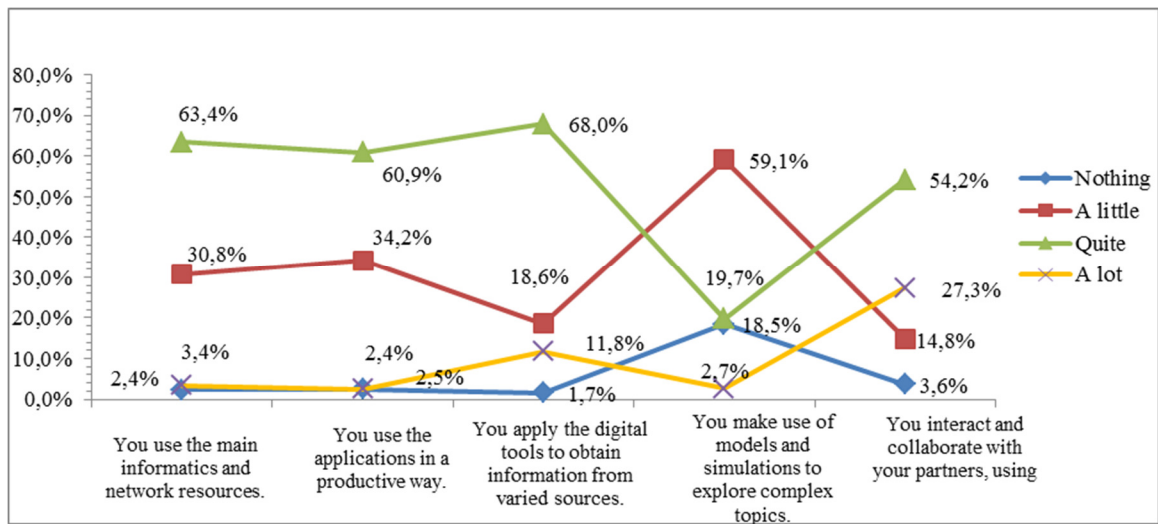


Fig. 1. Percentages for Basic Competencies Dimension by Item

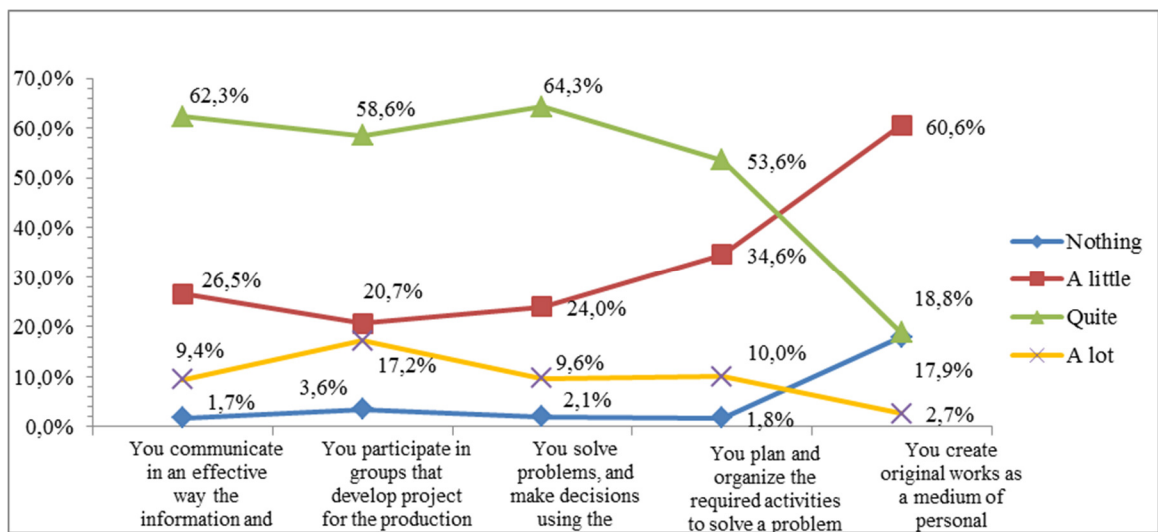


Fig. 2. Percentages by Item for Application Competencies Dimension



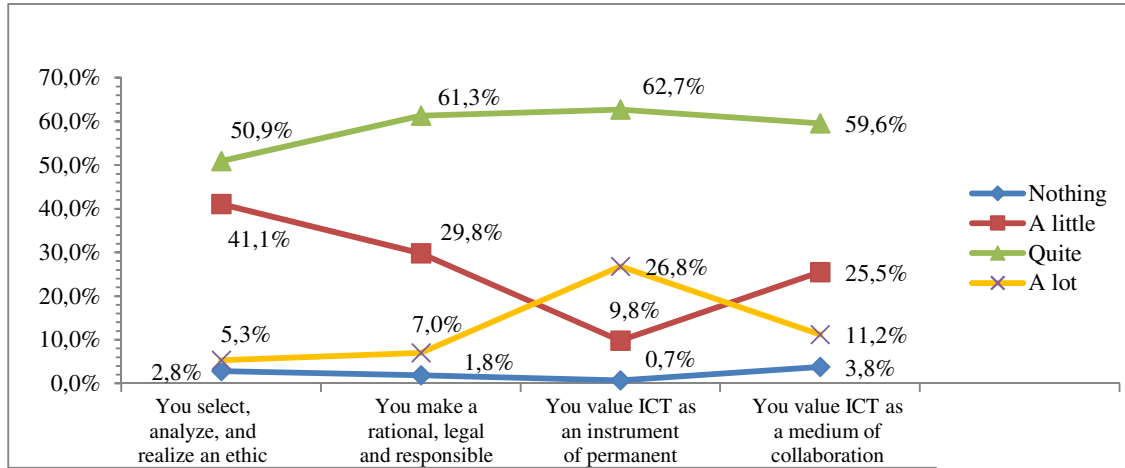


Fig. 3. Percentages by Item for Ethical Competencies Dimension

### DIFFERENCES IN COMPETENCIES BY UNIVERSITY

The students filled out a self-reported questionnaire with 14 items. We have used Likert-type rating scales to measure the ICT competency level of students (Likert, 1932). Likert scales are commonly used by self-reported questionnaire, providing a range of responses to a given question or statement (Jamieson, 2004).

The Likert scale is ordinary scale, and as such we can calculate mean, min, max, median, modus, std. dev. etc. We can use the non parametric tests where we need ordinary variables. We have two independent samples so we could use the Mann-Whitney-Wilcoxon test for 2 samples (Boonyasit W., 2011). The Mann-Whitney-Wilcoxon test seems better choice versus t test by Likert-type data (De Winter J. C. F. and Dodou D., 2010), because it is testing the medians of the samples.

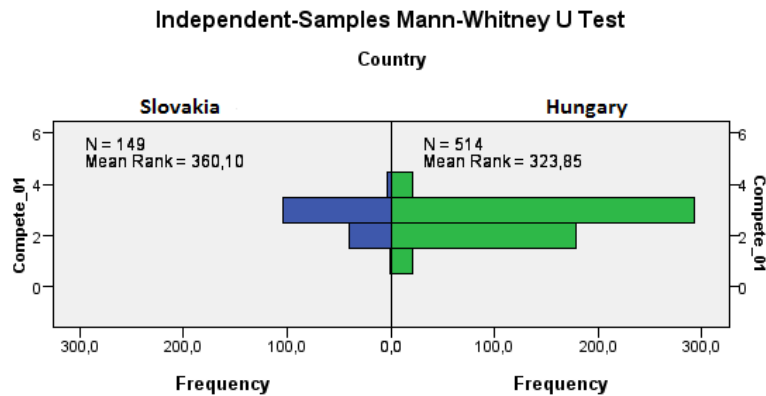
We used the Mann-Whitney independent sample U test of SPSS to compare the means of scores taken by the students. Monitoring was held on  $p=5\%$  significancy level in the whole analyzing process.

Table 3. Levels of Competencies Questions by university and results of the Mann-Whitney-Wilcoxon test

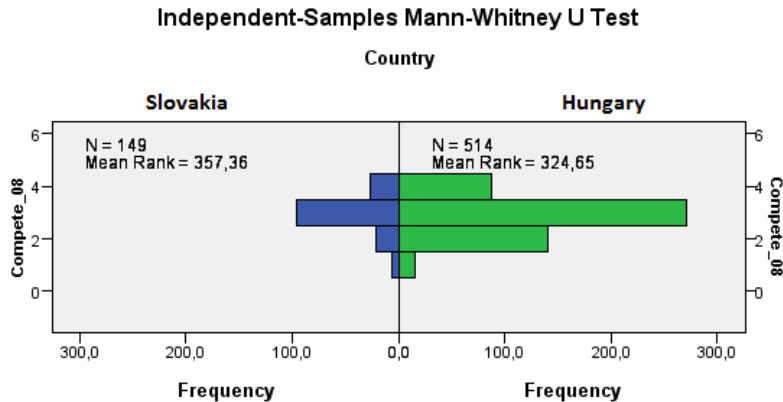
Item	Media Global	J. Selye University	Óbuda University	Sig.
You use the main informatics and network resources.	2,64	2,74	2,61	<b>0,019</b>
You use the applications in a productive way.	2,63	2,64	2,63	0,937
You apply the digital tools to obtain information from varied sources.	2,93	2,85	2,95	<b>0,013</b>
You select, analyze, y realize an ethic use of the obtained information.	2,61	2,54	2,63	0,104
You communicate in an effective way the information and ideas, using a variety of media and formats.	2,8	2,79	2,8	0,841
You make use of models and simulations to explore complex topics.	2,07	2,07	2,07	0,999
You interact and collaborate with your partners, using a variety of digital recourses.	3,08	3	3,11	0,072
You participate in groups that develop project for the production of original works or solve problems.	2,86	2,95	2,83	<b>0,04</b>
You solve problems, and make decisions using the appropriate tools and digital resources.	2,85	2,76	2,87	<b>0,038</b>
You plan and organize the required activities to solve a problem or make a project.	2,74	2,68	2,75	0,366

You create original works as a medium of personal expression.	2,09	2,02	2,11	0,158
You make a rational, legal and responsible use of the information through the ICT	2,76	2,7	2,77	0,132
You value the ICT as an instrument of permanent learning.	3,19	3,09	3,23	<b>0,004</b>
You value the ICT as a medium of collaboration and social communication.	2,84	2,68	2,89	<b>0,001</b>

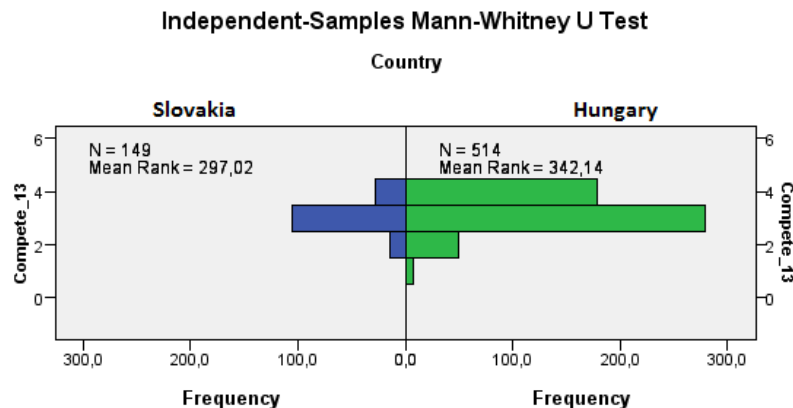
According to the Mann-Whitney-Wilcoxon test significant differences were found in at least 6 different items. Same examples show the frequency of the scores by different items (Fig. 4., Fig.5, Fig.6.).



**Fig. 4.** You use the main informatics and network resources



**Fig. 5.** You participate in groups that develop project for the production of original works or solve problems.



**Fig. 6.** You value the ICT as an instrument of permanent learning.

Figure 7 shows an overview of the profile that exists in the various dimensions of ICT competencies levels. It is clear that similar levels exist between students from the two countries. However the dimension of Application Competencies presents a major difference in favor of Slovakian students. Basic and Ethical Competencies show very similar values, being slightly higher for the Slovakian students.

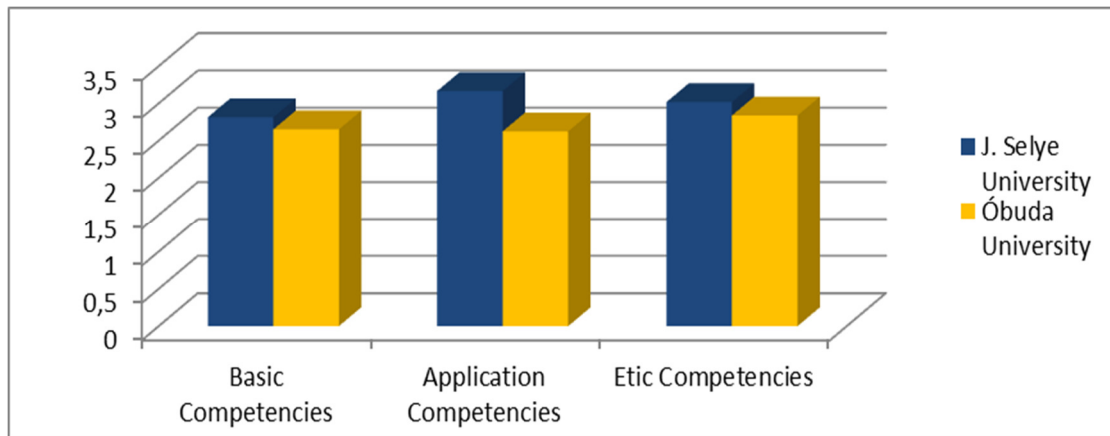


Fig. 7. Means of competencies dimensions: Differences by country

#### CREATION PERCENTAGES BY DIMENSION

To provide further details on the manner in which students from both countries recognize themselves as competent in various activities relating to the use of ICT, the percentages obtained for each item comprising the three different dimensions are presented. The activities in which students claim to be highly proficient (at or above 75% values) are also pointed out.

Basic Competencies can be considered basic for proper scholarly performance. This type of dimension is related to activities such as interaction with others through the digital media, the use of models to explore complex topics, the application of tools used to find information from various sources, the productive use of applications and the use of the main informatics resources (Fig. 8.).

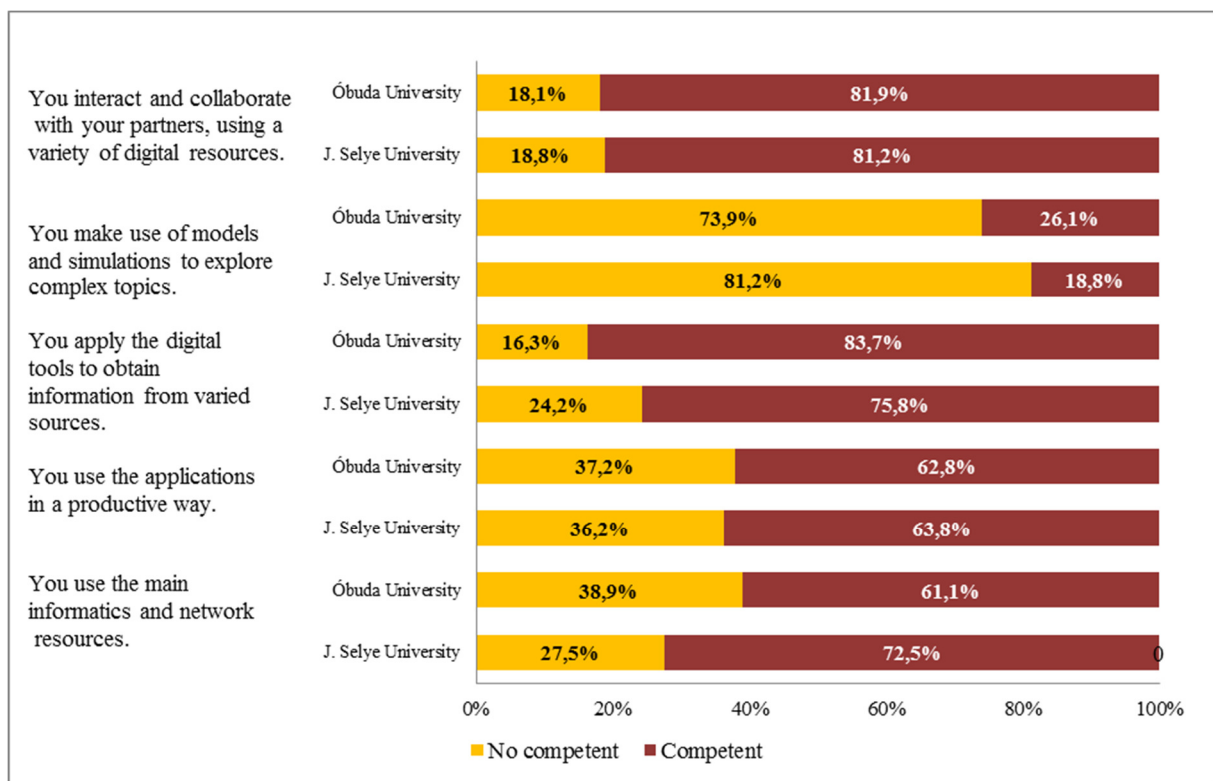


Fig. 8. Means of competencies dimensions: Differences by country

The percentages obtained in this dimension, indicate the presence of an acceptable level of competency for the students of Slovakia and Hungary in many areas. However, in the item referring to the use of models to explore complex topics, a lower level of competence was obtained. The percentage was higher for the Hungarian students (73.9%) in comparison to Mexican students (81.2%).

Meanwhile in interaction through the use of digital resources, there is a higher level of competency for the Hungarians (81.9.2%) compared to the Slovaks (81.2%). In the use and application of digital tools to obtain information from a variety of resources, anew there is a higher level of competency in the Hungarian students (83.8%) than the Slovakian students (75.8%).

Finally, in reference to the productive use of the applications, and the use of the main informatics resources, we find that there is a major degree of competencies in the students from Slovakia (63.8% and 72.5%) compared to the students from Hungary (62.8% and 61.1%).

The items rated highest by the Mexican students are those related to the use of the main informatics and network resources and the application of digital tools to obtain information.

Meanwhile, their worst ratings are in the use of models to explore complex topics. For the Hungarians their highest levels of competency are in interaction and collaboration using digital resources and the application of digital tools to obtain information. The area where they receive the lowest evaluation is the one related to the use of models to explore complex topics.

According to this data we can say that Slovakian students have higher levels of competencies in basic activities such as the use of applications and the use of the main informatics resources.

### APPLICATION COMPETENCIES

In the Application Competencies are the questions related to the use that is given to ICT in various fields. Activities such as the creation of work as a medium of expression, the planning, as well as the resolution of problems through digital resources, the participation in groups that use these tools and effective communication using a variety of informatics resources (Fig. 9.).

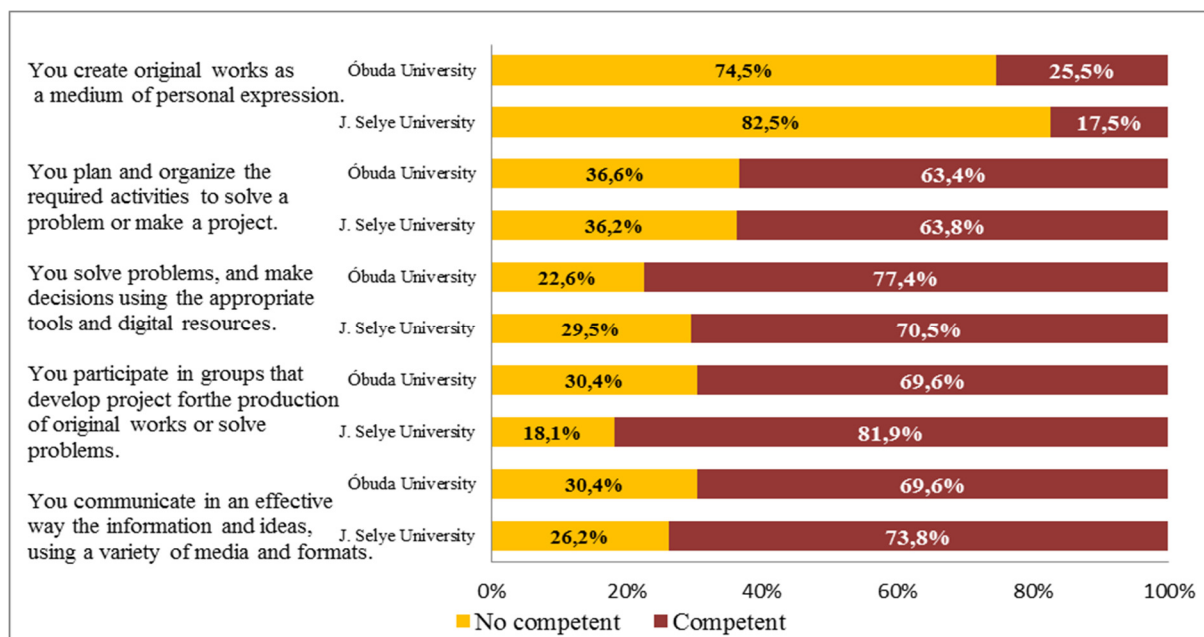


Fig. 9. Application Competencies: Level of Competency (%)

Within this dimension we find an acceptable level of competency for the students of both countries. An exception occurs regarding the creation of work as a medium of personal expression, where the Hungarian students (25.5%) show certain levels of non-competency, while the Slovakian students consider themselves competent (17.5%), so the Slovakian students say that their major level of non-competency (82.5%) is in the participation in groups that develop projects for the production of original work. In this same item, the Hungarians show an admissible level of non-competency (74.5%).

For the area concerning the planning and organization of activities for problem solving or carrying out projects the Hungarian students (63.4%) show same level of competency than the Slovaks (63.8%).

In relation to problem solving and decision making through digital resources, the Hungarians (77.7%) are once more competent in comparison to their Slovakian counterparts (70.5%).

For effective communication through media and formats, the Hungarians (69.7%) are more non-competent in comparison to their Slovakian counterparts (73.8%).

In relation to participate in groups that develop project for the production of original works or solve problems, the Hungarians (81.9%) are once more competent in comparison to their Hungarian counterparts (69.6%).

The Slovakian students evaluate as their own highest level of competency the area of participation in groups that develop project for the production of original works or solve problems while the area they rate as their lowest is the creation of work as a medium of personal expression.

Meanwhile, for the Hungarians, we find that their highest level of competency is problem solving using digital resources. Their lowest level of competency is same with the Slovaks the creation of original work as a medium of communication.

### ETHICAL COMPETENCIES

Finally, for the dimension of Ethical competencies, we find the areas where we ask the students about their level of competency in ethical activities. These questions analyze the impression of the students about ICT as a medium of collaboration and as an instrument of learning, as well as the use that is given to the information obtained from ICT (Fig. 10.).

The results indicate the existence of a high level of ICT competency in the students of both countries. Referring to the question of ICT as a medium of collaboration and communication, there is a higher level of competency in Hungarian students (77.0%) in comparison with the Slovakian students (64.4%). For the area of ICT as a permanent tool for learning, there are high levels of competency in both cases: Hungarian students 89.1% and Slovakian students 89.9%.

Slovakian and Hungarians consider using ICT as an instrument of permanent learning to be their area of highest competency. For Slovakian and Hungarian students the area they felt least competent in was the legal use of the information obtained through ICT.

Hungarian students show higher levels of competency in the area of ethical competencies than Slovakian students.

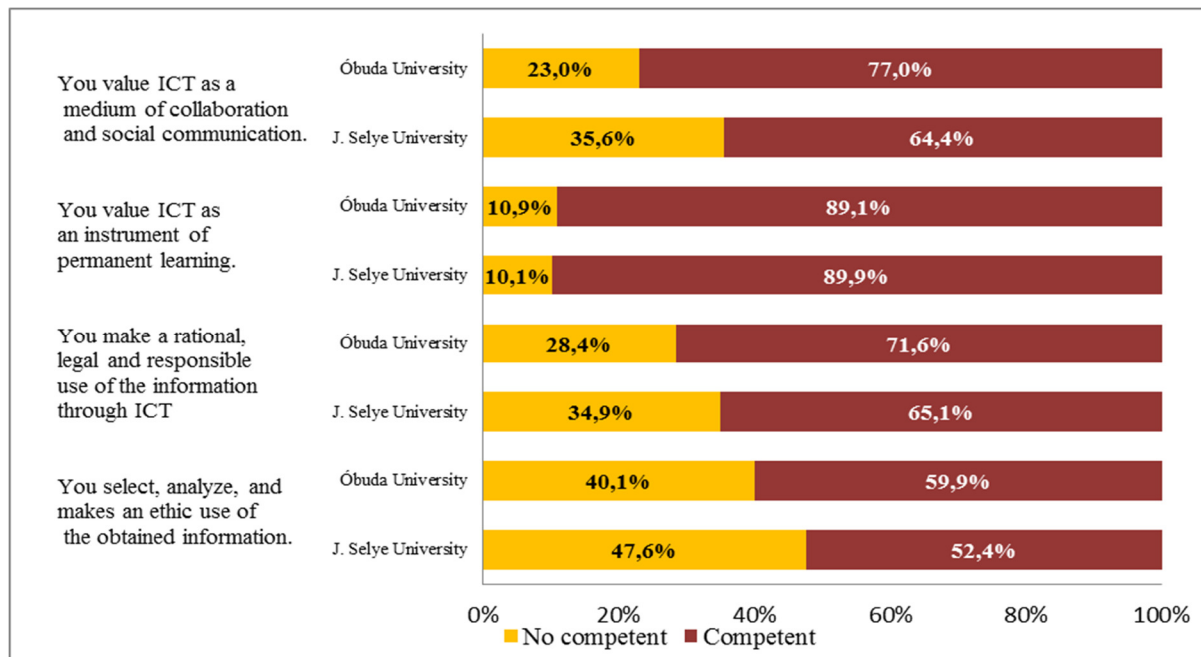


Fig. 10. Ethical Competencies: Level of Competency (%)

### CONCLUSIONS

The situation of education in Hungary and Slovakia is not so very different although each country has taken a different path.

The results referring of Hungarian and Slovakian Students' perceptions of their competencies in ICT indicate that they perceive a high level of competency in ICT. The students obtained a high degree of competency in the use of ICT as a permanent means of learning and as a means of social communication. The students also felt they made productive use of the various applications that are offered. The main use given to these tools is obtaining information, and they claim they make legal and responsible use of the resources.



Referring to the hypothesis we proposed, we could say that in some areas there were some significant differences between the two participating universities (Óbuda University and J. Selye University) in reference to the students' perceptions regarding their levels of ICT Competencies.

The differences between Slovakian and Hungarian students found in the Mann-Whitney-Wilcoxon test include the selection of computer resources and the use of information obtained from the network, interaction with classmates through project developing, problem solving through the use of digital tools and the choosing ICT tools a for permanent learning and social communication. In the rest of the areas no relevant differences were found.

Meanwhile, we found that eight questions do not receive significantly different answers.

In this document a proposed classification of Competencies in ICT (Basic, Application and Ethical) was presented. In these terms, the highest level obtained was for Ethical Competencies, followed by Basic Competencies and finally Application Competencies. These results suggest the need for developing strategies that promote the effective use of technology resources by students and teachers alike.

As for differences by university (J. Selye and Óbuda), percentages indicate that there are higher levels of competencies in the Hungarian students. By using the main informatics and network resources, developing project in group, using a variety of media and formats the Slovakian students are more productive. The free hand of the teacher in Slovakia shows a good way for the Slovakian students to prefer teamwork over individual work what is more important in the future on the labor market.

## ACKNOWLEDGEMENT

The authors would like to thank to the group of Spanish researchers who created the instruments used in this study: Ana García-Valcárcel Muñoz-Repiso, Francisco Javier Tejedor Tejedor, Luis María González Rodero, María Sagrario Prada San Segundo and Azucena Hernández Martín.

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## Symbolic-Anthropological Expressive Mediation: For A Holistic-Intercultural Education

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### ABSTRACT

The paper is about the method of Symbolic-Anthropological Expressive Mediation, which comes mainly from the research, training and supervision carried out in *Eurinome*, the *School of Bodily and Expressive Mediation Pedagogy* of Perugia (Italy).

The specific methodology is set up as an educational re-working of methodologies, born in the dance-movement-therapy clinical field that enhances the symbolic and intercultural dimension of dancing and movement.

The characteristic element of the method is the holistic approach. Bodily and expressive mediation is designed and proposed as a privileged dimension to enable the various components of the person in all its complexity, in consideration of the plot of interactions in which he/she lives.

### INTRODUCTION

With this paper, I intend to present some of the elements that characterise the theory and methodology of *symbolic-anthropological expressive mediation*, highlighting in particular the pedagogical potential of symbolic mediation. Both the theoretical and the practical dimensions of the specific method proposed prove deeply intercultural: the theory integrates philosophical, psychological and spiritual approaches of different geographical and historical contexts, searching within them that which unites in light of the broadest and most inclusive interpretation of human beings. The practice of the use of the symbol in expressive and dance mediation reveals obvious opportunities for intercultural opening and understanding thanks to the universality of the symbolic image itself. Thanks to bodily and expressive mediation, to which the spoken word is integrated with methods that increase the value of the creative processes, knowledge, from *sophia*, wisdom, becomes *fronesis*, wisdom of life.

### 1. SYMBOLIC-ANTHROPOLOGICAL DANCE-MOVEMENT EDUCATION: FROM THERAPY TO PEDAGOGY

The method comes from my personal path of training and research, which was divided over the years through different disciplinary fields, and by the work of education, research, training and supervision carried out in the *School of Bodily and Expressive Mediation Pedagogy*, *Eurinome*, of Perugia (See [www.danzasimbolica.altervista.org](http://www.danzasimbolica.altervista.org)), which has been in operation since 2006. All of this is also thanks to the exchange, sharing and researches carried out with colleagues both within the context of dance-movement-therapy and bodily mediation in different university contexts (Naccari 2004, 2006, 2012 ed., 2015).

The specific methodology is configured as a reworking and integration, in a pedagogical key, about theories and methodologies conceived mainly in the clinical field of dance-movement-therapy, methodologies that enhance the symbolic dimension of dance and movement. The new approach is thus established both as an explicit educational possibility in context and agencies proposed for pedagogical purposes, and as an educational integration within clinical practice. Also in clinical theory and practice, illness is now no longer considered only in reference to purely biological data, it is increasingly trying to consider the complexity of the affective, personal and social system of the person in need of care, a system that affects the status of health or illness, influencing the meaning that is attributed to the symptom and the way of accepting and reacting to the illness itself. In many medical systems (for example psychosomatics), symptoms are a language that refers to the whole person. In addition, the concept of well-being refers not only to the absence of illness but also to the subjective perception of "one's own state of satisfaction and of psychophysical balance" (Benetton 2012, p.23). For the World Health Organisation, well-being involves all the dimensions of a person, therefore not only the body, but also the affective, social and spiritual reality. Therefore, the well-being, and/or the *being well*, is inevitably intertwined with pedagogical matters because it affects the various *growths* (corporeal, affective, social, intellectual, ethical, spiritual...) of people, and the capacity they have to take care of themselves, of self-realisation and personal development.

In this sense the meaning of therapy increasingly approaches the original etymology of the term. In fact *Therapeuein* means taking care of the person in the broadest sense; therefore also educating those aspects that are seemingly distant from the "diseased part", in consideration of the total humanity of the person in therapy. Aspects that are distinctly medical, therefore, should not be disjointed from those that are pedagogical (see Naccari 2004, pp.10-11). Among other aspects, illness inevitably requires a change and a capacity of acceptance and of condescension towards human frailties that could inevitably prove to be educational tasks.

In developing the pedagogical approach, I consider the educational opportunity essentially *teleological*, that is to say related to the ability to look and to orient towards the future, towards the actualisation and the development

of talents that are still not particularly developed, towards ideals that are still under explored, towards the possible evolution of the different components of the personality; in one word: towards empowerment of the person. In this, the approach differs from some *archaeological* approaches of therapeutic methods that are probably already outdated, that used mainly to dedicate attention to what happened in the past. I believe that within the concept of *time* should be regarded essentially a sort of dialectic circularity in the subjective conscience, in which the memory of the past and the expectation of the future, conceived in the present, influence each other. Designing one's own possible future can allow a different interpretation of one's past, and every time something happens in the present, the past is seen in a new light. Therefore, it is important to move away from the deterministic and linear logic in which the past radically influences what we can be; with Morin (but also with Saint Agostino and Ricoeur) I believe that in order to affirm the sense of freedom, of responsibility and of self-determination of the person, it is necessary to pass from a linear logic of time to one that is circular (Morin 1999).

In the symbolic-anthropological approach, the methods of working are usually *nutritive* in the sense that there is a tendency to offer from the outside through movement forms-symbols deemed psychotropic, i.e. positive for the personality of those involved. Through these images, it is possible to activate-learn new or little explored attitudes and possibilities of existence.

Symbolic images are proposed through a specific setting in which activities are structured (by those who lead, or by traditional choreographies...) and unstructured (open skills, theatre-dance and games-exercises, improvisation etc.) flow one into the other in relation to the same symbolic theme, chosen on the basis of educational needs of those participating in a particular group. In gestures used, the cultures of people of the world are enhanced through the appropriate and specific integration of ethnic dances and/or other expressive forms that include universal archetypal meanings: gestures that are culturally connoted, myths and narratives in general, graphic-pictorial expressions... etcetera.

Therefore substantially the symbolic image, central to the setting of each session, is proposed for a specific holistic (and always, inevitably intercultural) education, as I will describe in more detail shortly.

## 2. FOR A HOLISTIC EDUCATION AND INTERCULTURAL APPROACH TO KNOWLEDGE

The theory and the methodology of the symbolic-anthropological approach enhance a holistic education, with all the nuances that this definition involves. Dance, bodily and expressive mediation in general are conceived, and, in fact, proposed as privileged dimension to activate the various components of the person in his/her complexity, in the different life cycles and in consideration of the even more complex plot of interactions in which he/she is inserted.

The complexity of the person is considered through an intercultural reading, in which philosophical, religious, and medical systems of all time and places, (from the neoplatonic philosophy to the theory of multiple intelligences of Gardner, see Naccari 2006), find a peculiar convergence in the enhancement of the interdependence of the human being's different dimensions, and in their confluence in universal archetypes.

In the cultural worlds that have contributed to the weaving of the theoretical model of reference must be included the Jewish one, thanks to the philosophy of the dialogue of Martin Buber (1984) and the authoritative studies on the Jewish religion by Gershom Scholem (1960, 1982). The philosophy of the dialogue has allowed me to understand how human interaction, as well as being crucial for the formation of the human being and for the care of civilisation, is substantially a reality which entirely involves the whole person, and requires a kind of presence in which the spoken word plays only a small part. Becoming a person is thus configured as a *training of You*, in which the experience of relating with corporeal-emotional-imaginative-empathic-spiritual reality is continuously evolving and requires the ability to put oneself in the game and take risks, in order to meet the another in a special space (the *Zwischen*). Space in which understanding is also created from empathy, from signs, gestures, and glances, in short, from that which is non-verbal.

In addition, biblical Judaism, to which Scholem masterfully refers, does not know the dualism between body and soul even from a linguistic point of view. In fact, in Hebrew each term always refers to the human being's totality, emphasising a different perspective. No term describes a part of the person as if it could be imaginarily detached from the rest. The word *Basar* cannot be translated with the word *body*, but refers to a whole human being seen from the perspective of its earthly weakness. *Nefes* cannot be translated with *soul*, meant as guest of the body; but is instead as life of the body, which *animates* its emotions, feelings and desires. In relation to the interdependence of the complex realities that make up human beings, in the Book of Zohar, an interesting metaphor is proposed: *Nefes* is "intimately linked to the body, - and - having reached perfection, it becomes the throne on which it rests *Ruah* [ ... ]. When both, namely soul and spirit, have reached perfection, then they can receive *Nesamah*, the "super-soul", for which *Ruah* becomes a throne [ ... ]. The soul, *Nefes*, is the inferior impulse that touches the physicality; as a candle where the lower dark light is in contact with the wick, on which its very existence depends. When the dark light has become well established on the wick - i.e. *Basar*, corporeality -, it becomes the seat for the white light, above. When both are well established, then it is the white light that becomes a seat, for that elusive, invisible and unknowable light, that rests on the white light" (Scholem, 1949 ed., p.18). Therefore,



"between corporeality, soul, spirit and higher soul there is a relationship of substantial systemic interdependence, where one part separate from the other is not in the least bit conceivable. From physicality to the *dark light*, to the *white light*, to that which is *invisible*, the metaphor indicates a progressive mutual belonging, where the conquest of the most beautiful light presupposes an improvement and not the mortification of previous-lesser *thrones*; but here *lesser* does not have a negative meaning, but only chronological precedence in the order of concrete existence and of possible improvement" (Naccari 2006, p. 20 ). The different dimensions of human beings are, therefore, in complex interaction and through one, it is possible to influence the other; corporeality and movement are an unavoidable reality for all the others, through which it is therefore possible to educate all the others.



The holistic approach not only refers to the totality of human beings in themselves, but in fact, also relates to the relational, cultural and natural context in which everyone is inevitably involved in a system of actions and responses (Bronfenbrenner 1979; as a photo of a workshop with the pupils of the school metaphorically represents), and to the specific cycle of life that involves each one of us with different evolutionary crises and tasks.

In this respect I consider a *eco-systemic* perspective in *space* and *time*. Each one of us, even when we believe we are not particularly incisive, influences the context we are located in, and are, in turn, influenced by; just as a drop falling into water generates multiple circles around the point where it falls, each of us reverberates our own way of being around us, interlacing, in an extremely complex manner, our *circles* with those of all others. Therefore in educating, it is necessary to take into account the system of relationships in which people are inserted, and it should be remembered how the relationship that we tend to generate as educators and the relationships that establish themselves in the group of pupils-clients-users are in themselves crucial in the learning process. This, among other aspects, is particularly true in corporeal mediation workshops where the bodily, relational, expressive and emotional dimensions are central.

All this also looks to favour an assumption of the awareness of the specific geographical and cultural context in which one lives, with particular personal, natural and collective times and rhythms, with which to try to be in harmony (see Bronfenbrenner 1979, Bateson 1972, Morin 1973).

We must consider, in fact, that we are citizens of planet earth (Morin 1999) not only in the cultural and intercultural sense, but also distinctly natural. For this reason, we are sensitive to the rhythms of nature and of the cosmos. We therefore need to be in harmony with the alternation of day and night, of the seasons, climate changes, the cycles of the moon etcetera. This in our methodology can be cared for-educated through the proposal for symbolic themes linked to the seasons and the natural and cosmic cycles (See Tosi 2012). In addition, such a reference to the *Other*, as human being, creature, element of nature, earth, universe, spirit, with which it is essential to be in harmony, is variously and richly present in different spiritual traditions, whose narratives and symbols (which will inevitably affect the perception of nature by human) can be integrated in the setting, as I will describe shortly.

From a purely didactic perspective, taking into account the network of relationships in which everyone is involved, means that, as dance-movement educators it is important to seek interaction with most of the operators involved in the system-institution in which we work, and, as far as possible, with the other external educators and/or therapists, relatives, parents, teachers, coaches, pastors and psychotherapists... It is what was defined *ecological model*, or *integrated educational system* (Orefice - Sarracino 1981). What is therefore sought is effective



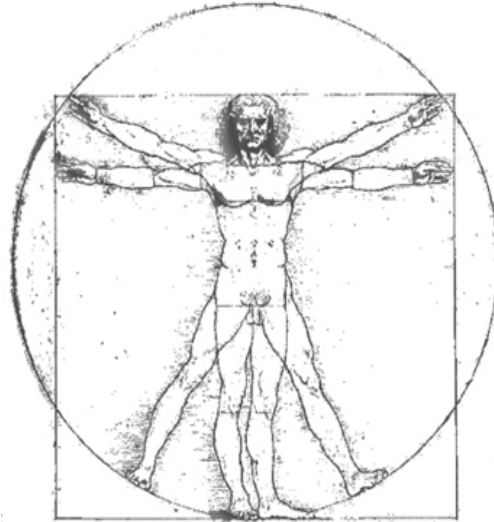
teamwork through the hermeneutic sharing of the process in progress, recursively, with the educators involved in the educational system.

Regarding the dimension of *time*, holistic approach means considering and appreciating the specific life cycles of pupils-clients-users, with different existential crises and evolutionary tasks to be addressed, also in relation to the culture of belonging (Naccari 2010). Lifelong learning, intended as broad educational attention in every existential moment of a person, is now part of the pedagogical culture of the west and its ancient roots are sunk into different cultural contexts (Demetrio 2003). The study of life cycles is not meant to be a theory of stages on the basis of which to read the needs of people and to prescribe relevant educational opportunities; rather it is a kind of synthesis theory relative to what has been stated about different dimensions of the development of human beings. It is an instrument at the service of the person, which may help to understand better what is happening, in which direction we are perhaps moving in order to orient *teleologically* educational opportunities. In addressing personally, or in trying to understand crisis and developmental tasks of our clients, it inevitably happens that we (or our students-customers) are involved in more than one stage, precisely because the theory is indicative-orientative and today there is a great fluidity between ages. However, making the effort to understand where we likely stand and where others are (even if a very articulated framework becomes clear) nevertheless makes it possible to understand better others and ourselves and to be able to better imagine and plan possible educational interventions.

Everything proposed thus far is not only the prerogative of the dance-movement educators, that should know all this, as their educational background also allows them so to propose and implement, in the best possible way, corporeal mediation workshops. This entire world of intercultural knowledge, which is continually drawn upon and that is continually enriched with new and endless stimuli, is also a precious resource for students-users-clients. In our setting, in fact, at the end of each meeting there is a space dedicated to speaking in which each person tells what they wish to share of what they have experienced, to predominantly better understand and to integrate it within one's inner world. At this stage of the meeting, those who lead, if they deem it appropriate, may narrate meanings and cultural, intercultural and geographic references of the symbols explored, or can describe certain aspects of the cycles of life, which are being worked on. This contributes to the broadening of user's knowledge horizons, in a knowledge-oriented manner linked to the experience, and it is also a response to the need for truth and spirituality (as opening to a deeper and more mysterious meaning, that concerns the human in their own essence) that is increasingly present in our era (Frankl 1972). Those who are listening are free to address what is being narrated, and to select this with whom they feel in resonance, agreeing with the educator, at the beginning and at certain intermediate moments of the path, a number of educational objectives and possibly symbolic themes on which there is a desire to work. In this way, in a dialectic manner, in our setting (that is mainly non-verbal) there is an integration of a verbal dimension that can be compared in many ways to the *logotherapy* (Frankl 1972) and/or to the *philosophical counselling*.

### 3. PEDAGOGY AND DIDACTICS THROUGH THE SYMBOLIC MEDIATION

The pedagogical model that we use (as a school) is itself symbolic. A pedagogical model "represents a mediation between the dimension of being and that of the need to be" (Mollo, 2005, p.41 ), and thus allows the passage from the description of phenomena, and therefore from interpretations of the real, and from anthropological concepts to the concrete educational practice. It is therefore a sort of reference framework to remember everything that should be educated in the human being. Ours is a model that makes the body itself a memorandum of the dimensions that belong to a person and that, therefore, one must always bear in mind in educational planning. It is a synthesis that takes into account the personalist and neo-humanist vision (but also many intercultural respects, as I have previously described) of human beings.



The human body, as shown by Leonardo da Vinci in the iconic drawing of the *Vitruvian Man*, is inscribed at the same time in a circle and a square. The first refers to the spirituality of man and woman, the second to their materiality. *Flesh and spirit*, incarnation and opening to transcendence in fact characterise the reality of the human creature as dialectic polarities. These polarities are also present in the upper and lower apexes of the vertical axis that passes through the body itself; we are, in short, located between *earth* and *heaven*, i.e. between matter and spirit, between deficit needs and being needs (Maslow 1954), between instincts and values (Guénon, 1957). The lower part, i.e. the legs and feet, roots us to the earth; the pelvis allows us to perceive and balance the attraction of the force of gravity. All of this symbolically refers to the need to accept limitations and naturalness, as well as the uniqueness of our birth in a precise place at particular moment in history, "with two parents that we cannot change, with a culture and a historic and geographical moment that determines and substantiates most of our way of being... But, at the same time, we are the only animal on earth with a properly erect posture, the spine is in fact set vertically to the ground, which indicates symbolically the irrepressible longing of a person to transcend the finite, to go beyond it with the powers of thought, that may push beyond the here and now and, therefore, beyond the limitations posed by space and time, and even further away thanks to the power of the imagination and intuition" (Naccari 2012, pp.47 -48).

The horizontal opening of the arms symbolises the meeting with other beings, men, women, animal creatures and with the natural and cultural environment in which we live. This is the crucial dimension in which we become human beings, because man and woman *become I through the thou* (Buber 1984). We become human thanks to the many human relationships in which we are involved in over time.

Therefore the *great triad* (Guénon 1957) of the symbolic dimensions in which we are involved synthesises the various *growth* that characterise us as human beings: the *Earth* (lower apex of verticality) concerns physical and emotional growth, physiological and safety needs (Maslow 1954), the need for play and movement; the *Horizon* (axis of horizontality) concerns affective-social growth, the need of love, belonging, esteem, communication and expression; the *Sky* (upper apex of verticality) concerns intellectual, spiritual, moral and cultural growth.

The further symbolic image that emerges from all this is that of the cross, which is a universal archetype present in many cultures. One needs only to think of the cross of Christ which, from a horrible instrument of death, becomes, thanks to the resurrection, symbol of transformation and extreme connection, in fact, between *earth* (finished, death) and *heaven* (spirit, immortality). Even in eastern philosophy along the axis of the verticality that crosses the human being are found the nuclei of vital energy (*chakras*), whose meanings are connected to the deficit needs and to being needs moving from bottom to top... I have dealt extensively with all these matters in other texts to which I am referring to (Naccari 2004, 2006).

The model as it is structured is a sort of *vademecum* to remember and read the educational needs and directions of the person, in order to focus on the dimension, which in turn is good to work on.

A fundamental aspect of didactic methodology is symbolic mediation in the concrete practice of movement and dance, which allows holistic contact of the person in all its different components. The choreographic symbol, if appropriately proposed, in fact, allows activation within the self of the meanings, experiences, attitudes and values related to the symbol itself, facilitating a complex synthesis between different aspects of the human being, and allowing new and meaningful learnings.

The symbol is eminently intercultural; the same symbolic images, with connotations that differ because of their specific geographical position, are found in distant cultures in time and space. This was precisely one of the characteristics that enabled Jung to deduce the existence of the collective unconscious composed of universal

archetypes. Moreover, for Jung, "the symbol is on the one hand a primitive expression of the unconscious, and on the other hand is an idea that corresponds to the deeper intuition of conscience" (Jung 1938, p.38 ). The image is "concentrated expression of the total psychic situation" (Jung, 1922-50, pp.17-18). The etymology itself of the term describes the multilateralism and, at the same time, the capacity for synthesis; *symbolleîn*, in fact, can be translated with *joining*, that which indicates something that is composed of several elements, and which refers to different realities.

For Eliade the symbol is an "autonomous mode of knowledge ... The symbolic thought is inherent to human beings, preceding language and discursive reasoning. The symbol reveals certain aspects of reality, the deepest aspects, which are beyond any means of knowledge. The images, symbols, myths ... respond to a need and fulfil an important function: to uncover the secret mode of being... They project historically conditioned human beings in a spiritual world which is infinitely richer than that of the closed world of the historical moment" (Eliade, 1952, pp.13-17).

The gestural symbol, therefore, both in its collective-intercultural and personal connotation, precisely because it condenses within itself not only meanings, but also existential attitudes and values, is able to arouse emotions and images that facilitate change and makes people receptive to new realities. These are dimensions connecting micro and macrocosm, i.e. realities that belong at the same time to human beings and to civilisation, nature and cosmos. Identifying oneself with a symbolic image through movement can activate inside oneself the corresponding meanings. For example: dancing the archetype of the tree, everyone is able to perceive inwardly how he/she is *rooted*, thus how one is able to welcome one's natural human reality; secondly (in terms of the polarity of the symbol) everyone can perceive how he/she allows and experiences the opening of his/her own *branches* to the sky, as an ideal inspiration, not as an escape; and how much the two dimensions are in harmony with each other. All this allows the realisation of an experiential learning in relation to values and attitudes that are difficult to activate in a purely verbal manner. The movement, in fact, allows to experience from within the symbolic image itself, so to personally experience its potential. All of this happens in a particularly effective way, precisely because it is not limited to instructing on a plane of intellectual knowledge, but is made of immersive methodologies of experience, learning and knowledge; as such, it does not only involve rational understanding, but living; enabling knowledge to become from *Sophia*, wisdom, *Fronesis*, i.e. wisdom of life. Verbalisation, as I have described previously, helps in this because it allows the realisation of a varied and complex verbal and non-verbal synthesis between dimensions.

Certainly each time one propose a symbol *from the outside* is, such as a movement that is not only improvised but also learned through traditional dance, than it is inevitably actualised and personalized by the individual who is dancing and, therefore, making it his/her own. For example the *tree* (see Naccari 2004), which I have previously stated, "as universal symbol of the axis of the world (present in the most varied cultures), will become the olive tree under which I played as a child, or the great scented lime tree I see in front of my window when I work on the computer, or even the great oak, strong and friendly that I would like to be for my pupils and students. The symbol proposed *from the outside* thus connects (*circularly*) with the *inner* one, activating personal resonances and meanings, whose degree of awareness varies greatly... All of them, however, some more than others, will dance the power that has the tree to rebalance high and low, heaven and earth" (Naccari 2012, p. 75).

#### 4. SHAMANISTIC ORIGINS?!

Due to the value assigned to symbolic mediation, I have always considered one of our ideal references as dance-movement educator in terms of Shamanism: without underestimating the epistemological distance between our world and that of the *multiple universes of shamanism* (Nathan - Stengers 1995). The shaman (Eliade 1951) administers the power of symbols, of movement, dance, music, trance, musical instruments, and various objects, such as masks, special clothes, colours, fabrics, feathers, nature's elements etcetera... We, as dance-educators, use all of these. Without searching intentionally for a particular trance-like state, in the setting of symbolic expressive mediation, the generation of a state of consciousness different from that which is usual is inevitable; this allows a lowering of the defences, to feel emotions, to allow oneself to imagine and to come into contact with one's own inner world. Often, among other aspects, those who lead the movement use instruments of various kinds, perhaps to mark time or to indicate a stop, thus administering the power of music that has often been considered in archaic cultures as a sort of mysterious language between the visible and invisible worlds. We also use objects of various kinds such as coloured cloths, balls and balloons of various sizes, sticks, newspapers, and much, much more. These become stimulus for the movement due to the characteristics of the material of which they are made and to their symbolic resonance.

The shaman is minister of the cult and, through the rite invokes and reactivates ancestral time, which allows all members of the community to return to the magic and the force of that time *beyond time* and to participate in it, finding meaning and energy for their daily lives to come.

In a very similar manner, in the symbolic-anthropological setting, in the space of a meeting, it is as if we narrate a story that evokes a symbolic theme and/or myth. Through the power of music, movement and instruments and/or

objects with which it is possible to dance, there is an identification with the theme suggested, thus personally reworking it. Different activities of improvisation or traditional dance as well as others are seamlessly interwoven in a specific frame, which makes up the integrator background and enables one to remain focused on the symbolic theme and the educational objective that is to be reached through it.

This weave relates to archetypal narrative roots, which, according to Jung, are both collective and unconscious matrices (forms of the collective unconscious) as well as cultural expressions (concrete manifestations of those forms). In addressing-identifying with these collective forms through corporeal and expressive mediation identification, it is possible to develop creatively one's own individual existential modes that in some way correspond to those images, activating a process of personal evolution. Thus, there is an orientation towards the realisation of one's existential authenticity, and towards the process of identification. The latter is understood as both a conscious comparison and assumption of collective meanings, and as an integration of unconscious experiences and ideals, in any case the two realities are in evident dialectic circularity with each other (see Naccari 2004, p.27). The process that is activated is thus both that of the conscious comparison with attitudes and meanings, and that of integrating sensations and hidden or latent instances that may emerge thanks to the proposed activities. All this however always occurs in the symbolic-mythical frame proposed by those who lead, which thus allows in a certain sense appropriate orientation and integration of the process of change (For examples see Naccari 2004, 2012).

The shaman is also a medicine man and psychopomp, in the sense that he cures not only with herbs, but also through his superior ability to sustain the soul on a journey that leads it back from the other-worlds where it was lost to the collective world to which it belongs, during which it is supported by the entire village. In a certain way we are doing something very similar, because we are trying to channel emotions and states of mind, of those who dance with us, towards more harmonic and evolutionary possibilities for one's own special path in life and in consideration of the context in which each one is inserted.

This is in fact possible through *the proposal of the right symbol* for that person at that particular existential moment. Durand expresses this concept as follows: "The psychotherapist who has to deal with depressive psychopaths injects into their asthenic psyche antagonistic images, images of ascension, of vertical conquest. And immediately, ... consciousness undergoes a genuine moral revitalization ... Similarly, in order to balance the neuropath who tends to lose touch with reality, Desoille makes them dream no longer of the ascent, but the descent to earth ... So in these therapeutic methodologies the change of regime sets up first imagination, and then behavior, a symbolic re-balancing " (Durand, 1964, pp.107-108).

Also in a pedagogical key, the symbolic dance theme is chosen on the basis of what people are deficient in. Initially it would be good to dance using the themes with which they already feel comfortable with, in order to be able to become familiar with the specific educational language, with the group as well as with those who lead.

A remarkable merit of the shamanistic therapy, from which we have much to learn, is to not to isolate the sick person, but to give them an important role in relation to the whole community. Tobie Nathan (Nathan - Stengers 1995) in speaking of non-western cultures, "*savage*", defines them *multiple universes societies*. This means that for them the world that we see is only one of the possible worlds, there are many others, inhabited by spirits, that are very different from each other; he calls our society, "*scientific*", with unique universe, that of the "alleged" scientific truth. What characterises shamanistic therapies is substantially the reference and the restoration of the sick person to his/her own culture and community. The sick person, therefore, is not alone with his/her problem, is instead firmly linked to the system of interpreting the world of his/her people, and, because he/she is sick, plays for them an important role in mediating between the worlds; thanks to the illness, he/she has the power to allow them to communicate with other worlds, to bring messages from the spirits.

Many traditional dances, until the last century also in Italy, used to ritualise this therapeutic valence of movement, such as the restoration of symbolic identity of culture of belonging (see Naccari 2004). An example of this can be traced to *tarantism* from the south of Italy (De Martino 1961).

In the symbolic-anthropological setting, ethnic dances are used in all their cultural and community value. Moreover the attention towards the person is never alone as it is individual; there is a constant effort to consider and to enhance the subtle threads of membership to one's own loved ones, to one's own community, one's own culture in the intercultural opening and one's faith (whatever it may be), in the opening to the widest possible and authentically dialogical ecumenism.

## 5. NOTES ON THE SPECIFIC METHODOLOGY

To enable entrance into the specifics of the method, I will describe below in summary the basic characteristics of the setting of a meeting of symbolic-anthropological bodily mediation (The setting is described in detail in Naccari 2006 pp.211-246; and 2012 pp.53-62)

First, one should bear in mind that the structure of each meeting is always carried out in three phases patterns. Initially, the warm-up is never simply physical but also relational and emotional, and as well introduces the chosen

symbolic theme. This phase lasts as long as people in the group need to be able to engage fully in play. Immediately after the warm-up we often propose an ethnic dance, or a sequence of *expression primitive* (Schott Billmann 1994), that condenses the symbolic image which will be addressed below in the next phase of exploration. The choreographic sequence aims to enhance the sense of belonging to the group, and to allow familiarising oneself with the chosen theme by starting to acquire some gestures that are related to it.

The next part, the exploration, is the central part in which one fully immerses oneself in the experience of movement in the proposed theme of the meeting. Here the perceptual, emotional, intuitive, imaginative, relational, analogical and expressive processes have the supremacy over our usual mode of being conscious and over our language. At this stage it is as if we are able to suspend the time and space of everyday life, to experience a sort of extended present (see Naccari 2012).

The phase that closes the meeting, which we call integration, is that which allows return to a state of daily consciousness, while at the same time seeking to create the synthesis of what has emerged, allowing oneself to integrate this experience into one's daily life. In this part of the meeting, we often propose the development of an individual or group choreography in which to focus and condense the most important aspects that have emerged during the meeting. We may also propose a plastic-pictorial reworking that is isomorphic to the theme chosen. For example, if I proposed to dance their own *tree*, this will be the subject of the design of each person, after all the drawings can be placed together to create a large collective mural. If I have worked on *shaping*, sculpting statues in space, I can propose the use of the collage technique, which retains the same purpose on another plane and in another language. If work has been performed on abandonment, it will probably be useful to work with finger paints, which facilitate regressive and fusional experiences. Another possibility of integration is narrative reworking, where it is possible to invent a story or tale from what has emerged, to write a poem or a poetic text, to narrate a part of one's own biography. Usually, at the end, whether another technique of reworking the experiences has already been used, or none has been used whatsoever, *verbalisation* (talking about the experience) is used to describe and better focus on the experience and to remember it. Therefore, *verbalisation* is not just for the purposes of interpretation but it is used to find the words to describe what has emerged (See Naccari 2012), to increasingly better integrate into the consciousness new dimensions and experiences.

The space of integration is also the time when the educator, as in the case I described earlier, is able to tell the cultural relevance of symbols that have been explored; this allows a global integration of the gestures and themes explored.

An aspect always present in our setting is that related to the synchrony of the basic theme; this means that from the warm-up to the integration, attention is paid in proposing activities about the same educational and/or therapeutic objective through the chosen symbolic mediation. For example, if the chosen theme is that of the *cross*, since the warm-up all the activities allow the perception of one's own verticality and horizontality, then an ethnic dance related to this theme is proposed (for example, a Greek dance); through the exploration, between other activities, it is possible to integrate a *visualization* on the axes and then to take them into the space and dance them... In integration, everyone can design their own personal way in which they have *seen*, perceived and danced all this. The basic objective here is not only to harmonise the three dimensions, but also to *centre oneself* in relation to this; on the basis of the specific needs of the group, the educator will place the emphasis on one thing or another...

Yet, another feature is the dynamic and harmonic continuity between diachrony and synchrony and the way to live time, space and personal resonances within the theme suggested by those involved. Everything that is proposed never presents abrupt transitions or interruptions, so that those people who are dancing are eased into immerse wholly themselves in the experience. All this in listening to timing and the specific needs of the group; in fact, regarding the latter the person that leads the group can adapt the time and the ways of the proposals during the meeting.

The most important symbols and narratives used in the meetings of symbolic-anthropological bodily mediation, both through the choreography of ethnic dances and through other expressive activities include the circle, the *mandala*, the cross, the labyrinth, the opposed rows, the tree, the cycle of the sun, the great triad and many others. They are proposed in all their intercultural forms, not only to learn and express on a choreographic plane, but to revive the old pedagogical meaning of them, which involves people holistically in their multiple realities: physical, emotional-affective, relational-social, intuitive-imaginative, cognitive, ethical, spiritual, creative, natural cultural and ...intercultural.



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## Teaching Writing In French At University And Students' Creativity As Its Component

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### ABSTRACT

The present contribution is devoted to the issue of teaching writing in language training, specifically teaching writing in French on the university level in the Czech Republic. The initial part of the paper sets basic definitions, most crucially writing in the sense of the French *expression*, or eventually *production écrite* as a part of four language competences as defined by CEFR. Since writing is closely connected to creativity, the final part of the paper is devoted to presenting particular examples of creative writing of students in selected French study fields in the Czech Republic.

**Keywords:** teaching writing, students' creativity

### INTRODUCTION

The present article is a result of the project “The Innovation of ‘Writing in French 1 and 2 courses’ and the creation of parallel e-learning Moodle support” carried out in 2015 at the Faculty of Pedagogy at University of Hradec Králové. The aim of the innovated courses of writing is to develop students' writing skills necessary not only in the academic field. Additionally, the courses serve as an introduction to standards of writing in French on several levels, from a basic communication level to the academic level. During courses, students will get acquainted with basic types of documents, structure, range and formal issues of major writing styles with an effort to attain authenticity of the documents and support creativity of students. Since creativity in education is a modern and tendentious element, the conclusion highlights this fact in contemporary didactics of foreign language teaching as well as presents particular students' works.

### WRITING

#### WRITING PROCESS IN CLASS

The fundamental interest of the present research is writing, in the meaning of the French term *expression écrite*, *production écrite* or *communication écrite*. Besides speaking, listening, and understanding, writing constitutes one of the four competences which are the focal interest of modern language education. In this context, Lieselotte Martens (2005) observes that essay writing, or writing in general is the skill which is being omitted, or which is receding in favour of dominating speaking skills. However, writing is an indispensable element of education hence it contributes to the development of an individual and the expression of their cultural and social values. It is our whole personality, whole body that participates in writing (writing here is understood as a target skill with a communicative function, rather than a tool with assistive, secondary function, cf. Janíková, 2005). In the process of writing, the author enters their inner self, often secluded from their surroundings (Hermanns, 1988). Writing in foreign language teaching can be classified from various perspectives. The present article draws upon the classification as advocated by Benešová, to which it also conforms. This classification differentiates the type, the kind and the method of writing.

**Table 1:** Writing Classification (Benešová, 2008)

WRITING AS A TARGET SKILL			Writing Type
Directed Writing (Writing Following a Sample)	Independent Writing / Personal Writing		Writing Kind
Functional Writing / Pragmatically Oriented Writing	Fact Oriented Writing	Creative Writing	Writing Method

As the table above illustrates, creative writing, whom the following chapters will devote more attention, is understood as a target skill, i.e. it has a communicative function and is independent, i.e. it is not a subject to any models, samples or norms; it employs emotions and playful approaches to language (Faistauer, 1997). Although it is independent writing, it does not imply that its message is autotelic. We write to communicate, which on the one side there is the one who writes, the person who tells, while on the other side there is the person who reads the text, i.e. the recipient of the given message. It is therefore real communication. According to Tháo (2007) “pupils

do not create texts so that teacher would mark their mistakes [...];” writing, on the contrary is an activity “which has a certain goal and sense [...].”

While applying the abovementioned distinction in praxis, it is necessary to bear in mind that the communication situation must be clearly and accurately defined while setting the task to students of writing. The students are therefore guided that through the development of writing competences in various situational contexts they should be able to convey their ideas and feelings (cf. Bouchard cited in Pouliot, 1993). It is still necessary to observe that the text is understandable to the given reader and that they can comprehend the ideas communicated to them (Weber, 1993).

Such competences in writing are, according to Albertová (1998), possible to classify into several levels. Linguistic competences involve grammar, the behavior of lexicon, and the referential ability including mainly experience. Sociocultural competences contain social rules, norms and knowledge of cultural history. Cognitive abilities are linked with the knowledge and command of the given language. The last competence is discursive or pragmatic, which is the ability to compose texts corresponding with the given communicative situation.

The capacity of written expression is a complex issue which contains a variety of partial categories which must be considered while teaching.

### WRITING IN FOREIGN LANGUAGE DIDACTICS

The position of writing within foreign language didactics has been gradually changing. Grammar-translation method understood writing as a means to acquire grammar rules and formalities. Audiolingual and audiovisual method conceived of writing as an accompanying/marginal element to speaking and listening. Communicative method accentuated exclusively oral expression; writing was seen as an attendant element until the late 1970s. The changes appeared in the 80s due to knowledge of cognitive processes which brought the emancipation of written expression. Besides cognitive processes, which are associated, as Kasta argues, with e.g. participation of more senses, writing becomes a parallel to reading, and is in its beginnings accompanied by inner speech etc. Thereby the focus on emotional aspects starts to be also considered (cf. L. von Werder, 1996).

These findings have been reflected in new methodologies and approaches to foreign language didactics in general, most notably in CEFR alias Common European Framework of Reference for Languages, where writing is equally defined. The CEFR framework defines completion of individual language levels according to the given criterion – the ability of written expression in a foreign language. Such defined markers correspond with French examinations DELF (Diplôme d’études en langue française – The Diploma of French Language Studies Levels A1-B2) and DALF (Diplôme approfondi de la langue française – The Diploma of Advanced French Language Studies Levels C1 and C2). The requirements for writing on different levels are available in the CEFR Handbook (p. 63).

The defining scale used by CEFR enables the teacher to measure students’/pupils’ progress and allocate their language knowledge within the particular language level. Simultaneously, the scale is the guideline for teachers to develop particular knowledge and skills, which the language at the given level enables them.

However, writing does not need to be restricted to fulfilling CEFR criteria or obtaining the French Republic certificates. Writing is most closely connected with creativity and the development of creative approach in class – the area which we have been attempting recently also on university level. Therefore writing at universities will be the subject of the following chapters.

### CREATIVITY

Before starting to elaborate on the term creative writing, it is necessary to define what it means in the context of language teaching.

The word creativity comes from Latin *creatio* meaning “to create, to make.” Intensive and systematic insight into the issue of creativity was provided by J. P. Guilford (1950), and in the Czech Republic it was namely J. Maňák (1998), J. Hlavsa and M. Jurčová (1978) who devoted their research in the phenomenon of creativity.

The phenomenon of creativity is a highly complex and recently significantly modern issue (Puozzo, 2013) which includes a variety of fields of human activity – be it artistic, as it may initially appear – or history, psychology, economy and others. Therefore its definition is neither clearly designated nor limited. Craft (2005) describes creativity as “the generating of new ideas.”

According to Czech authors Lokšová and Lokša (1999), “creative process whose result is a created product, is realized by a creative personality. They participate in a complex way with all their qualities and cognitive as well as non-intellectual psychic processes.” The very creativity is hence supported by a creative personality with their creative abilities which lead towards creative production and activity.

In the context of language as Noam Chomsky understands, creativity is an individual’s ability to create and understand an infinite number of new testimonies and these communicates later interpret (Robert, 2003). Among semantically related words of creativity are notions such as fantasy, imagination, originality, individuality, energy, courage, experiment etc. (Šíp, 2013). Quite an extensive characterization of creativity within psychology is provided by Žák (2004) who differentiates its individual components, as summarized in Table 2.

**Table 2:** Creativity and Its Components (Žák, 2004)

**CRETIVITY AND ITS COMPONENTS**

<b>1. Ability to</b>	<b>2. Attitude Of an individual, which is characterized by</b>	<b>3. Process Characterized by</b>
Imagine or invent something new	Agreement, acceptance of the change and novelty	Hard work
Create ideas, thoughts corresponding with general criteria	Willingness to play with ideas and thoughts	Continuous mind activity to generate solutions
Understand and analyse problems, design their solutions	Flexibility of the perspective	Space for improvisation
Constructively work with fantasy and individual features of emotional intelligence	Willingness to take risks	order (imposed, created or gained)

According to Žák, creativity includes attitudes, abilities and processes, which are further differentiated and defined. Creativity is then one of the human competences which can be further developed in individual aspects (Benešová, 2008). In such a complex system which originates at a creative person with a potential to immerse in an original activity, an inevitably important role is played by the very teacher, the climate of the class, the methods used, etc.

### CREATIVITY AND FOREIGN LANGUAGES DIDACTICS

Creativity has been an unknown term in didactics for a long time. Initially the methods were limited to imitating of given models (cf. Nováková, 2014) and exercises were restricted to a single correct answer; other possible alternatives represented system deviations. In foreign language didactics the term creativity appears no sooner than in 1970s as a part of communicative-pragmatic method; it is later developed in mid 1990s due to “action oriented approach,” emphasizing the activity and individuality of a student (Cuq, 2003). In French milieu these methods were acquired by the Office for Teaching of French Language and Culture in the World (BELC, *Bureau d'études des langues et des cultures*), whose funds also initiated the first publication aimed at creativity in foreign language teaching: *Game, speech, creativity (Jeu, langage et créativité)* focused on creative activities *les jeux de créativité*. Presently creative writing based on the knowledge of modern psychology and pedagogy “on the distribution of creativity in the human population and its possible development” focuses on the development of “students’ creative potential. [...] It represents an integrated complex of aims, methods and approaches aiming towards the development of creativity of students and the formation of creative personalities within education” (Lokšová, Lokša, 1999).

Creativity in foreign language teaching has several techniques and principles:

- Brainstorming method (*rémue-méninge*): associations to the given expression/topic suitable e.g. for practice or activation of vocabulary, i.e. the introduction of the given topic, or a motivational element for creative writing. One of brainstorming means is so-called clustering or sociograms; it is important to allow free flow of ideas which should be written down without their censorship.
- Language games (*jeux de langues*).
- Role-play (*jeux de rôles*): interactive communicative act leading to the development of students’ expressive abilities in a foreign language with the help of three aspects – linguistic, sociolinguistic and pragmatic (Cuq, 2003).
- Global simulation (*simulations globales*): one of the techniques originated in BELC workshops where students create fictional worlds with the help of imaginary places, buildings, islands, villages etc. (Yaiche, 1996).
- Creative writing (*écriture créative*): details see below.

Nowadays the abovementioned activities were supplemented by many other, such as creating of so-called mind maps (a more complex form of cluster based on complementary elements such as pictures, pictograms, etc.), project based teaching, which supports the application of inter-disciplinary relationships (Nováková, 2014).

## CREATIVE WRITING

Considering that creative writing constitutes a fundamental pillar of the present contribution, its conception and forming within foreign language didactics will be devoted the greatest attention.

Creative writing originated in the USA in 1920s at the University of Iowa where also the first specialised creative writing study programme opened 16 years later. Creative writing cherished equal popularity in Germany; however, it reached the Czech Republic no sooner than 1990s. In France creative writing still remained shaded by the prominent textual interpretation and analysis.

According to Z. Fišer (2001), creative writing can be understood from two perspectives: either as a formative activity leading to the development of an individual, or as an autonomous field with its own theory and technique. Within foreign language didactics creative writing is understood as a complementary method to other forms of writing where creativity is excluded.

The word “creative” used in this context means that the writing process is less bound with roles, e.g. formal, content, stylistic, or language requirements. Individual activities are targeted to underpin students’ individuality, needs and interests. The student acts as an author or a poet securing certain aesthetic communication. One of the most frequently indicated and used models of creative writing is so-called literary workshop (*atelier d’écriture*), which is mostly connected to teaching literature, where students focus on the reception of the presented work, upon which they create their own texts of various genres (letters, poems, fairy-tales, essays, autobiographies, inner monologues etc.) (Mann, Ch., Schröter, E. Wangerin, W., 1995).

According to Vanderheyd (cited from Tardieu, Van Hoorne, 2003) creative writing is a method which presents writing in an entertaining way; it is at least in its initial phase deprived of grammar rules and restrictions. It should thereby elicit the feeling of pleasure among pupils who should thus feel desire to write and consequently be read. There are various techniques of creative writing; they were described both in Czech Fišer, Mareček, Janíková, Čornej, Zajíčková, Matušková), French (e.g. Vanderheyde, Pimet, Boniface etc.) and other contexts. The techniques span from association techniques and brainstorming through filling-in texts until the very individual literary production based on certain models. The last technique will be dealt closely in the last chapter, where also the practical output of our students will be presented.

## CREATIVE WRITING IN PRACTICE

The last point of our contribution introduces an example how creative writing is put to practice in the Czech Republic within the university program called French Language in Education. The students participating were around 21 years old and their language level was B1/B2. The creative writing workshop was realized as a part of literary education, i.e. a students were introduced a literary text, a poem in our case, which served as a trigger (*texte déclencheur*). In the second phase students worked with the given text in a standard way, i.e. they performed literary analysis and later received a set of restraints for their own work. The first sample contained the poem *Il pleure dans mon cœur* in *Romance sans paroles* by Paul Verlaine. Based on the poem students were asked to create their own poetic works (Fig. 1) expressing their current feelings, impressions and mood. In the second case students focused on calligrams by Guillaume Apollinaire (Fig. 2) being thematically restricted to Christmas; the lesson had literary as well as civilizational orientation (sociocultural task completion): Christmas in France. Samples of selected poetry are reproduced at the end of this chapter.

However, students’ activity does not need to be limited only thematically; the imposed restrictions can include e.g. the number of words, selected lexicon, grammar phenomena etc. The product of writing can be other literary genres: interview, short story, novel, criticism, flyer, etc. The task reflects the original texts, lesson focus and aims set by the teacher. Students can work individually or in groups. Pedagogic activities thus vary according to their activities, from functional (expressions of feelings), sociocultural (lifestyles in different countries) to linguistic (lexical, stylistic or grammar focus) and so on.

The problematic issue associated with creative writing is its final evaluation, which should be more of a qualitative character (Šíp, 2013). The text should be understandable, yet it is originality, resourcefulness, and students’ enthusiasm that are considered its most significant elements. A beneficial component is other students’ participation in the evaluation (Martens, 2005), which is also practiced in our context. When performed regularly, creative writing assessment (with regular students’ participation to assess their peers) can create a chart of best poets of each year.

Poetic creativity can thus become a component of far more ambitious projects such as creating a poetry-book (considering the thematic and genre diversity), or organizing its final public presentation by reciting their own poems.



Fig. 1: Poems based on Paul Verlaine

**FINS AMÈRES**

**QUESTIONS POUR UNE FLEUR**

Une petite fleur qui maintenant dort  
ne sait qu'elle m'a laissé seule  
ne se réveille pas, aujourd'hui, encore  
son corps reste là mais déjà veule.

Être si belle et devenir pâle  
loi de la nature ou simple crime ?  
Je veux la protéger avec mon châte  
j'ai peur de froid sans estime.

Regarder derrière ou voir devant ?  
Je cherche des lunettes pour aviser bien  
Pourquoi des réponses me donner avant  
Je ferme mes yeux ne demandant rien.

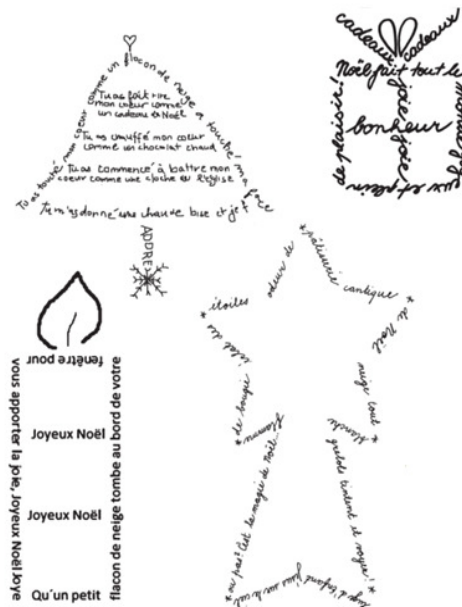
Gris est le ciel, des arbres sont affligement nus,  
Des allées sombres cachent les sculptures inconnues,  
L'éclat s'envolait avec les hirondelles,  
Gris est le ciel, le témoin de cet acte cérémoniel.

Pourquoi les fins amères tuent notre fois ?  
Est-il possible de gagner cet aboi ?  
La voix impassible proclamera la peine -  
Sans bouger les lèvres, sans sentir la haine.

La lutte déchirante est après tout finie ;  
Le goût de récriminations indéfinies  
Avec l'odeur de feuilles mortes m'enivrent.  
Je ne peux plus, ils ne cessent de me poursuivre.

Il est là, sans invitation, le chagrin.  
J'essaie de l'oublier ; il en reste un grain,  
Il m'aveugle comme une lumière crue.  
Douloureux est de remercier pour ce qu'on n'a plus.

Fig. 2: Calligrams based on Guillaume Apollinaire



## CONCLUSION

« En chaque personne sommeille un poète. »

The present contribution concludes with a quote from Vanderheyde (cited from Tardieu, Van Hoorne, 2003), which states that a poet slumbers in everyone. This is an observation to depart from while teaching creative writing; students initiated and motivated to self-expression, which enables not only to develop (not gain) language, but also literary and critical competences. Furthermore, creative writing is bound with emotions and functions thus as form of therapy where they students can “write themselves from their glooms.” The motivational aspect of creative writing lies in students’ realization that they are able to create original texts in a foreign language, texts which are additionally recognized by others (cf. Maley, 2009).

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## Testing Algorithmic And Application Skills

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### ABSTRACT

Sprego is a deep approach programming tool in spreadsheet environments. Its main features are a set of general purpose functions, entitled Sprego functions, and the ability to create multilevel functions and formulas built on these functions. Equipped with these tools Sprego can serve as an introductory programming language for programmers and as the ultimate language for end-user programmers. We have launched a project to test the effectiveness of Sprego on different levels of the education system. The present paper details the developmental progress of students of informatics studying spreadsheet management with Sprego.

### INTRODUCTION

We launched the project entitled Testing Algorithmic and Application Skills in the 2011/2012 academic year at the University of Debrecen, Hungary (Biró et al., 2014, 2015a, 2015b; Biró & Csernoch, 2014). The aims of the project were to test the level of computational thinking and algorithmic skills (Wing, 2006) and problem solving approaches (Csernoch & Biró, 2015b) of students of informatics in different traditional and non-traditional programming environments (Biró & Csernoch, 2013a, 2013b).

We have found that the students only consider high level programming tools adequate for developing algorithmic skills. To provide an explanation for these opinions, we analyzed the different approaches to non-traditional computer related activities, focusing on birotical document management. It was found, on one hand, that the software companies maintain that handling birotical programs and documents does not require any theoretical background or any algorithmic skills, and that users can wander around in the GUI (Graphical User Interface), and as if by magic after a couple of clicks the output will appear. On the other hand, even highly qualified educational professionals support the software companies' slogans, and claim that document handling is a low-level activity (Bell & Newton, 2013), and furthermore, is responsible for the failures encountered in the teaching of informatics (Gove, 2012, 2014).

However, in the process of creating a typology of computer related problem solving, we found that non-traditional computer activities could aid development of algorithmic skills just as well as traditional programming environments do. The key to this concept is that both traditional and non-traditional activities should be carried out by deep approach methods (Booth, 1992; Soloway, 1993; Case & Gunstone, 2002; Warren, 2004; Sestoft, 2010; Csernoch & Biró 2014b, 2015b). Based on this theoretical background, we have developed deep approach methods for both text and spreadsheet management – ERAC (Error Recognition And Classification) (Csernoch & Biró, 2015d) and Sprego (Spreadsheet Lego) (Csernoch & Balogh, 2011; Biró & Csernoch, 2014a; Csernoch, 2012, 2014; Csernoch & Biró, 2013a, 2013c, 2014c, 2015a, 2015c), respectively –, and claim that these should be applied instead of the popular but ineffective surface approach methods.

### THE STUDY

Within the framework of the TAaAS project (Csernoch & Biró, 2013b; Csernoch et al., 2014), we have introduced Sprego at different levels of the education system in Hungary. The present paper details the results achieved by first year students of informatics at the University of Debrecen.

The students arrive into tertiary education after completing several years of informatics classes, both in primary and secondary school, and most of them pass the graduation exams in informatics and the ECDL exams with excellent results. Both the informatics curricula and the graduation exams (SLE, n.d.) emphasize the importance of spreadsheet management, and the ECDL has its own separate module in the subject (ECDL, n.d.), so the students can be considered experts in this field. However, we found that the figures are not as clear as they initially appear. This finding is in accordance with the extremely high number of error-prone documents, which cause serious

financial losses and waste time, human and computer resources (Csernoch & Biró, 2014a; EuSpRIG 2015; Panko & Aurigemma, 2010; Powel et al., 2008; Tort et al., 2008; Van Deursen & Van Dijk, 2012).

To find out how students are affected by this issue, how Sprego affects their spreadsheet knowledge and their problem solving approaches, and what knowledge is stored in long term memory, we launched the Sprego test over several phases. The first phase (1ST) is carried out when the students enter tertiary education. In the first semester they study spreadsheet management with Sprego, and they are tested with short questionnaires. However, the final (FI) test is carried out one year later, following the completion of the Sprego spreadsheet courses (Table 1). In the first phase we tested the knowledge which they bring with them from secondary education, while in the final phase the test relates to the effects of Sprego.

**Table 1:** The sample. The number of students participating in the Sprego test

	1ST	FI	Total
2011	142	83	225
2012	123	41	164
2013	126	102	228
Total	391	226	617

In the Sprego test a sample table is provided (Fig. 1) and real world problems are presented based on the data. The majority of the tasks should be solved with spreadsheet formulas (Fig. 2, Tasks a)–e)) and one additional task should be answered with a natural language sentence, which is a what-does-the-program-do type of task (Fig. 2, Tasks f)).

	A	B	C	D	E	F	G
1	Country	Continent	Capital	Area	Population (thousand)		
2	Afghanistan	Asia	Kabul	647500	27756		
3	Albania	Europe	Tirana	28748	3545		
4	Algeria	Africa	Algiers	2381740	32278		
5	American Samoa	Oceania	Pago Pago	199	69		
6	Andorra	Europe	Andorra la Vella	468	68		
7	Angola	Africa	Luanda	1246700	10593		
8	Anguilla	America	The Valley	102	12		
233	Yemen	Asia	Sanaa	527970	18701		
234	Yugoslavia	Europe	Belgrade	102350	10657		
235	Zambia	Africa	Lusaka	752614	9959		
236	Zimbabwe	Africa	Harare	390580	11377		

**Fig. 1:** The sample table of the Sprego test

- a) What is the capital city of the largest country?
- b) What is the population density of each country?
- c) How many African countries are in the table?
- d) What is the average population of those countries whose surface area is smaller than G2?
- e) How many countries have a surface area greater than G2?
- f) What is the result of the following formula?  
`{=SUM(IF(B2:B236="Europe",IF(LEFT(A2:A236)="A",1)))}`

**Fig. 2:** The tasks of the Sprego test

Task a) is a classical programming problem, which can be solved with a three-level formula in spreadsheets. The algorithm of the task is the following:

- finding the largest number in a vector (S1),
- deciding the position of this value (S2),
- finding the matching item in another vector (S3).



- S1. =MAX(D2:D236)  
S2. =MATCH(MAX(D2:D236),D2:D236,0)  
S3. =INDEX(C2:C236,MATCH(MAX(D2:D236),D2:D236,0))

Task b) requires that the student knows how to calculate the population density, recognizes that the population is presented in thousands (Fig. 1), and is able to create a vector output. For the vector output there are two solutions: create one output then copy the formula (S5) or create an array formula (S4).

- S4. {E2:E236/D2:D236\*1000}  
S5. =E2/D2\*1000 then copy the formula to the other countries

Task c) is again a classical programming algorithm: a counting problem with an inside condition. To solve this problem there are several different solutions in spreadsheets. We can use the appropriate built-in \*IF?() functions (S6, S7), the database functions, or create a two-level formula with the Sprego functions (S8).

The Sprego formula has an inside IF() function with the condition and the output vector of 1s and the default FALSEs on the true and the false branches, respectively. The outside SUM() function calculates the sum of the items of the vector.

- S6. =COUNTIF(B2:B236,"Africa")  
S7. =COUNTIFS(B2:B236,"Africa")  
S8. {=SUM(IF(B2:B236="Africa",1))}

Task e) is a one-folded extension of Tasks c). This task is a counting algorithm, but the condition is different, since an inequality is checked and the comparable number is stored in a variable. We have to note here that when using the built-in \*IF?() functions the syntactic rules are changed (Csernoch, 2014), and a somewhat inconsistent method is applied to express the condition (S9, S10). On the other hand, using a two-level conditional array formula the syntax is simple and in accordance with other programming languages (S11).

- S9. =COUNTIF(D2:D236,">"&G2)  
S10. =COUNTIFS(D2:D236,">"&G2)  
S11. {=SUM(IF(D2:D236>G2,1))}

Task d) is a further extension of Tasks c) and e). This task calculates the average of those values which suit the condition. In this task the condition is an inequality with a variable, and the average of the population has to be calculated.

Using the built-in \*IF?() functions is quite confusing. Similarly to Task e), we are faced with the problem of the syntactic rule of the condition. Beyond this, the argument lists of the AVERAGEIF() and AVERAGEIFS() functions are different.

However, when using a two-level array formula, we do not have any of these problems. The algorithm, and consequently, the structure of the formula, and the syntactic rules for Tasks c), d), and e) are the same. The difference between Task d) and Tasks c) and e) is that d) is not a counting problem, but calculates the average of a vector. The vector is the output of the IF() function, which holds the population and the default FALSEs on the true and false branches, respectively. The average of this vector is calculated with the outmost AVERAGE() function.

- S12. =AVERAGEIF(D2:D236,"<"&G2,E2:E236)  
S13. =AVERAGEIFS(E2:E236,D2:D236,"<"&G2)  
S14. {=AVERAGE(IF(D2:D236<G2,E2:E236))}

The solutions of Tasks c)–e) clearly show that using the built-in \*IF?() functions requires knowledge of the names of the functions, the different syntactic rules, and the different order of arguments, which is extremely difficult to handle (S6, S7, S9, S10, S12, S13), (Csernoch, 2014). Using the database functions without any background knowledge in database management is even more complicated (Csernoch, 2014). While applying array formulas, we follow the algorithm which is well-known in programming: selecting the items which match the condition with an IF structure; following this we do further calculations with the output vector. Consequently, with the array formulas the algorithm is the same for Tasks c), d) and e) (S8, S11, S14), (Csernoch, 2014; Csernoch & Biró, 2015a, 2015c).

Task f) is a completed array formula, which calculates the number of European countries starting with the letter A.

Task e) was added to the test in year 2013, so some of the data is missing for this task (Table 1).

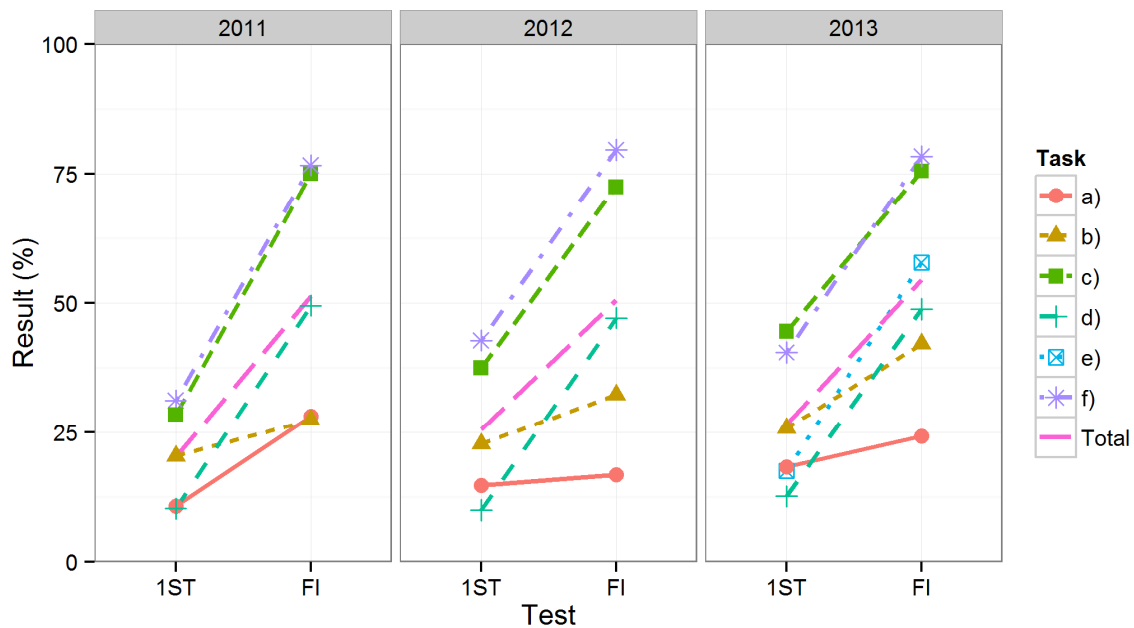


## FINDINGS

To compare the students' results in the two tests (Table 2 and Fig. 2), we carried out a mixed analysis of variance. The factor year (with three levels: 2011, 2012 and 2013) was a between-group variable, while there was a repeated-measures variable with the order of the test (with two levels 1ST and FI). The dependent variable was the results of the tasks in percentages, and the total results.

**Table 2:** The students' average results in the Sprego tests

	Task a)	Task b)	Task c)	Task d)	Task e)	Task f)
1ST test (1ST)						
2011	10.75	20.42	28.47	10.23	NA	31.22
2012	14.74	22.76	37.50	9.98	NA	42.82
2013	18.25	25.79	44.55	12.62	17.56	40.48
Final test (FI)						
2011	28.19	27.40	75.02	49.53	NA	76.60
2012	16.75	32.32	72.52	47.15	55.01	79.67
2013	24.25	42.16	75.58	48.81	57.80	78.43



**Fig. 2:** The average results of the students in the first (1ST) and the final (FI) tests

Considering the total results, there were significant main effects of the test ( $F(1,134)=113.21$ ,  $p<0.001$ ) and the year ( $F(2,134)=12.38$ ,  $p<0.001$ ). However, the interaction was not significant ( $F(2,134)=2.05$ ,  $p=0.132$ ). This analysis proved that the results in the final test were significantly higher in all the three years than in the first tests. In Task a) the interaction is significant; however, analyzing the averages there is an ordinal interaction, so the increase in the results from the first test to the final test shows differences in the different years. We examined the main effect of the order of the test, which is proved to be significant, as is the year factor ( $F(2,134)=5.35$ ,  $p<0.006$ ). In all the other tasks the interaction was not significant; however, the year and the order of the test were. Since Task e) was included from 2013, here a paired t-test was selected to test the significance. The test proved that there is a significant difference between the results of the two test results ( $t(52)=-559$ ,  $p<0.001$ ). As the statistical analyses proved, significant differences were found between the results of the first and the final tests. The students' results improved by applying Sprego instead of the popular surface approach methods: although when tested a couple of months after their school leaving exams they scored extremely low, one year later – after becoming familiar with Sprego – they were able to recall the method and achieved extremely good results.

In the following we focus on Tasks c)–e), since these are the tasks in which the students have the opportunity to

select between the built-in functions and the Sprego functions.

Applying the SOLO categories of understanding – P, U, M and R, for Prestructural, Unistructural, Multistructural, and Relational (Biggs & Collis, 1982; Lister et al., 2006; Clear et al., 2008; Sheard et al., 2008; Tan & Venables, 2010), respectively – to the spreadsheet solutions of Tasks c)–e), we found the patterns presented in Table 3. From the first to the final tests in Task c) the students' level of understanding has increased (Bowker test,  $p=0.001$ ). While in the first test the Prestructural and the Unistructural levels were dominant, in the final test it was the Multistructural and the Relational (1ST: 13+30 and 13+16; FI: 1+16 and 16+39). In Task e) the pattern is similar (1ST: 9+8 and 2+2; FI: 0+4 and 2+15), and the effect of studying Sprego is also significant ( $p=0.009$ ). With Task d), which is a two-folded generalization of Task c), we found the pattern, but we have to note here that in this task, even in the final test, the number of students with a low level of understanding is higher than in the other two tasks.

**Table 3:** The SOLO level of understanding recognized in the solutions of the two tests

FI 1ST	Task c)					Task d)					Task e)				
	P	U	M	R	sum	P	U	M	R	sum	P	U	M	R	sum
P	0	1	3	9	13	3	3	2	4	12	0	2	1	6	9
U	0	10	4	16	30	0	3	3	5	11	0	2	1	5	8
M	0	3	6	4	13	0	0	0	1	1	0	0	0	2	2
R	1	2	3	10	16	0	0	1	2	3	0	0	0	2	2
sum	1	16	16	39	72	3	6	6	12	27	0	4	2	15	21

In the final two steps of the analysis we checked the selection of functions (Table 4 and 5). In Table 4 we can follow the students' change in the selection, while in Table 5 we can see the absolute numbers of the selected functions. In Task c), which is a low-level routine task with a constant and equality in the condition, in the first test they preferred the \*IF?() functions, and then switched to Sprego, while every student who used Sprego in the first test, with one exception, did not change their approach. In the first test in Task c) as many students use \*IF?() functions as Sprego functions. In the final test all but one \*IF?() user switched to Sprego. In Task d), which is a two-folded generalization of Task c), none of the students used the \*IF?() functions, either in the first or the final tests. We can conclude that in all the three tasks, the effect of teaching Sprego was significant (McNemar-test,  $p<0.004$ ). The choice between the \*IF?() and Sprego functions is significantly affected by teaching spreadsheets with Sprego between the two tests.

**Table 4:** Students' changes in their selection of functions

FI 1ST	Task c)			Task d)			Task e)		
	*IF?()	Sprego	sum	*IF?()	Sprego	sum	*IF?()	Sprego	sum
*IF?()	5	38	43	0	2	2	1	10	11
Sprego	1	26	27	0	24	24	0	10	10
sum	6	64	70	0	26	26	1	20	21

The high number of students who ignored the tasks in the first test is remarkable. In the final test most of the students worked with problems. The selection of the method to use clearly shows a change from the \*IF?() functions to Sprego. However, we have to note that even in the first test, as the tasks become more difficult the students increasingly prefer Sprego, even if they are not aware of the method.

**Table 5:** Students' choice of functions in the two tests

	Task c)			Task d)			Task e)		
	*IF?()	Sprego	NA	*IF?()	Sprego	NA	*IF?()	Sprego	NA
1ST	123	77	191	8	79	304	24	20	347
FI	16	183	27	3	142	81	1	96	129

## CONCLUSIONS

We have introduced a deep approach problem solving method in spreadsheet management, entitled Sprego. The essence of the method is that we handle spreadsheet as a programming environment, and carry out concept and/or algorithmic-debugging activities. To prove the effectiveness of the method we launched a testing series in 2011. The present paper details the results of the first and the final tests. The first test is carried out when the students start their tertiary education, right after secondary school, and the final test one year later after covering spreadsheets with Sprego.

The statistical analysis clearly demonstrates that Sprego is significantly more effective than the popular surface approach methods. Both the students' average results and their level of understanding were increased. We have also found that after covering spreadsheet management with Sprego the students prefer Sprego when they have the opportunity to choose. It was also found that without being aware of the method, students prefer Sprego-like solutions in more complex problems.

We can conclude that we have found a method of spreadsheet management which is more effective than the previously favored surface approach methods. This approach to spreadsheets would serve as an introductory programming language, with which we can effectively develop students' computational thinking and algorithmic skills.

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## The Analysis Of The Posts In An On-Line Community Of Practice By Means Of Discourse Analysis

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### ABSTRACT

This study analyzed the messages in an on-line discussion forum in which Information Technologies teachers and academicians participate based on the concept of community of practice. This forum is a platform where members discuss the developments in their subject area, share their resources and materials, and conduct joint studies. The participation patterns of the members and types of posts in the forum by doing discourse analysis were exposed in the study. The study findings revealed that the categories in which members shared posts were personal problems, sharing files and resources, help and support, recent news and developments, common issues and discussion. The results also showed that the experienced members contributed to the subject titles most often, and the members' sharing lasted from one day to 91 months. The authors argued that the online community of practice analyzed in the study had a dynamic process of sharing and along with a repertory of resources. Moreover, new participants were able to find solutions for their professional problems. Finally, the members felt responsible to each other.

**Keywords:** On-line community of practice, sharing knowledge, discourse analysis

### INTRODUCTION

Teachers participate in groups that are related to their professions, share their knowledge and resources, and cooperate each other in varying issues. Communities of practice provide opportunities to teachers for lifelong learning and contribute to their professional development by creating an environment of learning and sharing, and also provide advantages indirectly for their students (Brouwer, Brekelmans, Nieuwenhuis & Simons, 2012; Baran & Cagiltay, 2006; Chalmers & Kehown, 2006; Schlager & Fusco, 2003). A community of practice is different from other groups due to three main characteristics. These are the "domain" which keeps individuals together, the "community" which provides the interaction and sharing between the members and the "practice" which means the experience, equipment and resources created through this interaction and active participation (Wenger, 2006). The other characteristics of the communities of practice are:

**Reification:** It is described as concretion, namely, transforming experiences into tangible objects and concepts. Some concepts based on experiences, tools, symbols, stories and terms were generated in communities of practice (Wenger, 2006). Herring (2004) said that virtual communities of practices have some certain observable characteristics. Some of these characteristics are active participation, shared target, culture, norms and values, mutual cooperation and support, criticism, conflict and subsequent resolution, group awareness, supervision, hierarchy and the distribution of roles. Participation, which is described as the social initiatives by means of membership and active participation, is a concept that includes all kinds of personal and official relationships in the community, such as harmony and conflict, and cooperation and competition (Wenger, 2006). Individuals' active participation in the group by knowledge-sharing provides the development and maintenance of the community. It is necessary to analyze the elements of participation and reification together in order to understand how a community of practice operates (Henri & Pudelko, 2003). In addition to these two elements, Wenger (2006) explained the other characteristics of communities of practice as:

**Mutual engagement:** includes the interaction of the members about the practices, solving problems cooperatively, discussing subjects and making creations. A strong cooperation and an intense sharing of knowledge are the indicators of mutual engagement (Murillo, 2008). **Shared repertoire:** a number of resources created by the cooperation and sharing among the members in the community. The repertoire created by the community includes concepts, stories, and symbols, created materials, files, practice methods and common works. **Joint enterprise:** it is the shared target and the initiatives for this target that keep the members together, provide harmony and the freedom to share things. The joint enterprises of the individuals shape the community.

Guldborg and Pilkington (2006) did a content analysis of the asynchronous discussions and interactions in a community of practice and put forwards certain evidences about the mutual engagement, joint enterprise and shared repertoire dimensions of that group. Sing and Khine (2006) said that teachers participated in the group they studied actively and made frequent interactions; on the other hand, they stressed that there was a need for more



reflective and deeper interactions in order for the on-line environment to become an information community. Baran and Cagiltay (2010) examined the personal, interpersonal and environmental factors of the development of on-line community of practice which help teachers enhance professional development. Being informed about the subject they share, having an interest for that subject, the desire for lifelong learning, recognition, and reputation are the motivating factors that encourage teachers to actively participate in communities of practice and to share knowledge. Alakurt and Keser (2014) examined the knowledge sharing practices and the types of knowledge shared by teachers from a variety of study fields and found that the main types of sharing were sharing knowledge, opinion/conversation, wish and appreciation/thankfulness. In this study, the authors analyzed the records of an on-line environment where information technologies teachers share knowledge by using discourse analysis method. The authors also discussed the characteristics of the community of practice based on the types and features of the posts shared by the members.

## STUDY DESIGN

This study analyzed the types of posts shared by Information Technologies teachers and academicians in an on-line discussion forum by using the discourse analysis method. The authors considered the messages sent to the titles in the forum as well as the sharing periods of the subjects' participation patterns of the members when collecting the study data regarding the characteristics of the community. In this respect, the research questions are:

- What are the participation patterns of the community members?
- What are the types of posts shared by the community members?

## METHODOLOGY

### On-line Discussion Environment

The on-line discussion forum analyzed in this study (<http://www.bilgisayarbilisim.net/>) was established with the purpose of bringing information technologies teachers together to share knowledge, initiate new projects, and discuss the latest technological developments (site administrator). The posts shared on the forum were classified into sub-forums according to their topics. Of these sub-forums, the authors selected and analyzed "*School counselor in information technologies*," including up-to-date developments, discussions and comments which concern counselors and information technologies teachers. Of 7,768 threads and 115,744 messages in the sub-forum, the authors analyzed 12 topics and 566 messages.

### Data Analysis

This study analyzed the messages posted to the on-line discussion forum by using discourse analysis method. Discourse analysis is a technique that requires analyzing the chronologically ordered written or verbal messages and revealing the underlying meanings (Creswell, 2007). Discourse is a suitable technique for revealing the inter-conceptual relations and relationship patterns in on-line practice groups (Hafeez & Alghatas, 2007; Sing & Khine, 2006). The authors read all of the messages (566 in total) under the titles in the forum and identified their underlying meanings. To identify the underlying meanings of the messages (discourse types), a researcher in computer education and instructional technologies not included in the study and experienced in qualitative studies, encoded one of the titles (Topic#3) in the forum. In order to ensure the reliability of the measurements, the authors calculated the percentage of agreement (Stemler, 2001) and found it to be 85%.

## FINDINGS

### Participation Patterns of Members

The forum classified the members according to the numbers of messages they posted. The types of members were *new member*, *site traveler*, *active member*, *elite member*, *experienced member*, *super member*, and *hyperactive member*. Member types and numbers of messages they posted were determined by forum administrators. Numbers and percentages of the posts that members sent to the 12 topics analyzed in this study were calculated by the authors and are shown in Table 1.

**Table1:**Types of membership and contributed messages

Type of membership	Total contributed messages	Contribution to analyzed topics	
		f	%
New member	0-24	43	8
Site traveler	25-99	69	12
Active member	100-249	90	16
Elite member	250-499	91	16
Experienced member	500-999	101	18
Super member	1000-1999	90	16
Hyperactive member	2000+	76	13
Admin	-	6	1

As Table 1 shows, the members were given member type names according to the total number of messages they had sent to the forum. Members graduated to upper levels of member types as their message number increased. An analysis of the total number of messages sent by each member to 12 titles in the forum showed that *experienced members* contributed to the forum the most while the "admin" (administrator) contributed the least. The numbers of messages sent by *active*, *elite*, and *super members* were comparable. *New members*, *site travelers*, and *hyperactive members* made less contribution to the forum than the other members. In the message segment of the forum web site, the content of the message, nick name of the member, type of membership, registration date, total number of sent messages, and the location of the member (optionally) are viewable.

### Types of Posts Shared by the Community Members

The topics started on the forum were presented under a relevant title. One of the rules in the forum required that the titles provide information about the content of the message and the titles which misled the readers would be deleted by the forum administrators. The membership type of the member who started the title, number of the responses written on the subject and the duration from the date of the first message to that of the last one was all calculated and are presented in Table 2.

**Table 2:** Threads and characteristics

Number and type of thread	Starter of thread	Number of reply	Discussion period
(Topic#1) Search for solution to a personal problem	Active member	45	41 months
(Topic#2) Starting discussion for a shared problem	Experienced member	29	3 months
(Topic#3) Search for solution to a personal problem	Elite member	54	8 days
(Topic#4) Sharing documents	Active member	65	91 months
(Topic#5) Searching for help and asking about the way something was done	Experienced member	38	28 months
(Topic#6) Sharing recent news and developments	Active member	51	1 day
(Topic#7) Sharing knowledge and resources	Super member	30	79 months
(Topic#8) Search for solution to a personal problem	New member	53	6 months
(Topic#9) Sharing a common issue and arranging a meeting	New member	69	19 days
(Topic#10) Information about an opportunity	Site traveler	45	57 months
(Topic#11) Searching for help and asking about the way something was done	Site traveler	24	27 months
(Topic#12) Sharing knowledge and resources	New member	63	4 months

As Table 2 shows, the topics shared in the forum are search for solution to a personal problem, starting discussion for a shared problem, sharing documents, searching for help, asking how something was done, sharing recent news and developments, sharing knowledge and resources, sharing a common issue, arranging a meeting, and information about an opportunity. The topic that received the biggest number of responses was sharing a common issue and arranging a meeting (Topic#9). The topics that received the smallest number of responses were searching for help and asking about the way something was done (Topic#11). Three topics were started by *active members* and three other topics were started by *new members*. Members shared posts under the topics lasting from one day (Topic#6) to 91 months (Topic#4).

The authors analyzed 566 messages under 12 titles. The authors read each message segment under the titles and identified their discourses, which provided the types of discourses (codes). There might be multiple discourses of a message in the forum. Thus, the number of discourses identified by the authors is bigger than the number of analyzed messages. The authors then brought the relevant discourses together and created the categories. Discourse types and categories are shown in Table 3.

**Table 3:** Discourse types and related categories

Category	Discourse type	f	%
<b>Personal problems</b>	Search for solution to personal problem (4)	215	34
	Sharing own problems about the topic (9)		
	Search for recent solution to same problem (2)		
	Making suggestion (44)		
	Asking question about suggestion (2)		
	Asking question about problem(13)		
	Comments about the problem (57)		
	Asking question about solution(4)		
	Emotional support (17)		
	Liking suggestion (5)		
	Informing about the results (9)		
	Giving thanks (5)		
	Providing information (26)		
	Sharing experiences (18)		
<b>Sharing files and resources</b>	Sharing files and resources (20)	140	22
	Asking for document (1)		
	Sharing own work (2)		
	Asking question about using document (9)		
	Comments about the document (26)		
	Providing information (12)		
	Reviewing the document and re-sharing (2)		
	Giving thanks (47)		
	Making suggestion (11)		
	Sharing experiences (10)		
<b>Help &amp; support</b>	Asking about the way something is done (4)	97	15
	Informing about the results of description (10)		
	Asking question about the description (5)		
	To describe alternative way (3)		
	Asking for document (2)		
	Asking for information and help (6)		
	To describe (10)		
	Suggesting help (2)		
	Suggesting cooperation		
	Giving thanks (25)		
	Providing information (25)		
	Sharing experiences (4)		
<b>Recent news and developments</b>	Sharing information and news (4)	91	14
	Asking question about topic (13)		
	Follow-up (27)		
	Re-opening the topic 2)		
	Comments (37)		
	Providing information (8)		
<b>Common issues</b>	Sharing a common issue	42	7
	Arranging meeting (2)		
	Asking for support (2)		
	Details of meeting (7)		
	Informing about the results of meeting(2)		
	Making suggestion (14)		
	Providing information (5)		
	Sharing experiences (6)		
	Comments (3)		
<b>Discussion</b>	Agreeing (16)	45	7
	Redirecting discussion (2)		
	Disagreeing (14)		
	Criticizing (8)		
	Warning (3)		
	Defense (2)		
<b>Total</b>		<b>630</b>	<b>100</b>

As Table 3 indicates, the most frequently shared topic in the forum started by the teachers was personal problems (34%). The messages sent to this title included comments about the problem, making suggestions, providing information, sharing experiences, and offering emotional support. Of all the messages sent to the forum, 22% were in the category of sharing files and resources. In this category, members sent messages of gratitude, comments about the document, and sharing files and resources. The discourse types frequently shared in a variety of categories are: providing information, making suggestions, giving thanks, making comments, and sharing experiences. The descriptions of some discourse types and quotations from messages are given below.

**Search for solution to a personal problem:** Sharing a problem and asking for help and different opinions about the problem

*Our new principal wishes to close down the information technologies classroom and use it as an ordinary classroom. He also does not want the Information Technologies course to be elective. Does he have the right to do that? How can I get myself out of this situation?*

**Informing about the results:** Sharing the results after the problem was solved or what they had done taking the suggestions into consideration along with the outcomes.

*...unfortunately it failed, an error occurred at step 4...*

*Thank you for your attention and responses...I talked to the sub-manager of the unit. Two top managers who came to the school will send me a letter tomorrow...*

**Sharing experiences:** Telling about a similar personal experience or an event observed before.

*...recently another member shared about their problems about the duties...and the problem was solved.*

**Sharing own problems about the topic:** Information about facing the same problem or being in a difficult situation.

*This year I also experienced the problem you told about. I came to this school in June and now I am out of the permanent staff.*

**Making suggestions:** Both making suggestions to solve the problem and using statements such as "If I were you, I would do it this way."

*If they appoint one personnel to each school without considering weekly hours of lessons, this problem will be solved.*

**Providing information:** Giving specific information about the topic.

*...mobbing is the psychological assault to a person by disturbing...*

*According to the extra hours legislation, teachers are not given any free days.*

**Follow-up:** Asking for the latest phase of the solution to the problem and statements showing that the member follows the topic.

*...this is an important issue, we would like to be informed when it concludes.*

*I will look forward to your post about the result; my situation is the same as yours...*

**Asking about the way something is done/searching for help:** Asking about the way something is done or about the details of the operation.

*Hello, I connected the smart board to the Internet by using a cable. Now I want it to be used in the classroom with a wireless connection. I know that this function is available but I don't know how to do it...*

**Suggesting cooperation:** Suggesting doing something together or making a contribution.

*46...questions have been uploaded to the on-line examination web site. If anyone has...test questions, I would like them to share with me. In return, I can send you an iFrame code that will help you upload on-line questions to your web site.*

**Re-opening a topic:** Sending a post to a topic and reviving it a certain period of time after the last message was posted.

*What is the latest situation of this problem? I guess we will face this kind of a problem. The articles I have been researching all belong to a very old date.*

**Arranging a meeting/Details of a meeting:** Arranging a face-to-face meeting to solve a shared problem and sharing the details of the meeting.

*...Let's get organized in here and go ask the Directorate of National Education on January 13 at 11 a.m. I believe we should meet a little bit earlier.*

## CONCLUSION & DISCUSSION

This study analyzed a discussion forum comprised of teachers and academicians in Information Technologies based on communities of practices (Lave & Wenger, 2007). The authors analyzed the types of posts sent to the forum along with the participation patterns of the members, discussing the characteristics of the forum as a community of practice. In order for the teachers to improve them and obtain professional skills and knowledge learning new practices, they should give up an isolated attitude and cooperate with their colleagues (Lieberman & Pointer-Mace, 2010). Certain professional practices can be obtained by participating in the process of sharing information in communities of practices. The participation patterns in on-line discussion and sharing environments is identified by different indicators. Sing and Khine (2006) expressed the participation rates of the

teachers in an on-line forum by calculating the numbers of read and sent messages and the numbers of words in the sent messages. Zhang and Storck (2001) calculated the participation patterns of the peripheral members of the community by considering the number of sent messages, number of topics opened by them, the number of topics they contributed to, and measuring their duration of participation. In the forum analyzed by this study, members were given names according to the number of messages they sent to the forum. The members entitled *new member* and *site traveler* shared fewer posts than the other members. However, the authors observed that the topics started by *new members* (Topic#8 and 9) were also discussed for a long time and obtained a big number of responses. Therefore, peripheral members interact with core members and the masters transfer knowledge to the apprentices (Lave & Wenger, 2007; Jimenez-Silva & Olson, 2012). The authors determined that the number of responses given to the topics was not related to the membership type of the member starting the topic but with the attraction of the topic and content. Different membership types started the topic of asking for help with a personal problem (Topic#1, 3 and 8). Regardless, it obtained similar numbers of responses. This shows that new members and members who didn't contribute much to the forum also found solutions to their problems. As peripheral members participate in knowledge-sharing and move onto core membership, they gain an identity and learn more. Peripheral members look for solutions to their problems by joining the community and contributing to the expansion of the group at the same time (Zhang & Storck, 2001).

The discourses in the personal problems category in the forum indicated that the problem was deeply analyzed while the discourses of making suggestions and sharing experiences indicated that different viewpoints were also evaluated. By searching for a recent solution for a continuing problem, members could revive the subject and view the suggestions and experiences addressed to the occupational problem. Sharing the result is another type of post and indicates that members feel responsible to each other. Henderson (2007) said that this kind of responsibility provided sustainable participation in communities of practice.

In the help and support category, teachers asked for help from their colleagues about the way certain things were accomplished and received support. With the participation of better-informed members, more successful operations were carried out and some cooperative groups were even created. In communities of practice, members improve their own practical skills by helping others, which creates a process of evaluation regarding the techniques of a certain subject (Cambridge, Kaplan & Suter, 2005). In the category of sharing files and resources, members shared their own work or documents other members could benefit from. Participating members then reviewed the shared documents, revised them, and discussed the details of its utilization. The posts sent under these categories created a repertory of experiences, files, descriptions of operations and work, information about the relevant subject, and suggestions for the solution to the problem (Murillo, 2008).

Other types of posts shared by the members were recent news and developments. Members also tried to solve their common occupational problems in this forum, and arranged to meet face-to-face when necessary. These shared initiatives enabled the creation of both cooperative and face-to-face groups. In the discussion category, members shared opposing ideas, criticism of each other's thoughts, expressed warnings, and defended themselves against these warnings. Members do not always support each other in on-line discussions and sometimes threats and criticism occurs. This situation is also observed in face-to-face relationships and indicates a realistic communication environment in the community. The most frequently seen discourses, though, were; offering solutions for problems (making suggestions), sharing personal experiences, providing information and giving emotional support. Deryakulu and Olkun (2007) conducted a similar study with teachers and found that these kinds of messages indicated serious reflection, crucial to professional development. In this study, members could obtain responses when they shared their problems or asked for help by the aforementioned discourses. This sharing of information caused the members to continue to use the forum for problem-solving. The repertory of knowledge in the community can only be created by members' sharing the information necessary for solving the problem and participating in the practices actively (Ardichvili, Page & Wentling, 2003).

In order for the patterns of on-line conversations and discussions to be revealed by discourse analysis and the study to be reflective, there should be a dynamic process of participation in the community that is spread over time (Hafeez & Alghatas, 2007; Sing & Khine, 2006). The time lapse of the topics analyzed in this study range between one day and 91 months. When necessary, members could send posts to old topics and revive them. For instance, the authors observed that one member sent a message to a topic of which the last message was sent four years prior, and requested that the members discuss the problem again to find a solution. This showed that the community had an active process of sharing.

To conclude, the discussion forum analyzed in this study met the criteria of the concept of communities of practice. The discourses of the messages in the forum revealed by the discourse analysis showed that the relationships between the community members were based on mutual engagement. Members developed joint enterprise by



organizing cooperative groups and meetings. Among the observable characteristics of virtual communities of practices suggested by Herring (2004) were: recent news and developments, personal problems, and the discourse types in the help and support and discussion categories. The posts sent by the members created a repertory and became a resource to be used by members when needed. This shared repertory makes the community of practice discussions a unique source of information that teachers cannot access by formal education and in-service training. The authors suggest that future studies analyze other types of communities of practice by applying different methods of analysis and approaching them from different perspectives.

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## The Choice Of Educational And Professional Path Of Basic School Pupils As A Component Of The Realisation Of The Technical Education

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### ABSTRACT

The article deals with the issue of career choice from the point of view of a pupil of the second stage of basic school (ISCED2) and the instruction of a general technical subject. The educational area *Člověk a svět práce* (i.e. *Man and the world of employment*) contributes to the issue of the pupils' choice of further educational and professional path mainly by the fact that it allows pupils to cognize the selected professions and occupations – they indirectly develop the set of soft skills (including the self-efficacy and self-assessment). These can be a key to a choice of further educational path which is in accordance with the real possibilities and abilities of the pupils.

**Keywords:** The choice of educational, technical education

### INTRODUCTION

The issue of career choice is for a pupil of the second stage of basic school (ISCED2) a quite difficult task. The researches evidence that the dominant role in this area has the family of a pupil. The role of the school is, however, not secondary. Its role in the process of pupil's choice of further educational path may become important in case of undecided pupils, in case of talented pupils (in talented in more than one area), or in case when the family background of a pupil is not completely functional. The school should provide the pupil information about their talent for the individual areas of education as well as about their possibilities of further education. In the submitted treatise, we focus on the role of the general technical subject in relation to the issue of pupils' career choice.

### THEORETICAL OUTLETS OF CAREER DECISION-MAKING

Career-related theories emphasizing the pupils' decision-making connected to further educational path and career are, at the level of basic schools, relatively new. As an example, namely theories by Osipow (1968), Osipow (1990), Weinrach (1979), Corsini and Ozaki (1984), and of the more current N. Gikopoulou (2012), could be named, among others.

The Czech and Slovak authors who deal with the mentioned topic are i.a. Koščo et al. (1987), Hřebíček (2001), Vendel (2008), Hlad' (2012), Hlad' (2013), Hlad' and Drahoňovská (2012), Balcar et al. (2011), Friedmann (2011), Friedmann (2012), Pugnerová (2006), Trhlíková (2012), Walterová (2009) and others.

For the needs of the present treatise, we based on the works of Hlad' (see above) who deals with career decisions in terms of family influence (see above), are used. In accordance with the work of P. Hlad' (2012), terms used within this text are understood as follows:

- **Career decision-making** is understood as a process of finding viable career alternatives, while these alternatives are being compared with one another and one of them is as a result of the process chosen by the person who undertakes such career selecting (Hlad'o, 2012, p. 16).
- **Career choice** is understood as *the process which includes decision-making concerning the study or vocational training, choosing a concrete profession and the entire future career.* (Hlad'o, 2012, p. 16)
- **Educational path** is defined as a passage of the individual through a various stages and types of schools or institutions of formal education during their life.
- **Choice of further educational path** is derived from the term **educational path**, and it is, in accordance with the work (9) understood as *a long-term decision-making process, characterized by the selection of specific type of high school, area of education and specific educational institutions.* (Hlad'o, 2012, p. 17)
- **Professional orientation** is, in accordance with (Pajers, p. 181), understood as *the creation and development of the real career aim and perspectives of a young person along with the characteristics and abilities important for the career-choosing process and career performance, eventually its retraining.*
- **Career readiness** is an important factor in the career-choice, expressing *the readiness to carry out informed, age appropriate decisions on career choice.* This model embodies both the aspect of career choice competence and aspect of attitude towards the career-based decision-making. (Hlad'o, 2012, p. 45)

**Career theories** are, from the point of attitudes, divided into the **structural** ones and **procedural** ones. Structural approaches are characterized as connections and interactions between the individual and the work environment. These approaches use a range of psychometric tools in order to assign the person's character to appropriate occupational groups. By those means, the approaches contribute to career choice in such ways as to attempt to identify personal predispositions of the individual and subsequently compare them with the requirements and possibilities of the world of employment. (Hlad'o, 2012, p. 22)

The procedural approaches do not perform a direct link between the individual and the world of employment. Their important attribute is the idea that a career development is an ongoing process which occurs over a long period of time and, therefore, is in contrast to the events which occur at any point during the individual's life. In the light of these approaches the career development is seen as a lifelong decision-making process. (Hlad'o, 2012, p. 22)

The key components of the career development are individual, environment, interaction and change. From this perspective, the developmental theories can be divided into those that emphasize the content (they define factors influencing the career development of an individual) and those that emphasize the process (which focus on explaining changes over time and knowledge of patterns of decision-making processes). (Hlad'o, 2012, p. 22-23) The dynamic understanding of career development defines three stages – *fantasy choice period* (early childhood up to roughly 11 years of age), which is followed by a *period of experimental choice* (from 11 years to 16-17 years of age) and then the *period of realistic choice* (from 17 years to young adulthood). (Hlad'o, 2012, p. 30)

### TAXONOMY OF OBSTACLES IN CAREER CHOICE OF ADOLESCENTS

The presented taxonomy (Gati, Krausz and Osipov, 1996) provides an overview of obstacles encountered in career choice-making. The main categories of this taxonomy are:

- insufficient readiness for career choice,
  - low motivation,
  - indecision,
  - incorrect assumptions,
- lack of information,
  - lack of information related to the process of career decision-making and its individual steps,
  - lack of information related to the individual's potential,
  - lack of information related to the world of employment, system of education and available alternatives,
  - lack of information related to the methods of obtaining information,
- inconsistency of career information,
  - inconsistency of career information caused by unreliability of information,
  - inconsistency of career information caused by internal conflicts,
  - inconsistency of career information caused by external conflicts. (Hlad'o, 2012, p. 47)

While the taxonomy of obstacles in career choice of adolescents is primarily aimed at a different age group, it can still be helpful in searching and identifying the individual problems of process of career choice, and in many of

them an attempt can be made to rectify the educational reality in terms of implementing the educational area *Člověk a svět práce* (i.e. *Man and world of employment*).

For dealing with these issues so called seven-phase model of the progress in pupils' career choice is used, see Image no. 1.

Career theories illustrate that the main determining factor in the choice of further educational path is the family of the pupil. Its dysfunction may prove to be a crucial problem in the choice of one's future educational path. Area in which can the educational reality in the process of choosing future career be helpful is the area of educational content (experience with selected areas of human work is crucial for either making or not making the choice of such area which gradually leads towards preferred work activity). Taken from this perspective, it is important for us that the career education of pupils is represented in the curricular documents for the basic school level by the educational area *Man and world of employment*. Another case where the educational reality in the process of future career choice can be useful is the area of supported pupil's self-concept development. If needed (for example in case of pupil's indecision, lack of information, dysfunctional family, etc.), the role of school may be important in the first six stages of the model in question.

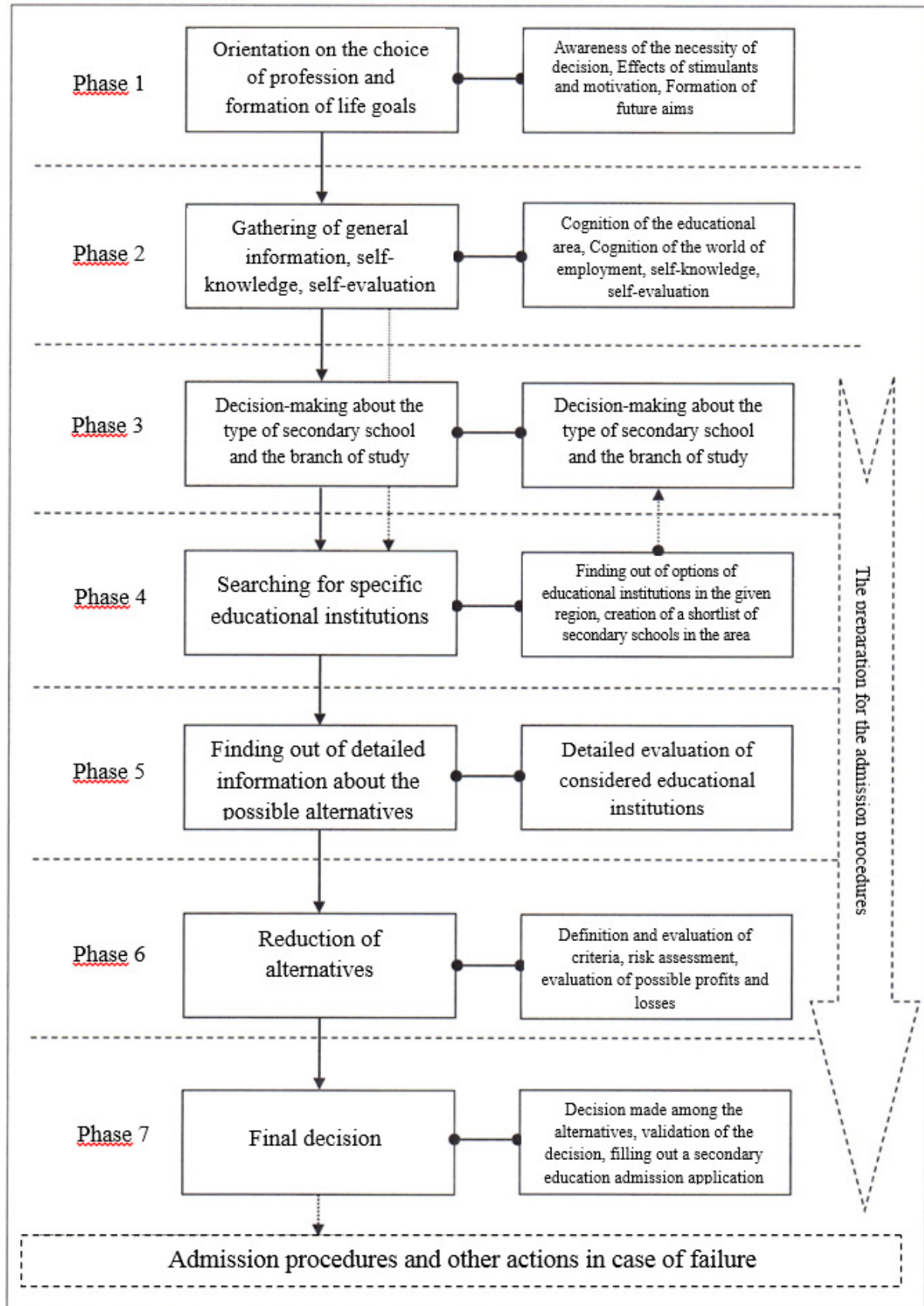


Image no. 1 – The seven-phase model of a process of choice of profession among the pupils (Hlad'o, 2012, p. 91)



### SELF-EFFICACY

A theory of a professional development by D. E. Super seems to be a contributing one. Its important constituent is the individual's self-concept: it is individual's idea about themselves, a self-image that is *a result of the physical, mental and social maturation, interaction with the adults and watching their work-related behaviour*. (Super, 1996) The term *self-concept* is related to a term *self-efficacy*, which is linked to a name A. Bandura; it influences the aspiration to a certain profession.

A self-efficacy can be described in three characterizing features. Those are:

- a level – already explained relation between the ability and the difficulty of the task;
- a size – a measure of the inner certainty, depth of conviction;
- generality – a broadness of the area, in which is the conviction valid (Weinrach, 1979, p. 20-21).

F. Pajares, according to the translation by T. Mertin, states that *the convictions about one's efficiency can be generalized among the activities and situations*. That means that the convictions gained from one environment can influence the new experience.

### THE SUBJECT *PRACTICAL ACTIVITIES* - UNIFYING THEME: THE CHOICE OF PROFESSION – DECISION-MAKING ABOUT CAREER OR EDUCATIONAL PATH

The educational area *Man and world of employment* covers a broad spectrum of work activities and technologies. It is aimed at the development of competences which are relevant to situations connected to technology and activities of practical nature. At the second stage of basic education, the area is divided into eight relatively diverse topics, which are structured **around the meanings of such terms as work, practical work of pupils**, economic and environmentally friendly behaviour, efficient solving of situations usually associated with technical issues and **decision-making about one's career or educational path**.

Thematic areas for second stage of basic education offer certain options, from which schools can choose according to their conditions and pedagogical aims always at least one more area. When selected, however, they have to be implemented in full range. According to our experience, some of these areas are being chosen minimally. Subjects, in which is the educational area implemented, are named according to individual schools preferences, most frequently as work education, practical activities etc. The important topic of the educational area *Člověk a svět práce* (mainly of a subject *Practical activities*) is decision-making about one's own professional and educational path.

### SELF-EFFICACY AND THE TECHNOLOGY-RELATED INSTRUCTION

A respected teacher can influence the self-knowledge, self-assessment, motivation and even self-efficacy of a pupil. Their means is the way of their instruction and now also the choice of a suitable content.

A perception of the self-efficacy focused on the themes of technical subjects' instruction at the basic schools (operation and maintaining of household, work with technical materials, application of digital technology, etc.) can be seen differently from theme to theme and even as a whole for different pupils concerning the necessity of the themes. The field didactics has a number of researches that, in our conditions, show significantly different preferences of the basic school pupils about individual thematic complexes (i.a. Cráska and Poláchová, 2005). The same could be, however, stated about the instruction of other subjects and the content which is included in them. For the potency of technical subjects' instruction at the basic school, also the character of content – technology (which reflects and includes the natural, societal and also the humanist connections, (Kropáč and Chráska, 2004)) contributes to the development of self-efficacy, apart from the abovementioned "practicality" and the activity approach.

The basic approach to the technology and the activities with technology is a critical, evaluating approach, which is based on an ability of critical thinking related to connections as broadest as possible, and an approach developing this critical thinking. The critical thinking is (according to (Grecmanová, Urbanovská and Novotný, 2000, p. 8)) characterized as the active, arranged and complex. The initial condition is the understanding of the input information and then their reflected assessment in a context. A pupil, during this process, compares the new information with those that they already know, with the other opinions on solving, searches further information, asks questions, creates answers and alternatives, and heads towards the defensible decision. With all that, the critical thinking development is a wider field for the development of perception of self-efficacy, since this thinking can be applied by the pupil also towards themselves, to assess their determinateness, continuously created competences and abilities, here mainly for the situations linked with technology. Therefore, if they is learning the thought processes linked to the technology assessment, they can also acquire experience with assessment and self-assessment, self-evaluation, cognize their determiners for the technology activities, and the already acquired competences – according to the achieved results, opinion of the peer group, assessment by a teacher, etc. In this

way, there can emerge a “well-founded” conviction of oneself, which is (apart from the knowledge of technology and its principles as an educational content) also a condition for the choice of professional orientation related to the technology.

## CONCLUSIONS

If we use complex tasks, which are, by their nature, close to the real life, during the instruction of a general technical subject, we i.a. contribute to the development of pupils’ technical thinking. During that, we can also develop a quite wide set of pupils’ competences, which will be applied also in connection to the choice of further professional and educational path. We include among these competences also the pupils’ self-efficacy.

The educational area *Člověk a svět práce* contributes to the issue of further educational and professional path of pupils both directly (it allows pupils to cognize some selected professions and occupations) and indirectly, by the development of the set of soft skills (i.a. self-efficacy and self-assessment). Those can be a key to a choice of further educational path which is in accordance with the real possibilities and abilities of pupils.

*This study has been supported by grant CZ.1.07/2.3.00/20.0166 from European Social Fund and the Ministry of Education of the Czech Republic.*

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## The Communication Skills And School Achievement Among The Students: A Review Of The Students At Vocational High Schools

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### ABSTRACT

Human being is in communication with his/her environment. This interaction is generally in the form of interpersonal communication. The person performs it according to his/her communication skills. The communication skills are the ability of making more than one senses when he/she encounters the events. In the research, the Communication Skills Inventory developed by Ersanlı and Balcı (1998) was used. This scale analyzes the level of communication skills from the points of its behavioral, cognitive and emotional dimensions. In the study, the communication skills of the students, their school achievement and other variants are analyzed. The study is conducted on the students of Aksaray University, Aksaray Vocational High School of Social Sciences. The study was limited with the expressions in the data collecting instruments.

**Keywords:** communication, communication skills, school achievement,

### INTRODUCTION

Communication is a system which forms the base of the society. It is an instrument makes the method work effectively, a technique affecting the personal behaviors, an obligatory science from the point of social relations or an art necessary social adaptation. Thus, the answer to the question of “Why do people communicate” may be given as knowledge, persuasion, management, sharing, sharing the differences, amusement, changing, problem solving and cooperation (Küçükaslan, 2014; 6). Communication is a human activity which is known by everybody, yet only a few people can completely define it. The samples of communication can be listed as talking face to face, television, information dissemination, hairstyle, literary critics, walking style of the individual etc. (Fiske, 2014;71)

Communication is divided into two groups such as source module and target module. The source module is the module which sends the message. It may be a talking person, a meowing cat or a computer playing chess. The target module is the module which the message is sent. The talking module is the source while the listening module is the target module when two people talk (Cüceloğlu, 2001;68).

Two basic elementary ideas emerge when the approaches are considered in explaining the term communication. The first of them reveal the direction of the communication process. This is an approach characterized with the model of sender-message-channel-receiver. In those models, it is stated that an attitude, an emotion and an idea is transferred to the other side. Other approaches are mutually and common perceiving and sharing (Mutlu, 2012;149).

Communication skills are the basic factors in eliminating or decreasing the conflicts in establishing an effective and correct communication and abilities related to speaking, writing, reading, listening and thinking (Toy, 2007; 14). Thus, the individuals having effective communication skills in their daily and business life will have increased success rate.

One of the basic factors affecting the School Achievement of the student is the attitudes of parents. Parents desire to do their best for their children and contribute to the development of their children. Since the rights of mothers and fathers are different from each other, however, their attitudes to their children also vary. The basic stones of the personality of the child begin during the pre-school age and continue until university age. The attitudes of the parents set an example to the developing child, the child imitates whatever he/she sees and starts to shape his/her personality through internalizing those attitudes. For that reason, the parents have to behave according to the behavior model they expected from their children (Gümüş, Kurt, Ermurat, & Feyetörbay, 2011).

Other factors affecting the School Achievement of the students are vulnerability of focusing and motivation. Such deficiencies, if prioritized, may be listed as follows; being unable to find a job after university, environmental and noise pollution, health problems, bad friends, inter-parental conflicts, economic insufficiency, the problems of transportation, terror and violence, and the problems of housing (Katipoğlu, 2012).

Numerous studies were conducted in both Turkey and the world on the various variants of communication skills. Some of those studies are as follows.

When the relationship between the communication skills and sub-dimensions of resolving interpersonal problems is analyzed, there is a positive relationship between communication skills and total score of skills for resolving interpersonal problems (*Koç, Terzi, & Gül, 2015*). According to the research conducted on various sectors, however, no significant difference was observed in terms of the age variant of communication skills. Moreover, no significant difference was obtained in terms of educational levels of the employees (*Örücü & Kivrak, 2013*).

## METHODS

The Communication Skill Inventory (Scale) was used in the research. This scale was developed in 1998 by Ersanlı and Balcı through conducting the validity and reliability checking. There are three basic sub-dimensions in the scale such as behavioral, cognitive and emotional dimensions. Moreover, the School Achievement was tackled as another variant. The data of the scale was obtained from 168 students studying in the first year of Aksaray University Aksaray Vocational High School of Social Sciences in the Spring term of 2014-2015 Academic Year. In the study, Communication Skills Inventory developed by Ersanlı and Balcı (1998) was used. This scale analyses the levels of communication skills from the behavioral, cognitive and emotional dimensions. The scale consists of 45 narrations. The items in the scale were scored as “always 5”, “generally 4”, sometimes 3”, “rarely 2” and “never 1”. Maximum score to be obtained is 224 while the minimum score is 45. The high levels of scores in the entire scale mean that the individual got high scores while the lower total scores indicate that the individual received lower marks. Moreover, there are 15 items for each sub-dimension. Each sub-scale may be separately analyzed as well as evaluating the general communication of the individual through considering the total scores of a scale. The maximum score for sub-dimension is 75 while the minimum score is 15. As seen in the general communication ability, the higher levels of ability mean high scores and low levels mean the lower scores. (*Ersanlı & Balcı, 1998*). SPSS 15.0 program was used in order to analyze the data obtained within the scope of the research. The descriptive statistics were used in the analysis of the data, Pearson correlation analysis were used to determine the relationships between variants, the ANOVA test was used instead of parametric test assumptions in order to determine the differences between the variants and Kruskal-Wallis test was applied when the assumptions don't become true. Moreover, Cronbach's Alpha test was applied in order to measure the consistency of the answers to the questions in the questionnaire and internal consistency coefficient of Cronbach's Alpha was found as 0,844. Namely, 84,4% of the responses given by the participants of the questionnaire is reliable and consistent.



## FINDINGS

The related characteristics of the students and families are given in Table 1.

**Table 1:** The Frequencies of the Students and Families related to their Characteristics

Characteristics		Quantity (n)	%	Characteristics		Quantity (n)	%
<b>Gender</b>	Female	95	56,5	<b>Mother Education Level</b>	Primary School	120	71,4
	Male	73	43,5		Secondary School	39	23,2
<b>Department*</b>	BYY	56	33,3		Associate degree	3	1,8
	HI	51	30,4		Undergraduate	4	2,4
	MVU	37	22,0		Graduate	2	1,2
	ÖGK	24	14,3	<b>Father Education Level</b>	Primary School	82	48,8
<b>Attitudes of Parents</b>	Over-Permissive	2	1,2		Secondary School	65	38,7
	Normal	103	61,3		Associate degree	7	4,2
	Over Protective	42	25,0		Undergraduate	13	7,7
	Authoritarian	21	12,5		Graduate	1	0,6
<b>Attitudes of Father</b>	Over-Permissive	5	3,0	<b>School Achievement**</b>	Unsuccessful	3	1,8
	Normal	101	60,1		Fail	2	1,2
	Over Protective	26	15,5		Medium	6	3,6
	Authoritarian	30	17,9		Over Medium	29	17,3
	Irrelevant	6	3,6		Fine	45	26,8
<b>Family income levels</b>	Too bad	3	1,8		Very Fine	45	26,8
	Bad	3	1,8		Perfect	30	17,9
	Medium	108	64,3		Wonderwork	8	4,8
	Fine	51	30,4	<b>Total</b>		168	100
	Very fine	3	1,8				

\*BYY:Office Management and Executive Assistance ,HI: Public Relations and Publicity ,MVU: Accounting and Tax Practices, ÖGK: Private Security Protection

\*\* Wonderwork (3,51 – 4), Perfect (3,01 - 3,50), Very Well (2,51 – 3), Well (2,01 - 2,50), Over Average ( 1,51 – 2), medium (1,01 -1,50), Poor(0,51-1), Unsuccessful (0 - 0,50)

Within the scope of the study, 168 students participated the research. Among them: 56,5% (95) of them are Female while 43,5% (73) of them are Male students. Among the students who participated the research, 33,3% (56) are the students of Office Management and Executive Assistance, 30,4%(51) are Public Relations and Publicity, 22% (37) of them are Accounting and Tax Practices and 14,3% (24) of them are the students of Private Security Protection department.

When the school achievements of the students are analyzed, 1,8% (3) of them was unsuccessful, 1,2% (2) of them was poor, 3,6% (6) of them was medium, 17,3% (29) of them was over medium, 26,8% (45) of them was fine, 26,8% (45) of them was very fine, 17,9% (30) of them was perfect and 4,8% (8) of them had the level of Wonderwork.

In this study, the communication skills were analyzed in three sub-groups. They are cognitive (mental) communication skill, emotional communication skill and behavioral communication skill. Within the scope of the research, total scores related to the communication skills were used. Moreover, total scores of communication skills were analyzed as the general communication skills.

**Table 2:** The Descriptive Statistics Related to Communication Skills and Sub-dimensions

Dimension	Range	Minimum Score	Maximum Score	Average	Std. Deviation
<b>Cognitive CS</b>	33	39	72	57,50	6,61
<b>Emotional CS</b>	38	33	71	55,25	6,95
<b>Behavioral CS</b>	30	41	71	57,70	6,431
<b>General CS</b>	82	125	207	170,49	17,30

The maximum score which general communication skill can obtain is 225 and minimum score is 45 while the maximum score in general communication skills according to the descriptive statistics given in Table 2 was 207 and the minimum of that was 125 and the arithmetic average was 170,49. Accordingly, it can be said that the communication levels among the students are high. When the sub-groups are considered, the emotional communication skill levels are seen to be lower than others and the scores of cognitive and behavioral communication are very close to each other.

In order to decide whether to use the parametric test or a non-parametric test in testing the significance of the difference between the school achievement and communication skill levels, we should consider the assumptions of normality and homogeneity of the variances.

**H<sub>0</sub>:** groups are normally distributed.

**H<sub>1</sub>:** groups aren't normally distributed.

**Table 2:** The values related to the normality test of the groups

Shapiro-Wilk	
GROUPS	p
<b>Cognitive CS</b>	0,203
<b>Emotional CS</b>	0,018
<b>Behavioral CS</b>	0,168
<b>General CS</b>	0,129

As seen in the values given in Table 2, the result of Shapiro-Wilk normality tests applied to the variants was found  $p > 0,05$  for cognitive CS, emotional CS and General CS. Namely, those variants are convenient for normal distribution. However, behavioral CS doesn't have the normal distribution due to its value of  $p < 0,05$ . In this occasion, ANOVA test will be used to measure whether the difference between cognitive CS, emotional CS and General CS and the school achievement is significant; and Kruskal-Wallis test will be used in order to measure whether the difference between behavioral CS and the school achievement is significant.

First of all, ANOVA test can be applied in case the variances for the variants of cognitive CS, emotional Cs and General CS which provide the normality assumption are homogenous. The results of Levene Test performed to test the homogeneity of the variances are given in Table 3.

**H<sub>0</sub>:** The variances between the groups are equal.

**H<sub>1</sub>:** At least one group has different variance than the others.

**Table 3:** The Test for Homogeneity of the Variances

	Levene Test	S.D.1	S.D.2	p value
<b>General CS</b>	1,005	7	160	0,430
<b>Cognitive CS</b>	,450	7	160	0,869
<b>Emotional CS</b>	1,384	7	160	0,215

The hypothesis that the result of homogeneity test conducted for General CS, cognitive CS and Emotional CS is  $p > 0,05$   $H_0$  was accepted. Namely, the variances are homogenous and the assumptions of the normality and homogeneity of the variances were proved in order to perform ANOVA test.

**H<sub>0</sub>:** There is no significant difference between cognitive CS, emotional Cs and general CS from the point of school achievement.

**H<sub>1</sub>:** There is a significant difference between cognitive CS, emotional Cs and general CS from the point of school achievement.

**Table 4:** The Values of the Effect of General Communication Skill, Cognitive Communication Skill and Emotional Communication Skill on the School Achievement

		Sum of Squares	S.D.	Sum of Squares.	F value	p value
<b>General CS</b>	Intergroup	1857,272	7	265,325	0,882	0,522
	Intragroup	48140,704	160	300,879		
	Total	49997,976	167			
<b>Cognitive CS</b>	Intergroup	505,541	7	72,220	1,701	0,112
	Intragroup	6794,459	160	42,465		
	Total	7300,000	167			
<b>Emotional CS</b>	Intergroup	225,503	7	32,215	0,657	0,708
	Intragroup	7840,491	160	49,003		
	Total	8065,994	167			

According to the result of ANOVA Test,  $H_0$  hypothesis is accepted since general communication skill is  $p=0,522>0,05$ , cognitive communication skill is  $p=0,112>0,05$  and emotional communication level is  $p=0,708>0,05$ . Namely, general CS, cognitive CS and emotional CS have no effect on the school achievement. In Table 5, the results of Kruskal Wallis test which is used in the analysis of the differences between behavioral communication skill and school achievement which doesn't prove the hypothesis.

**H<sub>0</sub>:** There is no statistically significant difference between school achievements, behavioral communication skills.

**H<sub>1</sub>:** There is a statistically significant difference between school achievements, behavioral communication skills.

**Table 5:** The values of the effect of behavioral communication skills on School achievement

	School Achievement	n	Mean Rank	p value
<b>Behavioral CS</b>	Unsuccessful	3	43.67	0.564
	Fail	2	109.50	
	Medium	6	76.25	
	Over Medium	29	82.98	
	Fine	45	85.11	
	Very Fine	45	89.60	
	Perfect	30	75.87	
	Wonderwork	8	105.50	

According to the results of Kruskal-Wallis test, it was found that  $p=0,564 > 0,05$ . In this case, the hypothesis of  $H_0$  is accepted. There is no statistically significant difference between the school achievements and the averages of behavioral communication skill. Namely, behavioral communication skill has no effect on school achievement. Finally, the relationship between the school achievements of the students, their communication skills and sub-groups was analyzed through. The values of correlation coefficients are given in Table 6.

**Table 6:** The relationship between school achievement, general communication skills and sub-groups

	School Achievement	General CS	Cognitive CS	Behavioral CS	Emotional CS
School Achievement	1				
School Achievement	0,134	1			
School Achievement	0,192*	0,883**	1		
School Achievement	0,056	0,,875**	0,706**	1	
School Achievement	0,095	0,845**	0,592**	0,592**	1

\*Correlation is significant at the level of 0.05 (2-ways).

\*\* Correlation is significant at the level of 0.01 (2-ways).

Cognitive CS, behavioral CS and Emotional CS have positive and highly relationships with each other. For example, the student with high cognitive communication skills also has both high behavioral communication and emotional communication skills; thus, he has high general communication skills. If the cognitive communication skill is low, the other communication skills will also be low.

We can state that the levels of communication skills have a very slight effect on the school achievement. It means that the student with high levels of communication skills may have lower school achievements.

## CONCLUSIONS

In the study, the communication skills and their school achievements were aimed to research. The study was conducted on 95 female and 73 Male students with a total of 168 who study at Aksaray University. The attitudes of the parents of the students were normal in the rate of 60%. It was concluded that mothers are more Over-protective than fathers.

Communication skill and its sub-group consisting cognitive, emotional and behavioral communication skills are in the interaction with each other however they have no effect on the school achievement.

A student with high school achievements may not have high communication skills. Hence, the student with low school achievement doesn't mean that he has low communication skill. Namely, it is not true to decide about school achievement considering the school achievement.

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## The Comparison Of Environmental Literacy Of Czech And Turkish Pre-Service Primary Teachers Using Elsa Scale

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### ABSTRACT

The paper deals with the issue of environmental literacy of teachers as one of the important prerequisites of effective environmental education. It presents the results of research conducted in 2015 between Czech and Turkish pre-service primary teachers (university students). The topic of the research was the environmental literacy of these students. As a research tool was used Environmental literacy scale for adults (Atabek-Yigit et al., 2014). In addition to students' nationalities, other demographic characteristics such as age and sex were also pursued. Data were analyzed using advanced statistical methods.

### INTRODUCTION

The comparison of national educational models as well as the results of the pupils has a tradition, which is today represented mainly with TIMMS and PISA testing. The ways for assessing of the results of environmental education are not included in this widely known and respected tests. Originally it was planned to add a framework for the assessing of environmental literacy as an optional component in the PISA for the 2015 (Hollweg et al., 2011), but this idea was rejected. Even so, this plan bore a fruit in the form of very strong and research-based definition of the environmental literacy (Hollweg et al., 2011). According to Hollweg and her colleagues (2011), the domain of environmental literacy consist of four interconnected dimensions (knowledge, dispositions, competencies and environmental responsible behavior). Such a complex phenomenon with a number of variables is hard to assess at once. It is therefore not surprising, that published studies on this topic only focus on a few of the variables, usually knowledge, attitudes and behavior (e. g. Buethe & Smallwood, 1987, Hsu & Roth, 1998, Moorone et al., 2001, Činčera & Štěpánek, 2007, Yavetz et al., 2009, Matějček & Bartoš, 2012, Kroufek & Látová, 2014).

The primary education plays an important role in the development of environmental literacy of children and is forming their future pro-environmental attitudes and behavior. Therefore it is up to their teachers to help the proper development of this literacy. The main driver for this help should be teachers own environmental literacy, therefore it is very important to know how to measure its level. If we know the ways how to measure the environmental literacy and how to compare its development, it could help us to develop it in the right way at faculties of education. The researches of the environmental literacy among primary teachers and pre-service primary teachers (university students) are not very often. Moseley & Utley (2008) compare pre-service primary teachers involved and not-involved in GLOBE program. They found, among others, a significant increase of environmental teaching outcome expectancy among involved pre-service teachers. Tan (2014) investigate primary school teachers' attitudes towards reading books on environmental issues and their environmental behavior and thinking. He found significant variance across gender and programs they are attending. Kroufek & Látová (2014) found significant difference of level of environmental literacy between full-time and part-time students, where the part-time ones has higher results. They also found quiet strong correlation between attitudes and consumer behavior of students.

The interest of environmental issues has begun since 1992-1993 education season in Turkey. In primary school environment, health, traffic and read lessons have been implemented. Also the environmental classes have been added into lesson programs of "Science Lesson" in Secondary schools. "Environment and human" course has been added as elective courses into the curriculum in tertiary school (Tombul, 2006). New curriculum had been developed in context of the constructivist approach. The acquisition of Science-Technology-Society-environment tried to be inserted anywhere in the curriculum.

In the Czech Republic, the environmental education is part of the curriculum from kindergarten to university. At primary school, the environmental education is conceived as a "cross-cutting topic" that affects all educational areas (Činčera et al., 2011). Teachers have partial freedom, and decide on the inclusion of environmental activities into their courses.



The aim of this study is to put forward similarities and differences of two different countries from two different continents, Czech Republic and Turkey in their student's environmental literacy. The second aim is to determine the usability of the ELSA scale (Atabek-Yigit et al. 2014) among university students of different countries.

## THE STUDY

The environmental literacy of pre-service primary teachers was assessed using the Environmental Literacy Scale for Adults - ELSA (Atabek-Yigit et al. 2014). The scale is composed of 20 items and, according to its authors, has three dimensions. The research was conducted among 248 pre-service teachers of the primary school. 156 of them were from Czech Republic (12 male, 144 female), 92 from Turkey (29 male, 63 female). Age varies from 18 to 53 years. The distribution of data was not normal (Shapiro-Wilk  $W=0.97$ ,  $p<0.01$ ), therefore we used non-parametric statistic methods to analyze the data. For comparison of two independent groups was used Mann-Whitney U test, for comparison of more than two independent groups Kruskal-Wallis ANOVA, for correlations was calculated Spearman correlation coefficient. Reliability (see below) was calculated using Cronbach  $\alpha$  coefficient. All results are significant at the level of significance  $\alpha=0.05$ . The Statistica 12 software was used to analyze the data.

## FINDINGS

The table 1 shows results of reliability calculation using Cronbach  $\alpha$  coefficient. The results are for whole scale, its three dimensions (consciousness, anxiety and awareness) and then for each nationality (CZ – Czech Republic, TUR – Turkey). In the third column is reliability from original publication (Atabek-Yigit et al. 2014).

Table 1 – Reliability of ELSA scale and its subscales

Subscales	Cronbach $\alpha$	Cronbach $\alpha$ original
ELSA	.76	.88 (Atabek-Yigit et al., 2014)
ELSA CZ	.81	
ELSA TUR	.80	
consciousness	.60	.80 (Atabek-Yigit et al., 2014)
consciousness CZ	.62	
consciousness TUR	.46	
anxiety	.55	.77 (Atabek-Yigit et al., 2014)
anxiety CZ	.56	
anxiety TUR	.62	
awareness	.74	.71 (Atabek-Yigit et al., 2014)
awareness CZ	.72	
awareness TUR	.65	

As shown in the table 1, the reliability of ELSA scale is good and the scale as a whole is usable for research among pre-service teachers of primary school. The results of reliability for each nationality are acceptable as well. In comparison to the original, the subscales reliability is significantly lower and there are some differences between Czech and Turkish versions, especially in the consciousness subscale.

The table 2 shows correlations among ELSA scale and its subscales, all results with  $p<0.05$  are shown in bold.

Table 2 – Correlations among ELSA scale and its subscales

	ELSA	consciousness	anxiety	awareness
ELSA		<b>.71</b>	<b>.72</b>	<b>.68</b>
consciousness	<b>.71</b>		<b>.26</b>	.09
anxiety	<b>.72</b>	<b>.26</b>		<b>.53</b>
awareness	<b>.68</b>	.09	<b>.53</b>	

The correlation between each item of scale and the results for the whole scale was calculated. The only item with correlation lower than 0.3 was: *I think we will not find a place to have picnic within a few generation* ( $r=0.28$ ).

Using the whole ELSA scale, we did not find statistically significant differences between countries ( $z=1.47$ ,  $p=0.14$ ), but there is a statistically significant difference in all of the three subscales. Czech students have higher results in subscale *consciousness* ( $z=9.06$ ,  $p<0.01$ ), while Turkish students have higher results in subscales *anxiety* ( $z=-2.8$ ,  $p<0.01$ ) and *awareness* ( $z=-6.61$ ,  $p<0.01$ ).

There is a statistically significant difference between each year of study,  $H(4, 248) = 21.7$ ,  $p<0.01$ . The order of years according achieved score from highest to lowest is: fifth, fourth, third, first and second.

The variable sex shows no statistical difference if the whole scale was used ( $z=0.57$ ,  $p=0.56$ ), but females have statistically significant higher results than males in the subscale *consciousness* ( $z=2.4$ ,  $p=0.02$ ).

Quite interesting result is statistically significant moderate correlation of the age of students and the subscale *consciousness* ( $r=0.54$ ), while virtually no correlation of the age and the rest two subscales (*anxiety*  $r<0.01$ , *awareness*  $r=-0.09$ ). The correlation between age and the results for whole scale is statistically significant, but lower ( $r=0.26$ ).

## CONCLUSIONS

The environmental literacy of Czech and Turkish pre-service primary teachers was measured using the ELSA scale (Atabek-Yigit et al. 2014). We found no statistically significant difference among the results of both countries, but there are some very interesting results if the subscales of ELSA are analyzed. The Czech students have statistically higher results in subscale *consciousness*, which consists of 9 items that aims mostly on considered responsible environmental behavior and, from our point of view, is quite close to the third subscale *awareness*. In this subscale, as well as in the second, *anxiety*, the students from Turkey have the better results. The results of the subscales comparison should be handled with caution, mostly because of low levels of reliability of some subscales for every nationality.

The level of environmental literacy rises with the age of students, the strongest correlation is between age and subscale *consciousness*. The reason for this results is, from our point of view, the rising responsibility for the family and children which goes hand in hand with the responsibility for the environment. Among the age, the other important variable could be environmental education courses during university studies, because students in higher years of study achieve higher results in level of environmental literacy.

There are a lots of possibilities of measuring of environmental literacy. The ELSA scale could be one of them and, as results shown, it is (as whole) suitable for measuring of environmental literacy of pre-service teachers of primary school.

## ACKNOWLEDGMENTS

This paper was partly supported by the Grant Agency of the University of J. E. Purkyně in Ústí nad Labem, grant SGS “The Analysis of relationship between technical and environmental literacy of pre-service primary teachers”.

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## The Correlation Between The New Test Variants And Student Results Of Final Exam<sup>2</sup>

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### ABSTRACT

The paper discusses analysis of correlation between system of testing and student results of final exam of the obligatory course The Basics of Law at the University of Economics in Prague. We shall describe dependence of these results on the new test variants in the period of 2013-2015 because of perceptible differences in measured values. The research also analyses the impact of new learning tools on student results during the examined period. The obtained results will be used to update system of testing of students in coming years. The aim of the research is to make teaching methods more effective and obtain more objective results within testing of students.

**Key words:** Statistical Methods, Pearson's Chi-squared Test, Yates's correction, ANOVA

### INTRODUCTION

The exam of the course The Basics of Law at the University of Economics in Prague (UEP) is obligatory requirement for each student of UEP during first academic year of study. The main aim of this course is to provide students with necessary basic knowledge of law especially in the field of the theory of law, theory of state, civil law and main principals of contract law. Special focus is put on business law at the national and also European level. This knowledge is necessary for further consecutive courses in all study programs at UEP and should be useful for students after finishing their studies at their work and also in a daily life.

This course lasts one semester and is annually attended by more than 2,000 students. About 75% of students pass the course The Basics of Law during exam period of the winter semester (WS). The rest 25% of students pass the course at the end of the following summer semester (SS).

The final exam of the course consists of two parts, 2 tests and final oral examination. The test part includes two different tests, mid-semester and end-semester. First test is focused on basics of law theory and second is focused on basics of business law. In this paper we will discuss the test results of first mentioned test focused on basics of law.

The tests variants consist of 20 multiple choice questions. Each question is for 1 point, therefore the maximum number of points is 20. Questions are independent. They are selected randomly by the system from the database of questions. Wrong answer is not penalized. The students can obtain in the test these numbers of points: 0, 1, 2, 3, 4, 5, ..., 18, 19, 20.

The aim of this paper is to analyze correlation between system of testing and student results of final exam in academic years 2013/2014 and 2014/2015. We will compare probability distributions of number of points in the test in 4 semesters. We shall study dependence of number of reached points in the test on test variants.

Tab. 1: The Basics of Law course at UEP summary

	WS <sub>2013/2014</sub>	SS <sub>2013/2014</sub>	WS <sub>2014/2015</sub>	SS <sub>2014/2015</sub>
Number of students	1564	583	1780	600
Database of test questions	290	348	374	375
Max number of points	20	20	20	20

The results of this research will be used to improve system of education and student testing in coming years.

<sup>2</sup> This paper was created within the project IGS no. F2/130/2014 „New Trends in Private and Public Law of the Czech Republic and the EU in relation to business”.

## METHODS

For independence verification of data in a contingency table we shall use Pearson's chi-squared test ( $\chi^2$ ) which is a method of mathematical statistics, which allows to verify if the random variable has a predetermined probability distribution. Test is often used for testing hypotheses in the contingency table. The value of  $\chi^2$  is

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^s \frac{(n_{ij} - n_{ij}^0)^2}{n_{ij}^0}$$

where

$\chi^2$  = the Pearson's cumulative test statistic, which asymptotically approaches a  $\chi^2$  distribution.

$r$  = the number of rows in contingency table,

$s$  = the number of columns in contingency table,

$n_{ij}$  = the number of observations

$n_{ij}^0$  = the expected frequency in case of independence.

If

$$\chi^2 > \chi_{\alpha}^2((r-1)(s-1)),$$

where

$\chi_{\alpha}^2((r-1)(s-1))$  = the critical value of  $\chi^2$  distribution, hypothesis of independence is rejected at significance level, which is asymptotically equal to  $\alpha$ .

For comparison of test variants we shall use ANOVA method and also Yates's correction for continuity. Yates's correction is usually used for extremely low expected frequency.

We shall confirm or reject the null hypothesis because the number of points of is the same in each semester. If the test statistic  $F$  is

$$F > F_{\alpha}(s-1, n-s),$$

where

$F_{\alpha}(s-1, n-s)$  = the critical value of F-distribution (Fisher-Snedecor distribution) with  $(s-1)$  and  $(n-s)$  degrees of freedom ( $s = 4$ , number of variants), hypothesis is rejected at significance level  $\alpha$ .

## RESULTS AND DISCUSSION

### 1.1 Dependence on the test variants

We can see results of tests in Tab. 2 where are complete data for examined period. The table shows frequency of obtained points in the test, for example 13 students in WS<sub>2013/2014</sub> obtained 5 points – 13 is frequency  $n_{61}$  in 6<sup>th</sup> row and 1<sup>st</sup> column of contingency table. Based on this table we shall study dependence of number of points in the test on test variants. We shall test null variant hypothesis

$H_0$ : number of points in the test is not dependent on the test variant.

We shall use  $\chi^2$  test of independence in contingency table. In the first step we calculate (1) statistic  $\chi^2$  (i.e.  $n_{61} = 13$  and expected frequency  $n_{61}^0 = \frac{1564}{4527} \times 54 = 18,656$ ).



Tab. 2: Distribution of number of points in test (contingency table)

Points in test	WS <sub>2013/2014</sub>	SS <sub>2013/2014</sub>	WS <sub>2014/2015</sub>	SS <sub>2014/2015</sub>	Sum
0	0	0	0	0	0
1	0	3	0	0	3
2	5	4	4	2	15
3	6	8	11	0	25
4	18	11	11	3	43
5	13	16	23	2	54
6	21	27	21	5	74
7	34	50	39	7	130
8	57	49	45	15	166
9	62	53	38	10	163
10	91	68	74	19	252
11	133	71	84	34	322
12	185	59	110	39	393
13	174	62	106	52	394
14	196	36	147	64	443
15	186	31	163	68	448
16	176	25	181	71	453
17	116	10	204	92	422
18	61	0	218	67	346
19	24	0	180	34	238
20	6	0	121	16	143
Sum	1564	583	1780	600	4527

We will eliminate first three rows due to low frequency, because there is no value for 0 points in the test. Therefore we will count first 4 rows of each column<sup>3</sup>.

<sup>3</sup> See Klüfa, J., (2015) *Dependence of the results of entrance examinations on test variants*. International Conference on New Horizons in Education. Volume 374, p. 3565-3571.

Then expected frequencies are

Tab. 3: Expected frequency in test (contingency table)

Points in test	WS <sub>2013/2014</sub>	SS <sub>2013/2014</sub>	WS <sub>2014/2015</sub>	SS <sub>2014/2015</sub>	Sum
0	0,00	0,00	0,00	0,00	0
1	1,04	0,39	1,18	0,40	3
2	5	2	6	2	15
3	9	3	10	3	25
4	15	6	17	6	43
5	19	7	21	7	54
6	26	10	29	10	74
7	45	17	51	17	130
8	57	21	65	22	166
9	56	21	64	22	163
10	87	32	99	33	252
11	111	41	127	43	322
12	136	51	155	52	393
13	136	51	155	52	394
14	153	57	174	59	443
15	155	58	176	59	448
16	157	58	178	60	453
17	146	54	166	56	422
18	120	45	136	46	346
19	82	31	94	32	238
20	49	18	56	19	143
<b>Sum</b>	<b>1564</b>	<b>583</b>	<b>1780</b>	<b>600</b>	<b>4527</b>

After enter the data into the formula we have

$$\chi^2 = 988,07$$

To compare and reduce the error in approximation we shall use Yates correction for continuity. We shall use it for original frequencies. The effect of Yates correction is to prevent overestimation of statistical significance for small data. This formula is used because the most of frequencies in first 3 rows is smaller than 5. We have to reduce first row because of null values.

Statistic  $\chi^2_{Yates}$  is

$$\chi^2_{Yates} = \sum_{i=1}^r \sum_{j=1}^s \frac{(|n_{ij} - n_{ij}^o| - 0,5)^2}{n_{ij}^o}$$

Using the Yates correction formula we have

$$\chi^2_{Yates} = 958,56$$

Critical value of  $\chi^2$  distribution for 51 degrees of freedom and significance level  $\alpha = 0,05$  is  $\chi^2_{0,05}(51) = 68,67$ .

Since the  $\chi^2$  and  $\chi^2_{Yates}$  is bigger than  $\chi^2_{0,05}(51)$

$$\chi^2 = 988,07 > \chi^2_{Yates} = 958,56 > 68,67$$

Null hypothesis  $H_0$  is rejected at approximately 5% significance level.

If we use Pearson's chi-squared test for calculation of p value in MS Excel the result is equal to null

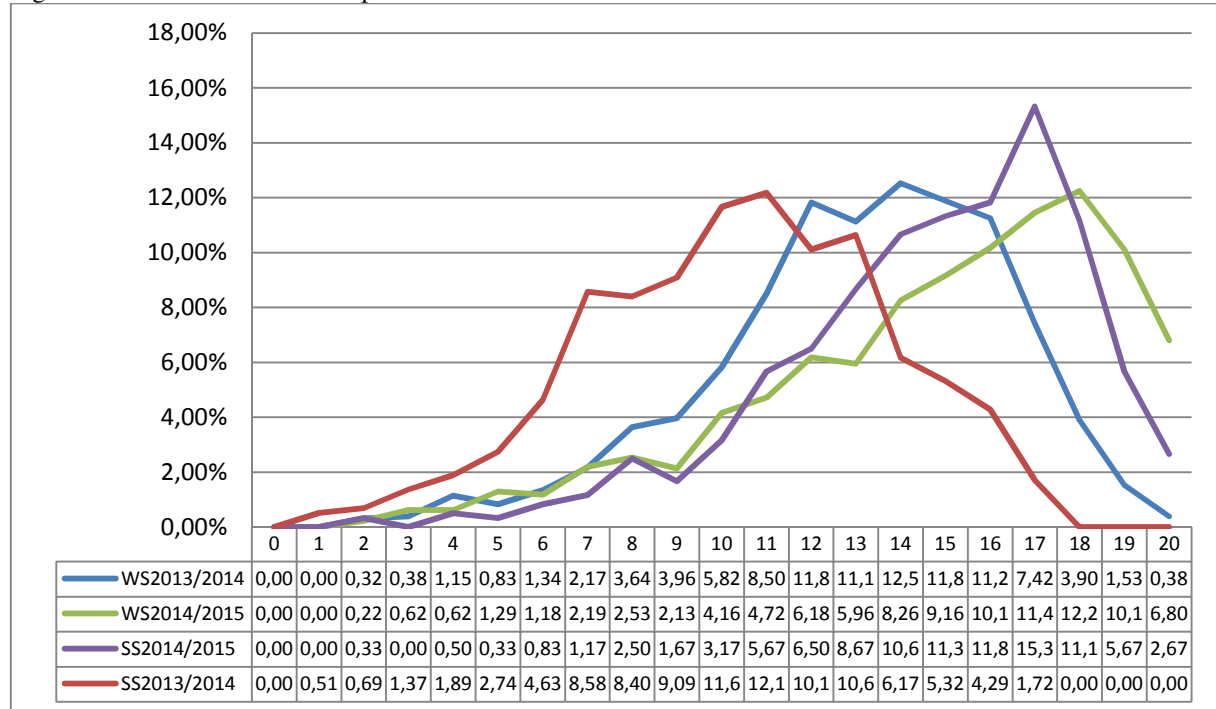
$$p = 0$$

Therefore we can say that the number of points in the test depend on the test variant.

### 1.2 Differences between the test variants

Now we can compare analyzed data from contingency table for each semester during examined periods in graph below:

Fig. 1 Distribution of number of points in test



We shall test null hypothesis

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4,$$

where

$\mu_1, \mu_2, \mu_3, \mu_4$  = the number of points in test in WS<sub>2013/2014</sub>, SS<sub>2013/2014</sub>, WS<sub>2014/2015</sub>, SS<sub>2014/2015</sub>. The number of points is the same for each semester.

For confirmation or rejection the null hypothesis we shall use the analysis of variance (ANOVA test) in MS Excel.

Tab. 4: Distribution of number of points in tests in WS<sub>2013/2014</sub>, SS<sub>2013/2014</sub>, WS<sub>2014/2015</sub>, SS<sub>2014/2015</sub>

Period	Frequency n <sub>i</sub>	Sum	Average number of points	Variance
WS <sub>2013/2014</sub>	1564	20394	13,03964194	10,72395534
SS <sub>2013/2014</sub>	583	6054	10,38421955	10,88992237
WS <sub>2014/2015</sub>	1780	26294	14,77191011	15,28240332
SS <sub>2014/2015</sub>	600	8811	14,685	10,71363105

Tab. 5: Results of ANOVA test (one factor)

Source of variability	Sum of Squares	Degree of freedom	Fraction	F	P value	F crit
Test variants	9670,93793	3	3223,6460	257,133	4,4454x10 <sup>-154</sup>	2,607
Rezidual	56704,3375	4523	12,536887			
Sum	66375,2755	4526				

As we can see

$$F = 257,133 > 2,607$$

The null hypothesis is rejected at 5% significance level. The differences between the average number of points in test (Tab. 4) in examined periods are statistically significant.

## CONCLUSION

In accordance with the tests we have done is evident the results of the test (points that students obtained) at the final exam of the course The Basics of Law at UEP differ depending on the semester. The analysis helped us to understand and explain the changes of the test methodology we have done recently.

As we can see in the Fig. 2 the curve of the distribution of the number of the test the curve of WS<sub>2013/2014</sub> is similar as a Gaussian bel curve and these results with average number of points 13,04.

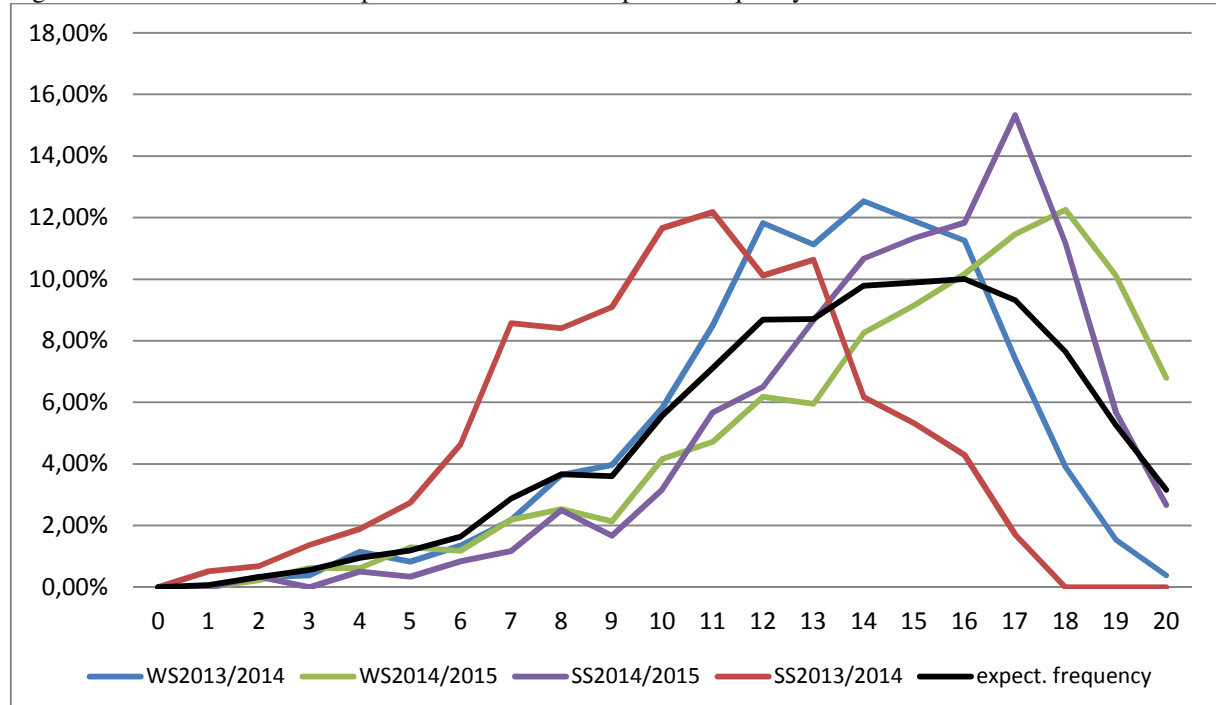
After this semester the recodification of private law was introduced in Czech Republic and due to these changes the question bases of the test was highly modified. Because of this the results of students got considerably worse which mean that the curve SS<sub>2013/2014</sub> is shifted to the left and the average number of points was decreased to 10,38.

In our previous study<sup>4</sup> we have proved the dependency of modification of the question bases on the student's results. We have concluded that to archive same results of the test it is necessary to modify 15 % of the question bases each semester.

Because of these unsatisfactorily results of the students we have provided them a new e-learning tool to help them to deal with the impacts of mentioned changes of law. The influence of using these e-learning tools on the results of students at the tests is discussed in our previous paper.<sup>5</sup> As we can see in the Fig. 2 these changes resulted in the fact that the students results got improved significantly, which we did not expected. Therefore the curve of WS<sub>2014/2015</sub> is shifted to the right. The average number of points was increased to 14,77.

Afterwards new questions were added into the question bases. This fact led to slight worsening of results in SS<sub>2014/2015</sub> and average number of points was decreased to 14,69.

Fig. 2 Distribution of number of points in test with the expected frequency curve



<sup>4</sup> Moravec, T. Štěpánek P., Valenta P. (2015) *The impact of progress testing of students on their results at final exam*. International Conference on New Horizons in Education. Volume 174, p. 3702-3706.

<sup>5</sup> Moravec, T. Štěpánek P., Valenta P. (2015) *The influence of using e-learning tools on the results of students at the tests*. International Conference on New Horizons in Education. Volume 176, p. 81-86.

Because the results of students depend on test variant it is necessary to make testing as objective as possible. It is also necessary to update database of questions regularly.

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## The Current Role Of Universities In The Civil Society In Continuity With Innovations In Higher Education In The Czech Republic – Theory And Practice

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### ABSTRACT

One of the major preferences of universities is improving the quality of education relevant for the labour market. The economic development is unthinkable without the civil society where non-profit organizations become significant. The diversity of the non-profit sector relates to increasing problems of the lack of specialists. The current state, reflecting the urgent society's needs, discovers new possibilities in terms of students practical competence and of consequent graduates' job positions. The study presents plausible solutions of the lack of marketing specialists in this sphere and establishing the platform for new approaches in educational curricula based on the essential requirement of interconnecting the theory and practice.

### INTRODUCTION

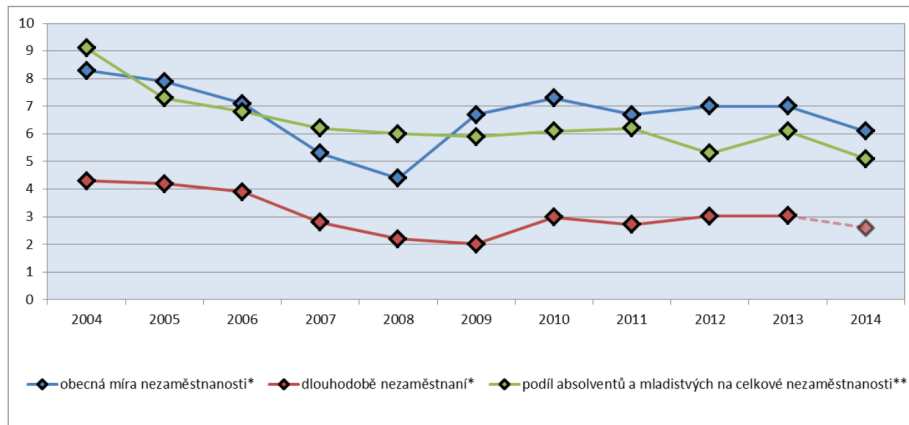
Finding a solution to the problem of youth unemployment, or with the assertion of graduates (especially university graduates) in the labour market has been troubling entire Europe. A number of young Europeans despite the decreasing indicators of different statistics still cannot find employment corresponding to their qualification, or any job in the long term. Young people thus lose their motivation for life, and especially precious years in which they could work on their careers and on further self-development. A slow transition from the educational system into full employment is negatively reflected in their personal lives. The Labour Office of the Czech Republic in its regional offices and other contact centers registered 519 638 unemployed to 31st October 2014 in total. To the same date, 31 677 graduates of different levels of education had been registered as well as the youth (they participated in the total unemployment by 6,1 %) and in total 58 217 job vacancies – at average 8,9 job seekers for one job vacancy. There were 14 570 job vacancies for the graduates and the youth, with 2,2 job seekers for one job vacancy in this category. (MPSV, 2015) The number of university graduates has increased in the last five years in total by more than 235 %. (iDNES, 2014) Nevertheless, what to do to stop the increasing figures? Very often do the words of employers support the fact that graduates only have theoretical knowledge which, however, often does not stem from the practical experience, which is negatively reflected also in rather ordinary working activities and habits. The National Institute for Education in the Czech Republic surveyed among employers in what extent university graduates are ready to fulfil job positions. The cited disadvantages and insufficiencies pointed out by the research from 2014 were found mainly in: irresponsibility, ability to make decisions, lead, work with figures, understanding to instructions or problem-solving abilities. (NUV, 2014)

### THE STUDY

#### *Theoretical Background*

#### *Employment x unemployment*

The aim of the employment policy, ie. the active part of the working population in the social and economic activities, is aimed at achieving the equilibrium between the labour supply and demand. It is thus a productive utilization of human resources and ensuring the citizens' right to work. The most common indicator to express unemployment is the unemployment rate, which represents the rate of the unemployed in the labour force, ie. the employed plus the unemployed. According to the definition of the International Labour Organization (ILO), persons aged 15 and over are deemed as employed who during one week, in which the measurement is taking place, meet one of the following conditions: a) they work for a wage (employees) at least one hour, they work to obtain some profit (entrepreneurs and cooperating family members) for at least one hour; c) they are employed but they are temporarily absent (eg. due to an injury, illness, time off, study leave, maternity or paternal leave, and so on). On the other hand, as unemployed people older than 15 years of age who within a reference period of time (ie. within one week of the ongoing surveys) had no employment (and who did not undertake any business), who did not work one hour for wage or remuneration (ie. neither did they undertake any business) and were actively seeking for a job they would be able to take up within two weeks. Workforce is then understood as the total sum of employed and unemployed persons, while other residents (children, full-time students, the retired, housewives, etc.) are not included among the workforce.



Graph 1: The development of unemployment in the Czech Republic in % (2004-2014).

Source: ČSÚ, NÚV, Eurostat. In: MŠMT, 2015.

(Note: blue – general unemployment rate, red – long-term unemployed, green – the proportion of graduates and young people in the total unemployment; \*) the average value for the reference calendar year; the unemployed in the long term – in 2014 the average value for the 3rd quarter; \*\*) the value for April of the monitored calendar year.

#### *The youth unemployment rate*

If we focus our attention specifically on the youth unemployment rate, as indicated by EUROSTAT, April 2015 featured the total number of unemployed young people (15-25 years old) of 4,746,000 in the EU-28, of which 3.168 million in the Euro area. If we compare the above data with the data on the state of youth unemployment in April 2014, we would see that there was a decrease in the unemployment rate by 478,000 in the EU-28 and 270 000 young people in the Euro area. For confrontation: the rate of youth unemployment in April 2015 was 20.7% in the EU-28 and 22.3% in the Eurozone, while the data from April 2014 speak of 22.5% and 23.9%. The lowest rate of youth unemployment (April 2015) is represented by Germany (7.2%), Denmark and Austria (both 10.1%), then the highest rate can be observed in Greece (50.1% in February 2015), Spain (49.6%), Croatia (45.5% in the first quarter of 2015) and Italy (40.9%).

The youth unemployment rate is generally much higher, even by double than is the unemployment rate for all other age groups. It is the percentage of unemployed young people compared to the total population of that age group, both active and inactive, such as students. The high unemployment rate among young people, especially among university graduates, reflects the challenges they face in finding employment. (EUROSTAT, 2015)

#### *The current situation of the higher education in the Czech Republic*

Although in the Czech Republic there is an exceptionally good overall unemployment rate, the country from the perspective of young people up to 25 years of age already in comparison with other European countries it cannot compete them. The indication of this March as high as 14.5% shows that the Czech labour market, unlike the German one, where the rate is a half of the Czech one, the Czech market is unable to accommodate new graduates. One of the highest risk groups that are vulnerable in the labour market is represented by graduates. A lack of experience among university graduates is considered the priority cause of this fact, representing a serious problem for the future employer. Those often perceive a very uncertain investment in them, especially in terms of their short or no professional history and experience, based on which they cannot adequately assess whether a particular young person is competent enough to carry out their future profession.

The Czech higher education is divided according to the law into public, private and state. Public universities are often confused with the state, despite the fact they are not the same form of higher education institution. Public and private universities fall under the Ministry of Education, Youth and Sports, while state institutions (the University of Defence and the Police Academy) fall within the competence of the Ministry of Defense and the Ministry of the Interior. Public universities (26) can be further divided into the following parts: faculties, university institutes, other workplaces for the education and research, development and innovation, artistic or other creative activities, or for providing information services; specialized facilities for cultural and sports activities, for accommodating and catering mainly of the academics or the operational units. A legal entity is authorized to operate as a private university (44) if the Ministry granted a state approval and currently has a registered office, central administration or the principal place of business in the territory of a Member State of the European Union,

or which has been constituted or established under the laws of a Member State of the European Union. A state higher education institution is a military or police (2), the Military schools provide specialists especially for the armed forces, but students who are not soldiers in the active service may study at the school as well. Police academies provide specialists for the security forces, but even students who are not members of the security forces may study here.

#### *University students in the Czech Republic*

To the date of 20th January 2015 – 347,339 students are studying at university in total, of which 264,077 (undergraduate bachelor's studies at 157,739, master's degree study programs 30,666, follow-up master's degree study programs 62,756 and doctoral studies 12,916) are full-time students and 86,170 (undergraduate bachelor's studies at 49,196, master's degree study programs 1,923, follow-up master's degree study programs 23,866 and doctoral studies 11,393) students in distance and combined study programs. The total of 88,146 graduates on the given date were recorded, 63,382 (undergraduate bachelor's studies at 35,034, master's degree study programs 5,086, follow-up master's degree study programs 22,730 and doctoral studies 592) in the full-time study programs and 24,845 ((undergraduate bachelor's studies at 13,254, master's degree study programs 283, follow-up master's degree study programs 9,456 and doctoral studies 1,857) students of distance and combined study programs. Students with the Czech citizenship make the total of 306,188 (with a foreign citizenship they were 41,179), of which 227,966 they were full-time students (36,122) and in distance and combined study programs 80985 (5 196) listeners.

At public universities the total of 308,428 students was registered, out of whom 245,371 (undergraduate bachelor's studies at 142,856, master's degree study programs 30,666, follow-up master's degree study programs 58,967 and doctoral studies 12,882) were full-time students and 65,682 (undergraduate bachelor's studies at 36,184, master's degree study programs 1,923, follow-up master's degree study programs 16,467 and doctoral studies 11,327) were distance and combined study program students. On the given date there was the total of 74,391 graduates at public universities, 57,704 (undergraduate bachelor's studies at 30,880, master's degree study programs 5,086, follow-up master's degree study programs 21,208 and doctoral studies 589) in full-time study programs and 16,764 (undergraduate bachelor's studies at 8,644, master's degree study programs 283, follow-up master's degree study programs 6,000 and doctoral studies 1,842) students in distance and combined study programs. The total number of students at private universities was 39,461, out of which 18,946 (undergraduate bachelor's studies at 15,101, master's degree study programs -, follow-up master's degree study programs 3,823 and doctoral studies 34) full-time students and 20,578 (undergraduate bachelor's studies at 13,047, master's degree study programs -, follow-up master's degree study programs 7,473 and doctoral studies 66) students of distance and combined study programs. Graduates of private universities on the given date made the total of 13,761 students; 5,680 (undergraduate bachelor's studies at 4,154, master's degree study programs -, follow-up master's degree study programs 1,523 and doctoral studies 3) of them in full-time study programs and 8,081 (undergraduate bachelor's studies at 4,610, master's degree study programs -, follow-up master's degree study programs 3,456 and doctoral studies 15) students in distance and combined study programs. Master's degree study programs correspond to 1-3 years and a continuation of undergraduate bachelor's study programs leading to master's study programs which represents the degree programs lasting 4-6 years. (Nebřenský, 2015)

#### *Civil society*

Civil society is the area in which the citizens are aware of their common interests and through horizontally working, as opposed to the vertically-acting (ie. on the principle of superiority and inferiority), social institutions (associations, unions, community organizations, churches, trade unions, associations, etc.) – that is they promote these interests independently of the state. “Civil society is a society of responsible, independent and compassionate citizens, self-confident and initiative, who associate freely in pursuit of personal or public interests.” (Čepelka, 2003, p. 17) We thus speak about the area which is filled by a number of various interest and self-help organizations and associations through which citizens express their interests and which help them to fulfill their needs. The civil society structure must be independent of the governmental powers and the state does not interfere with its activities – unless they get into a conflict with the law, the government does not determine who will lead or what action they will take. The civil society institutions are independent of the government also economically - they obtain the financial means for their operation mainly through private sources, from sponsors, foundations, etc. Civil society is currently composed especially of non-profit non-governmental organizations that provide the citizens with a platform for expressing their opinions and political positions on one hand, on the other hand they provide a number of other services.

### *Institutions and civil societies in the Czech Republic*

Civic associations as non-profit organizations represent by operation of law so called special-interest autonomy. The most important NGO's included: civic associations, charitable organizations, foundations and endowment funds, churches and religious communities. (Rektořík, 2007) As of 1<sup>st</sup> January 2014, Act No. 89/2012 Sb., The Civil Code, or the so-called. New Civil Code, which among other things regulates the legal relations of legal entities of private law, which include the NGOs. The fundamental changes brought by the new Civil Code include especially a new definition of private law entities (corporation, foundation, institutes); the need to coordinate internal relations of NGOs with the new legislation (statute, organs, etc.); to define so called public utility; further inability to establish a charitable company (hereinafter referred to as the "o.p.s." meaning a public benefit organization); automatic transformation of the o.p.s. into an alliance, and to discuss further legislative changes (the Act on change of legal form, the law on public benefit status). (Šebesta, 2013)

The current state of non-profit sector in the Czech Republic is demonstrated by the number of non-governmental non-profit organizations since May 2015: when 495 foundations, 1442 endowment funds, 2 912 public benefit organizations, 206 registered institutes, 4 156 religious organizations, 87 698 clubs and 26 225 branch associations. (NEZISKOVKY.cz, 2015)

## **FINDINGS**

### ***Problem formulation***

As already indicated the Introduction, although a very small part of Czech companies explicitly rejects to employ young people, the vast majority of employers admits (70%) that they do not prefer graduates. The research also pointed out persisting problems represented by a huge disaffection of the theory from the practical experience, insufficient practical readiness, the lack of knowledge and experience in project management, or the lack of project thinking, ie. the ability to focus on the outgoing goal, to proceed in steps, to finish phases, to meet deadlines, make decisions and defend and back up one's own approach and procedure, to communicate within a project. Enhancing the quality of higher education thus constitutes a necessary connection not only with the areas of scientific research, but also with economic practice.

The priority to streamline the educational process thus becomes a bridge and interconnection between the theory (universities) and practice (commercial entities) in the corresponding continuity necessary practical preparedness of university students to enter into employment, simultaneously with the development of competencies leading to sufficient orientation in business processes. "The task of universities is to educate future professionals in their chosen field, to give students the maximum knowledge and connect this knowledge with practical skills so that they are prepared for entry into practice." (Jurášková, 2001)

### ***Academic sphere and non-profit sector***

"The current economic crisis manifests itself in all aspects of economic life, affecting the economic performance of companies and the prosperity of organizations. Companies, organizations and education areas too, now realize the importance of strategic marketing management." (Jurášková, Juříková, Kocourek, 2013) And why particularly the non-profit sphere? It was the research conducted in 2012 which confirmed the persisting absence of marketing specialists in the non-commercial sphere. However, it is the non-profit organizations playing a significant role in the development of civil society and they represent the area for creation of a necessary platform for new approaches in educational curricula creation based on the essential requirement of interconnecting the theory and practice. Out of the total number of respondents which was 436 NNO in the Zlín Region, only 73 (18%) stated that they manage their promotion on a professional level, only 6 (2%) confirmed that they have a special marketing and promotion department. 49% (215) use for promotion and marketing affairs those, who are currently free for the particular activities. 16% (71) of the NNO stated they had had a qualified person responsible for marketing and promotion of the organization, on the other hand 7% (32) of the organizations do not deal with the issues of marketing and promotion. The cause for this state of things the organizations state the lack of funds and human resources. (Göttlichová, 2013)

The subsequent survey conducted in March 2015 with 175 actively participating NNOs in the Zlín Region showed a persisting unsatisfactory state of things. A special marketing and promotion department was confirmed by only one single organization. Despite the fact that 20% (30) of the NNOs stated they had had a qualified person responsible for their marketing and promotion, in 54% (94) of the organizations it is still "the available" person who has some time to deal with marketing and promotion, and 9% (15) of the NNOs does not deal with marketing and promotion at all. The lack of financial means and human resources is given as the cause for the unsatisfactory situation. (Göttlichová, 2015) However, organizations do not fully realize that even in the non-profit sector it is true that "at present effective marketing reacts to the economic, legislative, demographic and cultural environment

of the organization, modulates the structure and intensity of “implementation” of marketing tools and exerts itself (particularly in the field of services) to balance the swings of the demand and supply”. (Juříková, 2014, p. 22)

### **Problem solution**

As was already mentioned, the problem of the Czech higher education persists still in the relatively high rate of separation of the individual partners represented by the academic sphere on the one side and the commercial as well as non-commercial entities on the other side, which in reality means a constant separation of the theory and practice in the university educational processes. However, where to find a constructive solution reflecting in enhancing higher education?

The possible solutions include especially cooperation with the economic sphere based on the constructive communication of both the parties, which represents an element of sc. *capital of an educational institution* reflecting in a better quality of a created curriculum based on the requirements stemming from the practice and allows students to acquire necessary amount of information and knowledge usable in the educational process. It represents the reflection into the innovation of education and enrichment of the educational program heading to enhancement the quality of vocational training in the form of:

- a) *Controlled professional training placements or internships directly in enterprises (public institutions).*
- b) *Participation of experts in education.*

What is gaining an increasing position is:

- c) *The possibility for students to directly participate in real projects with a comprehensive mastery of the knowledge of project management methods.*

### **Research objectives and methodology**

The aim of the surveys was to obtain a sufficiently reliable insight into the current state of implementation of promotional activities of NNOs in the Zlín Region in continuity with the implementation of professional marketing personnel on the one hand (or the graduates of the Institute of Marketing Communications, Faculty of Multimedia Communications of Tomas Bata University), and at the same time finding how interested the NNOs are in cooperation with universities (specifically with TBU) in connection with the preferred forms of co-operation with reflection on enhancing the quality of teaching. Only the cooperation of NNOs with the academia in the Zlín Region can bring both the significant potential to the NNOs, being it whether in the field of volunteering, employment of graduates, interns helping with various activities, etc., for which the financial means of an NNO are insufficient. Likewise, the non-commercial sphere may provide the graduates of the university with an option of employment after they have finished their university studies.

As mentioned in the previous part of the article, the first survey was conducted for the NNOs in the Zlín Region in 2012 – as a part of the project called *Kooperace vysokého školství, veřejné správy, podnikatelského a neziskového sektoru pro socioekonomický rozvoj regionu (Cooperation of higher education, public administration, commercial and non-commercial sectors for the socio-economic development of the region)*, the aim of which was the development of international cooperation and experience exchange in development of human resources and employment based on the cooperation and connection between the academic activities, the activities of the non-commercial sector, the public and commercial sector on the basis of partnerships. 436 NNOs in the Zlín Region entered the survey. (Göttlichová, 2013) The follow-up survey in March under the project called *Život není zebra 2015 (Life is not a zebra 2015)* reduced the number of participating NNOs in the Zlín Region to 175. (Göttlichová, 2015)

### **Cooperation of TBU and the NNOs in the Zlín Region**

For the question of the cooperation of the academic sphere and the non-profit sector in the survey in 2012, positive responses prevailed. 207 organizations (47%) showed being interested in cooperation. Even though 167 organizations (38%) did not prefer cooperation and 62 organizations (14%) did not provide any response to this question, 207 organizations (47%) showed being interested in cooperation. The most common reasons for having little interest in cooperation were mainly the following responses: “we have no reason, no need to that”, “we are only a small organization”, “we have own specialists in promotion”. From the perspective of the forms of cooperation, more than a half preferred some assistance with promotion during preparing and realizing a project (173, 58 %), less than a quarter then selected ordering analyses by means of bachelor and master theses (63, 23%) and 13% of the NNOs preferred regular internships with the orientation to the field of promotion. (Göttlichová, 2013) Analyses of marketing communications and projects of communication and fundraising activities are thus a common task and topic of university works and theses at the Institute of Marketing Communications at the Faculty of Multimedia Communications at Tomas Bata University in Zlín.



Responses to the same questions in the survey conducted in 2015 do not significantly differentiate from the results of the previous survey. We can even observe some increasing number of organizations who became interested in cooperation with the TBU students in the area of promotion (106 NNOs, 61%). 69 NNOs in the Zlín Region (39%) do not prefer any cooperation with the university. Among the preferred forms of cooperation are again at the forefront assistance with the promotion during the preparation and realization of projects (66, 62%), followed by ordering analyses in the form of bachelor and master theses (12, 11%) and regular internships with the orientation to promotion (16, 15%). (Göttlichová, 2015)

#### *Connection between the theory and practice (university and an NNO) = solution to the problem*

As was already mentioned, one of the crucial steps in the innovation of teaching leading to increase in the quality of vocational education is the form of students' direct active participation on real projects with comprehensive management of project management knowledge. The need for the given competences and abilities was confirmed by the survey conducted for the employers (see NUV, 2014), as well as the given form of innovation of the survey results in the NNOs in the Zlín Region (see Göttlichová, 2013, 2015). The solution then may be observed in one of the established ways at the Institute of Marketing Communications, the Faculty of Multimedia Communications, Tomas Bata University in Zlín, leading to enhancing teaching, and to increasing the quality of the institute itself, of the faculty, the university. We are speaking about a study subject called *Projects of non-profit organizations*. The priority is not to mechanically acquire the largest amount of information but the ability to orientate within practical life situations, the ability to independently negotiate while accepting responsibility and overcoming potential risks. At the same time also to deepen students' interests in the goings-on in the region and definition of prospective profiling onto non-commercial marketing communications.

#### *Connection between school and life*

What is the content of *Projects of non-profit organizations*? It is a special educational course having been realized for 12 years at the Institute of Marketing Communications at the Faculty of Marketing Communications at Tomas Bata University in Zlín. Its objective is the possibility to apply team work in non-profit social projects solutions. The contents of the course is the extension of the reciprocal cooperation with non-profit organizations focusing on conducting projects of non-governmental non-profit organizations in the current social context of the partner environment. The attention is paid to the system theoretical solutions of all phases of a marketing process and the practical implementation. Students can penetrate into the secrets of project management in its full breadth. Attention is paid to methodological and procedural sides of project management and project planning, as well as to the system of controlled communication and project documentation management.

#### *Projects of non-profit organizations*

It is not possible to introduce all students activities (projects). Some have been ongoing for a year, some for twelve years. Some came and left with their students, with their hobbies and interests, creativity and ideas how to help, should it be even once, to those who need the help. It does not always have to be people, but for example animals shelter (project called *Němá tvář* or A dumb creature). A highly beneficial aspect is the interconnection of students of art with marketing communications students, which allows realization of the project in all spectre of possibilities and prepares students for their future occupation where team work and communication of marketing specialists becomes a necessity. The content of the projects is as diverse as is the non-profit sector.

The objective of the largest non-profit projects called *Percipio* is a fundraising gala event with the auction of works of art (made by students of art studios) to support selected non-profit entities. Each year of *Percipio* is focused on different direction and helps in another sphere, being it a fundraising help to children in homes for orphan children, to paediatric ward of Bata Hospital, to the deaf and hearing impaired children, to the selected non-profit organizations or individuals to who due to their health condition the project can improve their life by some bit.

Among other projects we may mention for instance help to the mentally impaired by preparing a day full of games (the project called *FAJNDEN* (FINEDAY)) with various topics and in various environments. Our students regularly actively participate in preparation of a Czech Red Cross conference, and on promoting a project aimed at young people – Give blood. At the same time they take part in the organization of a Christmas auction for a non-profit organization advancing a long-distance adoption and building of new schools in Africa. For eight years, the students have been the organizers of a fourteen-day exhibition of non-profit organizations of the Zlín Region (the title of the exhibition is *Život není zebra* (Life is not a zebra)) with a rich cultural program as well as a number of workshops aimed at the general as well as professional public, primary and secondary school pupils and students, and at university students. The event also includes a photo contest and a non-profit market called NEJARMARK (No-market). The aim of this is a presentation of the width of activities of the non-profit organizations in Zlín. This year the project expanded into cooperation with the Slovak Republic. The aim of another project called the

Rainbow Marble is a two-day event of International Contest Festival of Advertising which is complemented with a number of workshops, lectures and an accompanying program from the field of film promotion.



Fig. 1-3: Fashion Show the Touch, Percipio, Life is not a zebra.  
Source: Göttlichová, 2014.

The last of these projects to be mentioned is the *Fashion Show Dotek* (the Touch) presents a charitable fashion show with the auction of clothes in order to support non-profit organizations ensuring seniors peaceful old age. In the course of one evening, on a professional level four new student collections were introduced and the fifth one, complemented with designer jewellery, created by designers specially for this event, was auctioned and the proceedings helped to those who need it. (Göttlichová, 2014)

## CONCLUSION

The list of projects could be taken even further. But let us go back to the beginning. We should recall the shortcomings identified by the survey conducted for employers in 2014 (see NUV, 2014). They were namely: irresponsibility, ability to make decisions, lead, work with figures, understanding to instructions or problem-solving abilities. However, further investigation revealed the persisting problems, which in addition to the huge detachment between the theory and practice and the lack of practical preparedness, it was above all the lack of knowledge and experience in project management, ie. the lack of design thinking, ie. *the ability to focus on the outcoming goal, to proceed in steps, to finish phases, to meet deadlines, make decisions and defend and back up one's own approach and procedure, to communicate within a project*. All that is included in the content of the subject, all that students acquaint, what they embrace not only for their careers but also for their personal lives.

The students thus may not only test their knowledge of project management in practice (and in the course of realization of an exhibition, fashion show, conference, starting with the proposal to its realization – is not an easy thing to do), but they become familiar with the issue and specifics of the non-profit sector in the real environment – and what is important, when it is necessary to sacrifice their free time for those who need their help. The students are thus encouraged to cope with real situations, to learn quickly and flexibly respond to the real social situation, and are granted the maximum space within the real environment of the non-profit sector, allowing them access to the real conditions of employment, to provide them with comprehensive set of theoretical and practical knowledge and skills. And that is exactly what may become the foundation of their future professional orientation. On the other hand the businesses of a non-commercial character may actually verify the level of knowledge, skills and abilities of university students and to gain awareness of their relation to the work, which can be subsequently reflected in their offer of employment. Mutual cooperation thus may represent the "offered hand" of the academia to the interests of employers, civil society at large and the regions themselves.

To provide such knowledge and skills for graduates to become *employable* and to be able to assert themselves even within the rapidly changing labour market requirements has to become the priority task of the educational system. This requires reconciling the outputs of the tertiary education with the needs and demands of employers. At the same time to enable all students to actively participate in creative work connected with teaching and learning processes that lead to the formation of a stimuli-rich environment, and to provide motivation for further work. Only then the veracity of in the history often cited words that **the school prepares for life** will be realized.

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## The Effect Of 3D Virtual Learning Environments On Mathematic Success: Second Life Sample

İrfan K. Gönül

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### ABSTRACT

The usage of three dimensional (3D) virtual worlds in Mathematics Education not only eliminates the dependance of education on K-12 schools but also enables the subjects to be more concrete. The objective of this study is to create a mathematics laboratory by using the virtual classroom qualities of 3D worlds. In this lab, abstract mathematics subjects are concretised by the materials developed. This state makes the learning of secondary school students, who still think concretely, easier and more consistent.

In our country, Turkey, studies on three dimensional virtual worlds exist in Management, Sociology, Fine Arts, Architecture, Science and Technology. In terms of teaching, there are only studies in the field of Foreign Language. No studies are available about its contribution in Mathematics Education yet.

For the objective of this study, an experiment group of 28 people was chosen from Fatih Secondary School third grade students. The teaching of Mathematics to this group was supported by Second Life. At the beginning and at the end of the study, an achievement test was applied. With this study, the positive effect of three dimensional virtual worlds on Mathematics education was observed together with the change of student success in Mathematics courses, and it was found significant at a level of .01.

**Keywords:** Second Life, Mathematic Teaching, 3D Virtual Learning Environments, 3D Virtual Worlds

### INTRODUCTION

In this century, graduated individuals are expected to define the problems they encounter, solve them and contribute to the society in which they live. Therefore, the current education system adopts a student-based and structural learning understanding through which students form knowledge. In the frame of this understanding, context and methods of the education need to be re-organized in a way to gain critical thinking, scientific thinking, relational thinking, reasoning and creative thinking skills. Providing students with learning opportunities suitable to their skills and expectations and raising manpower equipped with the qualities required in our age is only possible through a technology-based structure within the education system. Educating individuals and ensuring that their creative thoughts emerge is only possible with a contemporary education perception (Özden, 1997; Alkan, 2005).

In light of these ideas, technology has started to take its place in the learning-teaching process. During this period, computer technologies have also begun to be used in material development in order to provide more effective education as used in consulting and assessment-evaluation services. The rapid improvement of science and technology is bound to affect computer technologies used in the education process, and it also provides possibilities to overcome the limitations that can occur in computer-based learning environments. Presently, a transition has started from internet-based learning to 3D, multiple user, online virtual learning environments. These 3D online environments allow multiple users to do activities and communicate with other users with the help of a virtual self (avatar) that represents them in the same environment at the same time. These environments provide a powerful visual interface structure that evokes the sense of reality in social communication, which becomes an alternative for them by eliminating the drawbacks of other Internet-based systems. These environments eliminate the distance concept as it can bring the users together in remote places. In addition, according to Barkand and Kush (2009), virtual learning environments are described as: instant messaging, discussion boards, e-mails, blogs and podcasts (Dickey, 2005; Dede et al., 2004; Mennecke et al., 2011).

The methods and the techniques used in the learning-teaching process in our country are inefficient, especially in the courses with abstract subjects like Mathematics. According to Piaget, cognitive development of individuals is completed in four phases, and these are: Sensorimotor Stage, Preoperational Stage, Concrete Operational and Formal Operational Stage. Concrete operational stage: It applies to individuals' in the age range 7-11, and this age

## The Effect Of 3D Virtual Learning Environments On Mathematic Success: Second Life Sample

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### ABSTRACT

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In light of these ideas, technology has started to take its place in the learning-teaching process. During this period, computer technologies have also begun to be used in material development in order to provide more effective education as used in consulting and assessment-evaluation services. The rapid improvement of science and technology is bound to affect computer technologies used in the education process, and it also provides possibilities to overcome the limitations that can occur in computer-based learning environments. Presently, a transition has started from internet-based learning to 3D, multiple user, online virtual learning environments. These 3D online environments allow multiple users to do activities and communicate with other users with the help of a virtual self (avatar) that represents them in the same environment at the same time. These environments provide a powerful visual interface structure that evokes the sense of reality in social communication, which becomes an alternative for them by eliminating the drawbacks of other Internet-based systems. These environments eliminate the distance concept as it can bring the users together in remote places. In addition, according to Barkand and Kush (2009), virtual learning environments are described as: instant messaging, discussion boards, e-mails, blogs and podcasts (Dickey, 2005; Dede et al., 2004; Mennecke et al., 2011).

The methods and the techniques used in the learning-teaching process in our country are inefficient, especially in the courses with abstract subjects like Mathematics. According to Piaget, cognitive development of individuals is completed in four phases, and these are: Sensorimotor Stage, Preoperational Stage, Concrete Operational and Formal Operational Stage. Concrete operational stage: It applies to individuals' in the age range 7-11, and this age



range corresponds to the span between the primary school third grade and secondary school third grade. In this stage, an individual can achieve basic operational series with the condition that every step is clearly explained. Additionally, an individual improves the concepts of the substance amount of the objects, reversibility and conservation of length and weight. The next stage, Formal Operational Stage, applies to the age 11 and above, and this corresponds to the secondary school fourth grade and above in educational life. In this period, an individual improves the skills of hypotetico-deductive reasoning, identification and control of variables, imagining, comprehending abstract events and concepts by interpreting them (Gültekin, 2005; Özmen, 2004).

The lecturers in virtual learning environments provide convenience to the education leaders on the matters below:

- Observing the students' contribution to discussion.
- Preserving all the activities and conversation history, written or visual, to get feedback and an evaluation.
- Transferring discussions to the students to be able to set an example about critical thinking skills.
- Asking questions and adding interpretations in order to direct the critical thinking.
- Putting forth an expert view when necessary.

More importantly, the lecturers in virtual learning environments have the opportunity to watch and evaluate the discussions made offline (Duffy, Dueber & Hawley, 1998).

Upon examining the mathematics curriculum of the schools educator can see that, by the second grade of secondary school, an abstract subject like algebraic expressions has been taught to the students. The students are in concrete the operational stage at this age, so comprehension of abstract subjects like this is made impossible by the methods and techniques used while teaching. Furthermore, for example presentation of a cube, a three dimensional object, on a two dimensional board creates a separate paradox. The low number of the materials designed to present the abstract subjects to the student in concrete operational stage does not allow each student to use them and the users are also limited by internet Access, materials at the school. In this context three dimensional online virtual learning environments are needed. The materials formed in three dimensional interfaces provided by these environments not only concretize the subject but also provide the opportunity to use them in required place and time. Besides the cost and the time spent for copying these materials for students being close to zero, it also serves the educational policy of cost saving (economy). (Küçükahmet, 2006; Ergün ve Özdaş, 1997).

## THE STUDY

With this research, Second Life environment, which is a three dimensional online virtual world is aimed to reveal the effects of student attitudes toward mathematics courses and design activities which will enable the third grade students of secondary school to see the 3D objects in mathematics courses in a concrete way, access the information outside of the school, and provide them with an education through games. Furthermore it gives the chance to observe the effects of this method on academic success and the cognitive levels of the students.

The problem statement forming the base of the study is: "What is the effect of supporting teaching principles with the activities prepared in Second Life environment on Secondary School third grade students' academic success?"

Accordingly, the hypotheses of the study were defined as follows:

1. A statistically significant difference exists between the academic success pre-test and post-test scores of the SL learning group.
2. A statistically significant difference exists between the academic success pre-test and post-test scores (the score of answers given to the objective of the application) of the SL learning group in favor of post-test.

The premises and the limitations of the study can be lined up as follows:

1. It has been presumed that the information taken from various sources and institutions reflects the truth and that the uncontrollable variants of the study affect each student in the same way.
2. This study is delimited with a working group of 28 third grade students from Uskudar District Fatih Secondary School and a research period of three weeks research period.
3. The application process applies to the secondary school third grade Mathematics subject of "Cartesian Coordinate System."
4. The improvement in the academic success of the students has been assessed by the written exams which are prepared by the course teacher.

In this research the effect of a mathematics course taught with Mastery learning and supported by Second Life on

student success is examined. Written exams prepared by the researcher are used for data collection. The data collected from the research is analyzed with non-parametric statistical methods as the group number is less than 30. In order to compare the pre-test and post-test total scores of the experimental group, the Wilcoxon signed rank test is used, which is considered to be appropriate to use in relational measurements (Büyüköztürk, 2003). The quantity analysis of the study is made with the help of SPSS 21 for MacOS X package program.

## FINDINGS

In this part, the findings obtained by the quantity data of academic achievement tests were presented in accordance with the research hypothesis and problem.

### Findings of the First Hypothesis

**The first hypothesis of the study is:** “A statistically significant difference exists between the academic success pre-test and post-test scores of the SL learning group.”

Wilcoxon signed rank test results, as to whether the scores taken from the academic achievement tests before and after the application show a significant difference or not, are given in Table 1.

**Table 1:** Wilcoxon Signed Rank Test Results of Pre-Experimental and Post-Experimental Academic Achievement Test Scores

Second Life Education After - Before	n	Mean Rank	Sum of Rank	z	p
Negative Ranks	8	16.19	129.50		
Positive Ranks	20	13.83	276.50		
Ties	0			-1.674	.094
Total	28				

\*Based on negative ranks

According to the test results in Table 1, it is noted that there is no significant difference between the answers given to the achievement test before and after the 3D material application developed in Second Life environment. ( $z=1.67$ ,  $p>.05$ ).

When the mean rank is taken into account, the scores are in favor of the pre-test, that is to say, the general success obtained from the examination before the application is greater than after. The result can be seen as normal considering the facts that the achievement test is not just for the related objective but covering all the courses of the semester and that it has been applied four months later than the pre-test. This state stands for the vision that pre-test and post-test scores of general success does not show a significant difference.

### Findings of the Second Hypothesis

**The second hypothesis of the study is:** “A statistically significant difference exists between the academic success pre-test and post-test scores (the score of answers given to the objective of the application) of the SL learning group in favor of post-test.”

Wilcoxon signed rank test results, as to whether the scores taken from the academic achievement test questions covering the related objectives before and after the application show a significant difference or not, are given in Table 2.

**Table 2:** Wilcoxon Signed Rank Test Results of Pre-Experimental and Post-Experimental Academic Achievement Test Scores Concerning the Objectives of the Application

Second Life Education After - Before	n	Mean Ranks	Sum of Ranks	z	p
Negative Ranks	6	7.00	42.00		
Positive Ranks	15	12.60	189.00		
Ties	7			-2.561	.01
Total	28				

\* Based on negative ranks

According to the test results in Table 2, it is noted that there is a .05 significance level between the answers given to the achievement test questions covering the related objectives before and after the application with Mathematics Robot developed in Second Life environment ( $z=2.56$ ,  $p=.05$ ).

The mean ranks in Table 2 show that the scores of the answers given after the application are greater. In other words, the difference is in favor of positive ranks, namely post-test scores. After these results, it can be stated that the learning application with 3D materials developed in Second Life environment has a positive effect on the learning level of the related objective by the Second Life learning group.

## CONCLUSIONS

In this research, Second Life environment, which is a three dimensional online virtual world, is aimed to reveal the effects of student attitudes toward mathematics courses and design activities which will enable the third grade students of secondary school to see the 3D objects in mathematics courses in a concrete way, access the information outside of the school, and provide them with an education through games. In addition, SL allows researchers to observe the effects of this method on academic success and the cognitive levels of the students.

Researchers in different studies express that before carrying out the activities in three dimensional virtual learning environment, it is necessary to define the content and the objectives related to the content. (Hodge et al., 2009; Molka-Danielsen & Deutschmann, 2009). The selection of the materials must be appropriate for the content in order to make complex tasks easy to learn, and the interaction of the participants with the materials is emphasized. (Gillen, Ferguson, Peachey, & Twining, 2012; Moore & Rocklin, 1998; Salomon, 1993). Therefore the researcher has chosen Cartesian Coordinate System, a subject of third grade, and the objective “The student is able to explain and use the two dimensional cartesian coordinate system”.. Later on, 3D material, suitable for the content and the objective, was developed in second life environment. It is noted that there is no significant difference between the answers given to the achievement test before and after the 3D material application developed in Second Life environment (Table 1).

When the mean rank is taken into account in Table 1, the scores are in favor of pre-test, that is to say, the general success obtained from the examination before the application is higher. The result can be seen as normal considering the facts that the achievement test is not just for the related objective but covering all the courses of the semester and that it has been applied four months later than the pre-test. This phase stands for the vision that pre-test and post-test scores of general success does not show a significant difference.

By looking at the second hypothesis, the following result can be reached: a significant difference can be formed in the general academic success of the students in the research on the condition that the study is applied throughout the semester.

On the other hand, it is noted that there is a significant level of difference between the answers given to the achievement test questions covering the related objectives before and after the application developed in Second Life environment (Table 2). Considering the mean rank in Table 2, positive ranks are higher, namely in favor of the post-test scores. This phase can be interpreted as 3D materials developed in Second Life environment provide a better understanding of the subject and have a positive effect on their academic success.

Research has shown virtual environments provide a possitive impact on learning. Sert (2009), defines game based learning environments as: the environment that learning is carried out through games to ensure the learning process to be more fun and highly motivational. In the study by Salmon et al. (2010) due to the environment designs made by the participants, it is found out that they are more entertained and have a higher motivation for studying in the environment. In another study, researchers state that student-student interaction in virtual environments is very important for the formation of social learning (Beldarrain, 2006; Kongmee et al., 2011).

When the findings of the research are examined, thanks to the three dimensional Mathematics Robot developed in the SL environment, it can be seen that affective qualities are improved: (a)students’ interests toward Mathematics increased, (b) they started to like Mathematics, (c) they would like to reserve more time for Mathematics, and (d) they would like to have advanced level information about Mathematics. Besides an increase of academic success regarding the objectives, a cognitive quality, has been noted. It can be stated within the light of this finding that the increase in the sympathy and the motivation toward mathematics mobilized the academic success in a desired course. Furthermore, increasing students interaction enables social learning by having an independent environment from the school, encouraging them to ask questions to each other, and sharing more things..

## ACKNOWLEDGE

This work was supported by Scientific Research Projects Coordination Unit of Istanbul University. Project number is 54140.

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## The Effect Of Argumentation-Oriented Astronomy Teaching On Preservice Teachers' Pseudoscientific Beliefs

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### ABSTRACT

Pseudoscientific beliefs involve that seem scientific through personal explanations, hypothesis and subjective examples, even though they do not go through a scientific phase and are not verified by scientific researches. According to the researches, the preservice teachers also possess these types of beliefs, which are common in astronomy. The aim of the study is to determine the effect of argumentation-oriented astronomy teaching on preservice elementary science teachers' pseudoscientific beliefs. A total of 98 (N=57 female, N=41 male) preservice elementary science teachers from the Elementary Science Department, in the Faculty of Education, Pamukkale University, Denizli, Turkey. In this research, the Solomon Four-Group Design utilising a Pseudoscience Beliefs Scale is administered to participants for a pre-test and post-test to gather the data. Four activities developed by the first author of this study. In-class activities are designed based on Walton's Dialogue Theory and applied in experimental groups. The results showed that argumentation-oriented astronomy teaching had an effect on participants' pseudoscientific beliefs. Analysing the data, the change of the scores of the participants' pseudo-science beliefs in experimental groups was more than the ones in the control groups.

### INTRODUCTION

For thousands of years, in parallel with the scientific works, there have been many fallacies regarding astronomy in every society. Named as pseudoscience, these fallacies acknowledged as the truth consist of the beliefs which people try to corroborate by religious beliefs and which are made up of hypothesis, personal explanations and examples that do not go through the phases of scientific methods or are not promoted by scientific studies (Çetinkaya, 2013). It has been a popular topic for scientists and the philosophers to discuss the distinction between the science and the pseudoscience. As a matter of fact, at the beginning of the 20<sup>th</sup> century the philosophy academies established in various countries aimed to draw a clear line between the science and the pseudoscience. Vienna Circle established in Austria is the most famous of all. The school embodying the prominent people of the time came to a conclusion that the science should be completely separated from the metaphysic. Further more, the school purposed to define the science once again by creating a scientific language consisting of meaningful thesis (Şahin, 2006).

It is quite possible to encounter the news claiming to be scientifically true on the internet via printed or visual media. People who cannot distinguish the science from the pseudoscience could easily believe in these claims and be mistaken. These fallacies could harm those people financially or emotionally. Recently, the prophecies asserting that the World would go through a fundamental change in 2012 according to Maya Calendar, that probably a meteor hit would bring the end of the World and that only people in particular parts of the World would survive from the disaster affected many people worldwide. Unidentified Flying Objects (UFOs), the traditionalistic news on the visual and printed media nowadays, are another example of infollution with no scientific information source.

The debates have shown that there is still no series of criterion to distinguish the science from the pseudoscience (Turgut, 2009). No matter how hard it is to create certain criterion, it is possible to find definitions of what the pseudoscience is. The pseudoscience is defined as well-organised thoughts, processes and attitudes that seem scientific but are not indeed (Martin, 1994). Pseudoscience aims to solve the mysteries and uses legends as sources (Radner & Radner, 1982, in Oothoudt, 2008). The pseudoscientific claims by analysing the achievements very well when the scientific studies speed up and draw on these scientific data when presenting their claims without any control mechanism. Even in the infancy of the scientific knowledge, those kinds of claims have not get into difficulty in improving themselves and have increased day by day.

People usually tend to believe what they want to. Therefore, they sometimes do not even avoid from abusing the scientific knowledge. Most of the pseudoscientific beliefs seem to have quite reasonable and scientific justifications. For example, although there are not any studies or statistical data promoting the fallacy that the birth and the crime rates increase at full moon, that belief is quite popular in many cultures. It is a threatening fact for a preservice teacher who is to bring the light of the science to his/her students, to have a mentality that believe in



whatever it hears without asking “how?” and “why?”, instead of reaching the information by going through the scientific phases that requires effort and thinking. In that case, the teachers shaping our future must learn the process of scientific methods.

One of the highly applied approaches in science teaching is the scientific argumentation. Scientific argumentation is sometimes regarded as a learning process, and sometimes as a process witnessing the construction of a scientific knowledge (Bricker & Bell, 2008). And therefore, scientific argumentation is considered as a teaching approach or an objective for science education (Osborne, Erduran & Simon, 2004). In addition, scientific argumentation helps students to regard science as a social application, to develop an epistemological understanding, to increase study skills and conceptual understanding (Driver, Newton & Osborne, 2000).

In science education, there are various views of what an argumentation means and what kind of dialogue could be regarded as an argumentation (Macagno & Walton, 2006). The scientific argumentation is a reasoning strategy including informal logic and critical thinking (Jiménez-Aleixandre, Rodríguez & Duschl, 2000). An argumentation is a social and a verbal activity that is done by means of reasoning in order to make a group of people accept or reject a particular view (van Eemeren, Grootendorst & Henkemas, 1996). Also, argumentation is like a living organism and it has an integrity, in another word; an anatomic structure (Toulmin, 2003). Asserting an argumentation with all details may take lots of pages or time and in that case some significant points of the argument may be overlooked. To solve this problem, the argumentation must be molded. No matter how often the Toulmin’s argumentation model is adopted by the pedagogs, recently the criticisms towards the model have started to become intense. For example, Paglieri (2006) stated that the Toulmin’s argumentation model is deficient in that it ignores the emotional aspect of the argumentation, it is difficult to use the experimental data, it disregards the cultural and the sociopolitical dimensions of the argumentation, it does not have different validity criterion to be applied on different subjects and that it aims to mold the argumentation and ignores the content.

Walton’s argumentation model which is more convenient for dialogue argumentation is recommended in classrooms instead of Toulmin’s argumentation model (Erduran, Simon & Osborne, 2004; Jiménez-Aleixandre & Erduran, 2008). In the Walton’s model which is suggested as an alternative model for analysing the argumentations, 25 common diagrams of reasoning that appeared most frequently are determined by Yeh (1998). The significant difference between these models is that while the Walton’s model put the emphasis on the content of the argumentation, the Toulmin’s model underlines the components of the argumentation (Osborne, Erduran & Simon, 2004). Walton’s Theory of Dialogue provides pre-assessment criterion in the argumentation and makes it more conventional for the social dialectical argumentation. Furthermore it enriches the argumentation within the frame of argument and counter-argument. Toulmin’s argumentation model, which includes more presumptive reasoning in dialogues; Walton’s model also includes many latest philosophical visions (Nussbaum & Edwards, 2011). Duschl (2008) has asserted two reasons why to use Walton’s argumentation model for the discourse analysis in Science classes. The first reason is that the model includes five criteria to improve the quality of the argumentation (Sampson & Clark, 2006), that is the agreeable outlook of the argumentation.

1. Examine the nature and the quality of the claim.
2. Examine how the claim is defended.
3. Examine the valid evidences.
4. Examine the different attempts of arguments.
5. Examine how the claims and evidences are used as a scientific knowledge.

The second reason is that the model is more convenient in analysing the dialogical argumentation in small, cooperative groups. Because, the presumptive reasoning is better represented in Science classes, also the evidences are to be defended against the other individuals of the group in that design. These make the Walton’s diagrams more convenient for arguing and assessing a claim in a group (Duschl, 2008).

The purpose of this study is to investigate the effect of the argumentation oriented astronomy teaching on the preservice elementary science teachers’ pseudoscience beliefs about astronomy.

## METHOD

### *The Participants*

During spring semester of 2015, this research is carried out elementary science preservice teachers in different four groups attending the Astronomy course in the Department of Science Teaching in the Faculty of Education in Pamukkale University. Thus the participant sample size ( $N$ ) is 98. Of the 98 participating preservice teachers, 57 (58%) are female and 41 (42%) are male. Approximately 44% of participants are juniors, and 56% are seniors. With the principle of impartiality there are 24 preservice teachers both in the experimental group-1 ( $N=14$  female;  $N=10$  male) and the control group-1 ( $N=13$  female;  $N=11$  male); 25 preservice teachers both in the experimental group-2 ( $N=15$  female;  $N=10$  male) and the control group-2 ( $N=15$  female;  $N=10$  male).

### The Research Design

The Solomon Four-Group Design is adopted from the experimental factorial designs in this research. This model is a 2x2 factorial design, one of the two factors is taking the pre-test or not, and the second is the performance. The Solomon Four-Group Design, one of the true performance models, is a useful approach especially in revealing the sensitivity effect of the pre-test. That model is accepted as the most powerful performance model to protect the internal and the external validity together (Karasar, 2005). In a factorial performance the differences in groups can be tested by the analysis of variance. MANOVA can be used to test the differences between the evaluations of two dependent variables. Analysis of variance can be applied for each factor individually (Balcı, 2010; Kayış, 2006).

### Data Collecting Tool

The science-pseudoscience distinction scale developed by Oothoudt (2008) is translated and adapted to Turkish by Çetinkaya (2013). Within the process of adaptation the scale was reduced to 23 items from 32 items in the original. The items were collected under four different factors. These factors are named as; “pseudoscience”, “scientific method”, “the distinction of the science-pseudoscience”, and “pseudoscience beliefs”. As a result of the calculation, the Cronbach alpha reliability coefficient is determined as .75. It is clear that reliability coefficient of the scale is quite good. The scale consists of 10 scientific items and 13 pseudoscientific items. It is in 5 point Likert type scale, and the pseudoscientific answers are given high scores while scientific answers are low. Therefore, the higher scores of the scale represent greater endorsement of pseudoscientific beliefs.

### The Procedures of the Study

First of all, the review of the literature has been done to determine the science-pseudoscience distinction scale appropriate for the purpose of the study. Four activities have been developed based on the Walton’s Theory of Dialogue considering the opinions of the experts. The pilot study has been done to control of the activities to be used during the application process of the study in summer semester of 2014. Before the instruction process the attendants of the experimental groups had been given information about argumentation based science learning approach, the argumentation model of the Toulmin and Walton’s Theory of Dialogue for three weeks. Performance sessions regarding Walton’s Theory of Dialogue which is to be underlined in the study were especially carried out. Before the study, only the experimental group-1 and the control group-1 had taken the Pseudoscience Scale as a pre-test in accordance with the research design. While the lessons were conducted with source books, videos and slide shows in all groups, only the experimental groups carried out the newly developed four activities additionally. Each activity applied in two hours (90 min.). During the first hour, an activity is done, and an argumentation is made regarding the activity in the second hour. To organize the argumentation, the attendants were addressed the critical essential questions for each type of dialogue and this way the argumentations were aimed to be strengthened. At the end of the study all of the groups were applied the Pseudoscience Scale as the post-test. The collected data were compared with the pre-test results to see if there was a statistically meaningful difference between them.

## FINDINGS

Because the Pseudoscience Scale has 23 items in total, the score interval is 23-115. The descriptive statistics obtained from the answers of the preservice teachers for the Pseudoscience Scale are represented in Table 1. The ANOVA results according to the control and the experimental groups are given in Table 2.

**Table 1:** Descriptive statistics of the pre-test and post-test scores according to the groups

	Groups	N	$\bar{X}$	SS
Pre-Test	Experimental Group-1 (EG1)	24	93,42	8,40
	Control Group-1 (CG1)	25	91,84	7,48
Post-Test	Experimental Group-1 (EG1)	24	58,63	9,80
	Control Group-1 (CG1)	25	80,84	6,63
	Experimental Group-2 (EG2)	25	60,52	8,86
	Control Group-2 (CG2)	24	81,25	9,80

According to the results of the analysis (see Table 2), it is clear that there is not a statistically meaningful difference between the pre-test scores of the pseudoscience scale in both experimental and control groups [ $F(1,47)=,482$ ,  $p>,05$ ]. Considering the pre-test results before the instruction, it is also clear that the mean scores of the pseudoscience scale of the control group-1 (=91,84) and the experimental group-1 (=93,42) are quite close to each other.

**Table 2:** The ANOVA results of the pre-test and post-test scores according to the groups

	The Source of Variance	Sum of Squares	sd	Averages of Squares	F	p	Meaningful Difference
Pre-Test	Intergroup	30,439	1	30,439	,482	,491*	---
	Intragroup	2967,193	47	63,132			
	Total	2997,633	48				
Post-Test	Intergroup	11317,469	3	3772,490	48,183	,000**	EG1-CG1, EG1-CG2
	Intragroup	7359,725	94	78,295			EG2-CG1, EG2-CG2
	Total	18677,194	97				

\* $p > .05$ ; \*\* $p < .01$

After the instruction (see Table 2), it has been found out that there is a statistically meaningful difference between the groups [ $F(3,94)=48,183$ ,  $p < .01$ ]. The Scheffe test is used to understand among which groups are there the differences, and to determine the directions of the differences. The post-test scores of the preservice teachers in experimental groups got from the pseudoscience scale have changed meaningfully after the instruction. The mean post-test scores of the pseudoscience scale of the experimental group-1 (=58,63) and the experimental group-2 (=60,52) are lower than the mean post-test scores of the control group-1 (=80,84) and the control group-2 (=81,25). This finding shows argumentation oriented instruction is more effective than existing teaching method to remove the participants' pseudoscientific beliefs. The preservice teachers' pseudoscientific belief scores who attended the experimental groups where the activities regarding the Walton's Theory of Dialogue had been conducted have gone to a positive change (lower scores) when compared with the preservice teachers in the control groups.

## CONCLUSIONS

The discussion about what is scientific information and what is not dates back to the academy of philosophy in ancient Greek civilisations (Nickles, 2006). We can say the contemporary discrimination of science has started under the leadership of the philosophers such as Popper, Kuhn and Lakatos and lasted until today. In recent years, the increasing communication facilities have also increased the social interactions and that way the discussions of science-literature, science-art, science-religion, science-math and science-pseudoscience discriminations have accelerated. In parallel with these developments the academic studies related to the discrimination of the science and the pseudoscience have started to draw attention.

For instance, in their study in a university in the USA, Eve and Harrold (1986) conducted a research on the college students' tendencies to believe in the pseudoscientific claims. One of the first in the field, the study revealed that the students have many pseudoscientific beliefs in many different categories. In one of his researches, Turgut (2009) examined the preservice science teachers' perceptions of science – pseudoscience discrimination and observed that the preservice teachers remained incapable of discriminating the science from the pseudoscience. Çetinkaya (2013) aimed to evaluate the seventh grade students' perceptions of science and their opinions on scientific method by taking the discussion of science-pseudoscience discrimination to the centre in a public school. The findings of the study, the most of the attendants supported the naive inductive claims regarding scientific information and they regarded the thesis related to the speculations as scientific information. One of the remarkable studies in astronomy was concluded by Güneş (2010). He examined the relationship between the preservice teachers' knowledge level on basic astronomy with their self-efficacy beliefs for astronomy. He found no correlation between the achievement scores with the ideas on nature of scientific information while determining a statistically meaningful relation between the achievement scores and the self-efficacy belief scores in astronomy.

In the science literature, we can clearly see that students have high level of pseudoscientific beliefs either in third, secondary or primary levels of education. In this study, firstly, the students are allowed to think and express themselves freely by creating a student-centered learning environment. The participants of the experimental groups where the developed activities used in astronomy instruction were found to make a positive progress in discriminating the science from the pseudoscience when compared to the participants of the control groups who took the lessons in accordance with existing teaching system. It is important for the science preservice teachers to discriminate the basic knowledge of astronomy from the pseudoscientific beliefs as they are supposed to convey scientific knowledge throughout their career. Teaching students to distinguish scientific from pseudoscientific claims is an important, also to preservice teachers.

## Acknowledgement

This paper is based on work that was supported by a grant from Pamukkale University whose financial support is gratefully acknowledged (Project Number 2015EGBE004).

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## The Effects Of Full Studio Class On Pre-Service Teachers' Conceptual Understanding And Inquiry Skills

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### ABSTRACT

This study aims to examine effects of full studio class on pre-service teachers' conceptual understanding and inquiry skills about Bernoulli Principle. The sample of the study consists of 51 first year pre-service primary science students of one education faculty in Turkey. General physics course was designed by using "Full Studio" approach which is known to be one of the active learning approaches. Course schedule, which involved active learning techniques and Bernoulli Principle, was implemented for four weeks. Single group pre test- post test weak experimental design, in which the same data collection instruments were applied to the same students before and after teaching, was used in this study. Data were collected by means of conceptual understanding test and inquiry skills scale. Additionally, semi-structured interviews were conducted with five students to explore their responses in the test and to reveal their ideas about teaching process before and after instruction. This study is a mixed methods research in which quantitative and qualitative data were collected concurrently. Students' responses to conceptual understanding test were analyzed by using rubrics which indicated changes in conceptual frameworks of students. Analysis results of data obtained from inquiry skills scale showed that students inquiry skills were improved and there was a statistically significant difference between the pre and post scales ( $t=3.39$ ;  $p<.05$ ). Interview data also supported the difference in students' inquiry skills. Suggestions were made for designing a full studio class and for whom to use active learning and full studio approaches.

### INTRODUCTION

It has been reported that classes in which traditional teaching methods used are inadequate in promoting students' success in physics (Bernhard, 2000; Demirci & Çirkinoğlu, 2004; Thornton, 1987). It appears that misconceptions have been existed among students before traditional education and there has been a little change at the end of the course (Küçüközer, 2004; Candan, Türkmen & Çardak, 2006). Also studies indicate that the students in the traditional classroom have failed in tests involving conceptual questions even if they are successful in the tests containing numerical problems (Crouch & Mazur, 2001; Bernhard, 2000). There are many reasons why students fail in course. But teaching comes at the beginning of these reasons. In our schools, teacher-centered methods are often used in teaching science concepts and students have to memorize this information. In this case failure brings with it.

Studies show that active learning methods are more effective in learning physics concepts and increase the success more than traditional teaching methods (Gibson & Chase, 2002; Kalem & Fer, 2003; Minner, Levy & Century, 2010). Active learning has become one of the most interesting areas in recent years. Especially, in many developed countries such as USA, Germany, England, several projects have been prepared (Minner, Levy & Century, 2010). Also, the number of publications and research conducted on this subject are increasing day by day (Ün Açıkgöz, 2011). Active learning is a learning process in which a learner carries the responsibility of the learning process and has the opportunity to make decisions regarding various aspects of the learner and self-regulate the learning process. Furthermore, it is a learning process in which the learner is forced to use his/her mental abilities through complex educational tasks (Çeken, 2002). According to active learning approach, students make decisions about how to perform their own learning, how much they should learn and what is missing concerning their own learning. Teachers only guide their students and make some advices when students require and follow up the development of their students.

### *Active Learning Approaches in Physics Education*

Many active learning curriculums, which are based on constructivism, have been developed. At a meeting at Tufts University, the participating physics education researchers reached an agreement on the following points (Bernhard, 2000):

- Questions that require qualitative reasoning and verbal explanation are essential
- Students need to participate in the process of constructing qualitative models that can help them understand relationships and differences among concepts.



- Certain conceptual difficulties are not overcome by traditional instruction
- Scientific reasoning skills must be expressly cultivated.
- Connections among concepts, formal representations, and the real world are often lacking after traditional instruction.
- Teaching by telling is an ineffective mode of instruction for most students. Students must be intellectually active to develop a functional understanding

In accordance with the decisions taken, radical decisions about physics education in America were made and a variety of active learning curriculums based on constructivism were developed. The principal aim of those curriculums is to engage students in active learning process and to ensure that students work in groups collaboratively (Bernhard, 2000; Minner, Levy & Century, 2010). Redish (2000), refers to these as “active engagement classes”. They all have in common a focus on what it is the students actually do and on what the effect of that activity is.

Active learning approaches that are used in physics teaching have been presented in Table 1. Those approaches are applied in different forms (Bernhard, 2000; Şahin, 2007). While laboratories have been reorganized in some universities, arrangements have been made to active involvement of students in large classes in some universities. The most important revision is arranging group work, laboratory study and problem solving hours so that all these activities can be managed at the same time in a class.

**Table 1.** Active learning approaches (Bernhard, 2000; Şahin, 2007)

<i>Curricula</i>	<i>Developer</i>
<b>Traditional Format</b>	
<b>Discovery Labs</b>	
Tools for Scientific Thinking	R. Thornton, Tufts University D. Sokoloff, Oregon University
Realtime Physics	R. Thornton, Tufts University D. Sokoloff, Oregon University P. Laws, Dickinson College
Socratic Dialogue Inducing (SDI) Lab.	R. Hake, Indiana University
<b>Lecture Based Models</b>	
Active Learning Physics System	Alan van Heuvelen, Ohio State University
Peer Instruction /Concept Tests	Eric Mazur, Harvard University
Interactive Lecture Demos (ILD)	R. Thornton, Tufts University D. Sokoloff, Oregon University
<b>Recitation Based Models</b>	
Co-operative Problem Solving	Ken and Pat Heller, Minnesota University
Tutorials in Introductory Physics	Lillian Mc. Dermott, Washington University
Mathematical Tutorials	E. Redish, Maryland University
<b>Full Studio</b>	
Physics by Inquiry	Lillian Mc. Dermott, Washington University
Workshop Physics	Priscilla Laws, Dickinson College
The Physics Studio	Jack Wilson, Rensselaer Polytechnic Institution
Scale Up	Beicner, North Carolina State University

Laboratory-based models are replaced with the traditional laboratory by a discovery type active learning laboratory. Recitation-based (problem-solving) models are replaced with the recitation in which an instructor solves problems for 1-2 hours by active learning activities guided by carefully designed worksheets such as a mini-lab in which the students carry out shorter guided discovery experiments and learn reasoning in groups. Lecture-based models retain scheduling of the lectures and are carried out in a lecture hall, but modify the activities carried out by the students. In the full studio classes, the teacher lectures only for short periods during the class. Instead most of student time is spent doing experimental activities in groups in designed experiments.

#### *Full studio classes*

In the full studio classes, the entire class time is taken up by periods in which the students actively engaged with exploring the physics using some laboratory equipment. Only a small fraction of the period may be spent with a teacher lecturing to the students. These classes tend to be more expensive, time, space and equipment required than the traditional lecture format (Redish, 2000).

### *Physics by Inquiry*

One of the initial applications of Full Studio classes is Physics by Inquiry that has been designed by Lillian C. McDermott and her friends at the University of Washington. Their teaching was designed for the learning environments in which the main aim was exploring rather than memorizing and learning by inquiry rather than lecturing so as to ensure that students worked like their teachers (McDermott, 1996a; Redish, 2000). This class was fully equipped explorative laboratory. There was not a teacher and each topic was taught in the periods of two hours of two laboratory classes. Students worked in groups of two with simple materials and followed the worksheets given to be able to answer the questions posed in those periods. Those worksheets were prepared in a manner that each student understood the task and explained the mechanism of how a system worked with his/her predictions. When the system did not work, student's prediction ended with a cognitive conflict. Then, teachers, who were responsible to the group of 10-15 students, took over the control and helped them to find the correct explanation of the problem.

### *Workshop Physics*

Workshop Physics, which was developed by Priscilla Laws at Dickinson College and used in physics education, was a successful learning approach. Theoretical, practical and laboratory classes were integrated rather than separating them. Aim of teaching, in which peer instruction was used, was to learn physics by doing physics. Each student was equipped with a computer and various experiment materials during teaching. Students were active in each class and used Workshop Physics Activity Guide that was written by Laws (1991). Computers were used almost in all experiments. This technique was reported to be quite successful in small groups (Knight, 2004).

### *Physics Studio*

Physics Studio is a very similar technique to Workshop Physics and it has been developed by Jack Wilson at the Institute of Rensselaer Politechnic (Wilson, 1994). Separation of theoretical, application and laboratory classes was also removed. Classroom environment consists of studio computers and laboratory materials. More than one student can access a computer. Physics Studio is a more structured technique, can also be applied in large classrooms and puts more importance on problem solving than Workshop Physics (Knight, 2004).

Common goal of both Workshop Physics and Physics Studio is to present more qualitative world to students. Classrooms were equipped with computer materials. Each student group works with computer supported tools like Universal Lab Interface Box (ULI). Physics Studio classes mostly consist of periods of two hours in which students make observations with equipments provided and construct their mathematical models. Classroom has a common area where general presentations are made and each class ends with many teachers' brief presentation or classroom debate.

### *Scale-Up*

The Scale Up (Student-Centered Active Learning Environment for Undergraduate Programs) project has been conducted by Beichner and his friends at the University of North Carolina State and shows that collaborative interactive computer based education can be managed in large classes (URL-1).

### *The importance of the study*

In this study, classroom environment was designed on the basis of "Full Studio" approach under current circumstances. Separation of theoretical, practical and laboratory classes was removed. Arrangements were made to prepare a classroom atmosphere in which students could work in groups and they could conduct an experiment, carry out an investigation by using computers or browse textbooks and journals whenever they were required. This study is believed to contribute to the literature because of the full studio classes which were developed and applications made in abroad was adapted to our country for the first time by using active learning techniques.

Many studies conducted to improve students' understanding of physics. Most of these studies include mechanical (Candan, Türkmen & Çardak, 2006; Ünlü & Gök, 2007; Ünlüsoy, 2006) and electrical concepts (Küçüközer, 2004; Şekercioğlu, 2011). The number of studies on fluid mechanics is quite small compared to the concepts studied in previous researches. Studies which focus on the concept area of fluid mechanics chose one or two topics of fluid mechanics on the primary or secondary levels (Gazioğlu, 2006; Akpınar & Ergin, 2007; Çeken, 2002; Şahin & Çepni, 2011; Daşdemir & Doymuş, 2012). The topics considered are generally properties of liquids and gases, swimming, stinging, pressure and buoyancy. However, this study deals with Bernoulli Principle which is the last

topic of fluid mechanics and the effects of full studio class on pre-service teachers' conceptual understanding and inquiry skills are investigated.

Teachers attempt to realize desired learning at schools and quality of education is directly proportional to the quality of teachers. Loverude, Gonzales and Nanes (2011) emphasize that attention should be paid not only to content knowledge but also to pedagogical subjects about the related content area in training teachers. In this study, it is aimed to help students acquire both content knowledge and pedagogical knowledge about teaching Bernoulli principle by presenting content knowledge with pedagogical content knowledge. Moreover, students' inquiry skills are aimed to be improved by designed teaching model.

## THE STUDY

The aim of this study is to examine effects of full studio class on pre-service teachers' conceptual understanding and inquiry skills about Bernoulli principle. The sample of the study consists of 51 first year pre-service primary science students of one education faculty in Turkey.

### *Method and data collection tools*

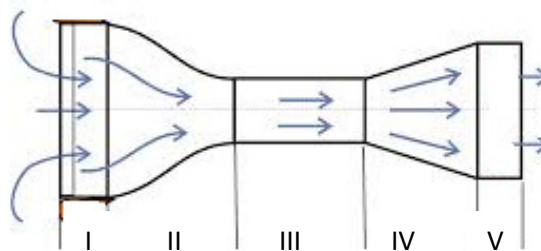
Teaching of Bernoulli principle, which utilized active learning techniques, was implemented for four weeks period in a class of which was designed according to "full studio" approach. In this study, single group pretest-posttest weak experimental design, in which the same data collection instruments were applied to the same students before and after teaching, was used. A conceptual understanding test that was developed by researchers, an inquiry skills scale that was developed by Aldan Karademir and Saracaloğlu (2013) and semi-structured interviews that were conducted with five students before and after teaching were used as data collection instruments.

This study is a mixed methods research in which qualitative and quantitative data were collected concurrently. Mixed methods research design is accepted as increasing the reliability and as reinforcing the validity of a study with qualitative and quantitative data. Qualitative data, which were obtained from the conceptual understanding test and semi-structured interviews, were examined by using rubrics whereas quantitative data, which were obtained from inquiry skills scale, were analyzed by using SPSS 14.0 software.

### Conceptual understanding test

The conceptual understanding test was developed by researchers. First, a number of questions regarding the Bernoulli's principle were prepared. Then the questions were applied to another group of students and the responses were evaluated. Incomprehensible or difficult questions were removed from the first version of the test. The remaining questions were presented to the four experts in physics education area. Three of them were chosen to take part in the final version of the test as can be seen in Figure 1.

#### Question 1



The air flow, as shown in the figure above, is passed in a tube having different cross-sectional areas.

- Do you think, the rate of air flow is different or remain same in the areas? (If you say different, please rank from major to minor) Please explain your reasoning.  
Your answer:.....
- Do you think, the pressure that exerts to the walls of the tube, is different or remain same in the areas? If you say different, please rank from major to minor) Please explain your reasoning.  
Your answer:.....

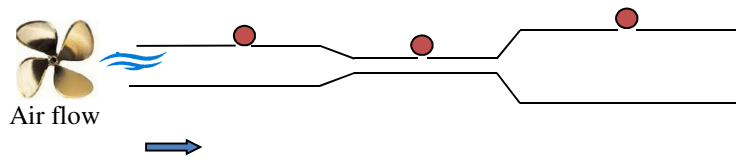
### Question 2



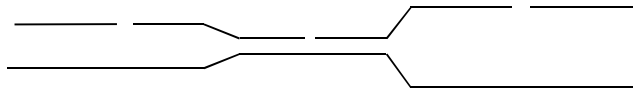
When a light breeze blowing, the smoke rises faster throughout the chimney. What do you think is the reason for this situation?

Your answer:.....

### Question 3



There is a tube in the airflow as shown in the figure above. This tube was collapsed in some places and some parts were also enlarged. Three holes on the tube exist on different parts and ping-pong balls were put on those holes. When air starts to flow towards the tube it is known that balls remain stationary above the tube. How do you think positions of the balls over the tube will likely to be? Please explain your reasoning by displaying on the tube below.



Your answer:.....

**Figure 1.** The questions in the conceptual understanding test

### *Inquiry skills scale*

In this study, Inquiry Skills Scale, which was developed by Aldan Karademir and Saracaloğlu (2013), was used in order to question students' inquiry skills. The scale was applied to 425 pre-service teachers studying at the departments of primary science, primary teaching, and primary social studies. The scale which was constructed as a five points likert type, consisted of three factors and 14 items. According to the exploratory factor analysis that was conducted by the authors, these factors were named as "Getting information", "Checking information" and "Confidence" (Table 2). Each sub-factor's Cronbach's alpha reliability coefficient was calculated as .76, .66 and .82 respectively. The whole scale's reliability coefficient was .82.

**Table 2.** Examples of the statements in the scale

<i>Statements</i>	<i>Concerned factor</i>
I can distinguish what information I need to learn.	Getting information
I try different solutions when answering a question	Checking information
I say without hesitation what I think about the topics discussed in class.	Confidence

### *The interview form*

The interview form, which was prepared by the researchers, consists of two parts in a semi-structured format. In the first part of the interview form, there are conceptual questions about the Bernoulli Principle. Some preliminary trial interviews were conducted to decide on which of the questions had to be used. Different from the questions of Conceptual Understanding Test, two different questions were included in the interviews. Other questions were designed for each individual student based on the related student's responses given to the conceptual understanding

test. The second part of the interview form includes the pre-service teachers' opinions on the use of inquiry skills and teaching process. Figure 2 shows some sample questions from the interview form.

**Question 1**

Is there a relationship between flow rate and pressure of a fluid? How do you explain?

**Question 2**

What do you expect to happen when it is blown out between two papers as illustrated in the figure? Why ?



**Question 3**

Do you say that everyone could easily tell what she/he thought in this course?

**Figure 2.**Some sample questions from the interview form

*Preparation of the learning environment and teaching process*

In this study, the classroom was organized as a full studio class and active learning techniques were used. In full studio classes, the discrimination among theory lesson, laboratory and recitation lessons are eliminated. Therefore, the learning environment was organized as follows:

- Four hours of lectures and two hours of laboratory course were given as a total of six hours per week.
- The classroom was divided into two groups. Then each group was divided into heterogeneous groups in their own four or five people. The students' university entrance scores were important for the creation of the groups.
- The discrimination among theory lesson, laboratory and recitation lessons were eliminated and because of this reason, teaching of the topic was decided to be processed in the laboratory.
- Laboratory was prepared in accordance with the full studio. Much as possible, computers were established in the laboratory and internet connections were made. There was a computer available to each group. In addition, students could use the library, stationery or try corner whenever they wanted as can be seen in Figure 3.



**Figure 3.** The full studio classroom



- ‘Energy Conservation and Bernoulli’s principle’ was chosen as the topic of teaching. However, active learning techniques in the designed lesson plans were applied from the beginning of the ‘Fluid Mechanics’ unit in the full studio classroom in order to ensure that students get used to the classroom environment. Time plan for teaching of the unit was presented in Table 3 on a weekly basis and teaching of the whole unit lasted for four weeks.
- Tests and scales were applied and semi-structured interviews were conducted before and after teaching.

**Tablo 3.**Time plan for teaching

Lesson	Subject	Lesson	Subject
Week 1	What is fluid?, General characteristics	Week 3	Viscosity, fluid resistance
Lesson 1	of the fluids, Density	Lesson 1	
Week 1	Pressure , Hydrostatic pressure ,	Week 3	Ideal fluids, Flow lines, Rate
Lesson 2	Pressure Gases	Lesson 2	Continuity equation
Week 1	Pascal principle	Week 3	Energy conservation
Lesson 3		Lesson 3	Bernoulli’s equation
Week 2	Buoyancy	Week 4	Applications of Bernoulli's
Lesson 1		Lesson 1	equation
Week 2	Swimming - Sinking - Hanging ,	Week 4	Rate measurement, Venturi
Lesson 2	Archimedes Principle	Lesson 2	tube
Week 2	Surface tension, Capillary , Adhesion ,		
Lesson 3	Cohesion		

## FINDINGS

### *Findings from Conceptual Understanding Test and Interviews*

In this part, students’ responses to conceptual understanding test and interview questions about Bernoulli’s principle were presented. Students were asked to respond those questions before and after teaching. Firstly, students’ responses were allocated to two broad categories in terms of being scientifically acceptable or unacceptable during the analysis. Thereafter, responses were grouped hierarchically in sub-categories in terms of the elements involved in each response. Below, students’ responses were presented question by question.

### *The Findings for Question 1*

In the case of question 1, it was asked whether the velocity of air changes or not through different regions as shown in Figure 1. Teacher candidates' responses to this question in the pre and post-tests are given in Table 4 in comparison.

**Table 4.** Responses of students to question 1, part a.

TYPE OF ANSWER			PRE TEST		POST TEST	
			N	EXAMPLE ANSWERS	N	EXAMPLE ANSWERS
SCIENTIFICALLY ACCEPTABLE ANSWER	CORRECT ANSWER	Correct sequencing- Correct explanation	3	• How much cross-sectional area decreases, speed increases.	23	• According to $A_1.v_1=A_2.v_2$ equation, narrower cross-sectional area, increases fluid flow rate. • Fluid flow rate should be fixed. Speed of the fluid must be increased in a narrowed channel compared to the speed at a large channel.
	PARTIALLY CORRECT ANSWER	Correct sequencing – Partially correct explanation	-	-	1	• When we put a boat in front of the air flow in the ping-pong ball experiment, the ball was faster than previous. I sort of think about it.
		Wrong sequencing- Correct explanation	10	• In large areas, speed decrease and progresses more slowly. But in a narrow place, the same amount of air has to pass, so flow quickly.	13	• Greater the cross-sectional area, less the speed for air flow.
		No sequencing- Correct explanation	2	• There is more in the area III. Because in the cross-sectional area III, air is much more compressed. So gas rate increases.	-	-

		No sequencing-Partially correct explanation	1	<ul style="list-style-type: none"> <li>It is different. Because the structure and shape of the pipe is different.</li> </ul>	-	-
		Wrong sequencing-Partially correct explanation	9	<ul style="list-style-type: none"> <li>Because of the length / area / width is different.</li> </ul>	-	-
		Correct sequencing – Irrelevant explanation	-	-	1	<ul style="list-style-type: none"> <li>Static pressure is the pressure that fluid makes the side surface and it is inversely proportional to dynamic pressure.</li> </ul>
		Correct sequencing – No explanation	3	-	2	-
SCIENTIFICALLY UNACCEPTABLE ANSWER WRONG ANSWER		Wrong sequencing-Wrong explanation	12	<ul style="list-style-type: none"> <li>The speed of the air flow does not depend on the area. Therefore it remains the same.</li> <li>It is the same. Because gases are distributed homogeneously.</li> <li>Airflow needs larger areas to pass more quickly / Air stream is compressed in narrow areas.</li> <li>Because the pressures are different. It is due to the cross-sectional areas.</li> </ul>	6	<ul style="list-style-type: none"> <li>As cross sectional area is decreased, the amount of air passing through the tube increases and accelerates it immensely.</li> <li>The speed of the airflow varies. Because the pressures applied to the wall in the numbered regions change.</li> </ul>
		Wrong sequencing – No explanation	4	-	-	-
		No sequencing-Wrong explanation	1	<ul style="list-style-type: none"> <li>I would say normally area III is the fastest. However, pressure of air does not change as in the case of the experiment we did water. When we do try narrowing path of water, its pressure is increased but it is not the same for air and narrowing the path of air does not change the result.</li> </ul>	-	-
		Correct sequencing - Wrong explanation	2	<ul style="list-style-type: none"> <li>The speed of air flow varies depending on sections. Because the pressure of the air flow increases in narrowed sections.</li> </ul>	3	<ul style="list-style-type: none"> <li>Flow lines are much where the cross-sectional area decreases.</li> </ul>
UNCODEABLE		Sequencing and explanation irrelevant	3	<ul style="list-style-type: none"> <li>III&gt;IV&gt;II&gt;V&gt;I Field II is narrowed and closed and has maximum air pressure. In field IV air pressure is too high because it takes the pressure from both narrow spaces because it is in a closed area, though both have less pressure accordingly.</li> </ul>	2	<ul style="list-style-type: none"> <li>I&gt;II&gt;IV&gt;V&gt;III Rate is increased in area III.</li> </ul>
UNANSWERED		No response	1	-	-	-
Total			51		51	

Considering the answers given in Table 4, the number of respondents, who gave correct answer, was three and twenty-three in the pre and post tests respectively. These students argue that the speed of the airflow increases as the cross-sectional area is decreased. In the post test, it was found that students made explanations using flow rate concept or continuity equation in line with that expected of teachers.

Partially correct answers category consists of seven subcategories that are named in line with the responses of teachers as correct sequencing-partially correct explanation, wrong sequencing-correct explanation, no sequencing-correct explanation, no sequencing-partially correct explanation, wrong sequencing-partially correct explanation, correct sequencing-irrelevant explanation and correct sequencing-no explanation. In this category, it seems that more students responded especially in the subcategory of wrong sequencing-correct explanation. This

situation is valid in both the pre and post-tests.

Scientifically unacceptable responses of students have grouped in four subcategories. These are labeled as wrong sequencing-wrong explanation, wrong sequencing-no explanation, no sequencing-wrong explanation and correct sequencing-wrong explanation. The number of students, who made wrong sequencing-wrong explanation, was twelve and six in the pre and post tests respectively.

When students' scientifically unacceptable responses were examined it was found that some students assert the notions of 'flow rate of air was not related to cross sectional area' or 'as the cross sectional area was decreased the amount of air would be increased'. On the contrary, some students reasoned that air flow would go faster as the cross sectional area was increased. Student 48 explained his opinion on this topic in the interview before teaching as follows:

*Air flow spreads much in wide regions and it progresses more comfortable, its speed increases and its pressure is reduced. However, speed decreases and pressure increases in the third region due to the narrowed area.*

Response of the same student in the post test was coded in the wrong sequencing-correct explanation category. Below some part of the dialogue after teaching between student 48 and the researcher was presented.

Interviewer: Are you sure about your response?  
 Student 48: No, not about the sequence. But cross-sectional area is inversely proportional to speed.  
 Interviewer: Ok. Do you want to reorder?  
 Student 48: Yes. III is the largest; IV, V, II and I come in order.

In the pre-interview, student 50 revealed her ideas about question 1 as follows:

Student 50: More current passes through large areas, it would be so much speed.  
 Interviewer: Do you think that the amount of air passing through the area of I and II is different from each other?  
 Student 50: It is the same for both, because both are integrated. Then it is pointless. It is faster in area III.  
 Interviewer: So, in part II cross-sectional area is narrowed. Does this change anything?  
 Student 50: Of course, the air must enter to the area II faster.

Considering dialogue held with student 50, it seems that she does not have a clear idea and makes a different explanation in her every answer. A dialog from post interview with the same student is presented below.

Student 50: Because the cross-sectional area is narrowed speed is maximum in area III.  
 Interviewer: Ok. What is the reason for this?  
 Student 50: The same amount of air has been forced to pass through the narrowed area.  
 Interviewer: What if we use water instead of air? Does the result change?  
 Student 50: No, nothing is changed. It is also a kind of fluid.

When uncodeable responses are examined, two and three students' responses fall into this group in the pre and post tests respectively. The reason for coding responses in this category is that there is inconsistency between the statements made and the rankings given. For example, area III was considered the last in the rankings, while it was reasoned that speed was higher in area III than the others. One student left the question unanswered in the pre test.

In part b of question 1, it was asked whether the air pressure on the walls of the pipe in different regions would change as shown in Figure 1. Responses given by teacher candidates to this question in the pre and post tests are presented comparatively in the Table 5.

**Table 5.** Responses of students to question 1, part b.

TYPE OF ANSWER		PRE TEST		POST TEST	
		N	EXAMPLE ANSWERS	N	EXAMPLE ANSWERS
SCIENTIFICALLY ACCEPTABLE ANSWER	CORRECT ANSWER	-	-	13	<ul style="list-style-type: none"> <li>Where the speed of air flow is reduced, static pressure increased and dynamic pressure decreased. As the speed increases the pressure made to wall decreases.</li> <li>Static pressure + dynamic pressure + height dependent pressure = constant. The flow of the fluid is constant. Speed of the fluid in a narrowed region should increase to get a constant flow rate. The height is equal in every part of the tube, so it is ineffective. Then the static pressure decreases as the speed increases.</li> </ul>
	PARTIALLY CORRECT ANSWER	1	<ul style="list-style-type: none"> <li>Pressure is low in tight areas, because speed is high. But in wide areas, pressure is high.</li> </ul>	3	<ul style="list-style-type: none"> <li>Static pressure is inversely proportional to the dynamic pressure.</li> <li>Static pressure increases as the wall of the pipe increases.</li> </ul>
		-	-	6	<ul style="list-style-type: none"> <li>Bernoulli equation says that pressure decreases according to whatever speed increases.</li> <li>Pressure on the wall of the pipe made by the airflow and static pressure is inversely proportional to speed.</li> </ul>
		-	-	1	<ul style="list-style-type: none"> <li>When we narrowed the cross-sectional area of the pipe wall, it reduces the air pressure and also the static pressure.</li> </ul>
		3	<ul style="list-style-type: none"> <li>It changes because areas are different.</li> </ul>	-	-
		4	<ul style="list-style-type: none"> <li>Speeds /cross sectional areas are different.</li> <li>How much the region is greater, pressure is greater too.</li> </ul>	1	<ul style="list-style-type: none"> <li>Smaller the cross-sectional area less the pressure applied to surface.</li> </ul>
		-	-	4	-
SCIENTIFICALLY UNACCEPTABLE ANSWER	WRONG ANSWER	28	<ul style="list-style-type: none"> <li>Same in all areas. Because it is only the force applied to the wall. So everywhere is the wall of the pipe.</li> <li>In large areas, pressure is high. In tight/small areas, pressure is low because of the jamming.</li> <li>There is more pressure in areas with increased speed</li> </ul>	19	<ul style="list-style-type: none"> <li>It is same in all areas. Because the wall of the pipe is the same everywhere, so the pressure doesn't change.</li> <li>Pressure will be more in the narrow area. Because the number of molecules will increase. The pressure is inversely proportional to the surface area. Pressure on the wall of the pipe is reduced as surface area is grewed.</li> <li>Pressure on the wall of the pipe is increased where airflow is strong.</li> </ul>
		12	-	3	-
		2	<ul style="list-style-type: none"> <li>As the cross-sectional area of the pipe decreases, the pressure increases.</li> </ul>	-	-
		-	-	1	<ul style="list-style-type: none"> <li>Makes more pressure because more air molecules are found in large areas.</li> </ul>
UNCODEABLE	Sequencing and explanation irrelevant	1	<ul style="list-style-type: none"> <li>It is directly proportional to the cross-sectional area. More pressure is exerted in smaller cross sectional areas. This is observed the most in area III.</li> </ul>	-	-
Total		51		51	

When students' responses were examined, none of the students gave correct answer (correct sequencing-correct explanation) in the pre test while thirteen students responded in this category in the post test. Students basically responded that the narrower the cross sectional area, the bigger the speed of the air flow which would increase dynamic pressure and decrease static pressure on the walls of the tube.

Partially correct answers were allocated to six subcategories which were labelled as correct sequencing-partially correct description, wrong sequencing-correct explanation, no sequencing-correct explanation, no sequencing-partially correct explanation, wrong sequencing-partially correct explanation and correct sequencing-no explanation. Responses in this category lack the enough explanation about the relationships between the concepts of cross sectional area, speed, static pressure and dynamic pressure. Additionally, more students gave responses belong to wrong sequencing-partially correct explanation and wrong sequencing-correct explanation subcategories in the pre and post test respectively.

Scientifically unacceptable responses were divided into four subcategories that were labelled as wrong sequencing-wrong explanation, wrong sequencing-no explanation, no sequencing-wrong explanation and correct sequencing-wrong explanation. 28 students made wrong sequencing-wrong explanation in the pre test while 19 students still responded in this category in the post test. When the responses were examined it was found that students mainly used the concept of 'pressure' without mentioning static and dynamic pressure in their responses. Moreover, the idea of 'increasing the speed also increases the pressure' was frequently used by the students. It is known that dynamic pressure increases with the speed of the fluid but students have to concentrate on the walls of the tube to be able to explain the pressure which is called static pressure and decreases with increasing speed of the fluid. Student 48 explained the situation in the post interview as can be seen below.

"Where the speed is high, dynamic pressure increases and static pressure decreases. Static pressure is higher in a larger area. It influences the wall of the tube more than the case of small area. We can get the reason of this from Bernoulli's equation"

One student gave an uncodeable response in which inconsistency emerged between the explanation given and the sequence made in the pre test. None of the students left blank this question in both the pre and post tests.

#### *The Findings for Question 2*

The reason for the fume's rising up faster through a chimney in a windy day was asked in the second question as can be seen in Figure 1. Students' responses to this question in the pre and post tests were presented in Table 6.

As can be seen in Table 6, only one student made a scientifically correct explanation that was correct sequencing and correct explanation in the pre test while twenty nine students gave such a response in the post test. Students who gave a correct explanation argued that the pressure at the upper end of the chimney was decreased due to wind blowed above the chimney. Moreover, they were aware that pressure inside the chimney was higher than the pressure outside the chimney that was thought to be the reason of the faster movement of the fume inside the chimney from the higher pressure to the lower pressure.

**Table 6.** Responses of students to question 2



TYPE OF ANSWER		PRE TEST		POST TEST	
		N	EXAMPLE ANSWERS	N	EXAMPLE ANSWERS
SCIENTIFICALLY ACCEPTABLE ANSWER	CORRECT ANSWER	1	<ul style="list-style-type: none"> <li>The smoke in the chimney rises faster when lower air pressure exists inside the house than the air pressure outside in windy weather.</li> </ul>	29	<ul style="list-style-type: none"> <li>There would be increase in the rate of the speed because the wind blows. As speed increases, the pressure decreases. The upper part of the chimney is the low pressure region while the fireplace becomes the region of high pressure. Direction of flow is towards the low pressure from the high pressure region. Smoke rises faster through the chimney for this reason. I reached this idea from the Bernoulli equation.</li> </ul>
	PARTIALLY CORRECT ANSWER	5	<ul style="list-style-type: none"> <li>Pressure difference occurs.</li> <li>Gas pressure drops on the chimney so it rises faster.</li> </ul>	8	<ul style="list-style-type: none"> <li>The pressure in the air affects the smoke. Therefore pressure applied to the smoke is much greater inside the house as the wind blows and the smoke rises faster.</li> <li>As the pressure difference is much, smoke moves faster.</li> </ul>
SCIENTIFICALLY UNACCEPTABLE ANSWER	WRONG ANSWER	43	<ul style="list-style-type: none"> <li>The air has a frictional force; this slows down the rate of rise of smoke. But when the wind blows slightly it helps smoke to move up and the smoke rises faster.</li> <li>Smoke starts to rise/disperse/mix faster upwards to air with the help of the wind. An air exchange/flow occurs.</li> <li>It is reverse with blowing speed of the wind and it rises faster through the chimney when a light wind blowing. When the speed of the wind increases, the smoke will be stuck in the chimney and it will down into the chimney.</li> <li>The suction power / thrust of the wind or more streams can be the reason of it.</li> <li>Wind direction is clearer at a time to go to smoke and fumes cannot withstand the impact of large wind speed and rises with him.</li> <li>The blowing wind can cause a circulation in the mouth of chimney.</li> <li>Wind speeds of / takes out the smoke.</li> </ul>	14	<ul style="list-style-type: none"> <li>The low pressure inside the house wants to mix more quickly with high pressure outside the house. The wind sets up a balance as a factor here.</li> <li>Wind creates high pressure at the top of the chimney. Smoke goes from low pressure towards high pressure.</li> <li>Because when the wind blows, breaks down his smoke and prevents it to be risen. But smoke rises faster in light winds due to be comfortable.</li> <li>Because smoke is scattered under the influence of air flow that is created by the wind and rises quickly through the chimney.</li> </ul>
UNCODEABLE	Irrelevant answers	2	<ul style="list-style-type: none"> <li>Because air pressure is applied and weather takes away all the smoke.</li> <li>The opposite may be the case, I cannot explain.</li> </ul>	-	-
Total			51	Total	51

Five and eight students responded partially correct answers in the pre and post tests respectively. Those students were also aware that pressure difference existed but they did not mention the effect of the speed of the wind or in which regions high and low pressures would have been occurred.

43 students' responses coded as scientifically unacceptable in the pre test and 14 students continued to reason in the same category in the post test. It has been revealed that different ideas emerged in this category and students mainly used the notions of friction, the effect of wind and repulsive force without referring the concept of pressure in their answers to the pre test.

Students ideas about the same concept were tried to be probed by asking a question in different context in the interviews conducted as can be seen in Figure 2. Students were asked to hold two A4 size papers parallel to each other in a vertical dimension. Then, they were asked to anticipate what would happen if s/he blew between the papers. Students 46, 47 and 48 responded in the pre interviews as follows:

- Student 46: I expect two papers to be separated.  
 Student 47: I guess they move apart.  
 Student 48: They may repel each other.

When it was blown between two papers it was observed that papers came closer that was contrary to the students'

predictions. As a result of this trial, student 46 made such an explanation in the pre interview:

“Let's consider the narrow region in the first question. We can get inspiration from there. Air speed is decreasing towards the bottom of the paper. But it is probably irrelevant.”

Student 47 tried to explain the situation as follows:

“I guess, air pressure causes this phenomenon. The pressure is much where we blow.”

Student 49 explained the same situation in post interviews as follows:

“It is due to the pressure. We increase the speed of air and decrease the pressure between the papers when we blow. The pressure outside the papers is higher than the pressure between the papers. Papers stick to each other since the external pressure is higher than the internal pressure.”

All five students answered both the chimney and blowing papers questions correctly in the post interviews. Finally, two students made irrelevant explanations in the pre test and coded as uncodeable.

### The Findings for Question 3

In the case of question 3, it was asked when the air flew, how the balls' position would likely to be as shown in Figure 1. Teacher candidates' responses to this question in the pre and post-tests are given in Table 7 in comparison.

**Table 7.** Responses of students to question 3

TYPE OF ANSWER			PRE TEST		POST TEST	
			N	EXAMPLE ANSWERS	N	EXAMPLE ANSWERS
SCIENTIFICALLY ACCEPTABLE ANSWER	CORRECT ANSWER	Correct presentation - Correct explanation	1	<ul style="list-style-type: none"> <li>As the width of the tube decreases, speed of air increases and pressure decreases. That's why the ball does not raise much.</li> </ul>	18	<ul style="list-style-type: none"> <li>The speed increases when the cross-sectional area is narrowed. According to Bernoulli's equation, dynamic pressure increases as the speed increases. In order to remain energy constant static pressure must be decreased. In narrow cross sectional area the ball rises less due to low pressure.</li> </ul>
	PARTIALLY CORRECT ANSWER	Correct presentation – Partially correct explanation	-	-	8	<ul style="list-style-type: none"> <li>Static pressure is reduced and dynamic pressure is increased in places where cross-sectional areas are small.</li> <li>Reduced static pressure exists on the periphery of the narrow wall. Therefore, air outlet is the least at the wall of the narrow place.</li> </ul>
		Wrong presentation – correct explanation	-	-	1	<ul style="list-style-type: none"> <li>Static pressure decreases as the speed of air increases. More pressure will be applied on the large wall surface area and the ball will go higher than the other cases.</li> </ul>
		No presentation - Partially correct explanation	-	-	1	<ul style="list-style-type: none"> <li>Static pressure is inversely proportional to speed. Thus, the ping-pong ball rises more in the thick part of the pipe.</li> </ul>
		Wrong presentation - Partially correct explanation	-	-	2	<ul style="list-style-type: none"> <li>The velocity of air entering into the tube will be greater and causes more dynamic pressure. But here is the static pressure which is exerted on the pipe wall. Narrowed places will increase speed.</li> </ul>
		Correct presentation – No explanation	-	-	1	

SCIENTIFICALLY UNACCEPTABLE ANSWER	WRONG ANSWER	Wrong presentation – Wrong explanation	44	<ul style="list-style-type: none"> <li>• The airflow removes harder in narrow places and the ball more gets up. But in wide areas, the air flows more comfortable, so the ball does not get up much.</li> <li>• Location on the tube is inversely proportional to the width of the tube. Air pressure is increased when the tube is narrowed and position of the ball on the tube will increase.</li> <li>• (They rise equal) When the air flow close up the balls, balls begins to rise upwards.</li> <li>• It is about the sizes of the holes.</li> </ul>	18	<ul style="list-style-type: none"> <li>• Airflow increases as the cross-sectional area is decreased. Thus, static pressure / pressure is also increased. Static pressure / pressure is greater where the height is maximum.</li> <li>• The first ball cannot jump upwards due to pressure created by the air stream when air flows inwardly into deadlock and starts to rotate. Other two balls jump up with the impact of the stream.</li> <li>• Because it will come up more quickly than with a narrow cross-section. Cross-sectional area than would be the now slower than larger ones.</li> <li>• Static pressure and dynamic pressure increase, this causes increase in speeds.</li> <li>• Air flow through the tube is much where it is the most narrow.</li> </ul>
		Wrong presentation – No explanation	1	-	-	-
		Correct presentation - Wrong explanation	1	<ul style="list-style-type: none"> <li>• Provides the hyperinflation of the ball for more air passes through the expanded location. In areas with narrow vice versa.</li> </ul>	2	<ul style="list-style-type: none"> <li>• Larger cross-sectional area causes more airflow. That's why the ball rises more above the big one.</li> <li>• As speed increases, the dynamic pressure is reduced. Decrease in dynamic pressure results in reduced height.</li> </ul>
UNCODEABLE		Irrelevant answers	2	<ul style="list-style-type: none"> <li>• The balls fall in. Gas in broad areas progresses and spreads more comfortable than in narrow areas. Thus, balls reach the balance so...</li> </ul>	-	-
		Explanation and presentation irrelevant	1	<ul style="list-style-type: none"> <li>• Where the pressure is less, speed is low.</li> </ul>	-	-
UNANSWERED		No response	1	-	-	-
Total			51		51	

Considering the answers given in Table 7, the number of respondents, who gave correct answer, was one and eighteen in the pre and post tests respectively. The students responded that the narrower the cross sectional area, the bigger the speed of the air flow which would increase dynamic pressure and decrease static pressure on the walls of the tube and where the static pressure is high the ball rises more. The answers are more scientific and expository in the post test.

Partially correct answers category consists of five subcategories that are named in line with the responses of students as correct presentation-partially correct explanation, wrong presentation-correct explanation, no presentation-partially correct explanation, wrong presentation-partially correct explanation and correct presentation-no explanation. In the pre test, none of the students and in the post test thirteen students gave answers belong to these subcategories. Eight students made correct presentations and partially correct explanations. The explanations in this category are shallower than the explanations in the correct answer category.

Scientifically unacceptable responses of students have grouped in three subcategories. These are labeled as wrong presentation-wrong explanation, wrong presentation-no explanation and correct presentation-wrong explanation. The number of students who made wrong presentation-wrong explanation was fourty four and eighteen in the pre and post tests respectively. When the responses were analyzed, students mostly referred to narrowed cross-sectional area and increased rate of the air flow and the pressure as a cause of the balls rising upwards. Also, students seemed to make wrong explanations due to mixed or incorrect knowledge of the dynamic pressure and static pressure. Student 48 explained his opinion on this topic in the pre interview as follows:

“The amount of the air is much, so the ball rises more. In the wide areas, balls rises more, because the pressure will be more.”

When the students' opinions are examined, both correct and wrong ideas are appeared. In large areas, the pressure is much more, but this pressure is called static pressure. The cause of the balls rising higher is not due to more air, because the filling is same in everywhere. The cause is decrease of the rate of flow and in dynamic pressure and increase in static pressure. In the pre test the same student's (48) idea is as follows:

"In large areas, the air flow rate increases. When the rate increases, dynamic pressure increases and static pressure decreases. The static pressure effects to range of the wall, because of this, when the static pressure decreases, the ball rises more."

Also, the number of students who made correct presentation and wrong explanation was one and two in the pre and post tests respectively. When the students' responses were examined it was clear that students believed to the idea of 'when the cross sectional area was increased, the amount of air flow was increased too'.

Uncodeable answers category consists of two subcategories that are named in line with the responses of students as irrelevant answers and both explanation and presentation irrelevant. Only three students' answers were coded in these categories in the pre test. Also, only one student unanswered the question in the pre test.

#### *Inquiry Skills Scale*

Students' responses, which were given to inquiry skills scale before and after teaching, were compared. In doing this, paired samples t-test analysis was used. Findings showed that there was a statistically significant difference ( $t_{(50)} = 3.39$ ;  $p < .05$ ) between the pretest and posttest scores of the scale as can be seen in Table 8.

**Table 8.** The comparison of the answers of pre-service teachers to inquiry skills scale before and after teaching.

Inquiry Skills	N	Mean ( $\bar{X}$ )	SD	df	T	Sig.
Pretest	51	3.7519	.42264	50	3.390	.001*
Posttest	51	4.0003	.53403			

( $t=3.390$ ;  $p<0.05$ )

Considering the means that are given in Table 8, average of the pre-service teachers' answers in the post test (4.0003) is higher than it is in the pre test. In this study, inquiry skills are analyzed in three sub categories that are getting information, checking data and self-esteem. Prospective teachers' opinions on these subjects are as follows:

"I am normally a quiet person. I'm not one who participated in a course. In the physics lab, I was the spokesman and made the conversations, so I've noticed that I've done and turned to. My self-confidence has increased." (self-esteem, student 28)

"Throughout this course, I destroyed my prejudice against physics completely. I started to learn and love physics. Now I believe I'm going to be a better teacher." (Self-esteem, student 50)

"We investigated the concepts and then, discussed in the groups. In discussions, I was able to say my ideas freely without being bored. At the end of the each lesson, the teacher helped us to see our shortcomings about the subject to understand it. It was very useful. I found opportunity to learn about myself in this course. I learned how to talk in the community, to explain ideas to other people and experiments were very useful when learning something." (Checking data, self-esteem, student 47)

"When we came to the classroom, we had some information about the course. Some were right, some were wrong. We learned new ideas from experiments, books and computers by ourselves in this course. Then our teacher went over the details of the subject. We had been provided to make brainstorming about different ideas by working together in our group and other groups. After investigation, we came together with other friends who were in different groups and discussed our opinions about the subject. It was nice to complete our incomplete opinions." (Getting information and checking data, student 49)

## CONCLUSIONS

Active learning has been one of the most popular areas of research in recent years. The number of studies conducted on active learning is increasing day by day (Ün Açıkgöz, 2011). In this study, learning environment has been designed by using full studio approach which is known to be one of the active learning approaches. The reason for selecting full studio approach is that it covers course process as a whole compared to other active learning approaches and it is applicable to large classes. Learning process has been enriched with group works and active learning techniques which are aimed at developing inquiry skills in a learning environment that is prepared in accordance with full studio approach.

Several conducted studies showed that active learning techniques increased students' physics achievement, became more effective during the learning of physics concepts and caused students to be more active in classroom activities compared to traditional teaching (Gibson & Chase, 2002; Kalem & Fer, 2003). When students' responses given to the conceptual understanding test were examined it was found that the number of correct responses to the questions increased in the post test.

Active learning is a process in which a learner is responsible for his/her own learning and finds an opportunity to make a decision and observes the outcome of that decision. Curiosity, suspicion, learning by doing, investigation and practice substitute the concept of memorization in active learning (Bonwell & Eison, 1991). Learning environment is not restricted to a class. Inquiry-based learning and group works are the most important characteristics of the active learning (Bell, Uhrarne, Schanze & Ploetzner, 2013). When pre and post test scores of inquiry skills scale were compared it was found that full studio class was successful in improving pre-service teachers' inquiry skills. Also, interview data supported the findings obtained from conceptual understanding test in terms of the quality in students' responses.

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## **The Effects Of Media And Advertisements On Food Purchasing And Consumption In Physical Education And Sports School Students (Turkey-The Akdeniz University Case)**

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### **ABSTRACT**

The study investigates the effects of media and advertisements on food purchasing and consumption in physical education and sports school students. 160 woman (mean age=21,52±1,9) and 248 man (mean age=22,14±2,2) totally 408 students of Turkey, Antalya Akdeniz University School of Physical education and sport, participate to the study. Research is aimed at case identifying and used questionnaire was prepared for the purpose of the study. % 79,4 of individuals follow the news, information and developments about 'healthy nutrition, sport nutrition, adequate and balanced nutrition, supplements, and new products' which are located in media and advertisements. The mass media which are mostly used and causing individuals to modify the nutrition habits are respectively internet, television and newspaper. % 60,5 of individuals finding reliable, information in the media and advertising and % 51,6 of them reports that they modify their nutrition habits influenced by these information. Milk and milk products, meat, chicken, fish, vegetables and fruits are most purchased food groups and fast food, chips, confectionaries are given up food groups, affected by these information. Studies show that, media and advertisements have effect on nutrition habits and product purchase. All occupational groups have to work for information which contained in advertisements and mass media to be reliable, scientific, real and clear. Also, inter-professional cooperation should be carried out.

### **INTRODUCTION**

Nowadays, the use of the media in searching for and communicating information on health and nutrition has increased, as in many other fields. An increase has been experienced in the number of published news/information/developments related to nutrition and health, and this increase has brought with it information pollution and confusion. While some information is shared correctly and reliably by experts on the subject, others are unscientific and based solely on commercial concerns, and may mislead people. The media and advertisements are one of the most important environmental influences affecting the health and eating behaviors of individuals (Aktaş, Arnas, 2006; Harris et al., 2009; Scully et al., 2009; Mink et al., 2010; Cebirbay and Aktaş, 2011). Bad dietary habits associated with many health problems such as coronary heart disease, some types of cancer, diabetes, hypertension, obesity, etc., threaten particularly children and adolescents, the adults of the future. Studies show that especially television advertisements change the dietary habits of children and direct them to products with higher fat, sugar and salt content (Aktaş, Arnas, 2006). In contrast to their negative aspect, mass media also have a positive aspect that directs people to positive health behaviors (Çobaner, Ardiç and Köksoy, 2013). It is of prime importance for the development of positive health behavior in individuals that news articles/information/developments related to health and nutrition and published or broadcast on mass media, should be trustworthy and based on scientific facts, and monitored beforehand. The aim of this study is to investigate the influence of the media and advertisements on the food purchase and consumption habits of the students of Akdeniz University, School of Physical Education and Sports.

### **THE STUDY**

This study was conducted between the dates of January 2015 – May 2015, with the voluntary participation of 160 women (mean age=21.52±1.9) and 248 men (mean age=22.14±2.2), making up a total of 408 students studying at the School of Physical Education and Sports of the Akdeniz University in Turkey, during the 2014-2015 education year. The investigation was aimed at determining the facts, and a goal-oriented questionnaire prepared for the study was used. Definitive statistical methods such as frequency (f), percentage (%), etc., were used in the evaluation of data, and a chi-square test was applied to determine the relation between the genders.

### **FINDINGS**

A total of 408 students, of whom 160 were female (39.22 %) and 248 were male (60.78 %), participated voluntarily in the study. Table 1 shows the frequency of the participating individuals in following the news on "healthy eating, sports diets, sufficient and balanced diets, dietary supplements, new products" published on media and advertisements. 79.4 % of the participants follow the news, information and developments on "healthy eating,

sports diets, sufficient and balanced diets, dietary supplements, new products” published on media and advertisements. There is no statistically significant difference in following frequency between men and women ( $\chi^2=5.96, p>0.05$ ). (Table 1)

**Table 1. The frequency of the participating individuals in following the news on “healthy eating, sports diets, sufficient and balanced diets, dietary supplements, new products” published on media and advertisements**

	Female (n=160)		Male (n=248)		Total (n=408)		$\chi^2$
	f	%	f	%	f	%	
Yes	53	33,1	89	35,9	142	34,8	5,96
No	25	15,6	59	23,8	84	20,6	
Sometimes	82	51,3	100	40,3	182	44,6	

$p>0,05$

The mass medium most frequently used by both male and female participants in following news/information/developments in nutrition is the internet, with television in second and the press in third place. 58.5 % of the women and 61.9 % of the men find the news/information given on the media trustworthy, and according to both groups, the most reliable mass medium is the internet.

34.0% of the women and 35.8% of the men follow the developments related to nutrition included in the media for healthy living, while 17.4% of the women and 30.5% of the men do so to increase sports performance, 17.0% of the women and 7.1% of the men, to lose weight, 4.1% of the women and 11.7% of the men, to gain weight, 12.0% of the women and 3.7% of the men, to learn new recipes, and 15.5% of the women and 11.2% of the men, because it is interesting. There is statistically significant differences between the genders in the answers on increasing sports performance ( $\chi^2=28.385, p<0.05$ ), losing weight ( $\chi^2=22.661, p<0.05$ ), gaining weight ( $\chi^2=14.963, p<0.05$ ), learning new recipes ( $\chi^2=21.966, p<0.05$ ), and because it is interesting ( $\chi^2=4.014, p<0.05$ ) (Table 2).

**Table 2. The reason of the participating individuals in following the news on nutrition published on media and advertisements**

	Female (n=135)		Male (n=189)		Total (n=324)		$\chi^2$
	f	% <sup>a</sup>	f	%	f	%	
Healthy living	108	34,0	156	35,8	264	35,1	0,337
Increase sports performance	55	17,4	133	30,5	188	25,0	28,385*
Lose weight	54	17,0	31	7,1	85	11,3	22,661*
Gain weight	13	4,1	51	11,7	64	8,5	14,963*
Learn new recipes	38	12,0	16	3,7	54	7,2	21,966*
To be interesting	49	15,5	49	11,2	98	13,0	4,014*
Total**	317	100	436	100	753	100	

<sup>a</sup>: The percentage column

\*\*A total of more than one answer

\* $p<0,01$

By answering ‘yes’ or ‘maybe’, 51.8% of the women and 51.3% of the men have indicated that they have changed their eating habits through following news/information/developments included in the media and advertisements. There is no statistically significant difference between men and women in changing eating habits or trying a new product ( $\chi^2=0.06, p>0.05$ ) (Table 3).

**Table 3. The changing of eating habits of the participating individuals in following the news on nutrition published on media and advertisements**

	Female (n=135)		Male (n=189)		Total (n=324)		$\chi^2$
	f	%	f	%	f	%	
Yes	32	23,7	46	24,3	78	24,1	0,06
No	65	48,1	92	48,7	157	48,5	
Sometimes	38	28,1	51	27,0	89	27,5	

$p>0,05$

The ranking of mass media tools most effective in triggering eating habit changes again puts the internet in first, television in second and the press in third place. Food groups purchased under the influence of the media and advertisements were respectively herbal teas, yoghurt and similar products, vegetables, fruit and milk and milk products in women, and meat, poultry, fish, milk and milk products, dietary supplements, vegetables and fruit in men. Food groups the consumption of which was stopped under the influence of the media and advertisements were respectively fast food, crisps, candies, ketchup-mayonnaise, fats and margarines in women, and crisps, fast food, ketchup-mayonnaise and candies in men.

### CONCLUSIONS

According to the results of the investigation, a large percentage of the participants follow news/information/developments related to nutrition through the mass media. The most commonly used mass medium is the internet, with television in second and the press in third place. In previous studies, television has been found to be the most commonly used medium (McKay et al., 2006; Yılmaz et al., 2007; Aksoydan et al., 2010; Cebirbay and Aktaş, 2011). With the development and prevalence of internet technologies, new media and social media concepts have gained importance in the communication of information in the fields of health and nutrition. In Turkey, the number of people using the internet to search for information on health is increasing at a remarkable rate (Çobaner, Ardiç and Köksoy, 2013).

58.5 % of the women and 61.9 % of the men find the news/information given on the media trustworthy, and the most reliable mass medium according to both groups is the.

A large proportion of the participants have indicated that they have changed their eating habits under the influence of the media and advertisements. In the ranking of mass media that influence change the most, internet is again in the first place, with television ranking second and the press, third. In this study, it has been observed that the participants were positively influenced by the media and advertisements, and men and women have specified that they have purchased healthy foods such as milk, yoghurt, meat, vegetables and fruit more under the influence of the media and advertisements, and have stopped using products that are considered unhealthy, such as fast food, crisps, candies, ketchup-mayonnaise, etc..

It is of prime importance that media and advertisements that influence individuals and trigger behavior changes should be reliable, scientific and comprehensible. The media and advertisements create an environment that, on one hand, provides significant opportunities for protecting and improving the health and increasing the health related knowledge of individuals, while on the other hand, also provides the chance of providing uncontrolled, false information (Çobaner, Ardiç and Köksoy, 2013). The media may be used to communicate with a large number of people, but its strengths and weaknesses should be well investigated (Güler, 2006). In order to provide correct information to people on subjects related to nutrition, there must be media – scientist collaboration, support must be obtained from experts on the subject, risks must be minimized and information must be provided in simple terms that can be understood by the layman (Fernandez-Celemin and Jung, 2006). Furthermore, in order to avoid confusion, a consensus must be reached among scientists before information is disclosed to the public. The supervision of the media and advertisements is important for accessing reliable information. However, emphasis should be placed on dietetics in formal and non-formal education, thereby providing individuals with the opportunity to reach correct decisions by making informed choices (Aktaş, Arnas, 2006; Sabbağ and Akin, 2012).

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## The Effects Of Pedagogical Training Program On Students' Professional Attitudes And Self Efficacy Levels

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### ABSTRACT

Obviously, one of the most important elements of education is teacher. The effect of the teacher is very high and the importance of professional attitudes and self-efficacy levels of teachers are improving in each day. Nowadays, pedagogic training program is going on for the students that are graduated from the other faculties than education. At the end of this certificate program, these students are being teachers. This study aims to investigate the effects of pedagogic training program on students' professional attitudes and self efficacy levels. A weak experimental design is conducted for the study. Experimental design is known as one of the quantitative research methods. The population of the study are 1037 Siirt university pedagogical training program students. This program started in July 2014 and finished in January 2015. Professional Attitude Scale (PAS) and Teacher Self-Efficacy Scale (TSS) are used as pre-test at the beginning and post-test at the end of the study. PAS is developed by Çetin (2006) and includes 35 items and TSS is developed by Çapa, Çakıroğlu and Sarıkaya (2005) and includes 24 items. At the end of the study, there is no statistically significant difference between pre-test and post test scores on participants' professional attitudes scores and its subscales love, value and appropriateness. Additionally there is a statistically significant difference on participants self-efficacy scores and its to subscales student participant and teaching strategies.

**Keywords:** Pedagogical Training Program, Professional Attitudes, Self Efficacy

### INTRODUCTION

The world is changing and developing in many sectors so the organizations must make revisions in both their human management politicizes and their systems to adapt these developments and the changes. Educational systems and schools as part of the process of these changes and developments need to make improvements. Nowadays societies want individuals to have critical thinking, questioning, aware of personal and social responsibilities from educational systems. Obviously, one of the most important elements of educational systems are teachers. In this century, there are some changes in the structure, definition and responsibilities of teaching profession. There is a strong need to improve teachers' qualities as parallel to new educational programs to develop their questioning, critical thinking and responsibilities. A special knowledge to make a job, the concept of proficiency as described for license, the improvement of the qualities that the teachers should have must be gained by teachers (Köksal, 2008). Ministry of Education in Turkey made some training programs to improve teachers' proficiencies and attitudes. In developed countries, teaching profession is known as a career profession in the base of professional mentality. However, in Turkey, teaching profession efforts to create its own rules and proficiencies for reaching standards. Because, when a teachers' success is increased, this will automatically increase students' and educational systems' success. Sönmez (2003) determine the basic and important elements of school system in education as; student, program and teacher. When one of them is missing, he states that education and schools can not be exist.

In the related literature, generally, the expected qualities of teachers are listed as follows by (Numanoğlu ve Bayır, 2009);

- Taking into account the individual differences and needs of students in teaching process,
- Improving human relations and communication skills,
- Encouraging students for cooperative learning and active participant,
- Advising them for their spare time,
- Counseling them for environmental studies,
- Using student centered approaches during lectures,
- Helping students that need special education,
- Planning and using appropriate techniques and strategies,

Evaluating them with appropriate methods and instruments for their cognitive, affective and psychomotor domains,

- Preparing teaching materials,
- Encouraging them for expected behaviors,
- Connecting between inter-disciplines,
- Knowing intelligent quantity types and learning styles,
- Knowing enough subject matter.

Teachers professional attitudes and self-efficacy levels become important because of these expected changes in the proficiencies of teachers. In this regard, attitudes are different than opinions, values and beliefs. Opinions are known as personal reflections to specific situations and formations. However, attitudes are more general because of the effects to broader range of events groups and groups of people (Üstüner, 2006). Recently, the increase in the number of studies related to attitudes and self efficacy levels of teachers show us the importance of this subject. Because, higher and positive self efficacy levels and teaching profession attitudes effect students' success and motivations (Ekici, 2006).

As a result of these, researchers tried to investigate the changes on professional attitudes and self efficacy levels of the students that enrolled pedagogical training program to be a teacher. So the effect of pedagogical training program is being determined. Researchers are tried to answer the following sub-problems:

- What are the pre-test and post-test results of teaching professional attitudes scores of pedagogical training program students?
- What are the pre-test and post-test results of self-efficacy level scores of pedagogical training program students?
- Is there a significant difference between pre-test and post-test scores of teaching professional attitudes of pedagogical training program students?
- Is there a significant difference between pre-test and post-test scores of self-efficacy levels of pedagogical training program students?
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## METHOD

During the study, a weak experimental study is conducted to investigate pedagogical training program students' teaching professional attitudes and self-efficacy levels. As known, in scientific methods, the precise results can be obtained by experimental studies which is a kind of quantitative studies (Büyükoztürk, 2014; Can, 2014; Corrine, 2011). Large group design is used and the same participants are examined in different conditions, before and after the treatment. To supply these, pre-tests were used before pedagogical training program and pos-tests were used at the end of the program. The program took 5 months and students got courses related to education and teaching profession. The scores of the instruments were analyzed by using a statistical program.

The study is started in July 2014 in Siirt University- Education Faculty and finished in January 2015. 1037 students that enrolled to pedagogical training program were constructed the population of this study. The population was accessible so the sample selection procedure was not applied. The study consisted of two parts. In the first part, pre-test was applied in July 2014 and in the second part post-test were applied at the end of the program. Two instruments were used to collect data from the participants. First, "Professional Attitude Scale" (PAS) is used to understand the attitudes of participants towards teaching profession. This scale is constructed by Çetin (2006) and consists of 35 items with three factors: love, appropriateness and value. Second, "Teacher Self- Efficacy Level Scale" (TSS) is used to understand participants self-efficacy levels. The scale was transformed to Turkish, reliability and validity analyzes were done by Çapa, Çakıroğlu ve Sarıkaya (2005) and consists of 24 items. TSS has three factors; student participant, teaching strategies and classroom management. Additionally, reliability analyzes were done by the researchers and found above 0.70 for both scales. Data is analyzed by using SPSS 21.0 and frequency (N), arithmetic average ( $\bar{X}$ ), percentage (%), standard deviation (Sd) was calculated for PAS, TSS and their subscales. To see the statistical significant difference between pre-test and post-test scores of the instrument and their subscales, after looking groups homogeneity parametric statistical techniques were used. T-test analyzes were applied and looked for the difference in  $p \leq .050$ . The findings are presented in tables as in follows.

## RESULTS

The demographic characteristics like gender, age and branches of the pre-test participants are presented in Table 1.

Pre-test results of the participants are presented in Table 1.

**Table 1.** Demographics Features of Pre-Test Participants

		N	%
Gender	Female	174	41,4
	Male	246	58,6
	Total	420	100,0
Age	30 and Below	28	6,7
	31-40	351	83,6
	41-50	41	9,8
	Total	420	100,0
Branch	Social Sciences	231	55,0
	Quantitative Sciences	189	45,0
	Total	420	100,0

From Table 1, the distribution of participants for gender and branches variables are seen equable. However, the students above ages 30 are seen very high (93,4%). This resulted from pedagogical training program was not started in the past and students was waiting for it for many years.

The demographic characteristics of the post-test participants in Table 2.

**Table 2.** Demographic Features of Post-Test Participants

		N	%
Gender	Female	118	38,2
	Male	191	61,8
	Total	309	100,0
Age	30 and Below	30	9,7
	31-40	253	81,9
	41-50	26	8,4
	Total	309	100,0
Branch	Social Sciences	187	60,5
	Quantitative Sciences	122	39,5
	Total	309	100,0

Similar to Table 1, Table 2 also shows that due to gender variable participant distribution is equable and according to gender variable again most of the participants (90,3%) are above 30 age. According to branches the number of participants (60,5%) from social sciences like history, religion, geography and literature is more than those of quantitative sciences like physics, chemistry, biology, mathematics and nursing.

Pre-test and post-test PAS scores of the participants are presented in Table 3.

**Table 3.** Pre-test and Post-test Scores of Professional Attitude Scale

		Pre-test		Post-test	
		$\bar{X}$	Sd	$\bar{X}$	Sd
Professional Attitudes	Love	2,96	1,20	3,00	1,20
	Value	1,58	0,87	1,65	0,92
	Appropriateness	3,76	1,27	3,74	1,25
	Total	2,77	1,11	2,80	1,12

According to Table 3, in general there is no significant changes in the participants professional attitude scores (pre-test= 2,77 – post-test= 2,80 change= +0,03), in subscales, the most increase is seen in value subscale (pre-test = 1,58 – post-test = 1,65 change +0,07) and this change is not so big to say there is a strong difference between beginning and end of the program. As a result, when we look at the arithmetic averages and the standard deviations, we can conclude that there is no strong effect of pedagogical training program on students' professional attitudes. Pre-test and post-test TSS scores of the participants are presented in Table 4.

**Table 4.** Pre-test and Post-test Scores of Teachers' Self-Efficacy Scale

		Pre-test		Post-test	
		$\bar{X}$	S.s.	$\bar{X}$	S.s.
Self-Efficacy	Student Participant	3,83	0,81	3,90	0,80
	Teaching Strategies	3,87	0,80	3,94	0,83
	Classroom Management	3,71	0,91	3,79	0,93
	Total	3,80	0,84	3,88	0,85

According to Table 4, it is obviously seen that, there is a positive effect of pedagogical training program on participants' self-efficacy levels and its subscales. The reason of that difference may caused from two important properties of pedagogical training program. Firstly, the education taken with pedagogical training program inform the participants about the requirements and the responsibilities of teachers. Secondly, participants' self confidence levels are increasing with the program and they are starting to think that they can make teaching well. Unforgettable thing from the results that the increase in self-efficacy levels is not too much.

T-test results of the professional attitude scores of participants are presented in Table 5.

**Table 5.** T-test Results for Professional Attitude Scores Between Pre-test and Post-test

		N	$\bar{X}$	S.s.	p
Love	Pre test	420	3,00	0,36	.942
	post test	309	3,00	0,49	
Value	pre test	420	1,65	0,64	.166
	post test	309	1,59	0,56	
Appropriateness	pre test	420	3,74	0,87	.758
	post test	309	3,76	0,81	
Total	pre test	420	2,80	0,29	.582
	post test	309	2,78	0,35	

Note: \* There is a significant difference on  $p \leq .050$ .

Table 5 is constructed to understand whether there is a significant difference between pre-test and post-test scores of professional attitudes scale. According to Table 5, it is seen that there is no significant difference on participants' professional attitudes in general and in subscales. Because p value is bigger than .050. So, we can say that pedagogical training program do not effect participants' professional attitudes significantly.

T-test results of the teachers self efficacy scores of participants are presented in Table 6.

**Table 6.** T-test Results for Professional Attitude Scores Between Pre-test and Post-test

		N	$\bar{X}$	S.s.	p
Student Participant	pre test	420	3,83	0,48	<b>.016*</b>
	post test	309	3,93	0,60	
Teaching Strategies	pre test	420	3,87	0,51	<b>.047*</b>
	post test	309	3,95	0,55	
Classroom Management	pre test	420	3,71	0,60	.058
	post test	309	3,79	0,56	
Total	pre test	420	3,81	0,47	<b>.015*</b>
	post test	309	3,90	0,47	

Note: \* There is a significant difference on  $p \leq .050$ .

Table 6 is constructed to see whether there is a significant difference or not between pre-test and post-test scores of the participants on teachers self-efficacy levels scale. It is seen that there is significant difference on total scores of self-efficacy levels and it two subscales student participant and teaching strategies because of  $p \leq .050$ . In the other subscale, classroom management, there is no significant difference is found because of  $p \geq .050$ . Participants' self-efficacy levels in general and in two subscales, student participant and teaching strategies, are changed significantly. The reason of this result may caused from increase in the education levels of the participants with pedagogical training program supply an increase in the self- efficacy levels of them.

## CONCLUSION AND SUGGESTIONS

During this study, the effects of pedagogical training program on students' professional attitudes and self efficacy levels are tried to be investigated by using one group pre-test and post-test design. There were no control group for the study so this study can be categorized as a weak experimental study. The findings of the study show that there is no obvious change in participants' professional attitudes at end of pedagogic training program. When we look at the subscales of professional attitude scores; in love and value subscales there is slight increases and in appropriateness subscale there is a small decrease. According to these findings, pedagogical training program does not positively contribute participants' adaptations to teaching profession and love to this job. On the other hand, it may be said, this program negatively affects the participants. The reason of that may be the requirements and the responsibilities of teaching profession like improving yourselves with new techniques, methods, technologies, studying hard with newly changed subject matter of the subject area and adapting teaching profession with new and changeable conditions. However, the participants think that these requirements are not so important for teaching profession. Because the participants enrolled to pedagogical training program think that teaching profession is a relaxed, have more spare times and holidays, and a job guaranteed by public. In value subscale of professional attitude scale, although there is a slight change in positive direction, the quantity of this change is very small and we could not make a comment. As a conclusion, the engrossing point in terms of program and students is that teaching profession is not sufficiently understood by future teachers participated in pedagogical training program.

The other dimension of the study is self-efficacy levels of the participants. As a result of this dimension, there is a small increase in total and subscales of self-efficacy levels. This result may be concluded as pedagogical training program slightly develop students' self-efficacy levels and its subscales student participant, teaching strategies and classroom management. Pre-test and post-test scores are also analyzed to understand whether there is a significant difference or not between beginning and end of the program. T-test is used in statistical package program. As a result of these, there is no significant difference seen in professional attitudes and its subscales while there is a significant difference seen on self-efficacy levels and its two subscales ; student participant and teaching strategies. Additionally, no significant difference were seen on classroom management subscale of self-efficacy levels. This study showed us the pedagogical training program does not heavily effect students' professional attitudes, but this program effect students' self-efficacy levels. The reason of that difference may be caused from the participants' thought about teaching profession as a job that may economically facilitates their lives and their learning in pedagogical training program effect their self-confidence.

At the end of the study, following suggestions can be done for the future studies related to pedagogical training program, professional attitudes and self-efficacy levels:

- This study can be repeated and compared with the other universities' pedagogical training programs and students.
- This study can be redesigned with the aim of comparison between pedagogical training program and education faculty program students.
- A qualitative research can be conducted with pedagogical training program students to check and deeply understand these quantitative results.

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## The Effects Of Plyometric Education Trainings On Balance And Some Psychomotor Characteristics Of School Handball Team

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### ABSTRACT

This study aims to search the effects of plyometric education trainings which was applied for 10 week on static-dynamic balance and some psychomotor characteristics of students who were been handball team of school. The girl students-players (N=16) who are in age  $14,57 \pm 0,92$  years. All student have got  $3,66 \pm 0,63$  years sport experience. Plyometric education trainings were performed twice a week for 10 weeks in the trainings of school handball team. Parameters such as body weight, height, vertical jump, standing long jump, 30m speed, agility, flexibility, and static-dynamic balance were measured and anaerobic power was calculated by Lewis formula. The SPSS 15.0 program was preferred for the statistics. Descriptive statistics were used for the analysis of psychomotor characteristics and paired sample t test was used for the differences between the pre-test and post-test of plyometric education training of the players. The significance level was set at 0.05. The differences were observed between the pre-test and post-test of plyometric education training of flexibility  $t(51)=-4,518$ ,  $p=0,00$ , standing long jump  $t(12)=-8,129$ ,  $p=0,00$ , anaerobic power  $t(01)=-3,018$ ,  $p=0,05$  and left leg ellipse area at unipedal static balance  $t(39)=2,399$ ,  $p=0,04$  were found to be statistically significant ( $p<0.05$ ).

**Keywords:** Plyometric, Handball, Balance, Flexibility, Anaerobic power

### INTRODUCTION

Motor ability, sprinting, jumping, flexibility and throwing velocity represent physical activities are more important for team handball. Handball players are a jumper, thrower, sprinter all in one and must execute these skills with precision and speed. They often perform upper extremity passing, shooting and dribbling skills while wearing shoes on flat, stiff surfaces. Their skills require great joint accelerations from jump landings and cutting maneuvers (Rannou et al., 2001; Zapartidis, 2009; Goran et al., 2010).

Plyometric exercises constitute a natural part of most sport movements because they involve jumping, hopping, and skipping (i.e., such as high jumping, throwing, or kicking). Plyometric training has been advocated as an appropriate approach for sports that require explosiveness and vertical jumping ability enhancement. Generally, plyometric trainings are the best way, which is accepted to provide power / speed to react immediately during the game and also to provide the player to jump higher and to improve the jumping ability of the leg muscles. It provides the opportunity to train specific movement patterns in a biomechanically correct manner at a more functionally appropriate speed. This provides functional strengthening of the muscle, tendon, and ligaments specific to the demands of everyday activities and sports (Wilkerson et al., 2004). Plyometric training does provide such training stimuli and has shown evidence to improve explosive actions in young and pubertal populations (Vissing et al., 2008).

Balance is generally defined as the ability to maintain the body's center of gravity within its base of support and can be categorized as either static or dynamic balance. Static balance is the ability to sustain the body in static equilibrium or within its base of support. Dynamic balance is supported to be more challenging because it requires the ability to maintain equilibrium during a transition from a dynamic to a static state. (Ross & Guskiewicz, 2004). Dynamic balance is necessary and effective in the fundamental technical movements of the handball sports such as dribbling, throwing, kicking and faking. The dynamic balance on one leg is also very important for doing the basic movements on handball (Rannou et al., 2001). Lower limb joint proprioception is known to play a key role in maintaining normal body posture (Gardner et al., 2000).

Sport training can improve sensorimotor performance and postural control (Anderson & Behm 2005; Vuillerme et al., 2001) and may cause different balance abilities and these differences could be objectively measured using Center of Pressure Measurements (C.o.P) (Germino et al., 2007). It is stated that using a combinational plan (plyometric, technical, balance and strenght) can improve anterior-posterior balance (Paterno, 2004). Strenght, plyometric and combinational trainings improve dynamic balance among athlete students (Sadeqi et al. 1988). It is stated the expertise on gymnastic has an effect on postural control during changing postural situation from two leg standing to one leg standing. In addition, this effect is a result of the ability education and trainings (Vuillerme et al. 2001; Vuillerime & Nougier 2004). On the contrary, Seiler et al.(2008) stated that one leg balance was not significantly improved after the intervention training.

A lot of factors effect to static and dynamic balance such as motoric and anthropometric characteristics (Salehzadeh et al. 2011), proprioceptive balance and visual clues (Carolyn et al. 2005; Gioftsidou et al., 2012) explosive power (Atilgan Erkut 2013), training programs (Salehzadeh et al. 2011), asymmetries in muscle strenght (Rahmana et al. 2005; Schuepfer et al. 2006), experince and training year (Vuillerme & Nougier 2004; Paillard 2006).

This study aims to search the effects of plyometric education trainings which was applied for 10 week on static-dynamic balance and some psychomotor characteristics of students who were been handball team of school.

## METHOD

### Participants

The girl students-players (N=16) who are in age  $14,57 \pm 0,92$  years. All student have got  $3,66 \pm 0,63$  years sport experience. Sixteen adolescent volunteer students without any sports injuries in the last year and visual-sensory disorders were enrolled in the study. The study was approved by the local ethical committee of the Marmara University.

### Procedures of psychomotor and balance tests

The players were informed about the pyschomotor and balance tests. After the 15 minutes warming up activity, the psychomotor tests were applied at the same day. Before the plyometric education training program, the players were evaluated with speed (30 m sprint), vertical jump (for anaerobic power), horizontal jump (standing long jump), agility (illionis test), flexibility (sit and reach) static and dynamic balance tests. Following 10 weeks training the tests were repeated. Pre test and post test results were compared. The players did this tests 2 times to evaluate them. Between the repetitions 2 minutes, and between the tests 3 minutes rest intervals were given. The best rates were recorded as the test result. After 2 hours resting time static and dynamic balance tests were measured by Prokin (Prokin System 5.0 Pk-Manop-05-en-01 Bergamo, Italy). Anaerobic power was calculated by Lewis formula ( $\sqrt{4.9 \times (\text{Body weight}) \times \sqrt{D}}$  (D=jumping distance).

*Body weight and height measurements:* The measurements of the body weight and height were done with Desis weighting expert digital weighting scale and linear measurement scale.

*Speed – 30m sprint test:* 30 m sprint tests measurements were done with Sport Expert MPS 501 photocell device.

*Agility – Illionis test:* Illionis agility test were done by the photo celled doors at the starting and finish points.

*Vertical jump – Counter movement jump test:* The vertical jumping tests were measured with New Test 2000 device.

*Horizontal Jump- Standing long jump test:* Standing Jump tests were done with metric measurement method.

*Flexibility – Sit and reach test:* Flexibility measurement test was done with sit-reach test (Zorba and Saygın, 2009).

*Static Balance Tests:* After explaining the tests to the subjects, data were entered (height, weight, age) and the device was calibrated. The feet of the subjects were placed on the balance platform nakedly (in a fashion that the distance between feet was 10 centimeters and the projection of the maximum point of the medial arcs was on the x-axis). The subjects were asked to look at the screen in front of them with 10 cm distance between their feet while their arms were at sides, and to keep them fixed at (0) point. After completion of each test, when the device was being recalibrated, the subject was asked to sit down and rest. At the time of the measurements, no verbal feedback was given to the subjects other than what was necessary. a) *Bipedal (double leg) static balance test:* Bipedal static balance were performed for 30 seconds with eyes open (EO) and eyes closed (EC). The data obtained were evaluated in terms of average center of pressure X (C.o.P. X), average center of pressure Y (C.o.P. Y), average forward-backward velocity, average medium-lateral velocity, perimeter error, ellipse area, Romberg test perimeter ratio (RTPR) and Romberg test area ratio (RTAR). b) *Unipedal (left / right leg) static balance test:* In this test, subject tries to stand up with one legged (left and right) within 30 second without hold. The data obtained were evaluated in terms of average center of pressure X (C.o.P. X), average center of pressure Y (C.o.P. Y), average forward-backward velocity, average medium-lateral velocity, perimeter error, ellipse area (Figure 1).

*Dynamic Balance - Slalom Test:* Dynamic Slalom test was used as monoaxial dynamic-time test Medio-Lateral (M-L) to one axis a time and to assess the subject's skill to complete the exercise. In this test, the subject tries to see some balls-objectives that come against. The subject's scope is to hit objectives and follow ideal line within 60 sn duration hold with two hand. Subject load was selected 5 hard degree (according to soft (0) to hard (10) degree system). At the end of the test the software provides two results: caught up objectives and the perimeter

error. The caught up objectives shows the objectives hit by the subject regarding the total objectives of the test. The perimeter error shows the subject's ability to stay on the blue ideal line. The error is calculated on how much perimeter in more has been store clerk regarding the ideal perimeter (in percentage) (Figure 2). <http://www.tecnobody.it>).

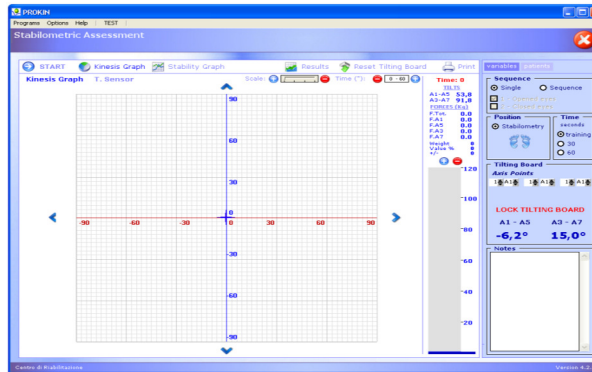


Figure 1. Static Balance test

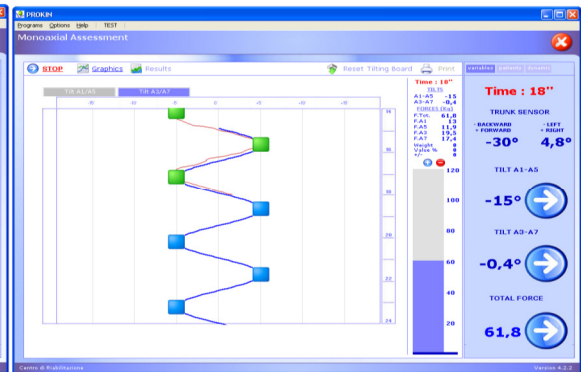


Figure 2. Dynamic Balance-Slalom test

### Procedures of Plyometric Education Program

Plyometric education trainings were performed twice a week for 10 weeks in the trainings of school handball team. This program was applied at least 2 days before the match day and with 2 days apart. The protocol of plyometric education training program was applied with 5 drill, twice in a week. Applying was started after the warming up. First 5 weeks; the exercises were performed in 3 sets. Each set the loading time was 30 seconds. Resting time between the drills was 30 seconds and between the sets 4 minutes. The last 5 weeks; 4 sets were done. Each drill loading time was 40 seconds. Resting time between the drill was 40 seconds and between the sets 5 minutes.

### Model of Plyometric Education Training Program

**1. Drill:** Jumping with two legs from right to left side over 40 cm bar. **2. Drill:** Doing pull-up with 1kg health balls. While doing pull-up the player gives the ball to her standing partner. **3. Drill:** Jumping forward over 5 bars of 40 cm with two legs and then 15 m sprint. After the determined distance, coming back by jogging and repetition the exercise. **4. Drill:** Arm-over standing passes with 1 kg health ball with the partner. **5. Drill:** 2 parallel 15 m lines, which have 80 cm between them. The player jumps with left foot to left then right foot to the right. After the determined distance, coming back and repetition the exercise.

### Statistical Analysis

Descriptive statistics were used for the analysis of psychomotor characteristics and paired sample t test was used for the differences between the pre-test and post-test of plyometric education training of the groups. The SPSS 15.0 program was preferred for the statistics. The significance level was set at 0.05.

### RESULT

Sixteen female school handball team's students  $14,57 \pm ,92$  years of age and  $3,66 \pm ,63$  training years were included to the study.

Table 1. Descriptive datas

N = 16	Sport age (year)	Age (year)	Height (cm)	Weight (kg)
M±SD	3,66 ± ,63	14,57 ± ,92	161,44 ± 54,41	56,95 ± 4,45

**Table 2.** Psychomotor and balance characteristics which were improved after 10 week-plyometric education training program

		<b>M±SD</b>	<b>t</b>	<b>p</b>
<b>Flexibility (cm)</b>	Pre test	24,92 ± 6,49	-4,518	,000**
	Post test	30,23 ± 8,22		
<b>Standing long jump (cm)</b>	Pre test	154,63 ± 14,61	-8,129	,000**
	Post test	178,38 ± 15,89		
<b>Anaerobic power (kg-m/sn)</b>	Pre test	591,63 ± 83,81	-3,018	,005**
	Post test	631,87 ± 87,79		
<b>Left leg ellipse area at unipedal static balance (mm<sup>2</sup>)</b>	Pre test	1683,33 ± 597,97	2,399	,043*
	Post test	1082,00 ± 518,91		

\*p<0.05 , \*\* p<0.01 M: mean, S.D: standart deviation

The differences were found between pre-test and post-test values which were been flexibility, standing long jump, anaerobic power and left leg ellipse area at unipedal static balance tests. The differences observed between the pre-test and post-test of plyometric education training of flexibility  $t(51)=-4,518$  ,  $p=0,000$ , standing long jump  $t(12)=-8,129$  ,  $p=0,000$ , anaerobic power  $t(01)=-3,018$  ,  $p=0,005$  and left leg ellipse area at unipedal static balance  $t(39)=2,399$  ,  $p=0,043$  were found to be statistically significant ( $p<0.05$ ). It shows that values of flexibility, standing long jump and anaerobic power increase from pre-test to post-test. Value of left leg ellipse area at unipedal static balance decreases from pre-test to post-test. No statistically significant difference was found between the pre-test and post-test of plyometric education training for vertical jump, 30m speed, agility, dynamic balance, Romberg test and the other measurments about static balance test ( $p>0.05$ )

## DISCUSSION

It was shown that plyometric education training positively effects flexibility, standing long jump, anaerobic power and left leg ellipse area at unipedal static balance performances ( $p<0.05$ ). No statistically significant difference was found between the pre-test and post-test of plyometric education training for vertical jump, 30m speed, agility, dynamic balance, Romberg test and the other measurements about static balance test ( $p>0.05$ ).

### Flexibility

The result of current study is shown that plyometric education training positively effects flexibility ( $p<0.05$ ). Iri et al (2009) conducted a study on 12-14 year-old kids concerning the effects of football ability trainings on basic motoric characteristics. Statistical significant differences on flexibility were measured. On the contrary, Aktas et al. (2011) conducted a study on 12-14 aged male tennis players. After 8 weeks of power training (including plyometric exercises), they stated that there is an insignificant difference between the test and the control group. Hewett et al. (1996) applied the plyometric training program on female athletes and found no significant difference on flexibility measurements.

### Standing long jump

The result of current study is shown that plyometric education training positively effects standing long jump ( $p<0.05$ ). Diallo et al. (2001) studied the effects of plyometric training on jump performance. They noted significant longer standing jump values for the study group. It is stated that standing long jump improved on plyometric group (Arazi & Asadi, 2012).

### Anaerobic power

The result of current study is shown that plyometric education training positively effects anaerobic power ( $p<0.05$ ). Rahimi and Behpur (2005) stated that plyometric training together with traditional weight-lifting power training supports vertical jump and explosive power performance positively. Balance is not only important for the execution of complex technical gestures, but it is also connected to the overall athlete's strenght, as reported by (Cowley et al. 2006). Another research states that findings proved that the effect of 8-week combinational training

(strenght and plyometric) on dynamic balance of teenage handball players. The highest effect in three groups (strenght, plyometric and combinational) were in three directions of posterior-internal, internal and posterior. In addition, it was indicated that as during achievement action in these directions we need Hamstring muscle activity (Salahzadeh et al. 2011) .

### ***Static and Dynamic Balance***

A certain tendency to better balance in the nonpreferred leg was observed, some authors did not demonstrated differences between dominant and nondominant extremities in athletes (Karadenizli et al. 2014; Gribble et al. 2001; Seiler et al. 2008). It is stated that there is a significant correspondence between given training programs and static and dynamic balance (Schneiders et al 2012). It is stated that using a combinational plan (plyometric, technical, balance and strenght) can improve antrerior-posterior balance (Paterno et al 2004).

In the current study, it was shown that plyometric education training positively effects left leg ellipse area at unipedal static balance performances ( $p<0.05$ ). This finding supports studies showing improvements on balance after a plyometric program (Arazi and Asadi 2011; Asadi 2013; Myer et al. 2006; Twist et al. 2008). In the current study, handball players's dominant legs were right but their jumping legs were left. Because handball players who use right hands usually jump their left leg. It is estimated that this result of study may be affected by this reason apart from training effects. Another result of the current study is that no statistically significant difference was found between the pre-test and post-test of plyometric education training for dynamic balance, Romberg test and the other measurements about static balance test ( $p>0.05$ ). Arazi & Asadi, (2012), stated that plyometric group made improved their dynamic balance, but this change was not statistically significantly. This finding supports to current study. On the contrary Karadenizli et al. (2014), stated that it was found significant difference on unipedal (Forward-Backward) dynamic balance tests. Significant difference was found between right and left leg belongs to soccer players, but, there is no significant differences for handball players. It is mean that right leg's dynamic balance of soccer players is better than for left leg's. It was stated better stability of the nonpreferred leg because soccer players have to stabilize their stance leg in different positions for kicking the ball. Barone et al. (2001), stated the soccer players have a better standing balance on the nondominant leg because of soccer activity. In addition, it was stated that the soccer group showed better standing balance on the left leg than the sedentary group.

### **Vertical jump**

No statistically significant difference was found between the pre-test and post-test of plyometric education training for vertical jump ( $p>0.05$ ). Nicole et al. (2004) stated that plyometric training studies for 6 weeks, twice a week caused an insignificant increase on vertical jump values. Turner et al. (2003) also showed no significance difference on vertical jump performance after 6 weeks plyometric training. On the contrary, Diallo et al. (2001) stated significant differences between vertical jump performances of young football players before and after ten weeks plyometric exercises in addition to usual training programs. It is stated that compared to pre-intervention measures, the plyometric group made significantly greater improvements than control group in vertical jump (Arazi & Asadi, 2012).

### **30m Speed, Agility**

Despite the fact that there were an increase in agility and speed values due to the training, no statistically significant difference was found between pre and post test values ( $p>0.05$ ). This results may indicate that 10 week plyometric education trainings are not sufficient to increase agility and speed. On the contrary, it is stated that in season plyometric training can positively affect sprint and agility performance (Asadi & Arazi, 2012; Asadi 2013).

## **CONCLUSION**

In the current study, it is shown that plyometric education training (of school team handball players for 10 weeks) positively effects flexibility, standing long jump, anaerobic power and left leg ellipse area at static balance performances. It is estimated that if the plyometric education trainings add to physical education curriculum program, all students can take profit from this positive result.

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## The Game And Sociocultural Animation – A Strategy Of Inclusion And Prevention

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### ABSTRACT

According to UNESCO (1977) the Sociocultural Animation is defined as the set of social and cultural practices that aim to stimulate the initiative, as well as the participation of individuals in the process of their own development and global dynamics of socio-political life in which they are integrated.

The Portuguese reality, as well as the other European demographic realities, demonstrate a growing weight of the elderly population. Many of these individuals, by choice or by lack of family support, are turning to institutions where they remain until old age. In this context, the socio-cultural Animation, in the figure of the animator, is very important, by creating dynamic conducive to the promotion of active ageing. As a first step, the goal of the strategies implemented passes through the integration of individuals of the new group to which they will belong, enabling socialization and reciprocal knowledge. In a second phase the strategies should enable the enhancement of institutional integration in the community, promoting empowerment, individual and collective.

The game over time plays a role of primary importance in the creation of these dynamics necessary for the proper functioning in a group and in society. Also here in the context of socio-cultural Animation can use this methodology to the inclusion of adult individual around the maintenance of a healthy experience in society in the period of retirement. Many studies referred to the need for enriching activities after the passage of an active stage within society to a less active position. All groups, young and old, need to co-exist in a healthy existence. However it is necessary to create conditions for this contact. The animator, usually young, makes the bridge. On the other hand there are exploratory studies that investigate the relationship between the use of board games and the decrease in the risk of developing certain psychiatric diseases.

We will try to expose in this article a pilot project to be developed in the context of socio-cultural Animation that will attempt to determine if there is relationship between the use of board games and certain abilities such as attention and learning in institutionalized adults.

**Keywords:** Socio-Cultural Animation, Game, Inclusion, Adults

### INTRODUCTION

When we think of play comes to our mind always a group of children or young people, rare are the times that we think in adults. And if you look at institutionalized people, what are the odds? Too low not to say none. However there is evidence that reported that this activity was carried out in a natural way, by children but also by adults in the middle ages and even earlier (Figure 1).



Figure 1: Pieter Bruegel painting- *Children's games* – 1560

However changes in our society dictated changes in behavior, and clearly lost something in this transition.

Despite the changes continues to feel the need to play there all the time, and the activities related to the act of play remain constantly studied these days.

One of the authors who investigated for a long time this activity and its repercussions was the American psychiatrist Stuart Brown, founder of The National Institute of Play (<http://www.nifplay.org/institute/about-us/>). In the course of their work of writing psychological profiles of murderers faced with the absence of behaviors of *play* in the lives of many of those prisoners who interviewed. This research enabled him to determine the extreme importance of *play* from the young to the elderly. Part of this investigation focused in the prisons of the State of Texas in the United States of America, and this work does not focus solely on preparation of profiles, having accomplished an immense number of interviews among the general population. The analysis performed has allowed the comparison of numerous cases, having found people who had been successful in their professional life in various professions and directing the act of *play* as having an important part of all their growth and even during their active adult life.

The fact that *play*, and by extension the use of board games as a tool to induce the act of *play*, acquires great importance in social relationships as well as in your own personal satisfaction of people inserted in a society with rights and duties. The play through a board game can help in the prevention of situations of stress and loneliness, but can also act on improving the capacity of attention and memorization preventing progression of certain psychiatric diseases. Studies as *Leisure Activities and the Risk of Dementia in the Elderly*, led by Joe Verghese et al. (2003) or *Late-Life Engagement in Social and Leisure Activities Is Associated with a Decreased Risk of Dementia: A Longitudinal Study from the Kungsholmen Project*, directed by Hui-Xin Wang et al. (2002), support this pilot project.

We built the foundation for the launch of an interdisciplinary project in the area of socio-cultural Animation that wants to use the board game as a strategy for preventing situations arising out of biological aging in a needy population that needs support.

Relying on studies of Stuart Brown or Joe Verghese et al we want to develop a pilot project in a nursing home. The main objectives undergo review the behaviors of its population before and after playing and sharing board Games. The aim is to check, if the board game will be a process or method of work that can help in preventing or decreasing the possibility of acquiring psychiatric illness, but also to assess their potential as a catalyst for positive attitudes with reflection on learning and attention of the institutionalized elderly, through the dynamic created around the game itself, among other aspects.

As the elderly population is the preferred audience for the implementation of this pilot project, it makes sense to consider us a quick analysis of this and existing social responses.

### Demographic ageing and social responses to Elderly

Following Serafim (2007), population aging refers to the gradual increase of individuals with advanced ages in relation to the total Group.

According to the same author, Portugal presents demographic change of wide scale and with important social, economic and cultural repercussions. Demographic change in Portugal, in the recent past, is characterized by a gradual increase in the weight of the senior age groups and a weight reduction of the youth population. Official projections available indicate an unprecedented population dynamics in Portuguese history, with a growing senior populations weight and a reduction in weight of the secular population active. According to the INE (Portuguese National Institute of Statistic), the demographic characteristics of the population show that worsened the ageing population in the last decade. In 2011, Portugal about 19% of the population presented 65 or more years of age, having an ageing index of 127.8%.

Most of the time lived by the elderly in daily life is free. The term *free time* can be referred to as a dynamic and complex set of occupations, voluntarily used to relax and have fun, or to develop the social participation, the tastes, the knowledge or abilities after seeing themselves freed from the professional obligations, family, social and cultural rights (Geis, 2003).

Due to the gradual ageing of the population, there has been a constant and progressive concern to create, over the past centuries, social responses to the elderly. Hence the emergence of two types of institutionalized social responses and differentiated in the services provided: Home Service (food, hygiene, health, treatment and others) and institutions (nursing homes, hospitals, residences, day-care centres, recreation centres, and universities seniors).

In the 15th century, the first equipment intended to support seniors, called "nursing homes". It is from this date that old age begins to be seen differently, that is, as "social disease", in which the elderly no longer known for their

experience and happens to be seen as weak, useless and unproductive. This was due to the fact that Western societies were giving very importance to productivity and development (belt, 2007).

After five centuries, Society and the State saw the needed to improve the equipment recently created, having appeared the nursing homes. In the late 20TH century appeared the first day centers and recreation centers. The day centres differ from nursing homes, as they are more "open", being a mix of home and hospital stay. In turn, the recreation centers are more geared to the animation. From 1976, began to appear in home support services, where it seeks to take the existing services in the day care center. In the late '90, the support system at home (SAD), starts to accommodate the health domain. Yet at the end of these years arose the night centers and the senior universities (Jacob, 2008).

The cessation of professional activity, the absence of relatives and the loss or reduction of social relations, leading elderly people to social isolation, feeding on feelings of loneliness, pessimism, boredom, and frustration-induced passivity "do nothing", by "not feel useful," leading to social exclusion.

One of the changes that comes with the third age is the excess of free time. According to several authors, through programmes and projects related to the animation in the third Age, the elderly can achieve well-being and satisfaction (Osório, 2007).

### **The role of socio-cultural Animation in the face of the problem of ageing population**

Given the changes that arise in the lives of individuals when it comes to the elderly, the elderly can choose to participate in activities directed towards him and, thus, become agent of its own development, dialogue with the society and interacting with the other generations. The animation of the elderly has a cultural, psychosocial, socio-educational function, among others, providing a more dignified old age and value of the elderly, and can contribute to the prevention of diseases, greater mobility for the elderly, sensation of physical and psychological well-being (Correia, 2007).

Socio-cultural animation in the context of the third age comes in response to a lack or reduction of your activity and social relations. To fill this void, the Sociocultural Animation (SCA) comes to encourage the emergence of a life centered around the individual or group, conceiving the idea of older people progress through their integration and voluntary participation in collective tasks in which culture plays a stimulating role (Lopes, 2007).

In the particular case of the third age, the SCA is an intervention process starting from a concrete reality in an attempt to modify and/or improve at all levels. It can be seen as a style of work, an active pedagogy to promote participation of individuals (Limón and Crespo, 2002).

For this intervention to be implemented should act in two dimensions: the General dimension and circumscribed in social policy "(social protection, the social needs), and the decrease in specific socio-educational intervention" "(in this field are programs and activities aimed at senior citizens, in a perspective of permanent education, in order to adapt the elderly the social and cultural contexts). Only is considered a complete intervention in these two fields when you take into account all the factors that determine the aging: personal characteristics, society, family, friends, institutions and demographic trends (Lopes, 2007).

Each of these factors can be evaluated differently, because the effects vary from elder to elder, hence the aspect to respond effectively to the needs, desires and expectations. Animation programs must be tailored to each individual or group situations.

The various SCA purposes in old age or Elderly animation can have no place in multiple institutional programs, such as: promoting personal well-being, and community group of individuals; try to improve the quality of life and integral health (physical, mental and social); cause the aging process to be "normal" without trauma, pain, etc.; provide the development of skills, abilities and skills of the elderly; promote the fulfilment of the elderly; motivate the elderly in a way that makes them more active participants, critical, creative, supportive and useful in society; stimulate the permanent education and training; develop critical attitudes towards life, through the animation of tanks and debate (Limón and Crespo, 2002).

By this characterization on the aging problem and the important role that SCA holds, it should now realize the method that will be used in this pilot project as well as the location and population of the study.

### **Characterization of the target population of the pilot project (Parish Center of Culture and service in Benespera)**

Located in Benespera village, municipality and district of Guarda, the centre is a Private Institution of Social Solidarity (PISS), constitutes a first step in 1997 in the institutions of the Parish Council, with home support service and day care. In 1998, it opened its headquarters (parish house), where he also have the home assistance. The



mission of the Centre is to support and guarantee the rights and the needs of the elderly and the surrounding community of integral form and customized. The institution has about 18 users whose range of ages are between 65 and 85 years.

## PLANNING

We intend to carry out an analysis of the activities to be developed through the application of the scale GDS (Geriatric Depression Scale) well known in the field of Geriatrics. This was adapted and validated for Portugal by John the Apostle in 2011 (<http://web.stanford.edu/~yesavage/Portuguese3.html>).

The GDS with 15 items (GDS-15) is a shortened version of the original scale and was drafted by Sheikh & Yesavage (1986), from the items that most strongly are correlated with the diagnosis of depression. This reduced version is quite attractive to track depressive states in community context, as well as in other non-specialized environments, because the time required for their administration is inferior (Paradela, Lourenço & Veras, 2005). Official page of GDS, the authors consider that it is in the public domain. It is a hetero-assessment scale with two alternatives (Yes – 1 point and No-0 points) (items 1, 5, 7, 11 and 13 one point to No), depending on how the elderly feeling lately, especially in the previously week. Use before the activity, and after this, will serve to assess the influence of the use of the tool board game in the evolution of loneliness and depression. There is at present a choice of several board games according to their characteristics, however its effective use will depend on the study to make about the characterization of the population under study of the nursing home. Only after this characterization could we could state the board games to use from our initial choices.

They use should be divided in time and for each activity, game used, it will be developed in 3 different periods:

- 1st phase: knowledge of the game, discussion of the rules, global understanding of the goals-2 sessions (2 x 30 m);
- 2nd phase: play the game with peers and facilitators of the project – 4 sessions (4 x 30 m);
- 3rd phase: play the game among peers – initial 5 sessions (5 x 30 m, 1 full week).

The evaluation shall include a pre and post test phase with the application of the scale already referenced.

## CONCLUSION

Being a pilot project, we have done here the previous study analysing the state of the art, we define the ages of the target group of our research, the procedures and methods to be used and the time periods. The goal after implementation is to assessing whether the results obtained allow us to have a statistical validation to move on the next step, which means to extend the study to a larger population with the formalization of a script in a descriptive set of activities that can help in the prevention of situations considered deviant in the context of the animation.

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## The Importance Of Music Education In People's Lives

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### ABSTRACT

Music is unique in each person's life. It is a means of relaxation for some, while for others, it is a hobby, and is pleasurable. In all levels of education, music has immense value. Students learn many important and necessary values for life as music enhances their mind, and their expressive ability. One can also learn a lot from studying and analysing music, composing, reading about music, understanding the history of music. Students of music learn self-discipline, expression through sound, enhance technical motor skills, develop problem solving skills, learn how to cooperate and collaborate with others, and learn to develop a creative and critical mind. Anyone who is educated in music learns these skills. People who have studied it, will take these skills and apply it to their everyday lives and career.

Research has shown that music, and in particular the singing and playing of music, helps the brain develop much more fully and extensively, especially in our early years. Music makes people brighter, more intelligent, more logical, more rational, and more capable. It improves study habits and test scores. It builds a better sense of self and community. It improves our quality of life. A recent study even suggests that the act of singing improves the immune system. Ancient Greek philosopher and teacher Plato said it best: *"Music gives a soul to the universe, wings to the mind, flight to imagination, and life to everything."*

This study aims to explain the importance of music education on human life especially in social, cultural and educational terms.

**Keywords:** Music, Music Education, Singing, Listening, Composing, Rhythm

### INTRODUCTION

Music is part of our lives whether we realize it or not, whether we actively participate in it or not. Since antiquity, music has occupied a major place in the life of humanity. People have mostly relied upon music to express their grief, joy, heroism, excitement and love (Somakci, 2003, s:131). Music education helps people to be healthier, more social, more positive, self-confident. There are many benefits of music education in human's life. Some benefits of music Education can be examined under different fields such as academic, psychological, neurological, social, personal, and economic.

#### 1. Academic Benefits of Music Education

Music education motivates children to stay in school. According to a study by NAMM and MENC: The National Association for Music Education in America, high school teachers strongly believe that music education promotes the academic success of their students. A key finding of the study, conducted by Harris Interactive<sup>6</sup>, shows that the vast majority of school administrators interviewed believe that music education has a powerful and lasting impact upon their students. In fact, 96 percent of public school principals interviewed believe that participating in music education encourages and motivates students to stay in school longer, and 89 percent agree that music education contributes to higher graduation rates.

Joe Lamond, president and CEO of NAMM states that they have seen "first-hand how music education provides a solid foundation for children to become productive, successful adults, and so have school administrators from across the nation. Music benefits every generation, but it is particularly important to the development of children, providing them with more opportunities for success early in life." ([www.spiritofharmony.org/music.html](http://www.spiritofharmony.org/music.html)).

Another research shows that learning the do-re-mi's can help children excel in ways beyond the basic ABCs<sup>7</sup>

The researcher and director Mary Luehrisen says: "When you look at children ages two to nine, one of the breakthroughs in that area is music's benefit for language development, which is so important at that age"<sup>8</sup> While

<sup>6</sup> <https://www.namm.org/news/press-releases/music-programs-public-high-schools-contribute-high>

<sup>7</sup> Brown, Laura [www.pbs.org/parents/education/music-arts/the-benefits-of-music-education](http://www.pbs.org/parents/education/music-arts/the-benefits-of-music-education)

<sup>8</sup> <http://www.pbs.org/parents/education/music-arts/the-benefits-of-music-education/>

children come into the world ready to decode sounds and words, music education helps enhance those natural abilities.

## 2. Psychological and Neurological Benefits of Music Education

The use of music in healing began in extremely ancient times within Central Asian Turkish Culture, was practiced by people with a variety of duties, and examples of it have survived to this day. It is notable that in music therapy, countries' authentic national music is effective, and different makams and instruments are useful according to the type of psychological disease.

In the Turkish Islamic world, music therapy activities and especially the use of music in hospitals first began in the 9th century, and exhibited great advancements up until the 18th century. The great Turkish Islamic scientists and doctors Zekeriya Er-Razi (854-932), Farabi (870-950) and İbn Sina (980-1037) established scientific principles concerning musical treatment, especially of psychological disorders.

In his book, "Musiki-ul-kebir," Farabi attempted to set forth the relationship between music and physics and astronomy. According to Farabi, the effects of the makams (mods) of Turkish music on the soul were classified as follows:

1. **Rast makam:** brings a person happiness and comfort.
2. **Rehavi makam:** brings a person the idea of eternity.
3. **Kuçek makam:** brings a person sadness and anguish.
4. **Büzürk makam:** brings a person fear.
5. **İsfahan makam:** brings a person the capacity of action, the sense of security.
6. **Neva makam:** brings a person pleasure and contentment.
7. **Uşşak makam:** brings a person the feeling of laughter.
8. **Zirgüle makam:** brings a person sleep.
9. **Saba makam:** brings a person courage and strength.
10. **Buselik makam:** brings a person strength.
11. **Hüseyni makam:** brings a person serenity, ease.
12. **Hicaz makam:** brings a person humility.

The great Islamic thinker and philosopher Ibn Sina (980-1037) wrote that he gained much from Farabi's works, and even learned music from him and applied it in his practice. He said, "One of the best and most effective of treatments is to strengthen the mental and spiritual strengths of the patient, to give him more courage to fight illness, create a loving, pleasant environment for the patient, play the best music for him and surround him with people that he loves."

According to Ibn Sina, "sound" was essential to our existence. Sounds arranged within a musical order, and in a particular fashion, would have a deep reaching effect on one's soul. The effect of sound was enriched by man's art. Ibn Sina also believed that changes of pitch would determine a person's mood. What allows us to appreciate a musical composition is not our sense of hearing, but our sense of perception, which allows us to derive various inspirations from that composition. For this reason, well-attuned, harmonious tones, and the adherence of compositions and rhythms to principles, can have a captivating effect on people. Their methods were later applied by both Selçuk and Ottoman doctors and were cultivated up until the 18th century (Somakcı,P, [www.turkishmusicportal/article](http://www.turkishmusicportal/article))

Research indicates that the brain of a musician, even a young one, works differently than that of a non-musician. Dr. Eric Rasmussen, chair of the Early Childhood Music Department at the Peabody Preparatory of The Johns Hopkins University says that "there is some good neuroscience research that children involved in music have larger growth of neural activity than people not in music training. When you're a musician and you're playing an instrument, you have to be using more of your brain" (Brown,L, [www.thebenefitsofmusiceducation/article](http://www.thebenefitsofmusiceducation/article)).

In fact, a study led by Ellen Winner, professor of psychology at Boston College, and Gottfried Schlaug, professor of neurology at Beth Israel Deaconess Medical Center and Harvard Medical School, found changes in the brain images of children who underwent 15 months of weekly music instruction and practice. The students in the study who received music instruction had improved sound discrimination and fine motor tasks, and brain imaging showed changes to the networks in the brain associated with those abilities, according to the Dana Foundation, a

private philanthropic organization that supports brain research (Brown, L, [www.the benefits of music education/article](http://www.thebenefits-of-music-education.com/article)).

There is an ever-increasing body of study on the benefits of music therapy in people with alzheimers, hemiplegia, dementia, dyslexia, autism and other conditions-- both listening to music and playing music. For some individuals, music involvement could potentially mitigate behavioral patterns that might otherwise be treated as discipline problems or pharmaceutical issues. A music therapist writes: "Music is fun and it's motivating, and people don't realize they are working when they are doing it." ([www.spiritofharmony.org/music.html](http://www.spiritofharmony.org/music.html))

A study by E. Glenn Schellenberg<sup>9</sup> at the University of Toronto at Mississauga, as published in a 2004 issue of Psychological Science, found a small increase in the IQs of six-year-olds who were given weekly voice and piano lessons. Schellenberg provided nine months of piano and voice lessons to a dozen six-year-olds, drama lessons to see if exposure to arts in general versus just music had an effect, to a second group of six-year-olds, and no lessons to a third group. The children's IQs were tested before entering the first grade, then again before entering the second grade. According to the results of the study, surprisingly, the children who were given music lessons over the school year tested on average three IQ points higher than the other groups. The drama group didn't have the same increase in IQ, but did experience increased social behavior benefits not seen in the music-only group.

### 3. Social Benefits of Music Education

Music boasts social benefits for students. Music is a way to make friends. Dimitra Kokotsaki and Susan Hallam completed a study dealing with the perceived benefits of music; in their findings they wrote, "Participating in ensembles was also perceived as an opportunity to socialize with like-minded people, make new friends and meet interesting people, who without the musical engagement they would not have had the opportunity to meet" Every time a student is involved in music, they have the chance to meet new people, and form lasting friendships (Kalivretenos, 2015).

Whether an orchestra, marching band, small ensemble, or rock band, young people involved in music programs develop the skills required to work with others, embracing teamwork and fostering socialization. Engagement in positive activities such as music increases student's resilience to the negative influences they encounter in life, and increases the likelihood they will make positive life choices. Music programs give young people an opportunity to interact closely and consistently with teachers and other musicians, who become mentors and role models over time ([www.spiritofharmony.org/music.html](http://www.spiritofharmony.org/music.html)).

Likewise, in a study by Columbia University, it was revealed that students who participate in the arts are often more cooperative with teachers and peers, have more self-confidence, and are better able to express themselves (Judson, 2013). Through one activity, a student can reap all of these benefits, as well as numerous others. Moreover, the social benefits of music education can continue throughout a student's life in ways one would never suspect. An example of this would be that "students who participate in school band or orchestra have the lowest levels of current and lifelong use of alcohol, tobacco, and illicit drugs among any other group in our society" (Judson, 2013:2). By just participating in a fun school activity, students can change their lives for the better. Music education can help students on their journey to success.

Furthermore, group participation in music activities can assist in the development of leadership skills (Kokotsaki and Hallam, 2007: 13). One participant stated about the benefits of music study that, "I have gained confidence in my leadership skills through conducting the Concert Band" (Kokotsaki and Hallam, 2007: 28). Conducting an ensemble is just one of the many leadership opportunities available to music students.

Music builds bonds between individuals. Feeling between music allows people to exchange the design ideas. being a member of the music group, making the division of labor, to take responsibility, develop feelings such as fulfillment individuals together an open, flexible, understanding that enables them to be tolerant also provides social contact and interaction

William Shakespeare wrote in his play *"The Merchant of Venice"* "The man that hath no music in himself, Nor is not moved with concord of sweet sounds, Is fit for treasons, stratagems and spoils; The motions of his spirit are

<sup>9</sup> Brown, Laura [www.pbs.org/parents/education/music-artsthebenefits-of-music education](http://www.pbs.org/parents/education/music-artsthebenefits-of-music-education)

dull as night And his affections dark as Erebus: Let no such man be trusted. Mark the music.” (*The Merchant of Venice*, 5.1.91-7).

#### 4. Personal Benefits of Music Education

Listening to music and playing music builds self-esteem, self-identity, self-discipline, focus, and creates an important emotional outlet. Music brings beauty into our lives and helps make the world a better place. Music helps the young and old connect with themselves and others by encouraging communication, creativity and cooperation.

Paulo Baldi, drummer for the band CAKE, said<sup>10</sup>, “Marching band in particular is the saviour for people who may or may not be athletic. Marching band is music, memorization, eye-hand coordination and good for your posture. It may hurt to be told your paradiddles suck, but it builds character. It's a team sport. You create friendships that become your buddies for life. High school music is something focused to do. You don't have to be great to belong, and members immediately have something in common.”

#### 5. Economic Benefits of Music Education

Music education helps young people acquire the life skills, traits, and attributes necessary to broaden the horizon of career opportunities in any field of endeavor, not only for careers in music performance or the music industry. The positive effects of music (higher graduation rates, better grades, more positive choices, and relationships with mentors) increases the overall lifetime economic prospects for individuals who have had music education in their lives ([www.spiritofharmony.org/music.html](http://www.spiritofharmony.org/music.html)).

Based on the results of the Spirit of Harmony Foundation’s informal survey on the perspectives of Americans regarding music education programs, our hypothesis is that there is significant benefit for students who have been exposed to music education programming in terms of college admission and career viability. We are currently in the process of designing a study, in concert with existing university partnerships, in order to examine these relationships. If discovered, a significant relationship between these variables would undoubtedly change the way that key stakeholders view the importance of robust music education programs in public schools ([www.spiritofharmony.org/music.html](http://www.spiritofharmony.org/music.html)).

Economic benefits cover production, distribution, consumption in music area. Foreexample making instrument is very important for music production industry, playing instrument is important for music distribution industry and buying an instrument is important for music consumption industry. So music education is very important for the quality music economic industry. (Uçan,1996 :28).Also increases the production costs of uniformity in the workplace to listen to music

#### CONCLUSIONS

Eventually, no one would even remember what music is. Many people do not realize it, but music has a bigger effect on their lives than they may think, and they would definitely care if it was to disappear. Without music, life would never be the same. To keep music alive, students must be educated about it in schools. Students will not only get to experience and enjoy what music has to offer, but will reap the innumerable benefits that come with music. Ancient Greek philosopher and teacher Plato said it best: “Music gives a soul to the universe, wings to the mind, flight to imagination, and life to everything.”

Even though it has been proven that music education benefits students, many people argue that it still should not be required in schools. They state that with the increasing importance placed on standardized testing, there is not enough class time to include music classes (Abril and Gault 68). However, it has been shown that the time students spend in music classes does not hinder their academic success.

So, we understand from all researches that; music education is very important in the people’s live. Therefore, we should make a place music and music education in all stages of our life.

<sup>10</sup> [www.spiritofharmony.org/music.html](http://www.spiritofharmony.org/music.html)



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## The Importance Of Palliating: Implications For Overload In The Informal Caregiver

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### ABSTRACT

Incurable disease affects lines of defence of the family and all feel the effects of suffering, the burden of tasks the caregiver is required to perform. Objective: Assess the impact of family functionality on overload of the informal caregiver.

Descriptive study, cross-cutting focus. Participants: non-probability sampling of 144 caregivers, mainly women (73.6%), with or over 44 years old.

Intense overload affects 54.8% of moderately functional families. The higher the family functionality, the lower the impact of caregiving.

Identifying the type of family APGAR and the specific needs of families are essential strategies to promote the caregiver's well-being.

**Keywords:** Family, Caregivers, cost of illness

### INTRODUCTION

“*Palliative care* focus on prevention and relief of physical, psychological, social and spiritual suffering, well-being improvement and support to patients and their relatives, when pain is related to a severe or incurable disease, at an advanced stage and progressive, Decree-Law No. 52/2012”. In turn, *palliative procedures* “are isolated therapeutic measures without curative purposes, performed by health care professionals without specific training, aimed at reducing, during hospitalization or at-home care, negative consequences of the disease on the overall well-being of the patient, particularly one with an incurable or severe disease, of progressive nature and at an advanced stage, Decree-Law No. 52/2012”.

These palliative procedures carried out at home represent significant and persistent challenges to relatives and can lead to significant physical and psychological effects. The action of providing care to a patient can be felt as a task that may result in imbalance, as well as physical, emotional, social and economic overload, in spite of the desire and satisfaction of performing this role, and affection is vital to ensure family support. This support will depend on the way caregiver and patient deal with their relatives over time (Ribeiro and Sousa, 2010).

Therefore, overload emerges as one of the negative effects of the informal caregiver's role. Nonetheless, at-home care enables greater perception on the patient's legitimate needs, in accordance with the daily life of the people who live and interact in that context, allowing a more humane and individual-centred assistance (Nietsche, Cielo Vedoin, Bertolino, Lima, Terra and Bortoluzzi, 2013).

Considering that the family takes on significant challenges that modern times pose as informal caregiver, as a privileged position of support to the life and mental health of members thereof, the study is aimed at assessing the implications of gender and family functionality in the overload of the informal caregiver.

### THE STUDY

Based on the assumption that Palliative Care strives to help cancer patients and their relatives achieve their highest physical, psychological, social and spiritual potential, its goals are: affirming life and viewing death as a natural process, not anticipating nor postponing it intentionally; providing patients with relief from pain and other uncomfortable symptoms; incorporating psychological, social and spiritual aspects of care, so that patients can come to terms with their own death to the fullest possible extent and in the most constructive manner possible; offering a support system to help patients be as active and creative as possible; offering a support system to help families adapt during the course of the disease and during mourning (Barbosa, 2013).

To sum up, Palliative Care is perceived as the evolution of caregiving inasmuch as, when there is inability to cure and death is apparent, one must acknowledge that when curing goals have been exhausted caring goals must be reinforced (Barbosa, 2012).

Within this framework, the issue of this study lies in the observation that, for informal caregivers of patients under palliative care, end-of-life care is extremely demanding vis-à-vis the abilities and technical skills required to provide that type of care, thus resulting in overload. It is a special health situation, marked by great instability as other transitional stages during life, but characterized by the singularity of being related to the end of life. The death-denying culture is implied and present in most articles, highlighted by trouble coping with loss, speaking openly about the closeness to death with the patient himself/herself, due to the sense of failure and defeat arising therefrom. These facts mirror the dominant culture in modern Western societies and show indirectly how difficult it is to establish a profound relationship with the dying patient. Therefore, there is an urgent need to engage the family in the therapeutical process, making it being taken care of too (Sapeta and Lopes, 2007).

Consequently, the following general research question emerged:

To what extent does gender and family functionality are predictive of an overload of the informal provider of palliative care?

## METHODOLOGY

This research has the features of a descriptive, analytic and correlative study, with a non-probability sampling of 144 informal caregivers, with an average age of 35.42 years ( $SD=14.854$ ), 26.4% being males and 76.6% females, living in mainland Portugal, in urban areas (53.5%), particularly in the centre of the country (77.6%). Most elements of the sample are aged 44 or older and a predominance of single caregivers (54.2%) was observed. This is a medium-qualified sample from an academic point of view composed of high school graduates (41.4%) who work (47.2%) and have a household income corresponding to minimum wage (43.5%) [Table 4].

Information gathering was based on a socio-demographic questionnaire, the Family APGAR Scale (Smilkstein, 1978 qtd. in Azeredo and Matos, 1989) and the Scale of Assessment of the Burden of Informal Caregivers (Sequeira, 2010).

In order to conduct the study, approval was sought and granted by the Ethics Committee of the Higher School of Health of Viseu.

As mentioned above, family functioning was assessed using the Family APGAR Scale, drawn up by Smilkstein, Ashworth and Montano (1978) qtd. in Azeredo and Matos (1989), which measures the existence of family dysfunction and the level thereof through 5 questions, with several answer possibilities (“almost always”, “sometimes” and “almost never”). We consider that a highly functional family has a total score between 6 and 10, a moderately functional family possesses a score between 3 and 6 and a highly dysfunctional family a score between 0 and 2. This scale enables characterization of the components of family function as: Adaptation – refers to the use of intra- and extra-familial resources to solve the problems which jeopardize the balance of the family in times of crisis; Participation/communication – regards sharing of decision making and nurturing responsibilities by family members; Growth/development – encompasses physical, psychological and emotional maturation and self-fulfilment that is achieved by family members through mutual support and guidance; Affection – caring or loving relationship that exists among family members; Resolve/devotion or decision – commitment to devote time to other members of the family for physical and emotional nurturing. It also involves a decision to share wealth and space.

It is worth noting that this scale merely assesses the degree of family satisfaction felt and expressed by the individual.

*The outcome of the psychometric study of the Family APGAR Scale* showed that, on the whole, items were well balanced. The highest figure was observed in item 1 ( $M=1.74$ ) and the lowest in item 5 ( $M=1.50$ ).

The Split-Half coefficient or method indicates values of Cronbach’s alpha slightly lower than the alpha for the scale as a whole (0.746), but reasonable for the first half where a figure of 0.774 was obtained and of 0.236 in the second half, which reflects a weak internal consistency. Nonetheless, the items from the original structure were maintained [Table 1].

Table 1: Statistics and Correlative Values of the Family APGAR Scale

Item No.	Items	Mean	sd	R/item	Alpha w/o item
1	Are you satisfied that you can turn to your family for help when something is troubling you?	1.74	0.508	0.587	0.677
2	Are you satisfied with the way your family talks on things with you?	1.56	0.570	0.706	0.624
3	Do you believe that your family accepts and supports your wishes to take on new activities or change your lifestyle?	1.54	0.583	0.549	0.686
4	Are you satisfied with the way your family expresses affection and responds to your emotion, such as anger, sorrow and love?	1.55	0.593	0.571	0.678
5	Are you satisfied with the way your family and you share time together?	1.50	0.584	0.197	0.811
<b>Split-half coefficient</b>			1st half 0.774 2nd half 0.236		
<b>Overall Cronbach's alpha coefficient</b>			0.746		

Sequeira's version (2010) of the Scale of Assessment of the Burden of Informal Caregivers enables the assessment of the objective and subjective overload of informal caregivers, exploring negative effects it has on the latter in social and personal contexts, as well as in terms of financial status, emotional situation and type of relationship. The original version was composed of 29 questions, but was reduced to 22 questions. Each question is assessed according to a Likert-type scale with five possible answers: "never" (1); "almost never" (2); "sometimes" (3); "often" (4); "almost always" (5). Sequeira (2010) validated the scale for the Portuguese population, reporting a good internal consistency ( $\alpha=0.93$ ). He also stressed that a factor analysis enabled the identification of 4 factors: the first, named "impact of care provision", encompasses items on overload related to provision of direct care, being composed of 11 items (1,2,3,6,8,10,11,12,13,17,22); the second, named "interpersonal relationship", covers items connected to the relationship between the caregiver and the care receiver. These items assess the interpersonal impact arising from the relation during care provision (associated to interaction problems). It is composed of 5 items (4,5,16,18,19); the third, named "expectations about caregiving", is related to the expectations the caregiver has regarding care provision, being essentially focused on means, fears and availability. It is composed of 4 items (7,8,14,15); the fourth factor, named "perceived self-efficacy", pertains to the caregiver's opinion on his/her performance. It is composed of 2 items (20,21).

The scale can have a total score between 22 and 110, where the highest score corresponds to a higher perception of burden. The following thresholds are used: below 46 corresponds to without overload, between 46 and 56 overload is mild and above 56 overload is high.

The outcome of the psychometric study of the Scale for Assessment of the Overload of the Informal Caregiver showed that, in subscales *expectations about care* and *perceived self-efficacy*, alpha values are slightly higher than those of the scale's author (Sequeira, 2010) [Table 2].

Table 2: Cronbach's alpha values for the subscales of caregiver's burden and overall value

Subscales	No. items	Cronbach's alpha			Cronbach's alpha Portuguese version (Sequeira, 2010)
		(Split-half)		Total	
		Part 1	Part 2		
Impact of care provision	11	0.790	0.861	0.906	0.93
Interpersonal Relationship	5	0.587	0.636	0.766	0.83
Expectations about Caregiving	4	0.582	0.514	0.758	0.67
Perceived Self-Efficacy	2	Not applicable		0.882	0.80
Overall Overload	22	0.860	0.826	0.914	0.93

## FINDINGS

The Family APGAR study reveals that family functionality ranged between a minimum value of 2.00 and a maximum value of 10.00, with an average of 7.89;2.001 sd. [Table 3]. Highly functional families stand out (77.1%), followed by moderately functional families (21.5%), and 1.4% of caregivers belong to families with marked dysfunction. [Table 4].

Table 3: Statistics regarding family functionality and gender

Gender	Min	Max	M	SD
Male	5.00	10.00	8.24	1.639
Female	2.00	10.00	7.76	2.107
Total	2.00	10.00	7.89	2.001

The study revealed that statistics regarding the overload of the informal caregiver have a minimum of 11.00 and a maximum of 47.00 for the first factor, *impact of care provision*, which correspond to a mean age of  $24.81 \pm 8.182$  sd. As for the second factor, *interpersonal relationship*, we observe a minimum of 5 points and a maximum of 23.00, with a mean value of  $10.14 \pm 3.802$ . For the third factor, *perceived self-efficacy*, the minimum score was 2.00 and the maximum was 10.00 ( $M=5.35 \pm 2.036$  sd). Lastly, the factor *expectations about caregiving* had a minimum score of 4.00 and maximum score of 19.00 ( $M=11.90 \pm 3.285$  sd). Finally, the overall overload achieved a minimum of 22.00 and a maximum of 86.00 ( $M=52.22 \pm 14.414$  sd) [Table 4]. Analyzing outcomes, we observe that 36.1% of informal caregivers had no overload. Caregivers with intense overload had the same number. It was found that 27.8% had mild overload [Table 5].

Table 4: Statistics regarding overload on the informal caregiver

Overload on the informal caregiver (n=144)	Min	Max	Mean	SD
Impact of care provision	11.00	47.00	24.81	8.182
Interpersonal Relationship	5.00	23.00	10.14	3.802
Perceived Self-efficacy	2.00	10.00	5.35	2.036
Expectations about Caregiving	4.00	19.00	11.90	3.285
Overall overload	22.00	86.00	52.22	14.414

The descriptive analysis of the burden of the relative according to socio-demographic variables showed that intense overload is higher in older men of little education, with low means and moderate family dysfunction [Table 5].



Table 5: Prevalence of overload in the informal caregiver according to socio-demographic variables

Overload	W/o overload		Mild		Intense		Total		Residual			X <sup>2</sup>	p
Variables	n°	%	n°	%	n°	%	n°	%	1	2	3		
<b>Gender</b>													
Male	12	31.6	8	21.1	18	47.4	38	26.4	-.7	1.1	1.7	2.946	0.229
Female	40	37.7	32	30.2	34	32.1	106	73.6	.7	1.1	1.7		
<b>Area of residence</b>													
Rural	24	35.8	18	26.9	25	37.3	67	46.5	-.1	-.2	.3	0.901	0.956
Urban	28	36.4	22	28.6	27	35.1	77	53.5	.1	.2	-.3		
<b>Age</b>													
<= 26 years	20	42.6	15	31.9	12	25.5	47	32.6	1.1	.8	1.8	6.320	0.176
27–43 years	15	31.3	16	33.3	17	35.4	48	33.3	-.9	1.1	-.1		
>= 44 years	17	34.7	9	18.4	23	46.9	49	34.0	-.3	1.8	1.9		
<b>Marital status</b>													
Single	32	41.0	21	26.9	25	48.1	78	54.2	1.3	-.2	1.1	1.960	0.375
In a relationship	20	30.3	19	28.8	27	40.9	66	45.8	1.3	.2	1.1		
<b>Region</b>													
North	5	27.8	7	38.9	6	33.3	18	12.6	-.8	1.2	-.3	4.944	0.293
Centre	40	36.0	27	24.3	44	39.6	111	77.6	-.2	1.5	1.5		
South	7	50.0	5	35.7	2	14.3	14	9.8	1.1	.7	1.8		
<b>Educational qualifications</b>													
Up to lower secondary education	14	34.1	6	14.6	21	51.2	41	29.3	-.4	2.2	2.5	9.946	0.041
Upper secondary education	25	43.1	19	32.8	14	24.1	58	41.4	1.4	1.1	2.4		
Higher education/doctorate	12	29.3	14	34.1	15	36.6	41	29.3	1.1	1.1	.1		
<b>Professional status</b>													
Active	21	30.9	21	30.9	26	38.2	68	47.2	1.2	.8	.5	1.706	0.790
Inactive	26	41.3	16	25.4	21	33.3	63	43.8	1.1	-.6	-.6		
Did not answer	5	38.5	3	23.1	5	38.5	13	9.0	.2	-.4	.2		
<b>Household income</b>													
Minimum wage	20	35.1	16	28.1	21	36.8	57	43.5	.2	.3	.4	0.998	0.910
Two minimum wages	17	34.7	11	22.4	21	42.9	49	37.4	.1	-.9	.7		
<= 3 minimum wages	8	32.0	8	32.0	9	36.0	25	19.1	-.3	.7	-.3		
<b>Family functionality</b>													
Markedly dysfunctional	0	0.0	1	50.0	1	50.0	2	1.4	1.1	.7	.4	7.639	0.136
Moderately functional	7	22.6	7	22.6	17	54.8	31	21.5	1.8	-.7	2.5		
Highly functional	45	40.5	32	28.8	34	30.6	111	77.1	2.0	.5	2.5		

Men reported higher levels of overload in terms of impact of care provision, perceived self-efficacy and expectations about caregiving, and interpersonal relationships. Nonetheless, differences were only significant in interpersonal relationships. [Table 6].

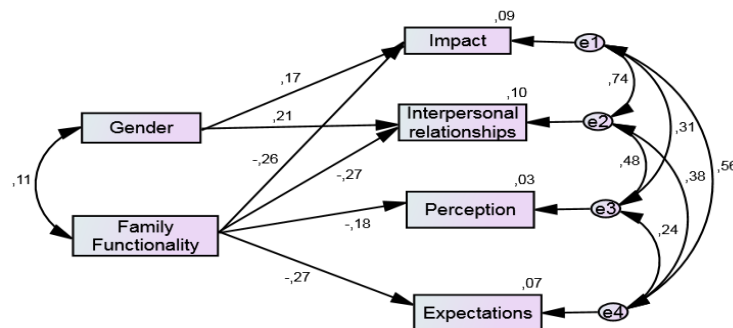
Table 6: Connection between the dimensions of the caregiver's overload and gender

Gender	Male	Female	UMW	p
Caregiver's overload	Mean Rank	Mean Rank		
Impact of care provision	88.29	75.72	1710.000	0.168
<b>Interpersonal Relationship</b>	<b>80.50</b>	<b>69.63</b>	<b>1465.500</b>	<b>0.013</b>
Perceived Self-Efficacy	86.93	67.33	1856.000	0.458
Expectations about Caregiving	76.66	71.01	1887.500	0.564
Overall overload	69.17	73.69	1708.500	0.166

Multiple and multivariate regression between independent variables and the dimensions of overload show, using beta or standardized coefficients, that functionality creates an inverse relationship with factors *impact of care provision* (-0.257), *interpersonal relationship* (-0.270), *perceived self-efficacy* (-0.180) and *expectations about caregiving* (-0.274). This means that the higher the family functionality, the lower the burden of the caregiver in these four factors.

On the other hand, we observe that gender creates a direct connection with factors *impact of care provision* (0.165) and *interpersonal relationship* (0.231). [Table1]. The sex and operational functionality variables explain the variability of the burden of the informal caregiver as follows: 9% impact of care provision, 10% interpersonal relationship, 3% perceived self-efficacy and 7% expectations about caregiving [Figure 1].

Figure 1: Multiple and multivariate regression (between independent variables and the dimensions of overload)



## CONCLUSIONS

Palliative care has implications for the overload of the informal caregiver and is worthy of cautious analysis, being definitely one of the main topics of discussion. From this perspective, one of the topics of discussion relates to the impact of socio-demographic variables of informal caregivers providing palliative care to a patient on the level of perceived overload.

The socio-demographic profile of the informal caregiver shows that it is a female participant (73.6%) with about 25 years who works (47.2%) and receives a minimum wage (43.5%).

Female gender is mentioned in other studies which highlight the woman's role as caregiver in Portuguese-speaking culture, as well as in other cultures. It is important to know her in her role as main caregiver, since it is the woman who has closer contact with the patient and is the strongest link in the health care team (André, Cunha, Martins & Rodrigues, 2014). As for the professional situation, active caregivers were more frequent (47.2%), where 43.5% receive minimum wage. Showing understanding of this profile is appropriate and useful for health care professionals, so that they can plan and perform activities oriented toward the reality of patients and their caregivers in the context of long-term illness, as all support offered, and consequently costs assumed, is almost exclusively the responsibility of families. And the well-being required for good mental and physical health is based on a sense of safety which arises from having material resources to pay for daily expenses, having easy access to health care, in case of need, belonging to a network of active family and social relationships (André, Cunha,

Martins & Rodrigues, 2014). In Portugal, the National Health Plan 2012-2016 states that disease represents an additional expense, both in terms of direct costs (drugs and complementary diagnostic tests) and indirect costs (absence from work and decrease in productivity). Therefore, the Portuguese National Health Plan clarifies that solidarity and social justice mean that the burden of expenses must be distributed fairly according to the ability to contribute, and that families must not become impoverished as a result of the disease and use of health care services. This idea is corroborated by the study conducted by Alves (2011), which identified the need that female caregivers had to stay near the patient, by obtaining unpaid leave or sick leave, thus changing the working situation they had before their relative was struck by a disease.

Stressing the importance of overload on caregivers has a special meaning in order to understand, feel, think and act regarding the coherence in health care provided by nurses and actions of assistance and support to families during transitional periods, which generate suffering, and health disparities. It is worth noting that 36.1% of informal caregivers had intense overload. This outcome responds to the study conducted by Fernandes (2012) in which most caregivers were also under intense overload. We observed that caregivers belonging to more functional families were less subject to overload, which is in line with data. Therefore, family is highlighted, by being mentioned as the most important microstructure to understand representations and practices related to the health, disease and care process (Leite & Vasconcelos, 2006 qtd. in André, 2014).

To sum up, outcomes support that gender and family functionality variables predict overload. Therefore, the essentially factual nature of knowledge is recognized, which arises from a holistic approach to assistance in palliative health care where family receives care, privileging management of the disease and at-home visits. We can state that the patient's home is the most suitable place to assist him/her, as it usually offers a more comfortable and reliable environment. In this context, it is worth mentioning the following principles of palliative care: being active, rehabilitating, promoters of autonomy, and a system of support and assistance to the family, so that it may be able to deal with the disease of its relative and its own mourning (Raposo, 2012). In this regard, it is relevant to highlight the action of the multidisciplinary health care team, promoting family empowerment in order to decrease overload.

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## The Influence Of Nicotine On The Level Of Simple And Choice Reaction Time Of Physical Education Students

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### ABSTRACT

The presented study is aimed at monitoring the effects of nicotine on the level of choice and simple reaction time. Measurement was attended by 15 people (9 men, 6 women) who are students of physical education at the Pedagogical University of Jan Evangelista Purkyně in Usti nad Labem. The test subjects were to perform different motion tasks based on the illumination of correspondingly colored LEDs, which increased demands for coordination of movement. The study results clearly favored Hick's law (Hick, 1952), when with increase in the number of stimuli the value of the choice reaction time increased as well. A prerequisite of this study was that the reaction time to a visual stimulus will be affected by the use of nicotine capsule. The findings suggest that nicotine has an effect on the choice reaction time ( $p = 0,041$ ,  $d = 0,528$ ). But the influence of nicotine on the values of simple response time was not proven ( $p = 0,233$ ,  $d = 0,308$ ). In a number of sports disciplines (eg. Athletics, ball games) may be students' performance in meeting the credit requirements affected by the alleged lifestyle. The results of presented study suggest that nicotine may negatively affect the processing of information from the environment and thus may affect an athletic performance.

**Keywords:** simple reaction time, choice reaction time, visual stimulus, performance

### INTRODUCTION

The level of reaction time plays an important role in human activities related to the decision process. These processes may be affected by substances that either accelerate or slow down the reaction time, which often determines the safety and human health. By these situations we can understand, for example, the decision of the driver when driving a car at a busy intersection. A level of reaction time in sport has an influence on athletic performance. In this regard importance of reaction time was found on athletic performance in combat sports (fencing, karate), ball games, athletics (start reaction of sprinters). According to Boutrel and Kobb (2004) nicotine is one of the most used psychostimulating substances in the world. In a series of studies was found an influence of nicotine on alertness and concentration. Generally speaking, the nicotine has psychostimulating effect on the central nervous system. At low doses, there is an increase in the levels of norepinephrine and dopamine in the brain (Clark, finkel, Rey, & Whalen, 2008). At higher doses, it causes an increased effect of serotonin which has a sedative effect (Silvette, Hoff, Larson, & Haag, 1962). Nicotine induces changes in the body, leading to an increase in heart rate and blood pressure (Narkiewicz, van de Borne, Hausberg, Cooley, & Winniford, 1998; Walker, Collins, Rowell, Godsmith, Moffatt, & Stamford, 1999). Further causing an increase in blood flow in muscles (Usuki, Kanekura, Aradono, & Kanzaki, 1998; Weber, Anlauf, & Muller, 1989) For smokers these reactions to nicotine are not as noticeable, as in the case of non-smokers (Hindmarch, Kerr, & Sherwood, 1990). Results of the various studies, however, when monitoring the effects of nicotine on the physiological changes in the body of the human organism are different. For this reason, it is difficult to objectively compare these studies. The reason for these differences may be a way of administering the nicotine to test subjects (Usuki et al., 1998). It should be noted that the substance is administered either orally (capsule, chewing gum), where it diffuses through the mucosa into the blood stream, or is administered in a spray (or electronic cigarette), where it after inhalation passes through the alveolar membrane and alveoli further into the bloodstream. The process of transferring nicotine to the brain, where it affects the nerve receptors only takes a few seconds. The last option for application of a nicotine substance is a nicotine patch on the body. Each of these forms of nicotine application results in a different effect of this substance in the body (rate of transmission, nicotine concentration, speed of causing an effect). Some

studies report that nicotine has a positive or negative effect on the reaction time or the speed of movement (Levin, McClemon, & Rezvani, 2006; Marzilli, Willhoit, & Guadagnoli, 2006; Meier, 2006; West, 1986). Based on available research carried out on rats, it is possible to believe that the process of transferring information from the environment can be significantly affected by nicotine. Terry et al. (2012) reported that cotinine (nicotine metabolite) may have therapeutic potential for neuropsychiatric disorders due to the improvement of attention and reduce impulsive behavior.

Schmidt and Wrisberg (2008) mention that the reaction time is a suitable indicator for fast and efficient processing of information from person environment. The time required for the realization of physical acts (reaction time) is the sum of reaction time and movement time, which is measured from the start of the movement until its completion (Williams & Walmsley, 2000). Kelso (1995) defines the reaction time as the interval between the occurrence of the stimulus and the first bioelectrical activity of the muscle. Given that processing of information from the external environment occurs in the central nervous system (CNS), we expect some delay in a response to a stimulus. An example might be the reaction of runners who remain standing on the start line, while smoke from a starting pistol already rises from the point of the shot. The level of reaction time is also connected with the processing speed of the information in the CNS. The longest stretch of information processing is at the stage of identifying the initiative, where the content of information from the environment is being analyzed by sensory organs (Schmidt & Wrisberg, 2008). Causes for extension of reaction time can also be linked, for example, with the complexity of motion or with the demands for coordination of the limbs. A statistically significant difference ( $p = 0.001$ ) between the simple reaction time and the reaction time associated with the demands for the complexity of movement found Mickevičienė, Motiejūnaitė, Skurvydas, Darbutas, and Karanauskienė (2008). In some studies, however, there were no significant differences in reaction time, which was associated with the different demands for the complexity of the movement (Shen & Franz, 2005). During complicated movements, reaction time is longer because the organization of the system for the initiating movement requires more time. Since the occurrence of the stimulus, perception, neurotransmission in the CNS, decision making, transmitting impulses to muscles and initiating movement lapses approximately 50-300 ms. The time delay between the transmission of stimulus and the initiation of movement causes a so-called delay in receptor receiving and conduction of nerve fibers.

## METHODICS

In the presented study, the effect of nicotine on the level of simple and choice reaction time was examined on students (9 men, 6 women) of physical education at the Department of Physical Education of Faculty of Education in Usti nad Labem. In all cases the monitored subjects were non-smokers. To verify the effect of nicotine on the reaction time, measurements were carried out over two days, between which there was an interval of seven days rest. Subjects were either before the first or second measurements orally administered with a capsule of Nicotine or menthol (placebo). Each tested person thus ingested either nicotine or menthol during the first measurement and during the second measurement ingested the substance they didn't get during the first measurement. This way, when the test subjects did not know whether they were administered with a nicotine capsule or menthol, it was possible to objectively verify the effect of nicotine on the reaction time level. Measurement was held in April 2015 always in the morning. Air temperature 21 ° C. For the reaction time measurement Fitrosword system was used and SWORD software that separately identifies the reaction time and movement time. This device consists of two highly sensitive obstacles (horizontal, vertical obstacle) and the hit target. Hit target was placed to a height of sternum's xiphoid process for each test subject individually. On this target there are located three different colored LEDs and steel rings for hits. Subjects should based on the illumination of the relevant LED respond with a movement of the arm, which was placed on a horizontal highly sensitive obstacle. In case of simple reactions only one LED generated light. In case of choice reactions three different colored LEDs generated lights that led test subjects to different motion tasks. In case the red LED generated light were tested subjects to respond by raising an arm and hitting the hit target. In case the green LED generated light tested person should hit a vertical obstacle first and consequently hit the target. Yellow LED diod did not lead to a motor response.

In case the red LED lights up when the test subject has to perform only the direct thrust, the LED lights up 20 times in a row. This protocol was the same for all tested subjects. For this reason, it was necessary to ensure that other people did not see the course of the other measurements. In the case of measuring a choice reaction time there was 10 times the occurrence of red LED, 10 times to the occurrence of the green LED and 7 times the occurrence of yellow LED. The time interval for incidence protocol of stimuli was 600 - 2000 ms. After application of the respective capsule (placebo nicotine), subjects were left to rest for 10 minutes. Then simple and choice reaction time were measured. Between measurements of simple and choice reaction time was a 2 minute break to eliminate fatigue. This protocol was used in the second measurement after a one week break as well.

Based on the recommendations of Tanaka, Hasegawa, Kataoka, and Katz (2010) were excluded for a simple reaction time values that exceeded 1000 ms. Excluded were also values below 100 ms, which indicated by Iida,



Miyazaki, & Uchida (2010) and Schneider et al. (2006) were anticipatory. For the choice reaction time were excluded values below 160 ms, which have been marked as anticipatory and values above 2000 ms, which were marked as wrong according to Arcelin, Delignieres, & Brisswalter (1998), Davranche, Audiffren, & Denjean (2006) and Delignières, Brisswalter, & Legros (1994). First 12 correct attempts were always used for statistical analysis. None of the study subjects were identified with a circumstance which would spoil the measurement process. All the tested individuals agreed by signing the informed consent, that they attend the measurement voluntarily, and that found data can be used for research purposes. Through Shapiro Wilks W test, it was found that the data was not normally distributed. For this reason, we utilized medians specified in milliseconds. For statistical data processing was used Wilcoxon test. Statistical significance was set at  $p < 0.05$ . The actual data processing was carried out in software Statistica 6.1

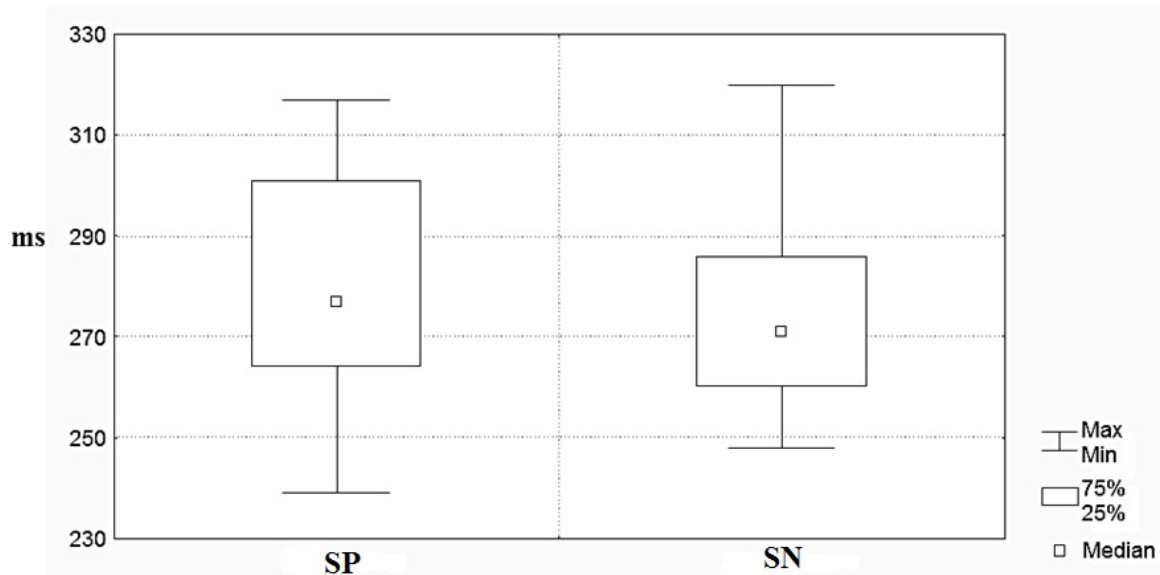
## RESULTS

The study results suggest that for a simple reaction time, there were no significant differences between the values measured when the test subjects were administered with nicotine capsules and between values when capsules with menthol were used. This relationship was neither statistically ( $p = 0.233$ ) nor substantively significant ( $d = 0.308$ ). Unlike for a simple reaction time there is a significant difference in the choice reaction time when the test subjects used nicotine capsules and the level of reaction time when using menthol capsules. There was a statistically significant difference ( $p = 0.041$ ) and a medium effect of substantive significance ( $p = 0.528$ ). Overall characteristic can be seen in Table 1. A more detailed relationship between the monitored variables can be seen in Figures 1 and 2.

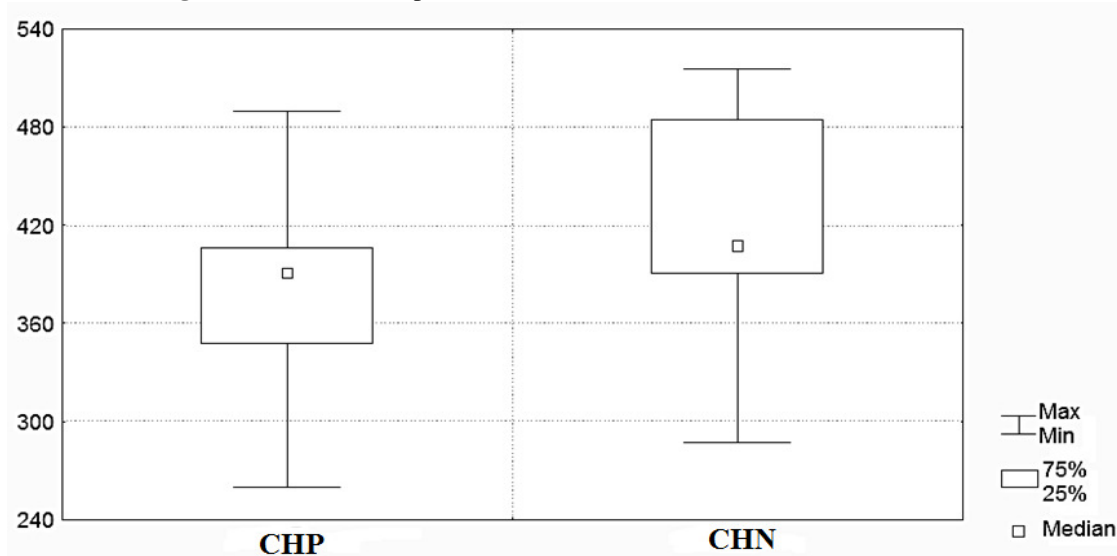
**Table 1:** Basic characteristics of simple and choice reaction time

	Median	Lower Quartil	Upper Quartil	p	ES
SP	277	264	301	0,233	0,308
SN	271	260	286		
CHP	390	347	406	0,041	0,528
CHN	410	390	485		

Key: SP – simple reaction time (placebo), SN – simple reaction time (nicotine), CHP – choice RT (placebo), CHN – choice reaction time (nicotine)



Key: SP – simple reaction time without nicotine, SN – simple reaction time with nicotine

**Figure 2:** Values of simple reaction time with and without the use of nicotine

Key: CHP – choice reaction time without nicotine, CHN – choice reaction time with nicotine

**Figure 3:** Values of choice reaction time with and without the use of nicotine

## DISCUSSION

Martinsen and Sundgot-Borgen (2012) suggest that nicotine may be abused by athletes for positive effect on athletic performance. In some sports, such as endurance disciplines, however, it can act according Alaranta, Alaranta, Patja, Palm Prattala, Mertelin, and Helenius (2006) rather negatively (presence of metabolites in nicotine). However we can find studies in which the effect of nicotine manifested positively. This is particularly the study focused on the monitoring of cognitive function (Levin et al., 2006). Marzilli et al. (2006) even found a positive relationship between nicotine levels and reaction time. The influence of nicotine on anaerobic performance in the Wingate test was shown in a study of Meier (2006). On the other hand, it was found in a study of West (1986) that nicotine has a positive effect on the speed of movement while tapping hand.

Existence of different measuring systems and programs for measuring these variables influences the resulting values, but also this fact limits the possibility to compare the values found in different studies. Yet fundamental patterns resulting from any of these investigations in compliance with established protocol can be drawn. Most studies focused on identifying RT use systems and devices that measure indicators of reaction abilities through the speed with which a button is pressed on the device. Pain and Hibbs (2007), however, point out that during this procedure the actual level of RT may be influenced. Differences in RT according to Pain and Hibbs (2007) in this regard arise because the reaction of the body parts providing fine motor skills is not as fast as the response of body parts intended for gross motor skills. On the basis of these recommendations were tested people during measuring exposed to real conditions that mimicked the movement of arm while driving.

In a number of sports disciplines, in which the performances are determined by the reaction rate to the appropriate stimulus, it may be crucial to reduce the values of reaction time for success. The phenomenon of choice reaction time is closely linked to Hick's law (Hick, 1952; Hyman, 1953). Validity of this law, which expresses that the relationship between the choice reaction time and the logarithm of the number of stimuli is linear, confirmed, for example, Jensen (1998) Gignac and Vernon (2004). The authors found that the level of reaction time is directly proportional to the number of processed stimuli. The cause of longer duration of reaction time for choice reactions, are the demands on the information processing in the CNS. Existence of the Hick's law can also be confirmed in the presented study. With the increase in the number of stimuli increases the reaction time.

It was also expected that the differences will be detected in the choice and simple reaction time when using nicotine capsules and without their use. After measurement, it was found that nicotine has a negative effect on the level of choice reaction time ( $P = 0.041$ ,  $d = 0.528$ ). These findings are in contrast with the findings in the study of Marzilli et al. (2006). In the presented study, there was not any influence of nicotine on simple reaction time ( $p = 0.233$ ,  $d = 0.308$ ). This fact is to be expected due to genetic determination of simple reaction time.

On the other hand, the results confirm the conclusions Contreras-Vidal, Van Den Heuvel, Teulings, and Stelmach (1999), who found that nicotine contained in tobacco has a negative impact on the coordination of movement during visuo-motor performance. On the basis of these results they indicate that nicotine affects brain activity. These findings are in contrast with the results of studies Harrell and Juliano (2012), who reported that smoking nicotine cigarettes caused improve performance in test focused on the speed of visual information processing

## CONCLUSIONS

The results of the study may expand awareness about the impact of nicotine on the speed of information from the environment processing in the CNS. During their studies, students of the department of physical education meet with a number of sports (athletics, ball games, etc.), in which may be their athletic performance affected by the current level of reaction time. Athletic performance can then be related to success or failure in meeting the specific credit requirements. The differences observed in the choice reaction time can provide objective information about the impact of nicotine on the human body. This effect can occur both in everyday human activities, as well as in a sports environment.

It is also possible to use results of the work in the construction of similarly focused projects where the influence of other substances on the speed of processing information from the environment can be assessed. Finally, it may be a guiding stimulus that may be included in the assessment of the abuse of banned substances in sport. Limitations of the study can be seen in a limited number of test persons. At the same time it can show the different results observed for differences in the administration of nicotine. There may be different values of the reaction time when using various kinds of stimulation (tactile, visual, audio).

The research was conducted with the support of SGS UJEP Ústí nad Labem project with the title Effects of different kinds of stimulation on the response of the organism of physically active and inactive population.

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## The Investigation Of Relationship Between Teacher Candidates' Goal Orientations And Epistemological Beliefs

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### ABSTRACT

Individuals' subjective beliefs about knowledge is defined as an epistemology. Epistemological beliefs of individuals has the potential in developing the curriculum. A motivational approach that attempts to explain the purpose of learners' participation in teaching activities is called goal orientation. Learners' goals of participating in teaching activities affect ways of participation to learning activities, participation levels and maintaining level of participation. The purpose of this study is to examine the relation between teacher candidates' goal orientations and the belief that learning depends on effort. In this study, correlation method was used. The achievement goal orientation scale and the scale of belief that learning depends on effort, which is the subscale of the epistemological belief scale. The data are collected from 161 teacher candidates. Pearson Product Moment Correlation and stepwise regression analysis method were used in data analysis. The results of the study showed that there was positive and significant correlation between belief that learning depends on effort, learning orientation and performance-orientation approach. On the other hand, there is no significant correlation between performance-avoidance orientation and belief that learning depends on effort.

**Keywords:** epistemological belief, achievement goal orientation, teacher training

### INTRODUCTION

Epistemological belief implies that what the knowledge is, how it is acquired, its clarity level, constraints, assumptions that the individuals possess about its obtainment criteria (Perry, 1981). From that point, epistemological beliefs can be told as five dimensions which are structure of knowledge, its origin, clarity, rapidness of its obtainment and its control (Schommer, 1990). The faith of the people who have improved epistemological beliefs is high that the knowledge is complicated instead of being simple, changing instead of being constant, the learning is realized in course of time not on a sudden and the ability is not by born, but improves in advance (Deryakulu, 2004).

The scale about acquiring the epistemological belief levels of the university students is developed by Schommer (1990). That scale is adapted to Turkish by Deryakulu and Büyüköztürk (2002). At the end of the study, it is found that the scale has a structure with three factors. These are 'belief that learning depends on effort (BLDE)' 'belief that learning depends on ability (BLDA)' and 'the belief that true is one (BTO)'. It can be stated that BLDE of those factors is a sophisticated epistemological beliefs while the others are naive epistemological beliefs. Effort is internal and at the same time has a controllable by the individual (Gredler, 2001). It is an important factor in active learning. Because students actively participate learning process and spend effort to learn new skills. To apply active learning methods in their classroom teachers must believe learning depends on effort. For that reason, it is required to improve BLDE of teacher candidates.

In that research, the BLDE of teacher candidates is identified as a dependent variable and it is researched that the achievement goal orientations of those candidates has an effect on their BLDE or not.

While learning-oriented students consider the aim of school as the acquisition of skills that will be taught, performance-oriented students think that as obtaining positive judgments about themselves or avoiding negative judgment (Slavin, 2000). In this context, students may be learning-oriented, performance approach and avoidance-oriented according to their achievement goal orientations. While learning-oriented students prefer activities that let them learn something new, performance approach-oriented ones prefer activities that cause to demonstrate their ability to others. The students with performance avoidance orientation refrain from activities that are going to demonstrate that they have low ability (Ormrod, 2006).



Ames & Archer (1988) and Harackiewicz, Barron, Tauer, Carter and Elliot (2000) have found that students with mastery goal orientation more use deep learning strategies (Arslan, Usta and Sahiner, 2012) and attitude toward class than students with performance goal orientations. Mastery goal orientated students prefer challenging tasks. They attribute success to effort. Performance goal orientated students attribute failure to ability (Ames and Archer, 1988; Graham & Golon, 1991; Gredler, 2001; Tuominen-Soini, Salmela-Aro and Niemivirta, 2008). Mastery goal orientation is negative correlated, performance approach and performance avoidance is positive correlated with fear of failure (Bartels and Mugan-Jackson, 2009). The aim of this study is to show that there is a relation between the teacher candidates' BLDEs and their goal orientations.

## METHOD

In this study, correlation method which is one of the descriptive research methods is used. Correlation is a statistical method that explain two or more variables covary or not (Cresswell, 2012).

### Participants

The study is carried out with 161 teacher candidates who studying in the academic year of 2013-2014 in Bulent Ecevit University Ereğli Education Faculty. 31% of the participants are classroom teaching students, 31% are pre-school teaching students, 38% are social studies teaching students.

### Instruments

In the study, two data collection tools were used. These are "Achievement Goal Orientation Scale" and "Epistemological Belief Scale".

#### *Achievement Goal Orientation Scale*

The scale developed by Midgley and others was adapted into Turkish by Cetin and Akin (2007). The scale consists of three factors in total. The first one is learning orientation factor. This factor consists of 6 items and its reliability is found as 0.77. The second factor is the performance approach factor. This factor also consists of 6 items and its reliability is found as 0.79. The third factor of this scale is performance avoidance factor. This factor consists of 5 items and its reliability is found as 0.78. In this study, coefficient reliability for the scale factors is calculated to the learning orientation 0.82, to performance approach 0.83, to performance avoidance 0.79.

#### *Scale of Belief that Learning Depends on Effort*

Scale used in this study was subscale of epistemological belief scale developed by Schommer and adapted to Turkish by Deryakulu and Büyüköztürk (2002). As a result of pilot study, it is understood that the scale have three-factor structure. These factors are "belief that learning depends on effort," "belief that true is one" and "belief that learning depends on ability". In this study, "belief that learning depends on effort" subscale located on the epistemological beliefs scale was used. This factor consists of 18 items and its reliability is found as 0.78. This factor coefficient reliability in the study is calculated as 0.79.

## ANALYSIS

In the study, while Pearson-product moment correlation was used to reveal the relationship between the factors, stepwise regression analysis was used in order to reveal the predictive power of independent variables on dependent variables.

## FINDINGS

In this study, primarily the relationship between teacher candidate's beliefs that learning depends on effort (BLDE) and achievement goal orientations is examined. The findings are presented in table 1.

**Table 1.** Results of Correlation Analysis

	Learning	Per.App.	Per.Av.	Effort
Learning	1,00			
Per.Ap.	0,357**	1,00		
Per.Av.	-0,010	0,308**	1,00	
Effort	0,541**	0,341**	-0,003	1,000

\*\* p < 0,01

When Table 1 is examined, it is observed that the strongest correlation occurred between the scores of BLDE and the scores of learning orientation. There is a positive, moderate and significant correlation ( $r = 0.541$ ;  $p < 0.01$ ) between these two variables. Accordingly, it is observed that when teacher candidates' learning orientation scores increases, BLDE scores also moderately increase.

It is seen that there is a moderate, positive, and significant correlation ( $r = 0.341$ ;  $p < 0.01$ ) between teacher candidates' BLDE scores and performance approach orientation scores. Accordingly, it is observed that when teacher candidates' performance approach orientation scores increases, BLDE scores also moderately increase. It is identified only a relationship isn't significant between teacher candidates' BLDE scores and performance avoidance orientation scores ( $r = -0.003$ ,  $p > 0.01$ ).

When the relationship between the factors that constitute the achievement of orientation is examined, it is seen that teacher candidates' performance approach orientation. Scores have positive, moderate and significant relationship both with learning orientation scores ( $r = 0.357$ ;  $p < 0.01$ ) and performance avoidance orientation scores ( $r = 0.308$ ;  $p < 0.01$ ). There is no significant relationship between learning orientation scores and performance avoidance orientation scores ( $r = -0.010$ ,  $p > 0.01$ ).

In order to reveal the impact of teacher candidates' goal orientations on BLDE scores, stepwise regression analysis was used. In the analysis, achievement goal orientation variables were identified as a independent variable, BLDE variable was identified as a dependent variable. The findings are presented in table 2.

Table 2. Regression Table						
Step	Predictors	R	R <sup>2</sup>	R Square Change	F	P
1	Learning	0.541	0.293	0.293	65,532	0,000*
2	Learning, Per.Approach	0.568	0.314	0.021	37,313	0,000*

When Table 2 is examined, it is seen that the most powerful predictor of teacher candidates' BLDE scores is learning orientation. Teacher candidates' learning orientation scores predict 29% of BLDE scores. The other significant predictor of teacher candidates' BLDE scores is performance approach orientation. Teacher candidates' learning orientation scores and performance approach orientation scores together predict 31% of BLDE scores. Accordingly, it can be said that learning orientation and performance approach orientation orientations have a significant effect on teacher candidates' BLDE scores.

## CONCLUSION

When the research findings are examined, the highest relation of the teacher candidates' BLDE scores occurs with learning orientation. Similarly, Ames & Archer (1988) and Tuominen-Soini, Salmela-Aro and Niemivirta (2008) have found moderate correlation between effort as a cause of success and mastery goal orientation. In addition, while the moderate, positive and significant relation between teacher candidates' BLDE scores and performance approach orientation is detected, very weak and insignificant relationship is found with performance avoidance orientation. When the results of study's regression analysis are examined, it is obtained that there are two predictors of teacher candidates' BLDE scores. While the most powerful predictor is learning orientation, the other predictive variable is performance approach. It implies, if teacher candidates set learning and performance goals, their BLDE increase and they use active teaching methods when they become teachers.

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## The Level Of Directivity Of The Parenting Style

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### ABSTRACT

The aim of this study is to provide theoretical and methodological insights into the level of directivity of the parenting style. The paper is focused on families with children who attend either Montessori or traditional classes at primary school and compares any potential differences in the level of directivity of the parenting style. The questionnaire, created by the authors, was used to divide directivity of the parenting styles into three broad areas: (1) autocratic, (2) laissez-faire, and (3) democratic. The differences by gender, age, education and the amount of time parents spend with children were also studied.

**Keywords:** parenting style; traditional and alternative education; Montessori education; children; parents

### INTRODUCTION

Theories that are the background of the results on how parental values, skills, goals and attitudes are passed from one generation to the next have been a part of philosophical debates since the seventeenth century (Spera, 2005; Van Ijzendoorn, 1992). For instance, John Locke (1689) posited that children were born as a blank slate or with a “tabula rasa” through which parents and society could easily spread their values and beliefs to their children. On the other hand, Jean Jacques Rousseau (1762) believed that children were “innately good” and that it is up to parents and the society to promote and teach the values inherent in children.

Education is currently primarily understood and researched in the context of the family, that is, when parents raise their children. Parental education is being realized through a wide range of parenting styles that are psychological constructs representing strategies that parents use in their child rearing. They cover the initial sum of the prohibitions, commands, attitudes and ideas about the world, which the child encounters in their life and therefore are extremely important. Children are further educated by teachers in kindergarten, primary school, by after-school club educators, teachers of various interest groups and recreational activities, professors and teachers at secondary schools and universities. The most important is certainly the early education in early childhood when habits and behavior patterns are instilled in children.

Parenting styles are often divided into different categories by researchers. Some of the distribution is less extensive, divided into two or three categories, others list multiple categories. For example, Don Bosco states that “preschool education always includes two systems: a preventive one and a repressive one” (Ferro, 2004), Čáp and Mareš (2007) expanded parenting styles into nine categories.

Lewin and colleagues (Lewin, Lippitt, & White, 1939) described three types of parenting (leadership) styles: autocratic, laissez-faire and democratic. Their studies were based on experiments focused on how leaders’ behaviors affect adult groups (e.g. Driskell & Salas, 2005; Hogan & Kaiser, 2005). The autocratic (i.e. dominant) parenting style is characterized by commands, threats, (strict) punishment, not respecting the wishes and needs of children, providing little room for independence and initiative of the child. Parents with laissez-faire (i.e., liberal, weak) parenting style don’t make demands or don’t require their strict fulfillment. Parents usually don’t constitute the limits and boundaries and provide little help in setting their own goals. The democratic (socially integrative) style supports the initiative of the child. Parents are open to discussions and debates with the child, give more suggestions, ideas and open space for independent decision-making and express understanding and encourage the independence of the children.

A growing body of research has occurred in the field of cultural differences in parenting (leadership) styles and their effects on teens’ self-esteem, perceived parental relationship satisfaction, and self-satisfaction (Chang, 2007), emotional intelligence (Alegre, 2011), children’s school achievements (Kordi, 2010), academic procrastination (Zakeri, Esfahani & Razmjooe, 2013), family relationships and happiness (Paterson et al., 2012). Ferguson, Hagaman, Grice, and Peng (2006) examined two large samples of data from a questionnaire administered to college students in a Midwestern university that partially supported the Lewin three-factor formulation for leadership styles and that, interestingly, also revealed an independent individualism factor described by Triandis,

McCusker, and Hui (1990).

### RESEARCH METHODOLOGY

The presented article measures parents' perceived parenting values that correspond to Lewin's parenting styles: autocratic, laissez-faire and democratic. A large number of instruments have featured prominently. The definitions of the parenting styles are often taken from Baumrind's Parental Authority Questionnaire (1968), Parental Authority Questionnaire (Buri, 1991), Measure of Parental Styles (Parker et al., 1997), Permissive, Authoritarian, and Authoritative Parental Authority Prototypes (Baumrind, 1971).

The basic research purpose was to determine the differences between parenting (leadership) styles of parents whose children attended traditional and Montessori classes in a medium-sized primary school from the region of Zlín in the Czech Republic. We also investigated what parenting style prevails in families (regardless of the traditional or alternative education chosen for children). Furthermore, we wondered whether the parenting style varies according to the age of parents and their achieved level of education. The aim of the study was also to find out how much time parents spend preparing children for school and how much leisure time they spend together. Due to the nature of the research foundation, a quantitative approach using descriptive and inductive statistics was used.

### Measurement

The administrated self-report questionnaire developed by the authors consisted of 15 questions in which the four items of the questionnaire have an informational character detecting sociodemographic variables such as gender, age, the level of education and type of the selected school for the children (i.e., traditional and primary school Montessori classes). The scale consists of 9 specific items asking the respondents to rate their parenting behavior on a scale of one (strongly disagree) to seven (strongly agree), with three items for each subscale: autocratic (i.e. "Do you think your child needs constant control?"); laissez-faire (i.e. "Do you keep track of how your child spends all his or her leisure time?") and democratic (i.e. "Do you give your child the opportunity to propose a solution to the problem?"). Higher scores for each subscale represented a higher endorsement of the measured parenting style, except for the laissez-faire parenting style with reversed items. These items were recoded during the data processing to maintain a uniform direction of parenting styles and these styles could be compared.

The remaining two items of the questionnaire discover how much time parents spend preparing children for school and how much leisure time they spend together. The answers ranged between a) less than an hour; b) 1-2 hours; c) within 3 hours; or d) 3 hours and more.

### Sample

The base sample consisted of  $n = 418$  parents whose children attended traditional and Montessori classes in a medium-sized primary school from the region of Zlín in the Czech Republic. All of the parents were invited to collaborate on research through printed questionnaires. An exhaustive selection of respondents was carried out and the final research sample consisted of  $n = 131$  parents. The return rate of questionnaires was 31% which symbolizes the average level of return (Mertens, 2015).

Out of that number, 16% were male and 15% were female with the age range between 29 and 52 years. The average age of parents was 38.5 years. The age composition of the research sample is illustrated in Table 1.

Table 1. Age subsamples.

Age groups	N	%
29-35	28	21
36-40	63	48
41-52	37	28
Missing	3	2
In total	131	100

The largest number of parents (44%) completed secondary school education and 34% of the parents were university graduates. 77% of the parents selected traditional classes for their children while 23% preferred Montessori classes.

### RESULTS

The Kolmogorov-Smirnov test, the Shapiro-Wilk test and the Lilliefors test of normality were used for testing the normal distribution of data. A nonparametric Mann-Whitney U test and Kruskal-Wallis one-way analysis of variance and Chi-square test for independence were used to decide whether there are statistically significant differences between the groups. The hypotheses were tested at a level of  $\alpha = .05$ . Possible confounding results due to multiple variables were corrected by the Bonferroni method. Calculations were performed using IBM SPSS 22.



The descriptive statistics showed that respondents (parents) scored the highest score of the questionnaire (see Table 2 and Fig. 1) on the democratic parenting ( $\bar{x} = 5.03$ ;  $SD = 1.12$ ) style. The autocratic parenting style ( $\bar{x} = 3.32$ ;  $SD = 1.09$ ) was the second used parenting style followed by the laissez-faire parenting style ( $\bar{x} = 2.15$ ;  $SD = .89$ ).

Table 2. The descriptive statistics of parenting styles.

Parenting style	Mean	Median	Modus	Min.	Max.	SD
Democratic	5.03	5	5	1.67	7	1.12
Autocratic	3.32	3.33	4	1	6.33	1.09
Laissez-faire	2.15	2	1.67	1	6	0.89

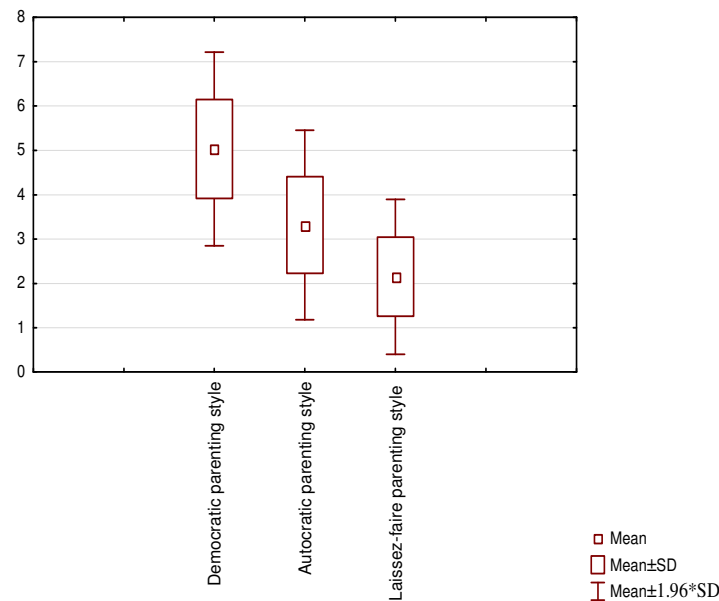


Fig. 1 The average scores on parenting style

Whether the achieved average results of the parenting styles differ significantly could be indicated based on the results of the analysis of the Friedman test. The testing indicated that there are significant differences in the achieved level of autocratic parenting style ( $Md = 3.33$ ), laissez-faire parenting style ( $Md = 2$ ) and democratic parenting style ( $Md = 5$ ). The calculation of the comparison of the individual samples (groups) by the non-parametric Wilcoxon test for two dependent samples to include the Bonferroni correction (in this case  $p = .05 / 3 = .02$ ) produced the following results: the medians of all groups were significantly different ( $p = .00$ ,  $p < .02$ ).

Regarding the relationship between types of the parenting style and the influence of the independent variables in the form of the preference of the chosen type of education for children (i.e. traditional or alternative education), there were two significant differences. Attainment levels and the democratic and autocratic parenting style vary according to the type of education chosen for children. Parents with a prevailing democratic parenting style often prefer a Montessori education for their children and on the other hand parents with a prevailing autocratic parenting style often prefer traditional education. This result confirms the assertion that alternative education is closer to parents who respect the needs and opinions of the child.

The preference of parenting style is not influenced by gender, age, or parents' education. The only exception is the democratic parenting style, which varies according to the educational attainment of their parents. Parents with a higher education achieve higher levels of the democratic parenting style. These findings are particularly interesting since they reveal the influence of specific factors on the preference of child-rearing. However, neither age nor gender or a certain level of education of parents influence their preference of the parenting style.

Parents typically devote less than an hour a day of the time to help children to prepare for school. However, parents have transferred a lot of their own leisure time to time spent being with the children. In both cases, women spend more time with children during the day. However, this result is largely influenced by the predominance of women

in the survey sample, which may affect the detected frequency of nominal variables<sup>11</sup> listed in Fig. 2 and 3. The interpretation of these results is descriptive for the level and should not lead to any general conclusions.

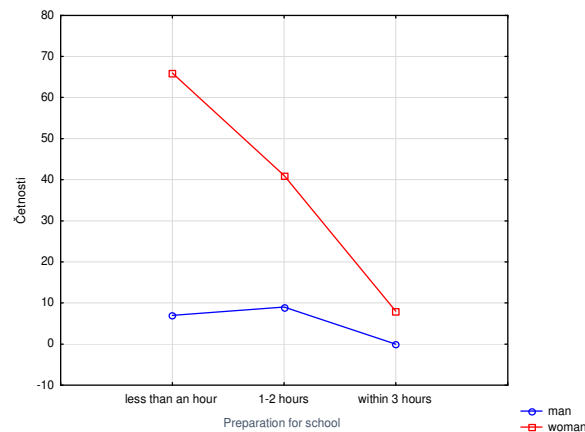


Fig. 2. The time to prepare for school by gender

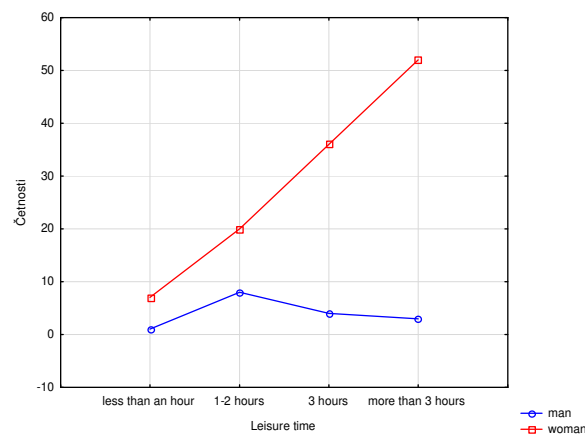


Fig. 3. The leisure time by gender

## SUMMARY AND DISCUSSION

The main aim of the study was to determine the achieved level of the three most common parenting styles (Lewin, Lippitt, & White, 1939) among parents ( $n = 131$ ) whose children attended traditional and alternative (Montessori) classes in a medium-sized primary school from the region of Zlín in the Czech Republic. The self-report questionnaire developed by the authors was used and the data was subjected to descriptive and bivariate statistics.

The highest score was achieved by the democratic parenting style ( $\bar{x} = 5.03$ ;  $SD = 1.12$ ) followed by the autocratic parenting style ( $\bar{x} = 3.32$ ;  $SD = 1.09$ ) and the laissez-faire parenting style ( $\bar{x} = 2.15$ ;  $SD = .89$ ). Regarding the relationship between the types of the parenting style and the influence of the independent variables such as the type of education for children (i.e. traditional or alternative education), the age, gender and the level of the education achieved by parents was very low. Significant differences were found only in relation to the type of education chosen by parents for their children and in the level of the democratic parenting style influenced by the educational attainment of the parents. We assumed that those parents who have their children in alternative classes will gravitate towards the democratic parenting style. This assumption was confirmed. Linked to this is the finding that the autocratic parenting style is more popular with parents who prefer a traditional education for their children. The limitation of the study is its focus on the Zlín region in the Czech Republic, whose results may materially differ from the remaining regions of the Czech Republic. For this reason, the results can't cover the entire population of parents.

An interesting area for future research is the intergenerational transmission of the parenting style and its influences on parenting attitudes, values and behaviour of the next generation in which the genetic and contextual continuity

<sup>11</sup> In the case of testing hypotheses about the influence of the variables (type of education for children, age, gender and the level of the education achieved by parents) on parenting styles was worked with metric data. Different frequencies of each compared group does not influence the results and can be widely interpreted.

would be taken into account as well as grand-parenting. Another point of view can be obtained in a methodologically adequate way. Most promising are studies using observational measures for parenting style with longitudinal projects such as the one that Grossmann and his colleague used (1988). Such a design would investigate two or three generations of parents with a comparable, valid parenting measurement. Furthermore, in the traditional research program using quite global questionnaires, the sample size should be taken into account since the size restricts the generalizability of the results. Lastly, longitudinal intervention experiments and a detailed description of individual cases may shed more light on the causal mechanism of parents influencing their children's parenting abilities.

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## The Mobbing Behavior In Secondary Schools And Differences By Province

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### ABSTRACT

The aim of present study is to investigate whether or not mobbing experienced in secondary education institutions in different regions of Turkey differ from each other. This study employed a survey research model. The sample of the study consists of 415 teachers. “Negative Acts Questionnaire” (NAQ) was used as a data collection tool. This scale was developed by Einarsen and Raknes (1997) and adapted to Turkish by Aydın and Öcel (2009). As a result, mobbing that teachers experience in secondary education schools in the city of Adana is the highest compared to other cities. Teachers working in schools in Balıkesir and Kütahya experience mobbing the least. The most common type of mobbing was found to be “Hiding from you the information that can improve your performance” and the least common type of mobbing was found to be “Implying that you need to leave your job”. There is no statistically significant difference between age groups and gender.

**Keywords:** Mobbing, school management, secondary schools

### INTRODUCTION

Mobbing is a type of negative behavior that take place between individuals and that affect individuals negativeley. Deriding someone on and on, interrupting someone, implying that someone is a liar, and spreading rumors about someone are some of the examples of this type of behavior (Davenport, Schwartz ve Elliott 2003). Leymann (1984, cited in Davenport et al, 2003: pp.4-5) defines mobbing as “psychological terror” or “psycho-terror” that takes place as a result of systematic hostile and unethical treatment of others by someone or some people. The victim of mobbing is influenced by being appalled and isolated (Leymann & Gustafsson, 1996). As a result of mobbing to which he or she was exposed to, the victim loses his or her self confidence. Generally, the ultimate aim here is to cause the victim to leave his or her workplace (Duffy ve Sperry, 2007).

Early research on the issue carried out in Europe and the United States showed that such behavior is an important bloodletting for institutions. Early studies carried out by Leymann (1996: 169) in Sweden found that 3,5% of the working population were exposed to mobbing. In addition to this, it was estimated that the possibility for any employee to be exposed to mobbing in his or her lifetime is 25% (Leymann, 1990: 125). On the other hand, studies carried out in the United States showed that 82% of the employees who were exposed to mobbing either had to leave their jobs or lost their jobs. Of this, 34% left their jobs due to some health problems that they experienced as a result of mobbing, and 44% left their jobs either on their own initiative or on the decision of the administrative boards after the performance assessment reports of the institutions.

Research on mobbing has shown that those who are exposed to mobbing experience some biological and psychological health problems. According to Einarsen and Raknes (1997), 23% of the employees who are exposed to mobbing in workplaces experience psychological disorders. According to Davenport et al. (2003: 70), if the experienced mobbing affects the victim severely, this may cause the victim to develop some health problems such as depression and heart attack, and this may even drive the victim to commit suicide.

Research has shown that mobbing can also be seen in educational institutions. Ertürk (2013) carried out a study in the schools of primary education in Turkey and found that 4.1% of the teachers and administrators are exposed to mobbing on a daily basis. O’Conner (2004:2-3) carried out a study in educational institutions and found that teachers are exposed to the mobbing of their school administrators, inspectors, their colleagues, their students and the parents of students. In the UK, Dick and Wagner (2001:255) carried out a study on job stress and mobbing that teachers experience. They found that feeling pain from fatigue and especially from physical symptoms that arise from mobbing causes more teacher absenteeism. Yazıcı (2009: 41) carried out a study with teachers in Turkey and he obtained similar findings. This study found that teachers who are exposed to mobbing develop stress and burnout syndrome.

Research conducted in different sectors in Turkey show that mobbing is present in all sectors. Demirçivi (2008) in tourism sector; Dilman (2007) and Aytaç, Bayram & Bilgel (2005) in health sector; Cemaloğlu & Ertürk (2007), Cemaloğlu & Ertürk (2008) and Tokel (2005) in education sector; Erbaş (2004) and Işık (2007) in textile sector; Yavuz (2007) and Gökçe & Oğuz (2009) in higher education; Kocaoğlu (2007) and Aytaç et all (2005) in security sector; Iyem (2007) and Cengiz (2009) in professional football clubs; Kocaoğlu (2007) in postal operations; Çakır

(2006) in industrial enterprises; Kök (2006) in public and private banking sector; and Bahçe (2007) in public and private sector are examples of the studies conducted in different sectors.

Mobbing also differs according to the cultures of societies or institutions. For the customs and traditions of the culture of an individual has an important role in the perception of a behavior as mobbing (Rayner, Sheehan & Barker, 1999). Different individuals feel differently in the same situation. Therefore, mobbing to be exercised may differ according to different societies and cultures. This study investigates whether or not mobbing experienced in secondary education institutions in different regions of Turkey differ from each other. To this end, the present study seeks to find answers to the following questions:

1. How frequently do teachers experience mobbing in different cities?
2. Is there a statistically significant difference among the frequencies of mobbing experienced by teachers in different cities?
3. Is there a statistically significant difference between the frequencies of mobbing in terms of the sex of teachers?
4. Is there a statistically significant difference between the frequencies of mobbing in terms of the age of teachers?

### THE STUDY

This study employed a survey research model. Survey research is carried out with a large group, confers on the views and attitudes of the participants, and describes the events in this way (Tanrıöğen, 2011: 59).

The general population of the study consists of the teachers and administrators who are presently working in the secondary education schools in the seven geographical regions of Turkey. This population consists of 2,734 schools and 95,655 teachers and administrators (MEB, 2014: 118). This study employed a sub-population method.. In this method, one city was selected randomly from each region. According to Balcı (2001: 95), in this method every member of the population has a chance to be involved in the sample. In the selected schools, a questionnaire was administered to those teachers who volunteered to take part in the study.

In order to determine the sample size, population size and sampling error were taken into consideration. The sample size for populations up to 100,000 is 383 (with a sampling error of 0,05 and a confidence level of  $\alpha=0,05$ ) (Şahin, 2011: 127). Therefore, considering the 95,655 teachers in the general population, a sample of 383 teachers was considered to be enough. Considering the return rate and possible data loss, the sample size was increased by 20%. In this way, the sample size was determined to be 459 (383+76). To collect the data, a total of 460 questionnaires were distributed. Of the 460 questionnaires, 432 returned (93.9%). Of the 432, 415 were found to be suitable for analysis. According to this, the return rate is 90%.

Of the participating teachers, 54% were male and 46% were female. 51% of the teachers were in the below-33 age group, 39% in the 34-45 age group and 10% in the 46-and-above age group. 86% of the teachers have bachelor's degree. In terms of career steps, 5% were teacher candidates, 76% teachers, and 19% senior teachers.

In order to find out about the frequencies of mobbing to which teachers are exposed, the "Negative Acts Questionnaire" (NAQ) was used as a data collection tool. This scale was developed by Einarsen and Raknes (1997), revised by Einarsen and Hoel (2001) (22 items), and adapted to Turkish by Aydın and Öcel (2009). During this adaptation work, the Cronbach's Alpha reliability coefficient of the scale was found to be .88 and the test-retest reliability coefficient to be .80. Furthermore, the factor loadings that accumulated under a single factor were found to be between 0,31 and 0,76, and the observed variance was found to be 39% (Aydın & Öcel, 2009: 99).

Factorial analysis showed that the items in the scale were collected in one factor but that two items had high factor loadings. These two items were excluded from the scale. It was also found that the factor loadings of the remaining items were between 0,55 and 0,74; that the KMO value was .69; and that the variance value was 64%. In the reliability analysis of the scale, the Cronbach's Alpha reliability coefficient was found to be .94.

SPSS v13.0 was used in the processing of the data. Frequency, percentage, t-test and ANOVA were used to analyse the data. The findings were tested at  $p<.05$  level.



## FINDINGS

This part of the study presents the findings and interpretations. Table 1 below shows the distribution of the frequencies of mobbing that the participants experienced in different cities.

Table 1. The distribution of the frequencies of mobbing that the participants experienced in different cities.

Item No	Behaviors	Total		Balıkesir	Kütahya	Adana	Ankara	Samsun	Gaziantep	Bingöl
1	Hiding from you the information that will improve your performance	$\bar{x}$	1,96	1,72	1,80	1,93	2,08	1,80	2,22	2,19
		S	,99	0,68	0,87	0,95	1,11	0,79	1,23	1,10
2	Overloading you more work than you can manage	$\bar{x}$	1,80	1,74	1,65	2,01	1,89	1,58	1,85	1,80
		S	,87	0,94	0,63	1,09	0,97	0,77	0,84	0,83
3	Assigning you simpler duties that are far below your skills	$\bar{x}$	1,63	1,48	1,44	1,78	1,70	1,50	1,75	1,72
		S	,90	0,79	0,70	1,13	1,01	0,51	1,01	0,90
4	Requiring you to finish illogical, meaningless and impossible jobs with impossible completion dates	$\bar{x}$	1,51	1,30	1,35	1,66	1,58	1,42	1,66	1,58
		S	,80	0,52	0,52	1,10	0,85	0,56	0,92	0,80
5	Ignoring your ideas and views	$\bar{x}$	1,62	1,40	1,41	1,73	1,61	1,66	1,86	1,78
		S	,79	0,55	0,52	0,90	0,93	0,76	0,97	0,79
6	Excessive control over your work	$\bar{x}$	1,49	1,30	1,36	1,61	1,51	1,44	1,63	1,58
		S	,75	0,61	0,55	0,97	0,77	0,65	0,93	0,67
7	Reminding you of your wrongs over and over again	$\bar{x}$	1,33	1,35	1,23	1,36	1,40	1,19	1,46	1,34
		S	,67	0,84	0,48	0,61	0,76	0,47	0,91	0,69
8	Denigrating or ridiculing you regarding your work	$\bar{x}$	1,54	1,36	1,43	1,69	1,53	1,47	1,68	1,58
		S	,72	0,75	0,58	0,88	0,72	0,65	0,79	0,67
9	Spreading rumours about you	$\bar{x}$	1,55	1,30	1,44	1,79	1,56	1,40	1,55	1,68
		S	,76	0,47	0,58	0,99	0,78	0,55	0,82	0,84
10	Speaking insultingly and abusively about you	$\bar{x}$	1,40	1,37	1,27	1,50	1,44	1,31	1,52	1,38
		S	,66	0,63	0,54	0,84	0,66	0,47	0,81	0,60
11	Disregarding or excluding you	$\bar{x}$	1,57	1,55	1,40	1,69	1,50	1,44	1,81	1,72
		S	,77	0,86	0,61	0,88	0,68	0,65	0,83	0,88
12	Implying that you need to leave your job (resign)	$\bar{x}$	1,21	1,20	1,13	1,27	1,16	1,25	1,34	1,22
		S	,56	0,70	0,34	0,71	0,41	0,44	0,80	0,51
13	Being frightened through menacing behaviors	$\bar{x}$	1,35	1,30	1,31	1,48	1,26	1,41	1,40	1,34
		S	,63	0,72	0,51	0,92	0,54	0,50	0,64	0,48
14	Insistent criticism of your work and efforts	$\bar{x}$	1,49	1,30	1,38	1,58	1,53	1,36	1,56	1,70
		S	,79	0,72	0,66	0,90	0,72	0,54	0,81	1,05
15	Ignoring you or treating you in a hostile way when you approach them in a friendly way	$\bar{x}$	1,36	1,30	1,18	1,43	1,41	1,27	1,52	1,46
		S	,73	0,66	0,49	0,90	0,72	0,51	0,86	0,91
16	Making untrue claims about you	$\bar{x}$	1,28	1,20	1,23	1,40	1,27	1,22	1,34	1,25
		S	,57	0,56	0,52	0,76	0,51	0,42	0,69	0,44
17	Becoming an object of excessive derision	$\bar{x}$	1,34	1,30	1,23	1,41	1,35	1,25	1,50	1,34
		S	,64	0,65	0,52	0,76	0,59	0,44	0,89	0,56
18	Shouting at you or becoming the target of anger in cases when you are not to be blamed	$\bar{x}$	1,70	1,56	1,53	1,80	1,63	1,75	1,84	1,90
		S	,87	0,64	0,75	1,00	0,78	0,81	1,02	1,01
19	Pressing you for not demanding something that you deserve	$\bar{x}$	1,42	1,35	1,29	1,58	1,47	1,31	1,50	1,41
		S	,74	0,77	0,60	0,93	0,76	0,47	0,76	0,75
20	Being exposed to practical jokes	$\bar{x}$	1,53	1,56	1,51	1,34	1,50	1,88	1,34	1,82
		S	,78	0,94	0,79	0,53	0,70	1,13	0,52	0,85
	Total	$\bar{x}$	1,49	1,35	1,35	1,63	1,50	1,42	1,59	1,55
		S	,52	0,33	0,34	0,73	0,55	0,35	0,60	0,49

When the data in Table 1 are examined closely, one can see that the behavior that has the highest mean is “Hiding from you the information that will improve your performance” ( $\bar{x}=1,96$ ). This behavior was most experienced by

teachers in Gaziantep ( $x=2,22$ ), Bingöl ( $x=2,19$ ) and Ankara ( $x=2,08$ ). The behavior that has the lowest mean is “Implying that you need to leave your job (resign)” ( $x=1,21$ ).

In terms of different cities, the frequencies of mobbing was found to be as follows: Adana ( $x=1,63$ ), Gaziantep ( $x=1,59$ ), Bingöl ( $x=1,55$ ), Ankara ( $x=1,50$ ), Samsun ( $x=1,42$ ), Balıkesir and Kütahya ( $x=1,35$ ).

Table 2. The ANOVA results regarding the frequency of mobbing to which the teachers are exposed in different cities

Province	N	$\bar{x}$	St	df	F	P	difference	
Balıkesir	1	34	1,35	,32	6	2,67	,015	2-3
Kütahya	2	83	1,35	,34	358			
Adana	3	64	1,63	,73				
Ankara	4	59	1,50	,55				
Samsun	5	32	1,42	,35				
Gaziantep	6	45	1,59	,59				
Bingöl	7	48	1,55	,48				
Total	365	1,49	,52					

\* $p>,05$

Table 2 shows that teachers working in the city of Adana are exposed to mobbing the most ( $x=1,63$ ). Teachers working in the cities of Balıkesir and Kütahya are exposed to mobbing the least ( $x=1,35$ ). Analysis results show a statistically significant difference between the frequencies of mobbing that the teachers experience in different cities [ $F_{6-358}=2,67$ ,  $p<,05$ ]. In other words, the frequency of mobbing that the teachers are exposed to differ significantly depending on the city where they work. A Scheffe test was used in order to find out about the between-groups differences. According to the results of this test, teachers working in Adana are exposed to mobbing ( $x=1,63$ ) more than those working in Kütahya ( $x=1,35$ ).

Table 3. The t-test results of teachers' exposure to mobbing according to sex.

Gender	N	$\bar{x}$	S	sd	t	p
Male	201	1,46	,46	362	-,837	,403
Female	163	1,51	,59			

\* $p<,05$

Table 3 shows that the mean of male teachers' exposure to mobbing is  $x=1,46$ , and the mean of female teachers' exposure to mobbing is  $x=1,51$ . When the t-distribution is examined, one can see that teachers' exposure to mobbing does not show a statistically significant difference in terms of sex variable. In other words, the sex variable is not a determinant factor for teachers' exposure to mobbing.

Table 4. The ANOVA results of teachers' exposure to mobbing in terms of age.

Age	N	$\bar{x}$	St	df	F	P
33 and above	185	1,51	,53883	2	,495	,610
34 – 45	141	1,46	,51059	361		
46 and above	38	1,56	,50459			
Total	364	1,4915	,52385			

\* $p>,05$

Table 4 shows that teachers who are 46 years old and above are exposed to mobbing the most ( $x=1,63$ ), and teachers in the 34-45 age group are exposed to mobbing the least ( $x=1,46$ ). Analysis results show that there is not a statistically significant difference between the frequencies of mobbing in terms of age. In other words, the age variable is not a factor that accounts for mobbing that teachers are exposed to.

## CONCLUSIONS

Research findings indicate that mobbing that teachers experience in secondary education schools in the city of Adana is the highest compared to other cities. Teachers working in schools in Balıkesir and Kütahya experience mobbing the least. That there is a statistically significant difference between the frequencies of mobbing in different cities leads us to think that mobbing is affected by cultural variables.

The most common type of mobbing was found to be “Hiding from you the information that can improve your performance” and the least common type of mobbing was found to be “Implying that you need to leave your job (resign)” A study by Mete (2013) found the most common type of mobbing to be “exclusion and discrediting.” The reason why the findings of the present study and those of Mete’s are not parallel may be that the two studies were carried out in different institutions.

In terms of the sex of teachers, there is no statistically significant difference in the frequency of exposure to mobbing. The findings of many studies on the topic confirm these findings. For example, studies by Cemaloğlu (2007), Koç and Urasoğlu-Bulut (2009), Acar and Dündar (2008), Yeşiltaş and Demirçivi (2010), Deniz and Ünsal (2010) Hansen et al (2006), and Vertia (1996) showed that there is no difference in mobbing in terms of sex variable. However, there are also studies that found that there is a statistically significant difference between mobbing and sex variable (Karcıoğlu and Çelik, 2012; Namie, 2003). This difference may be accounted for by cultural variables as well as by the characteristics of the institutions in which the studies were carried out.

As for the age of the teachers, there is no statistically significant difference between age groups. Zapf’s explanation supports this finding. Zapf (1999: 75) states that the age factor is not a significant factor in individuals’ exposure to mobbing. However, a study by Urasoğlu found that the age variable is an important and statistically significant variable in mobbing. Urasoğlu (2007: 85) conducted a study in secondary education institutions in 25 cities and found that teachers under 25 years of age are exposed to mobbing more than other age groups.

The finding that the types of mobbing in secondary education institutions differ according to cities is an indication that mobbing is affected by culture. With more comprehensive studies both in educational sector and other sectors, it is possible to obtain a clearer picture of this finding. Therefore, more studies are needed on the issue.

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## The Portfolio Implementations Of Prospective Pre-School Teachers In Science And Math Education As An Alternative Evaluation Instrument (The Sample Of Sabahattin Zaim University)

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### ABSTRACT

Although the use of portfolio in the curriculum of teacher training and evaluation process is a common method, in recent years, it is a new trend in Turkey. The purpose of this study is to set forth an approach on using portfolio not only as an assessment tool based on constructivist approach but also as a teaching tool in the process of science and math education in preschool education. The document examination and observation methods of qualitative research were employed in this study. The study was conducted with second grade prospective preschool teachers (n=49). For this study, prospective teachers were asked to design two original experiments and materials for science and math education for children at the age of 4-6, to perform these experiments by them and children in a period of 14 weeks; and to perform these experiments at home and kindergarten in compliance with the target achievements. The experiments designed by prospective teachers were discussed with other prospective teachers in terms of being safe, economic and practicable. The experiments were performed by prospective teachers for two times; first at home and kindergarten, then at science classes. After the process of experiments and the applications of materials, the feedback obtained from children were re-evaluated by prospective teachers. Finally, the prospective teachers were asked to prepare portfolio involving their self-assessment regarding each step of the implementation process. As a result of this study, under the lights of portfolio implementations and evaluations, an approach was set forth towards the use of portfolio in the process of teacher training which paves the way for the usability of cognitive life skills at the highest level for teachers and suggestions were made.

**Key words:** preschool science and math education, portfolio, experiment, material.

### INTRODUCTION

Advances in science and technology affect all developed and developing countries. These advances cause a fast change in the social, political, economic and cultural systems in Turkey. In parallel with this, the need for education increases and the importance of investing in human beings becomes clearer. Accordingly, the everchanging world and social needs make some changes in the educational system inevitable. The traditional status of teachers as information provider has been transformed into a status of teacher as a guide to information, a facilitator of learning, and a motivator of students for thinking. Instead of rote learning, students must be trained as individuals who can reach the information, who can use this information, who can debate, who is inquisitive, who can utilize the thinking processes, and who can produce new information (Bilen, 2002: p. 2). Classical approaches to assessment/evaluation have been commonly used both in Turkey and abroad. They usually tend to give importance to performance or process assessment, contain questions with one correct answer such as pen and paper tests, and find out whether students remember the information given to them. Besides, genuine assessment methods that offer students an opportunity of choice and collection of and reflection on the things that they are to learn, that will improve students critical thinking skills, and that will motivate them to show their akademik powers are ignored (Adams ve Hamm, 1992, p.103) and therefore permanent learning is not achieved (Banta, 2003, p.2). Starting from preschool teaching, teachers at all levels of education are interested in what students learn, and they feel the need to use suitable assessment methods in order for them to track the development of students. It is important that teachers run together the processes of knowing and assessment of students with the process of learning, and that they consider each activity as data about students (Parlakyıldız ve Yıldızbaş, 2007, p.377). The use of alternative assessment activities are supported by theories of learning and classroom life. On the one hand, students learn in different ways and on the other, they create information from their own experiences. Variation in types of learning and the nature of learning have obligated teachers to employ alternative assessment methods (Vyortkina, 2003, p.11). The main goal in choosing portfolio assessment from among alternative assessment methods in the present study is that it has all the characteristics of new assessment methods and that it has been widely used all over the world. Portfolios do not only assess students' knowledge and skills; they also require more effort for planning and assessment. For this reason, it is an assessment method that also teaches ways of learning (Banta, 2003, p.3). What is portfolio? Portfolios have been defined differently by different researchers. Some of them are as follows; "Collection of cumulative and systematic works chosen and recommended by students, teachers or colleagues in order to assess/evaluate the development of the student's existing skills" (Simon and Forgette, 2000, p.85). "A teaching portfolio is the total of the documents of a teacher's in-class activities and contains lesson plans, student homework, teacher's written instructions, video cassettes and even advisor evaluations" (Wolf, 1996, p.35). A



portfolio is a collection with a purpose which exhibits students' achievements in different areas in the process in which they are. This collection is a criterion for qualified decisions, a proof of students' own reflections, and contains students' own sections with the contents chosen" (Paulsen ve Meyer, 1991, p.60). As the definitions indicate, its characteristic that improves students' creative thinking makes portfolio an alternative to the classical assessment tests (Banta, 2003, p.1).

The characteristic of the present century which can be defined as "Science Explosion" makes it necessary for our children to acquire some characteristics such as scientific concepts and creative thinking in early childhood. Early childhood is a period in which a child actively acquires basic concepts and the skills of the scientific process. The experiences that the children have in this period creates a suitable environment for the acquisition of the concepts. In the day-to-day life, when we observe a small child in his/her natural activities, we can see the formation of the concepts and their application in cases that require problem solving. One-to-one matching, counting, classifying, and assessment are some of these concepts (Ari, 1993, p.99). The starting point of the science and maths teaching for preschool children is their natural environments. They are curious, investigative, imaginative and quier. In order to support their development in this aspect, they must be given opportunities in which they can satisfy their curiosity by investigating and make predictions by suggesting ideas. This can be achieved through "science and maths activities" that improve children's curiosity and research motives and stimulate their cognitive skills (Arnas, 2007, p.7). In this way, children who have become familiar with scientific activities can learn and implement the scientific processes both at home and in the preschool science teaching. In addition, active participation of the families in the programs of the educational institution, their familiarity with the play material and their uses, and at least their attempt to supply children with similar material in the home environment will simply contribute to the learning process of the children (Bilir, 1993, p.34). Achieving a successful parent-child interaction, which can be considered as the basis for the interaction that the child will establish with other people in the future, depends if and only on the condition that the mother spares enough time for the child and meets his/her affectionately and properly. As is known, parents are the first teachers of a child who help the child learn many developmental skills such as walking and speaking, and information about his/her environment. The teaching functions of the parents start from the child's birth but do not come to an end when the child starts to go to school and has a regular teacher at school (Temel ve Ömeroğlu, 1993, p.74). In general, almost in all countries in the world, the education in the first five years of a child's life, which is the most important period, is considered to be the basic duty of the parents (Oktay, 1993, p.104). It has been observed that children start the process of learning their immediate environment by touching, tasting, hearing and seeing and then start to develop their skills of asking questions and doing observation-experiment. Especially in the preschool period, making the activities of science and maths education more pleasurable for children and aiming their interests, expectations and needs rather than giving them standard information when planning these activities will make science and maths education more meaningful for children and lead them to develop a more positive approach to sciences in the future (Gürdal ve et al, 2001).

### **The Laboratory (Experiment) Method in Science Education**

Akgün (2001) defines the experiment method as "experimentation whose conditions are prepared by the researcher in order to repeat the events in nature and reveal a truth in science" (cited in Arnas et al, 2012, p.148). According to Kang & Wallace (2005), the laboratory method is a teaching method that develop cognitive skills and that allows for the learners to work individually or in groups. Science experiments are a necessary and indispensable part of learning experiences in science lessons. It improves the investigation and research skills of the learners and make them interested in learning and eager to learn. Science experiments which are based on learning by doing and experiencing make learning effective and lively and allows for the learner to actively take part in the learning process (cited in Küçükturan, 2008, p.66). This improves learner's such cognitive skills as ratiocination, setting up cause and effect relationships, problem solving, and making generalizations. It also helps them develop positive attitudes towards using the scientific method (Küçükturan, 2008, p.66).

### **The Importance of Experiment in Preschool Teaching**

The use of experiment method in science and maths lessons in preschool teaching is important in terms of developing children's curiosity and research motives, stimulating their cognitive skills and being successful in their school lives in the future. Children are interested in the objects and events in their immediate environment. In order to keep children's interest alive, parents and teachers should find science/maths activities that will set the them in motion and that will be interesting for them. A perfect laboratory is not always necessary in order to make experiments. Especially for preschool children, there are many experiments that can be conducted with simple materials without having a laboratory. Such things at home and in the environment as growing plants, animals, worms in the soil, wood floating on water, and sinking of a stone in water are all experiments. Children who do not attend preschool education institutions must also be educated by their parents at home. Science/maths activities can also be done at home (Şahin,1998, p.31). One of the most enjoyable ways of involving children in science and maths is the cooking activity either at home or school. According to Jackman (2005), one may ask a child playing in a dramatic playground to explain the material in an imaginary cake that she is baking. Most of the time, the

response will like this: “I added 20 cups of sugar, some flour, and two eggs. I blended them and put the mixture in the oven for ten minutes.” Even though the numerical amounts of the materials in the recipe are not correct, children are aware of the concept of amount in the recipe (cited in Kandır ve Orçan, 2011, p.37). The aim of conducting experiments in the science and maths lessons is not to transfer information to children by showing; the aim is for them to learn in an effective way by doing and experiencing the events related to the nature, science and maths (Arnas, 2012, p.148). As can be seen, parents at home and teachers at school can extend such activities through play. In this way, the child improves her skills of counting-concepts-colors-shapes-matching-measuring-forming patterns-modelling-cooperation-problem solving, and in this way contributes to her social and emotional development.

The aims of the present study are: to investigate the possible aims of science experiments and maths materials that can be conducted and used at home and school; to find out about the aspects of such experiments and materials, to which attention must be paid during implementation; to determine the advantages of using home and classroom as an experiment environment; to elicit learners’ views about the portfolio implementation in science and maths instruction; and, by creating a model of education, to suggest an approach on how experiments and materials can be used as experiment tools in science and maths education. Thus, the study involves the assessment of the regular and cumulative collection of the science experiments/maths materials that the university students performed/prepared during the course using some predetermined criteria.

## METHOD

In the present study, the data were collected through document review and observation methods (Yıldırım & Şimşek, 2000). “Documents prove their value not only because of the things that could be learnt from them but also due to being stimulating for researchers that can only be followed by observation and contact” (Patton, 2002). “Observation is a method that is used for a detailed description of a behavior that takes place in an environment or institution” (Yıldırım & Şimşek, 2000, p.124). This study was carried out in the Science and Maths Teaching course with the second year students (N=49) of the Department of Preschool Teaching, Faculty of Education, Istanbul Sabahattin Zaim University, in the spring semester of 2014-2015 academic year. This study was carried out with prospective teachers and the stages of the study are as follow; Prospective teachers were asked to review articles for two weeks and then design two original experiments and one maths material to be used in the science and maths class for the 3-6 age group. However, during the design process participants were warned that the experiments and material had to be in line with the gains and indicators and the students’ level of education and that the material had to be waste material that can be found in the natural environment. Each experiment and material that was designed by each prospective student was discussed in the class with other prospective students by paying attention especially to reliability, economy and practicality and necessary modifications were made. When the experiments and materials took their final form, prospective teachers were asked to test them themselves at home, and in this way the stages of experiments and materials were re-checked to see whether they are suitable in terms of such aspects as timing and reliability. Then, these experiments and materials were implemented in the Science and Maths Teaching course of the fourth semester of the undergraduate program of the university and in the science and maths courses in the nursery schools/at home by children. At this stage, before the results were discussed in class, prospective teachers were asked to prepare a portfolio including their own evaluations for each stage of the implementations. Finally, prospective teachers shared with other prospective teachers their experiences in class either by implementing them or as a presentation by considering the results of their implementations of the experiments and materials. The feedback that was elicited from children after the experiments and materials were implemented were re-evaluated with prospective teachers by considering the portfolios as well. After the presentations, prospective teachers were asked to add another section into their portfolios in which they evaluated their peers, course, and the instructor of the course. In this way, they evaluated themselves, the children at school/home, and their classmates. Throughout the process, the researcher observed the implementations of the prospective teachers and took some notes. The portfolios prepared by the prospective students were collected at the end of the implementations and were analyzed using document analysis, one of the qualitative research methods. When analyzing the portfolios, they were coded to make the analysis more meaningful. The portfolios were coded as P1, P2, P3, P4, and so on. The notes that were taken during the observations in the process and the results of the examination of the portfolios were combined and in this way the results for the approach of “Creating Experiments and Materials for Science and Maths Course” were obtained.

## FINDINGS

As a result of the researcher’s document review of the portfolios and observations, the findings about the aims that the experiments and materials serve were collected under the following titles.

### Acquiring the Concepts

Review of the portfolios and observation data showed that through science experiments and maths materials, children can acquire especially the concepts at home/school safely and joyfully. For example, a prospective teacher taught children the concept of numbers, counting from 1 to 6, and matching the colors through an activity

called “Let’s Do Our Own Lovely Train Loaded with Fruits” (P1) which was made completely of waste material. Doing a cut and paste activity, the prospective teacher contributed to their motor development (See Picture 1).



**Picture 1.** An image of “My Lovely Train Loaded with Fruits”.

It supports the cognitive development domain (The child concentrates, counts the objects, observes, does matching according to color, tells the name of the geometric form). It supports language development domain (the child examines the visual materials, answers questions related to the visual materials). It supports motor development domain (The child lays the objects together, piece them together to create new forms, stick them together, cut them). Gains after the activity are such concepts as primary-secondary colors, circle-square, odd-even, front-back, up-down, in front of-at the back, bottom-top-middle, former-latter, same-different-similar.

#### Modelling capability

Review of the portfolios and observation data also showed that science experiments are effective in modelling capability of children. For example, in the “Stampeding Peppercorn” experiment, it was found that the habit of washing hands with soap can be acquired (P28). In this experiment, the peppercorn as a visual element represents the microbes. If we immerse our hand with soap, we see that the peppercorn stampedes and it never likes soap.



**Picture 2**



**Picture 3**

A Picture of the “Soapy Water and Soapy Hand” experiment    A Picture of “Stampeding Peppercorn” experiment



### Forming Patterns (Matching-Establishing Relationships -Raising Awareness for Movements that Require Object Control)

Review of the portfolios and observation data also showed that the experiments and maths materials raised children's awareness in terms of balancing objects of different sizes and weights on a scale. For example, sorting objects with different sizes, colors, weights and figures in an ascending order, grouping, estimation, observation, and establishing a cause and effect relationship. The "Let's Weigh the Numbers" science-maths-play activity emphasizes the importance of child's ability to perform the movements that require object control (see Picture 4,5). This activity also improves child's ability to form patterns and use them in the Daily life.



**Picture 4.**

A Picture of experiment materials



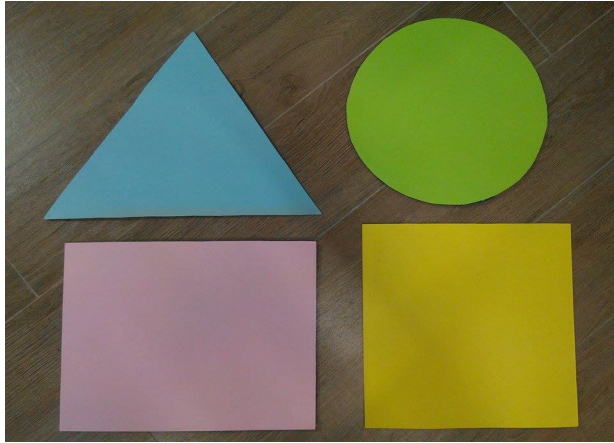
**Picture 5**

A Picture of "Let's Weigh the Numbers" activity

### Multipurpose usability of a single material

Prospective teachers state that many experiments can be made at home/in the classroom at zero cost using a single material that can be created by using waste material. For example, a prospective student explain it like this in her portfolio (P26). *"I am a graduate of vocational high school for girls and when I heard the word experiment I always remembered such things as heater, alcohol and beaker, but When I was preparing my portfolio I found that I can teach children a lot of things by using only "cloth-paper-rope. This caused me to make a lot of plans about my career development and Daily life."*

Another prospective student made the following remarks in her portfolio (P23). *"As can be seen from the sample experiments that I made, we do not need expensive materials and different equipment."* The aim of the "Journey to the Seasons" material aims to teach children clothing according to weather conditions, finding solutions to problems, shapes, colors, texture, thin-thick, and etc.



**Picture 6**

A Picture of experiment materials



**Picture 7**

A Picture from the “journey to the Seasons” activity



### Having an impact on the social and emotional progress of the children

Based on the examination of portfolios and observation data, one can see that home/classroom experiments affect children’s social-emotional development. For example, in the “What was It that I Touched” experiment (P36), “I can do it” feeling was observed in the children and this shows that home-kitchen-classroom can be used as experiment spaces (See Picture 6). Children always feel themselves ready to explore the physical environment in which they are. When they take the opportunity to explore they become interested. When they research in their daily lives, they also create a strong and permanent mental image of their experiences (Conezio and French, 2002, p.12).



**Picture 6.** “What was It That I Touched?”



Pictures from the Experiment Stage



In the light of the portfolio assessment and observation notes taken by the researcher, another finding is that there are some points that must be taken into account when using the home/classroom environment as experiment space. They are as follows;

- The experiment must be preplanned and materials must be ready.
- Experiments must be at student's level of development and be suitable to his/her want and readiness.
- Before the actual implementation, the experiments must definitely be tried by the teacher, necessary modifications must be made, and it must be tailored to the level of the child. It was observed that by doing this, the time is used correctly and fruitfully.
- The planned experiments must be evaluated from the child's point of view, and if necessary, they must be redesigned according to children's perceptions of them.
- When using the home and classroom as experiment spaces, objects of possible harm must be removed as far as possible, and ultimate care must be taken to create a suitable environment for the experiment.
- The teacher must be aware of the fact that the individual characteristics differ from one child to another and that expecting from them more than their actual abilities will demotivate them and they will get bored even with the simplest experiments.
- In order to get a good control of the experiment, it should first be implemented with a small group.

Based on the portfolio assessment and the notes taken by the researcher, the advantages of the approach of conducting experiments in the home and classroom environments were found to be as follows:

- It supports the questioning of the results of the observations and experiments.
- The experiment approach responds to teachers' and children's attempts to learn about the world in which they live.
- It increases children's curiosity.
- The child is able to define his/her environment better.
- Because children conduct the experiments themselves, this approach is effective in the development of their self-care abilities and improvement of their self-awareness abilities.
- Home/classroom experiments have some serious cost advantages.
- It was found that establishing relationships with the daily life is effective in discovering life skills, and this was especially emphasized by the prospective teachers.
- One of the most important advantages of home/classroom experiments is that one can use waste materials to conduct the experiments.
- In this way, they contribute to children's sensitivity towards the environment.
- If children carry out the experiments under the supervision of their parents, this will make children happy and will increase their self-confidence and therefore will contribute to their motivation.
- Home/Classroom experiments offer children a lot of opportunities. In addition, children directly make their own experiences more interesting and enjoyable in their lives.

Prospective teachers' views on the portfolio implementation in the Science and Maths Course are categorized in Table 1.

**Table 1. Students' views on the portfolio implementation in the Science and Maths Course**

Categories / Responses	f
<b>What did I do during this course?</b>	
I made an article review	45
I was planned and I used the library	10
I tried to create different activities	26
I followed the science and technology	33
I practiced by trying to take notes	10
<b>What did I learn?</b>	
Compared to other courses, I learned more distinctive things.	42
I am now able to transfer what I have learned to others	32
I've been reconciled with maths	4
When investigating experiments, I noted down the ones that I found different	5
I learned how to prepare activity plans	38
I learned how to prepare daily plans	12
I learned what to do with the materials at home	42
I learned that learning is a process	46

I learned to use scratch paper when studying	5
I discovered that things are more meaningful with children	
<b>Points/Activities in the study that I found I was successful</b>	43
I used the waste materials professionally	20
I knew myself	38
I developed tools at zero cost	24
My creativity and imagination improved	41
I enjoyed my activities	37
I gained self-confidence and learned the importance of group work	
	12
<b>Points/Activities in the study with which I had difficulty</b>	18
I had difficulty in creating experiments	34
I had difficulty in tasks that required hand skills	42
I had difficulty in keeping up with the pace of the course and in understanding the method of the course	
Preparing the portfolio took my time	
	22
	27
<b>Skills that I think I acquired throughout the Science and Maths course</b>	33
This course contributed to us in terms of such skills as social sensitivity, awareness, cooperation, solidarity, effective communication, self-assessment	44
I was patient and act according to needs	45
I learned to be open to innovation and to use the methods when and where necessary	36
My skill of criticism improved	12
I used the technology in the right place	30
I explored what I can do	45
My sense of competition improved	46
My sense of taking responsibility improved	31
<b>Occupational skills that I think I gained from the Science and Maths course</b>	27
I learned from this study that there are a lot of materials around me that I can use in science activities	31
By writing reports about the material, I learned how to prepare materials	47
I paid attention to doing research in all areas and courses	
My relationship with children grew stronger although I am a second year student	41
I gained the skill of leadership and actively participated in the lessons	45
I improved my skills of preparing presentations and speaking	44
<b>My thoughts on and recommendations for portfolio assessment</b>	46
I improved my research skills	12
I understood the importance of literature review	37
I improved myself through peer assessment	45
I saw my deficiencies through my research	46
I started to read articles in other fields	
I improved myself with the feedback of my instructor	
I adopted economy and saving as my life style	
I understood what process-driven learning is	

According to the statements of the prospective students in Table 1, the portfolio implementation in the Science and Maths course supported their personal and occupational development and improved their self-confidence. These feelings are manifested in their statements that their self-confidence are increasing consistently and that they are more aware of their achievements. The analysis, documentation and presentation of the activities that the prospective teachers conducted helped them to reflect their strengths and weaknesses in the beginning of the course, their changing interests and types of perception due to portfolio implementation, and their need for continuous improvement. Furthermore, they especially emphasized the fact that the science and maths course caused more enjoyable and more permanent learning with accompanying research and activities. However, the consensus that students reach in the form of self expression through individual or group works and discussion and critical analysis of their occupational development was found to be rather difficult and time consuming. The portfolio process encourages students about sparing more time for studying and research.

After the document review of all portfolios (N=49), observations and implementations, “A Model for Home/Classroom Experiment Approach” has been obtained that will allow for seeing all the related elements from

a single point of view (see Figure 1). The aim of this model is important in that it offers a flowchart for the use of home/classroom as an experiment environment.

At the first level of the flowchart, a needs analysis is made by taking an expert's opinion. After the learning targets have been set, the contents are created accordingly. After the creation of the contents, different teaching strategies are developed. For science experiments and maths materials, the most suitable strategies are determined as discovery and brainstorming methods. Brainstorming allows for sharing with stakeholders. At the end, an evaluation is made about whether the targeted behaviour has been gained. If the evaluation shows that it is enough, the interaction (congruence between learning targets and gains, congruence between method and implementation) between the elements is checked and so the teaching process comes to an end. If the targeted behavior is not congruent with the gains, the process starts again from the learning targets. Figure 1 shows this loop.

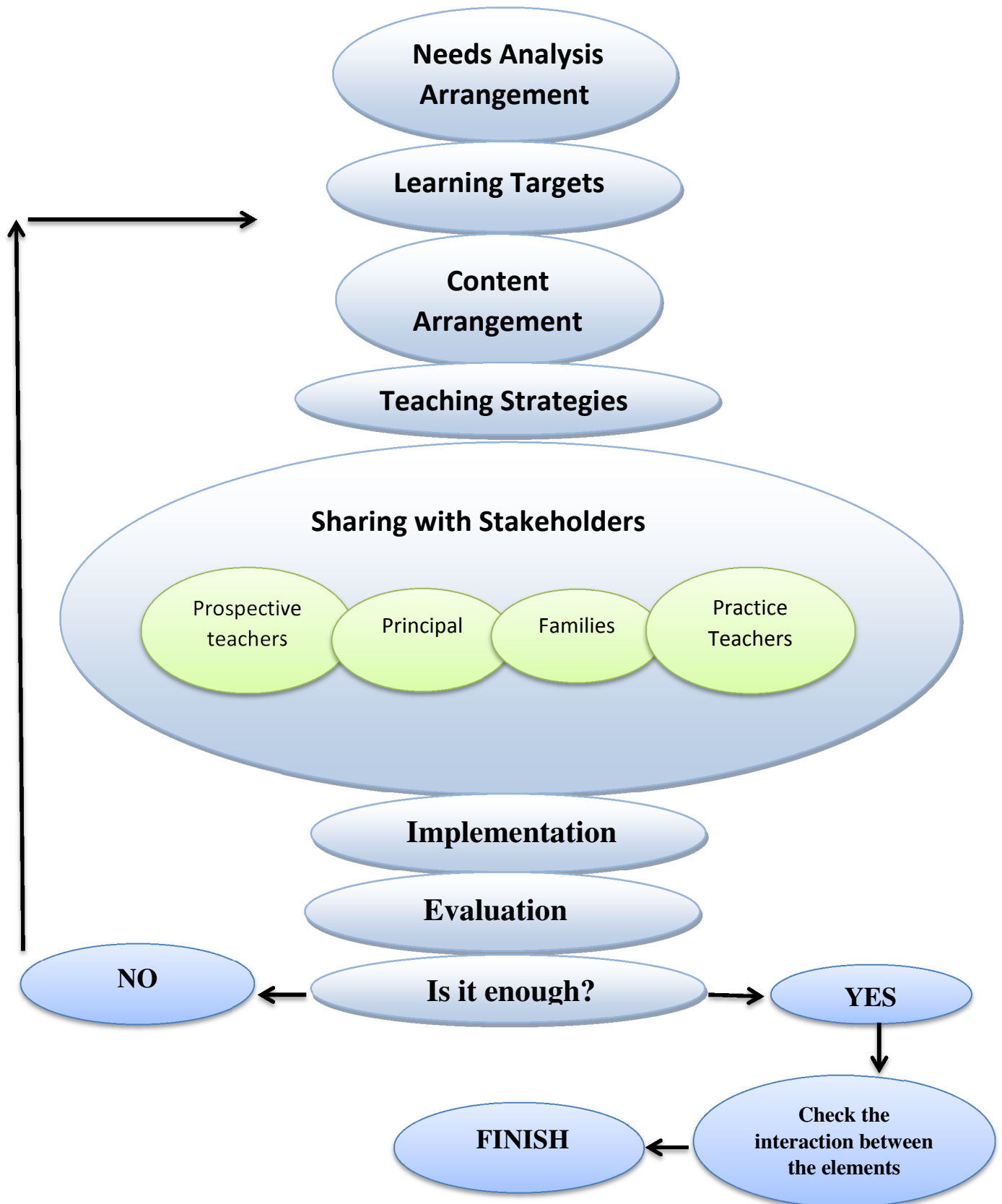


Figure 1. “A Model for Home/Classroom Experiment Approach”

## CONCLUSIONS AND RECOMMENDATIONS

Prospective teachers can get the necessary skills that can be the foundations of their lives by making suitable plans, designing suitable experiments and materials, and by using different methods. The positive and supportive attitudes of educators and parents are important in making the children to get these skills qualitatively. Each activity that is conducted with children will enrich their small world. For this reason, prospective teachers must be good observers, must be able to canalize children to such activities whenever they need to, and must develop their skills of observation, research, investigation, experimentation and questioning by asking them open-ended questions about everything. Observing whether or not a child can transfer the knowledge that she learned in the school or in her environment into her real life can be made only by parents and teachers. Therefore, prospective teachers must not see the science and maths education in the early childhood as an activity but as a life skill.

It is possible to create projects and conduct experiments at home/school. The findings of the study have shown that science experiments and activities made with maths materials can be used as a laboratory for science and maths education in all cases with waste materials and without structured apparatuses.

Prospective teachers stated that through the portfolios that they created they reflected the individual differences, occupational values, problem solving skills in the daily life, and life styles. These findings were obtained through a study made by prospective teachers and it was found that a lot of things can be achieved if different environments are used. All these make the present study important.

As one can see, portfolio-based learning, implementation and assessment make it possible for a student to give meaning to new knowledge by starting from her own knowledge without separating her brain from her body, feelings and social environment, and it perceives the student as a whole and aims to educate them as all-rounders. This study has shown that as an alternative assessment tool, portfolio implementation can be used successfully in the “Science and Maths Education” course with prospective teachers in undergraduate education.

This study makes the following recommendations:

- It is thought that simple science experiments and maths activities that can be conducted at “home/school” in the preschool period will offer children rich experiences. Teachers and parents can be informed of this.
- Workshops can be organized on how to design experiments and maths materials using waste material.
- Through in-service training courses and seminars, preschool teachers and prospective teachers can be informed of waste materials and science and maths experiments.
- Science and maths course is limited in terms of course coverage. In a longer period a pilot work may be done to find out about the effectiveness of the experiments and materials.
- In educational institutions, experiment and learning environments that are suitable for the constructivist approach can be created.
- Portfolio implementation and assessment is recommended in the teaching of different courses in teacher training departments of universities in general, and in the teaching of all courses in the departments of preschool teaching in particular.

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## The Proposal Of Additions To The Education Of The Ship Security Officer

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### ABSTRACT

This paper proposes supplements to the training program of the Ship Security Officer. The role of the Ship Security Officer is regulated by the provisions of the International Ship and Port Facility Security Code. The Code was adopted in 2002 and came into effect in 2004, bringing a number of measures aimed to enhance the security of ships and port facilities. This paper discusses and emphasizes the importance of the ship security officer. It is considered that, due to exposure of ships to various forms of contemporary threats such as piracy and armed attacks, the training program for Ship Security Officers should be complemented. The existing program does not provide the training of Ship Security Officers in terms of minimum self-defence criteria in case of exposure to the contemporary threats. Therefore, the paper proposes the supplements to the Ship Security Officer training program with the purpose of enhancing the ship and crew security and a more efficient implementation of the International Ship and Port Facility Security Code.

### INTRODUCTION

Maritime security is now considered as one of the most important segments of security. The deterioration of general security situation has severely affected the maritime security as well. Therefore the International Maritime Organization (IMO) developed a number of measures in order to increase the level of security of all segments and stakeholders in the maritime industry, including the International Ship and Port Facility Security Code (ISPS Code) which contains recommendations and methodology for implementing the security measures at international level. This paper discusses the provisions laid out by the ISPS Code with a particular emphasis on its goals and the role of all stakeholders in the system of maritime shipping security. The ISPS Code defines the persons participating in the implementation of the security system, with the Ship Security Officer (SSO) being one of the most important. The following chapters describe the duties and responsibilities of the SSO and discuss the SSO training program. Analyses confirm the need for supplements to the SSO training. The deterioration of the security situation at sea, especially in view of increased pirate attacks in some parts of the world, has resulted in forming and engaging the Privately Contracted Armed Security Personnel (PCASP). On board ships, PCASP provide physical protection in the event of fire arms attack. Since this represents a situation where arms are used onboard merchant ships, it was necessary to adequately regulate this issue at the level of the IMO. The IMO provided guidelines that, among other things, regulate the PCASP training requirements. The paper discusses the requirements and the feasibility of applying certain segments of the PCASP training to the SSO training with the purpose of increasing the level of ship security. It is suggested that the SSO training program is supplemented with the contents that ensure a better cooperation with naval forces and the contents associated with the familiarisation with fire arms and their effects on board ship. The suggestion of supplementing the training program of the SSO is aimed at raising the level of ship and crew security and a better implementation of the ISPS Code.

### INTERNATIONAL SHIP AND PORT FACILITY SECURITY CODE

The ISPS Code was created as the IMO's response to the contemporary security threats in the wake of the 9/11 terrorist attacks in the United States of America. Due to the deteriorated security situation it was necessary to develop a consistent system of organising, monitoring, surveying, and assessing the situation at the level of the IMO, with the purpose of improving maritime security. The Contracting Governments to the International Convention for the Safety of Life at Sea (1974 SOLAS Convention) finalised the text of the preventative maritime security regime at the IMO Conference in London in December 2002 (SOLAS/CONF.5/31). The Conference adopted the ISPS Code and agreed that the maritime security measures would be accepted internationally by 1st January 2004, and in force six months later (1st July 2004) as a mandatory amendment to the 1974 SOLAS Convention. The ISPS Code introduced an entirely new approach to maritime security issues, as well as new requirements on cooperation regarding these issues. The new requirements form the international framework through which ships and port facilities can cooperate to detect and deter acts which threaten security in the maritime transport sector.

The ISPS Code is a two-part document describing minimum requirements for security of ships and ports. Part A provides mandatory requirements for Governments, port authorities and shipping companies. Part B provides a series of guidelines about how to meet these requirements. The objectives of the ISPS Code are to establish an international framework (involving co-operation) and respective roles and responsibilities for Contracting Governments, government agencies, local administrations and the shipping and port industries with the purpose of detecting security threats and taking preventive measures against security incidents affecting ships or port facilities at the national and international level.

Other objectives include ensuring the early and efficient collection and exchange of security-related information, providing a methodology for security assessments in order to have plans and procedures to react to changing security levels, and ensuring that adequate and proportionate maritime security measures are in place (IMO/SOLAS/CONF.5/34, Section 1, Para 1.2).

These objectives clearly confirm that the ISPS Code involves a comprehensive approach whose implementation requires the integration of all elements (stakeholders) engaged in maritime shipping, including the Contracting Governments (their agencies and administrations), companies, port facilities and ships. The ISPS Code defines the activities, duties and responsibilities each of the stakeholders. In addition, the ship and port security assessment system is developed, as well as the ways of monitoring the system's implementation and the certification in line with the ISPS Code requirements. The ISPS Code defines the principles but provides for considerable flexibility to allow for the required security measures to be adjusted in meeting the assessed risks facing particular ships or port facilities.

Contracting Governments and their administrations are responsible for risk assessment and evaluation (including setting the appropriate security level), issuing of relevant documents, information exchange and supervision of the ISPS Code implementation.

On behalf of the Contracting Governments, the Recognized Security Organizations may carry out the assessment of ship security, approve the Ship Security Plan (SSP), and issue the International Security Shipping Certificate and/or the relevant training certificate (IMO/SOLAS/CONF.5/34 ANNEX 1, Sections 4 and 5).

Shipping companies should carry out the security policy, including the implementation of the security system across the company and its fleet, appointment of security officers and their detailed responsibilities within the security system, development and putting into effect the security plans, training and education of the personnel engaged in the security system as well as other employees and crewmembers, exchange of information, and reporting on security (IMO/SOLAS/CONF.5/34 ANNEX 1, Sections 6 and 11).

Ports must provide an adequate Port Facility Security Assessment and Port Facility Security Plan. They have to appoint adequate personnel in charge of security and carry out regular trainings. In addition, ports must participate in the exchange of information and in reporting on security-related issues (IMO/SOLAS/CONF.5/34 ANNEX 1, Sections 14 to 18).

The ship must act in line with the SSP and the security levels that are in effect in individual ports. Also, the ship must perform regular crew training, keep relevant records, have appropriate documents, and participate in the exchange of security-related information. In addition, the ship must carry authorised personnel who take part in the security system (IMO/SOLAS/CONF.5/34 ANNEX 1, Sections 7 to 10).

In order to meet the ISPS Code requirements, it is necessary to designate appropriate security officers/personnel on each ship, in each port facility and in each shipping company to prepare and to put into effect the security plans that are approved for each ship and port facility. The persons engaged in the security systems are Company Security Officer (CSO), Port Facility Security Officer (PFSO) and SSO.

According to the provisions of the ISPS Code, a CSO is an officer having at least one year of experience in the capacity of an officer and a completed adequate CSO training. Merchant shippers usually appoint one CSO who provides technical and any other support to the SSO in the area of security. The PFSO is in charge of port security and is appointed by an authorised government body. The PFSO's numerous and demanding responsibilities regarding the port security correspond to the CSO's corporate responsibility. Larger ports usually appoint a team of officers in charge of a port and its parts and facilities (Mojaš, Vujičić, Hrdalo, 2013).

ISPS Code provides training standards for the CSO, PFSO and SSO. The following paragraphs discuss the requirements and standards of the SSO training.

## REQUIREMENTS FOR SHIP SECURITY OFFICER

The SSO is the person on board, responsible for the security of the ship, including the implementation and maintenance of the Ship Security Plan and for the liaison with the CSO and PFSO (IMO/SOLAS/CONF.5/34 ANNEX 1, Section 2, Para 2.2.6.). The SSO is accountable to the master, designated by the Company, and identified by the Ship Security Plan. The ISPS Code defines SSO requirements. A SSO is an officer having at least one year of experience in the capacity of a ship officer and a completed adequate SSO training. The duties and responsibilities of the SSO, as described by the ISPS Code, include but are not limited to:

- undertaking regular security inspections of the ship to ensure that appropriate security measures are maintained;
- maintaining and supervising the implementation of the SSP, including any amendments to the Plan;
- co-ordinating the security aspects of the handling of cargo and ship's stores with other shipboard personnel and with the relevant PFSO;
- proposing modifications to the SSP;
- reporting to the CSO any deficiencies and non-conformities identified during internal audits, periodic reviews, security inspections and verifications of compliance and implementing any corrective actions;

- enhancing security awareness and vigilance on board;
- ensuring that adequate training has been provided to shipboard personnel, as appropriate;
- reporting all security incidents;
- co-ordinating the implementation of the SSP with the CSO and the relevant PFSO(s); and
- ensuring that security equipment is properly operated, tested, calibrated and maintained, if any (IMO/SOLAS/CONF.5/34 ANNEX 1, Section 12, Para 12.2.).

The SSO must be properly trained and qualified to carry out the above stated procedures. The qualification is ensured by completing the training as defined by the provisions of the ISPS Code and the SOLAS Convention. The SSO training program arises from his/her duties and responsibilities. The SSO should acquire knowledge, skills and training in the following areas:

- security administration;
- relevant international conventions, codes and recommendations;
- relevant Government legislation and regulations;
- responsibilities and functions of other security organizations;
- methodology of ship security assessment;
- methods of ship security surveys and inspections;
- ship and port operations and conditions;
- ship and port facility security measures;
- emergency preparedness and response and contingency planning;
- instruction techniques for security training and education, including security measures and procedures;
- handling sensitive security related information and security related communications;
- knowledge of current security threats and patterns;
- recognition and detection of weapons, dangerous substances and devices;
- recognition, on a non-discriminatory basis, of characteristics and behavioural patterns of persons who are likely to threaten security;
- techniques used to circumvent security measures;
- security equipment and systems and their operational limitations;
- methods of conducting audits, inspection, control and monitoring;
- methods of physical searches and non-intrusive inspections;
- security drills and exercises, including drills and exercises with port facilities;
- assessment of security drills and exercises;
- the layout of the ship;
- the SSP and related procedures (including scenario-based training on how to respond);
- crowd management and control techniques;
- operations of security equipment and systems; and
- testing, calibration and maintenance of security equipment and systems whilst at sea.

SSO training programs have been created in line with these areas. IMO member states are in charge of developing the programs for supplementary SSO training and the authorised maritime schools are in charge of carrying out these training programs. Upon completion of these trainings, the authorised government bodies issue adequate SSO certificates. Although the process of SSO training represents a national responsibility, it must be harmonised at the international level so that the certificates can be recognised internationally. The SSO training program in the Republic of Croatia is entirely harmonised with the ISPS Code and SOLAS Convention. It covers all the above stated areas and has a duration of 17 hours (Ordinance on ranks and certification of seafarers / Pravilnik o zvanjima i svjedodžbama o osposobljenosti pomoraca, Official Gazette / Narodne novine No. 130/13 and 45/14).

The analysis of this training program clearly shows that it is focused on maintaining and supervising the implementation of the SSP, assessment of security risks and threats, ship inspection aimed at ensuring that appropriate security measures are maintained, management and testing of the ship's security equipment, and enhancing the crew's security awareness and vigilance on board. These requirements and areas are in accordance with the contemporary threats in maritime shipping, such as piracy, armed robbery and terrorism.

However, two problems can be identified. The first problem refers to the duration of training while the second refers to the very contents of the training program. As for the training duration, it can be concluded that such a comprehensive program can be performed only at the terminology level within 17 class hours, given the fact that it contains a total of 25 areas defined by the ISPS Code. On the other hand, the contents of the programs are loaded with abundant administrative information on the maintenance and implementation of the SSP through all the entities within the maritime shipping security system.

It is reasonably assumed that the level of security threats in maritime shipping will increase, given the deteriorating security situation across the world. This will result in the increased risk of firearm attacks on merchant vessels.

Although the crewmembers onboard merchant vessels do not carry or use arms, their additional training will be required in terms of development self-protection measures in the event of a firearm conflict.

PCASP on board ships may be authorised by a flag State to counter the attacks and protect merchant vessels against firearm attacks. These personnel are trained to handle fire weapons and to provide physical protection to merchant vessels in the event of firearm attack. The following chapter discuss the PCASP training standards and requirements.

### **REQUIREMENTS FOR PRIVATELY CONTRACTED ARMED SECURITY PERSONNEL**

The increased threat to commercial shipping by Somalia-based pirates has led to an extended use of armed guards and a noticeable expansion in the number of firms offering armed maritime security services for ships in the High Risk Areas (MSC.1/Circ.1405/Rev.2). PCASP teams come on board with the purpose of preventing and dealing with armed attacks.

The deployment of PCASP teams on board of merchant ships and fishing vessels is based on the IMO Interim Guidance to private maritime security companies, flag States, governments, ship owners, ship operators, ship masters and crew. The Guidance covers Private Maritime Security Companies (PMSC) professional certification, requirements for PMSC, management and deployment considerations. According to the IMO, the use of PCASP should not be considered as an alternative to Best Management Practices and other protective measures. Carrying and use of firearms by seafarers for personal protection or for the protection of a ship is strongly discouraged (MSC.1/Circ.1334 and MSC/Circ.623/Rev.3). The use of PCASP on board merchant ships and fishing vessels is a matter for a flag State to determine in consultation with the ship owners, operators and companies. Masters, ship owners, operators and companies should contact the flag State and seek clarity of the national policy with respect to the carriage of armed security personnel. All legal requirements of flag, port and coastal States should be met (MSC.1/Circ.1334). Thus, the flag State has responsibility to authorize the use of firearms on board of merchant ships and fishing vessels in consultation with ship owners, operators and companies. Thereby the IMO refrained from the use of firearms on board merchant ships and fishing vessels and transferred the responsibility onto national legislations. The carriage of armed personnel remains a matter of decision for the ship owner, to request and the flag State to decide whether or not to allow the use of PCASP to protect their ships.

The areas of PCASP training are defined by the Annex to Interim Guidance to private maritime security companies providing Privately Contracted Armed Security Personnel on board ships in the High Risk Area. Private maritime security companies should ensure that the PCASP they employ acquire and can demonstrate to have acquired adequate and appropriate individual and collective training. The training areas are associated with the IMO recommendation that PCASP should have necessary operational capabilities, including the ability to assess risks, appropriate skill/experience in the field of carriage and use of firearms, appropriate medical qualification and shipboard familiarization training (MSC.1/Circ.1443).

It can be therefore concluded that the training of PCASP consists of two areas. The first area refers to tasks associated with using weapons for providing protection onboard ships, while the other area refers to the shipboard familiarization training. The training related to providing protection on board ships ensure compliance with the company standards in the fields of appropriate use of force, command and control relationship, competent use of the specific firearms, ammunition and other related security equipment, and medical training. The area of shipboard familiarization training refers to the familiarization with the ship type, the particular route envisaged, legal/practical implications for the deployment, and the provisions of relevant security related shipboard regulations. In that field PMSC should ensure, in consultation with the ship owner and master (subject to any additional requirements of the flag State), that the onboard team have received, as a minimum, shipboard familiarization training including life-saving, safety and fire-fighting requirements and communication protocols (MSC.1/Circ.1443).

These clauses of the Annex to Interim Guidance to private maritime security companies providing Privately Contracted Armed Security Personnel on board ships in the High Risk Area entitle the flag States to use their own legislation to regulate the matter of PCASP training in the area of shipboard familiarization. Hence it is possible that a flag State require the training in line with the provisions of the STCW Convention only for the Team leader, whereas other team members may attend training onboard the ship they protect; it is also possible that all team members have to complete the training in compliance with STCW requirements. Professional STCW training for seafarers comprises Basic Safety Training (STCW A-VI/1) which includes Personal survival techniques, Firefighting and fire prevention, Elementary first aid, Personal safety and social responsibility. This training has the duration of 55 hours, including 19 hours of practical work.

### **THE PROPOSAL OF SUPPLEMENTS TO THE TRAINING PROGRAM OF THE SSO**

By analysing and comparing the SSO training program and the recommendations for PCASP training, it can be concluded that the two training programs overlap in the part referring to the shipboard familiarisation. This correspondence results from the SOLAS Convention which requires that all persons performing any onboard duties must complete a special basic onboard safety training in order to be able to respond to emergencies onboard ships.



Therefore, theoretically speaking, both SSO and PCASP are qualified at the same level in terms of procedures in the event of emergencies onboard ships. However, in practice, it should be taken into account that an SSO is a professional seafarer who has been educated and trained to perform officer duties, and who has adequate experience, whereas a PCASP is not a seafarer but a person having military experience. Having in mind that a PCASP does not have a status of a crewmember, it can be assumed that the level of the Basic Safety Training necessary for the familiarisation with emergency procedures in the event of risk at sea could be sufficient for performing security tasks onboard ships.

Just as professional seafarers educate former or retired professional military personnel in the area of shipboard familiarisation, an inverse analogy might be applied regarding the training seafarers to become SSO. Therefore it is suggested that PCASP team members, i.e. qualified persons having experience in physical protection of ships, participate in a part of SSO training.

The analysis of SSO training leads to a conclusion that the SSOs are insufficiently trained for recognising and providing adequate response to the existing and oncoming security threats such as piracy, armed robbery and increased terrorist activities. The fact is that the security situation has worsened across the world, particularly in certain busy shipping areas. The deterioration of the security situation has reduced or even suspended the ability of some coastal states to control the security situation within the territory under their jurisdiction, both at sea and ashore. For all these reasons the SSO training programs need amendments and supplements.

It is suggested that the existing SSO training programs are supplemented by the following contents:

- familiarisation with the activities, abilities and constraints of national or international naval forces in preventing and suppressing terrorism, piracy and armed robbery against ships;
- familiarisation with the modes of cooperation with national or international naval forces and the organisations or services in charge of maritime shipping security and supervision;
- detailed familiarisation with the tactics, techniques and procedures of the attacks launched by pirates, terrorists or criminal groups at sea;
- good knowledge of technical features, capacities and efficiency of weapons, ammunition and equipment used by pirates, terrorists or criminal groups at sea;
- familiarisation with the measures for individual or group protection of crewmembers in the event of armed attack onboard ships.

Familiarisation with the activities, abilities and constraints of national or international naval forces in preventing and suppressing terrorism, piracy and armed robbery against ships is important due to the fact that a wide range of activities related to the above mentioned problems have been already undertaken at the national and international level. It is here worth mentioning the operations such as Operation Atalanta-Somalia, the first military operation undertaken by the EU Naval Force, NATO-led operations Ocean Shield and Active Endeavour, as well as operations launched by national naval forces in the areas of threatened security. Familiarisation with these activities would enable the SSO to implement more efficiently, and to adjust if necessary, the SSP.

Familiarisation with the modes of cooperation with national or international naval forces and the organisations or services in charge of maritime shipping security and supervision represents an important segment of fighting against all threats at sea. The SSO should be familiar, at an appropriate level, with the modes of cooperation with naval forces, as the matter is directly related to their missions. Likewise, the ship master could have easier and faster access to information on the activities of the naval forces in his/her area, which would considerably facilitate making decisions regarding the potential attacks on the ship. In this context we should emphasise the importance of familiarisation with the ways of operation of various organisations and services that carry out activities associated with the maritime shipping security and supervision, such as Maritime Security Center Horn of Africa, The United Kingdom Maritime and Trade Organization, The NATO Shipping Center, Maritime Liaison Office and others. The activities of these organisations and services directly contribute to an increased level of maritime security that depends on the data gathered from vessels and/or shipping companies. Therefore the SSO should be familiar with their activities and operation modes, as well as with the benefits that can be obtained through these organisations and services in terms of increased ship's security.

Detailed familiarisation with the tactics, techniques and procedures of the attacks launched by pirates, terrorists or criminal groups at sea represents a sort of insider's view into security threats. Such knowledge could result in the SSO's increased ability to respond to potential attacks launched by these groups.

Good knowledge of technical features, capacities and efficiency of weapons, ammunition and equipment used by pirates, terrorists or criminal groups at sea directly improves the quality of response to potential attacks. The existing SSO training program requires only the recognition and detection of weapons, dangerous substances and devices, which is not sufficient for creating quality protection against attacks. Practical experience has shown that various criminal groups engaged in attacks at sea use guns, rifles, machine guns and launchers for rocket-propelled grenades. Familiarisation with technical features, capacities and efficiency of these weapons would ensure a more efficient protection of the crew. The more we know about the efficiency of specific arms, the more efficient we are in responding to them. The SSO should be well aware of the parts of the ship that can be used as safe shelters

from specific weapons. Directly related to the familiarisation with the efficiency of various weapons is the modification of the SSP featuring the positions of shelters for an individual crewmember or a group of crewmembers.

The proposal is that the parts of training associated with the activities of naval forces, security organisations and services, are conducted by former or retired naval officers with adequate experience in missions, operations and security activities. The suggestion is that the contents related to armed attacks are delivered by former or retired professional military staff with adequate experience in physical protection of vessels.

With regard to the own experience in this matter, the author of this paper consider that the time needed for delivery and acquisition of these contents amounts to at least 15 to 20 hours. The exact duration of delivery and acquisition of these contents will be subsequently defined upon further consultations with the experts in this area. The author continues to examine supplements to the SSO training with the aim of sending finalised proposals to the relevant IMO bodies for adoption.

## CONCLUSIONS

IMO introduced the ISPS Code as a response to the deteriorated global security situation following the 9/11 terrorist attacks in the United States of America. The ISPS Code, implemented through the 1974 SOLAS Convention, is a comprehensive set of measures aimed at enhancing the security of ships and port facilities. It refers to all stakeholders, i.e. entities in the international maritime shipping, defining the procedures, obligations and duties of the Contracting Governments, shippers, maritime companies, ports and vessels. The implementation of the ISPS Code implies the appointment of persons in charge in companies, ports and on ships, namely the CSO, PFSO, and the SSO. According to the ISPS Code, it is the responsibility of the company and the CSO to appoint the SSO. The ISPS Code defines the requirements regarding the education and training of these staff. The requirements are implemented in national legislations of the Contracting Governments. The upsurge of Somali-based piracy has further worsened the security situation at sea. As a result, some flag States decided to engage the PCASP on board ships, to provide physical protection in the event of firearm attacks. As PCASP were deployed on board merchant ships, the IMO provided guidelines that define the PCASP training.

Through the analysis of the SSO training program and comparison with the PCASP training area, it has been ascertained that the existing SSO training program should be extended. The reasons for the program extension are associated with the development (deterioration) of the security situation at sea. Therefore it has been proposed that the SSO training is supplemented in the parts related to the activities of naval forces, with the purpose of reducing the efficiency of arms used in attacks on merchant ships.

Familiarisation with the naval force activities and operation modes would enable the SSO to implement the SSP in a more efficient way. It would also result in increased safety and security and it would simplify and facilitate decision-making regarding the implementation of onboard security measures.

Furthermore, it would be of great importance to familiarise SSO with the operation modes and attack patterns of pirates, terrorists and criminal groups, and with the efficiency of weapons they use. Therefore, supplementing the SSO training program with these contents would enable enhanced protection of merchant ship crews. It is proposed that the supplementary SSO training is performed by experts with experience in naval force or PCASP missions, operations, and activities. It can be concluded that the suggested amendments to the SSO training programs would enhance the level of security onboard merchant ships.

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## The Relationship Between Pre-Service Teachers' Learning Styles And Their Studying Habits

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### ABSTRACT

The purpose of this research was to analyze the relationship between learning styles and studying habits of pre-service teachers. The research was carried out in descriptive model and with the data collected from 618 pre-service teachers studying at first and fourth grades in different departments of Adıyaman University Faculty of Education in 2014-2015 academic year. In the research, the data related to personal information of the pre-service teachers were collected using "Personal Information Form," the data related to learning styles were collected using "Kolb Learning Style Inventory," and the data related to studying habits were collected using "Studying Skills Determination Inventory (SSDI)." For the analysis of the data, frequency, percentage, t-test, chi-square, and one-way variance analysis (ANOVA) were used. According to the analysis results, no significant difference was found in learning styles according to gender of pre-service teachers, but significant difference was found in learning styles according to the level of grade and program they studied at. SSDI scores had a significant difference according to gender, level of grade and the program being studied. And significant difference was determined in SSDI scores according to learning styles.

### INTRODUCTION

Information's being a meta that is easily reached and used by everyone has provided its increasing day by day through changing. These developments have caused societies to encounter with the problem of how current information will be acquired to individuals. Accordingly, "information acquisition" and "learning" concepts have become the concepts that are mostly emphasized in our age (Öncü, 2014, s. 98). Moreover, families and schools that are essential for raising individuals have encountered with problem(s) such as "What shall we teach better?" and "How do we teach learning?"

Especially the researches in education and the thought of education's individualization have led the result of developing different learning styles, strategies, and methods for each individual considering the individual differences. As result of these experienced developments, learning style has become one of the most important factors affecting the process of teaching and learning (Genç & Kocaarslan, 2013). Because each individual learns in a different style and has a learning style that reveals ability in ease and comfort (Topuz & Karamustafaoğlu, 2013). Learning starts individuals' meeting a situation and information, and ends through placing in brain structuring in mind. During this process, individuals use different instructional methods and techniques developing different ways and strategies specific to themselves for learning. For that reason, teachers should consider the presence of students with different learning styles in each classroom (Demir, 2008). Moreover, educational activities performed to the students are provided by knowledgeable and experienced teachers carrying on duty in formal educational institutions in modern countries (Aybek, 2010, s. 1). In environments where educational activities are carried out, students learn in many ways such as seeing and hearing, active and interactive, reasoning and intuitional, memorizing and visualization, designing similarities, making mathematical models, being regular and random. However, while some teachers teach through lecturing, some teach through demonstrating and discussing, some through focusing on principles, some through focusing on practices, some through making students memorize and some making individuals understand. To what extent students will learn in the classroom depends upon their innate talent, and level of readiness, learning styles of students and teachers and organization of teaching-learning environments according to learning styles (Felder & Silverman, 2002). Because educational environments where instructional activities are held include rich individual properties in terms of physical, biologic, psychologic properties, interests, expectations, requests, abilities, types of intelligence, and learning styles. The differences in individual properties of students reveal themselves in learning processes of them. An educational environment organized considering the learning styles will create a positive effect upon academic success and learning of students (Ekici, 2013).

Individuals are born as different from each other in terms of their physical, mental, cognitive, and psychomotor properties; moreover, the environmental factors individuals experience also increase the differences among the individuals (Sapanç, 2014). These differences cause learning differences among the individuals. For that reason, the differences among the individuals have gained importance gradually and caused the concept of "learning styles" that clarified how individuals learn, how they process data become more prominent (Durukan, 2013)

Several studies have been carried out upon the concept of learning styles. The concept of style is defined as a manner, tone, specific understanding, and structure in Turkish Language Society Dictionary (TDK, 2005). The

concept of learning style was firstly used by Rita Dunn in 1960s. Learning style is an individual path each individual follows while getting and assimilating the information, and this differs for each individual (Dunn, 2009). According to Keefe (1991), learning includes cognitive, affective and psychologic behavior characteristics individuals use as determinants that do not change to an extent in perception mutual interaction, and response styles of learners in a learning environment (Koçak, 2007). Learning style is defined as individual differences in learning based upon preferences of individual to set different stages into work in a learning cycle (Kolb & Kolb, 2005).

### **Experiential Learning Theory**

Although educational achievement depends upon students' abilities, aptitudes, it also relies on their individual learning styles (Kolb, 1984). Kolb and Kolb (2005) define the four learning styles as follows: diverging, assimilating, converging, and accommodating. The Experiential Learning Model is also based on the existence of four learning models- concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), active experimentation (AE). Although these models are a part of learning, individuals are thought to develop preferences for specific models over time (Koob & Funk, 2002). One of these four learning styles is prior for individuals, and it is inevitable to be exposed to this cycle numerously in a learning experience (Hasırcı, 2006).

#### **Diverging**

The *diverging* learning style describes individuals who learn by way of concrete experience and reflective observation (Sugarman, 1985). People with this learning style are best at viewing concrete situations from many different points of view. They tend to have broad cultural interests and like to gather information. They are interested in people, tend to be imaginative, emotional, and often specialize in the arts. Working in groups, appreciating diverse viewpoints, receiving personal feedback are some characteristics of the diverging learning style (Kolb & Kolb, 2005, s. 5).

#### **Assimilating**

People have AC and RO as dominant learning abilities in assimilating style. People with this learning style are best at understanding a wide range of information and putting it into concise, logical form. Individuals with an Assimilating style are less focused on people and more interested in ideas, abstract concepts. Generally, people with this style find it more important that a theory have logical soundness than practical value. This learning style is important for effectiveness in information and science careers. In formal learning situations, people with this style prefer readings, lectures, exploring analytical models, and having time to think things through. (Kolb & Kolb, 2005, s. 5)

#### **Converging**

People have AC and AE as dominant learning abilities in Converging style. People with this learning style are best at finding practical uses for ideas and theories. They have the ability to solve problems, make decisions based on finding solutions to questions or problems. Individuals with a Converging learning style prefer to deal with technical tasks, problems rather than with social issues and interpersonal issues. These learning skills are important for effectiveness in specialist and technology careers. In formal learning situations, people with this style prefer to experiment with new ideas, simulations, lab assignments, and practical applications (Kolb & Kolb, 2005, s. 5).

#### **Accommodating**

People have CE and AE as dominant learning abilities. People with this learning style have the ability to learn from primarily “hands-on” experience. They enjoy carrying out plans, involving themselves in new and challenging experiences. They are prone to acting on “gut” feelings rather than on logical analysis. People with an accommodating learning style tend to be effective in action-oriented careers such as marketing or sales. They enjoy setting goals, working with others, using different approaches for completing a project (Kolb & Kolb, 2005, s. 5).

Teachers are one of the partners that have the most important effect upon teaching-learning and the academic success of students. In order for the teachers to know learning styles and use efficiently, they are required to be trained on various learning methods, styles and techniques considering the individual differences of students either in teacher training institutions during the pre-service period or in-service trainings. Because pre-service teachers' awareness on their own learning styles and different learning styles before starting to their profession will provide contribution upon creating an efficient educational environment. Individuals' knowing their own learning styles will render service to their learning and provide contribution upon the productivity of learning.



## THE STUDY

The purpose of this research was to analyze the relationship between the learning styles and studying habits of pre-service teachers. For that purpose, answers to the research questions below were sought:

1. Is there a significant difference between the learning styles according to the gender of pre-service teachers?
2. Is there a significant difference between the learning styles according to the pre-service teachers' level of grade?
3. Is there a significant difference between the learning styles according to the department pre-service teachers study at?
4. Is there a significant difference between the studying skill scores according to the gender of pre-service teachers?
5. Is there a significant difference between the studying skill scores according to the pre-service teachers' level of grade?
6. Is there a significant difference between the studying skill scores according to the department pre-service teachers study at?
7. Do studying skill scores differ significantly according to the learning styles?

Descriptive study (relational screening model) was used in this research. The relational screening is a research model aiming to determine the presence and level of a change between two or more variables (Karasar, 2014, s. 77).

The study group of the research included 618 pre-service teachers in the first and fourth grade studying at seven different programs of Adıyaman University Faculty of Education in spring term of 2014-2015 academic year.

**Table 1.** Distribution of Study Group According to Gender and Level of Grade

			Gender		Total
			Female	Male	
Grade	1	N	225	115	340
		%	66.2	33.8	55
	4	N	176	102	278
		%	63.3	36.7	45
Total		N	401	217	618
		%	64.9	35.1	100

As could be seen in Table 1, 55% of the study group included pre-service teachers studying at the first grade, and 45% included the fourth grade pre-service teachers. According to the gender, 64.9% of the participants were female, and 35.1% were male.

**Table 2.** Distribution of Study Group According to the Program they Study at

Departments	N	%
Pre-school	54	8.7
Classroom	98	15.9
Turkish	83	13.4
Social	61	9.9
Science	86	13.9
Mathematics	92	14.9
PCG	144	23.3
Total	618	100

As could be seen in Table 2, the study group included 8.7% pre-school teaching, 15.9% classroom teaching, 13.4% Turkish teaching, 9.9% social sciences teaching, 13.9% science teaching, 14.9% mathematics teaching, and 23.3% psychological counselling and guidance (PCG) students.

In the research, to collect data Learning Styles Inventory and Studying Skills Scale (SSS) were used.

### Learning Styles Inventory

In order to determine the learning styles, “Learning Styles Inventory” developed by (Kolb, 1984) was used. Four learning styles were determined in the inventory that was proved in terms of validity and adapted into Turkish by (Aşkar & Akkoyunlu, 1993). Experiential Learning Theory created the basis of Kolb learning style. According to the experiential learning theory of Kolb, learning is a cycle and one of these four learning styles had priority for an individual. Learning style of each individual is a component of these four learning styles (Jonassen & Grabowski, 1993). Learning styles inventory included 12 items with 4 choices that requested individuals to list four learning styles that defined their own learning styles as the best. Each choice represented a learning style. Those were concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). A score between 12 and 48 was obtained as result of the scores participants determined for each choice. Subsequently, integrated scores were obtained. The positive score obtained from AC-CE among the integrated scores proved that learning is abstract and the negative score proved learning as concrete. Similarly, the positive score obtained from AE-RO proved learning to be active and negative score proved learning to be reflective. According to the calculated values, the learning style of each student was determined. Cronbach-Alpha reliability coefficients of the inventory were found as .76 for Concrete Experience (CE), as .76 for Reflective Observation (RO), as .77 for Abstract Conceptualization (AC), and as .75 for Active Experimentation (AE).

The combination of concrete experience (feeling) and reflective observation (watch) revealed the diverging learning style. The individuals with this learning style were successful at having different viewpoints to concrete situations. The combination of abstract conceptualization (think) and reflective observation (watch) revealed “assimilating” learning style. Thinking ability and being aware of the meanings were among the most important properties of individuals with this learning style. “Converging” learning style included the combination of abstract conceptualization (think) and active experimentation (do). Problem solving, decision making, and logical and systematic planning of ideas were leading properties of individuals with this learning style. The combination of concrete experience (feel) and active experimentation (do) revealed “accommodating” learning style. Planning, putting plans into action, being included in new experiences were the specific properties of individuals within this learning style (Kolb, 1984).

### Studying Skills Scale (SSS)

Studying Skills Scale (SSS) was developed by Bay, Tuğluk and Gençdoğan (2006). The scale included 26 items and prepared in 5-point Likert type; and had three sub-scale as motivation, time management and preparation to exam-exam anxiety. Motivation sub-scale included 11 items, time management sub-scale included 7 items, and preparation to exam-exam anxiety sub-scale included 8 items. As the scores increased, studying skill related to each sub-scale also increased positively. Cronbach Alpha reliability coefficient calculated for all SSS scale was found as .81, was found as .66 for motivation sub-scale, was found as .55 for time management sub-scale, and was found as .73 for preparation to exam-exam anxiety sub-scale.

## FINDINGS

**Table 3.** Learning Styles According to Gender

			Style				Total
			Accommodating	Converging	Diverging	Assimilating	
Gender	Female	N	49	63	146	143	401
		%	12.2	15.7	36.4	35.7	100
	Male	N	31	31	86	69	217
		%	14.3	14.3	39.6	31.8	100
Total		N	80	94	232	212	618
		%	12.9	15.2	37.5	34.3	100

When learning styles of pre-service teachers according to gender in Table 3 were analyzed, 36.4% of females were noticed to have diverging, 35.7% had assimilating, 15.7% had converging and 12.2% had accommodating learning styles. In terms of male pre-service teachers, 39.6% were noticed to have diverging, 31.8% had assimilating, 14.3% had converging and 14.3% had accommodating learning styles. When considered in general, most pre-service teachers (37.5%) were noticed to have “diverging” learning style and the least pre-service teachers (12.9%) had “accommodating” learning style.

Chi-square test was performed to determine whether there was a significant difference between the gender of pre-service teachers and their learning styles or not. There was no significant relationship between the gender and learning styles (Asymp. Sig.= .68,  $p>.05$ ). It was revealed that learning styles did not differ according to gender.

**Table 4.** Learning Styles according to Level of Grade

			Style				Total
			Accommodating	Converging	Diverging	Assimilating	
Grade	1	N	39	53	115	133	340
		%	11.5	15.6	33.8	39.1	100
	4	N	41	41	117	79	278
		%	14.7	14.7	42.1	28.4	100

In table 4, when learning styles of pre-service teachers were analyzed according to the level of grade they studies, it was noticed that 39.1% of the pre-service teachers studying at the first grade had “assimilating” learning style, 33.8% had “diverging” learning style, 15.6% had “converging” learning style, and 11.5% had “accommodating” learning style. In terms of pre-service teachers studying at the fourth grade, 42.1% had “diverging” learning style, 28.4% had “assimilating,” 14.7% had “accommodating” and 14.7% had “converging” learning style.

According to chi-square test analysis result that was performed to determine whether there was a difference between the grade of pre-service teachers and their learning styles or not, a significant relationship was determined between the level of grade and learning styles (Asymp. Sig. =.02,  $p<.05$ ). It was revealed that learning styles differed according to pre-service teachers’ grade level.

**Table 5.** Learning Styles according to the Program being studied

		Style				Total
		Accommodating	Converging	Diverging	Assimilating	
PCG	N	25	21	42	56	144
	%	17.4	14.6	29.2	38.9	100
Math	N	8	7	35	42	92
	%	8.7	7.6	38.0	45.7	100
Science	N	6	10	42	28	86
	%	7.0	11.6	48.8	32.6	100
Social	N	11	13	19	18	61
	%	18.0	21.3	31.1	29.5	100
Turkish	N	10	17	30	26	83
	%	12.0	20.5	36.1	31.3	100
Classroom	N	13	14	43	28	98
	%	13.3	14.3	43.9	28.6	100
Pre-school	N	7	12	21	14	54
	%	13.0	22.2	38.9	25.9	100

In Table 5, distribution of learning styles according to the program pre-service teachers studied were presented. It was noticed that 38.9% of psychological counselling and guidance pre-service teachers had assimilating learning style, 45.7% of mathematics pre-service teachers had assimilating, 48.8% of science pre-service teachers had diverging, 31.1% of social sciences pre-service teachers had diverging, 36.1% of Turkish pre-service teachers had diverging, 43.9% of classroom pre-service teachers had diverging, and 38.9% of pre-school pre-service teachers had diverging learning style.

According to chi-square test analysis result that was performed to determine whether there was a difference between the programs of pre-service teachers and their learning styles or not. There was a significant difference between the programs and learning styles (Asymp. Sig. =.02,  $p<.05$ ). It was revealed that learning styles differed according to pre-service teachers’ programs.

**Table 6.** T-test Results of SSS Average Scores according to Gender

Scale	Gender	N	$\bar{X}$	Sd	t	p
Motivation	Female	399	35.19	7.09	1.093	.275
	Male	217	34.53	7.23		
Time management	Female	401	19.90	4.81	-.248	.804
	Male	217	20.00	5.00		
Preparation to exam – Exam anxiety	Female	401	22.85	6.01	-2.181	.030*
	Male	217	23.99	6.54		

When Table 6 was analyzed, it was found that preparation to exam – exam anxiety scores significantly differed according to the gender ( $t=-2.18$ ,  $p<.05$ ). Male pre-service teachers average scores of preparation to exam – exam anxiety ( $\bar{X} =23.99$ ) higher than average scores female ( $\bar{X} =22.85$ ). Motivation ( $t=1.09$ ,  $p>.05$ ) and time management ( $t=-.25$ ,  $p>.05$ ) scores of pre-service teachers were not significantly different. It was possible to say that male pre-service teachers were more successful at coping with preparation to exam-exam anxiety. In terms of motivation and time management pre-service teachers had similar views.

**Table 7.** T-test Results of SSS Average Scores according to Level of Grade

Scale	Grade	N	$\bar{X}$	Sd	t	p
Motivation	1	340	34.59	7.07	-1.451	.147
	4	276	35.42	7.21		
Time management	1	340	19.97	4.95	.198	.843
	4	278	19.90	4.79		
Preparation to exam – Exam anxiety	1	340	22.70	6.31	-2.430	.015*
	4	278	23.92	6.05		

When Table 7 was analyzed, it was found that preparation to exam –exam anxiety scores significantly differed according to the grade level ( $t=-2.43$ ,  $p<.05$ ). Fourth grade pre-service teachers preparation to exam – exam anxiety average scores ( $\bar{X} =23.92$ ) higher than average scores of first grade ( $\bar{X} =22.70$ ). Motivation ( $t=-1.45$ ,  $p>.05$ ) and time management ( $t=.20$ ,  $p>.05$ ) scores of pre-service teachers were not significantly different. Depending upon this finding, it could be mentioned that fourth grade pre-service teachers perceived themselves more competent than the first grade pre-service teachers in terms of preparation to exam-exam anxiety sub-scale.

**Table 8.** One-way Variance Analysis Results of SSS Scores according to Program

		Sum of squares	sd	Average of squares	F	p
Motivation	Intergroup	1058.184	6	176.364	3.545	.002*
	Intragroup	30300.881	609	49.755		
	Total	31359.065	615			
Time management	Intergroup	126.661	6	21.110	.889	.503
	Intragroup	14511.002	611	23.750		
	Total	14637.663	617			
Preparation to exam – Exam anxiety	Intergroup	508.972	6	84.829	2.216	.040*
	Intragroup	23389.153	611	38.280		
	Total	23898.125	617			

As could be seen in Table 8, it was found that SSS motivation scores of pre-service teachers revealed a significant difference according to the program they studied ( $F_{(6, 609)}=3.545$ ,  $p<.01$ ). According to Tukey HSD test performed to determine among which groups there were differences, it was determined that score averages of classroom teaching pre-service teachers ( $\bar{X} =36.78$ ) were higher than the score averages of pre-school teaching pre-service teachers ( $\bar{X} =33.11$ ). No significant difference was found between time management score averages according to the program pre-service teachers studied ( $F_{(6, 611)}=.889$ ,  $p>.05$ ). It was possible to say that pre-service teachers studying at different programs had similar views in terms of time-management. The difference between the groups was found significant in preparation to exam-exam anxiety sub-scale ( $F_{(6, 611)}= 2.216$ ,  $p<.05$ ). According to Tukey HSD test result, score averages of classroom teaching pre-service teachers ( $\bar{X}=24.43$ ) were higher than the score averages of science pre-service teachers ( $\bar{X}=21.74$ ).

**Table 9.** One-way Variance Analysis Results of SSS Scores according to Learning Styles

		Sum of squares	sd	Average of squares	F	p
Motivation	Intergroup	621,523	3	207,174	4.125	.007*
	Intragroup	30737,542	612	50,225		
	Total	31359,065	615			
Time management	Intergroup	285,193	3	95,064	4.067	.007*
	Intragroup	14352,470	614	23,375		
	Total	14637,663	617			
Preparation to exam – Exam anxiety	Intergroup	514,620	3	171,540	4.504	.004*
	Intragroup	23383,504	614	38,084		
	Total	23898,125	617			

As could be seen in Table 9, it was found that SSS motivation scores of pre-service teachers revealed a significant difference according to learning styles ( $F_{(3, 612)}=4.125$ ,  $p<.01$ ). It was possible to say that pre-service teachers' motivations differed according to their learning styles. Also time management scores of pre-service teachers were significantly different according to learning styles ( $F_{(3, 614)}=4.067$ ,  $p<.01$ ). It was possible to say that pre-service teachers' time management differed according to their learning styles. Lastly preparation to exam – exam anxiety scores of pre-service teachers were significantly different according to learning styles ( $F_{(3, 614)} = 4.504$ ,  $p<.01$ ). This finding showed that pre-service teachers' preparation to exam – exam anxiety differed according to their learning styles.

**Table 10.** Paired Comparison Results Based upon Bonferroni Analysis of SSS (Motivation Sub-scale) according to the Learning Style

Dependent Variable	Learning Style(i)	Learning Style(J)	Average difference	SH	p	Bonferroni
Motivation	Accommodating	Converging	1.64574	1.07801	.764	
		Diverging	-1.07554	.91937	1.00	
		Assimilating	.70403	.93051	1.00	
	Converging	Accommodating	-1.64574	1.07801	.764	Converging - Diverging
		Diverging	-2.72129*	.86702	.011	
		Assimilating	-.94172	.87883	1.00	
	Diverging	Accommodating	1.07554	.91937	1.00	Diverging - Converging
		Converging	2.72129*	.86702	.011	
		Assimilating	1.77957	.67487	.051	
	Assimilating	Accommodating	-.70403	.93051	1.00	
		Converging	.94172	.87883	1.00	
		Diverging	-1.77957	.67487	.051	

According to Bonferroni test performed to determine among which groups there were differences. As could be seen in Table 10, motivation score averages of pre-service teachers with diverging learning style ( $\bar{X}=36.13$ ) were significantly higher than the score averages of pre-service teachers with converging learning style ( $\bar{X}=33.40$ ). Accordingly, it was possible to say that diverging learning style had an effect upon increasing the motivation of pre-service teachers rather than the converging learning style.



**Table 11.** Paired Comparison Results Based upon Bonferroni Analysis of SSS (Time Management Sub-scale) according to the Learning Style

Dependent Variable	Learning Style (i)	Learning Style (J)	Average Difference	SH	p	Bonferroni
Time Management	Accommodating	Converging	1.01144	.73544	1.00	
		Diverging	-.87026	.62686	.993	
		Assimilating	.28231	.63439	1.00	
	Converging	Accommodating	-1.01144	.73544	1.00	Converging - Diverging
		Diverging	-1.88169*	.59113	.009	
		Assimilating	-.72912	.59911	1.00	
	Diverging	Accommodating	.87026	.62686	.993	Diverging - Converging
		Converging	1.88169*	.59113	.009	
		Assimilating	1.15257	.45937	.074	
	Assimilating	Accommodating	-.28231	.63439	1.00	
		Converging	.72912	.59911	1.00	
		Diverging	-1.15257	.45937	.074	

According to Bonferroni test performed to determine among which groups there were differences. As could be seen in Table 11, time management score averages of pre-service teachers with diverging learning style ( $\bar{X}$  =20.73) were significantly higher than the score averages of pre-service teachers with converging learning style ( $\bar{X}$  =18.85). Accordingly, it was possible to say that diverging learning style had an effect upon increasing the time management of pre-service teachers rather than the converging learning style.

**Table 12.** Paired Comparison Results Based upon Bonferroni Analysis of SSS (Preparation to Exam-Exam Anxiety Sub-scale) according to the Learning Style

Dependent Variable	Learning Style (i)	Learning Style (J)	Average Difference	SH	p	Bonferroni
Preparation to Exam-Exam Anxiety	Accommodating	Converging	2.33059	.93872	.080	
		Diverging	.30216	.80013	1.00	
		Assimilating	1.87665	.80975	.125	
	Converging	Accommodating	-2.33059	.93872	.080	Converging - Diverging
		Diverging	-2.02843*	.75452	.044	
		Assimilating	-.45393	.76471	1.00	
	Diverging	Accommodating	-.30216	.80013	1.00	Diverging - Converging Diverging - Assimilating
		Converging	2.02843*	.75452	.044	
		Assimilating	1.57450*	.58634	.045	
	Assimilating	Accommodating	-1.87665	.80975	.125	Assimilating - Diverging
		Converging	.45393	.76471	1.00	
		Diverging	-1.57450*	.58634	.045	

According to Bonferroni test performed to determine among which groups there were differences. As could be seen in Table 12, preparation to exam-exam anxiety score averages of pre-service teachers with diverging learning style ( $\bar{X}$  =24.36) were significantly higher than the score averages of pre-service teachers with converging learning style ( $\bar{X}$  =22.03) and assimilating learning style ( $\bar{X}$  =22.49). Accordingly, it was possible to say that diverging learning style had an effect upon increasing the preparation to exam-exam anxiety of pre-service teachers rather than the converging and assimilating learning style.

## CONCLUSIONS

According to the result obtained from this study in which the relationship between the learning styles and studying habits of pre-service teachers, there was no significant difference between learning styles and gender of the pre-service teachers. It could be mentioned that dominant learning styles of female and male pre-service teachers had similarities, and gender was not a determinative factor upon the learning styles. When the literature was reviewed,

it was noticed that similar results related to gender and learning styles of pre-service teachers were obtained in several studies (Kaya, Bozaslan and Durdukoca, 2012; Dikmen and Saracaloğlu, 2011; Genç and Kocaarslan, 2013; Köse, 2010; Özgür, 2013; Can, 2009; Demir, 2008; Gürsoy, 2008). In some studies (Uzuntiryaki, Bilgin and Geban, 2004; Ekici, 2013; Kahyaoğlu, 2011; Yılmaz, 2014; Süral, 2008; Topuz and Karamustafaoğlu, 2013), it was noticed that there was a significant difference between gender and learning styles of pre-service teachers.

According to the result obtained from this study, it was determined that there was a significant difference between the grade levels of pre-service teachers and their dominant learning styles, and dominant learning style of the pre-service teachers differed according to the level of grade. When the literature was reviewed, some studies (Köse, 2010; Can, 2009) proved that there was a significant difference between the grade of pre-service teachers and their dominant learning styles. Whereas significant difference was found between learning styles and level of grade in some parts, no difference was found in some parts in similar studies (Dikmen and Saracaloğlu, 2011; Özgür, 2013; Topuz and Karamustafaoğlu 2013; Gürsoy, 2008).

A significant difference was found between the program pre-service teachers studied at and their dominant learning styles. This result could be based upon using different score types in student selection to the program. In a research carried out by Yılmaz (2014), the learning style pre-service teachers adapted revealed a significant difference according to the department they studied at; however, in the study carried out by Gürsoy (2008) learning styles did not differ significantly according to the program pre-service teachers studied at. As the level of grade changed, learning styles differed.

According to the gender, views of pre-service teachers related to the time management showed similarities; in the study carried out by Eldeleklioğlu (2015). Females were determined to perceive themselves better rather than the males. Male pre-service teachers were specified to be more positive rather than the female pre-service teachers in terms of exam anxiety and preparation to exam. This result supported the results of the studies in the literature related to the fact that exam anxiety of females was higher than the exam anxiety of males (Kapıkıran, 2002; Alyaprak, 2006).

When the research results were analyzed in general, pre-service teachers with diverging learning style were noticed to have higher studying skills rather than the pre-service teachers with other learning styles. In reference to this, it will be useful to analyze the effects of different learning styles upon exam performance and academic success.

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## The Relationship Between Teaching-Learning Approaches And Academic Self-Efficacy Of Physical Education Candidate Teachers

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### ABSTRACT

The purpose of this study is to investigate the correlation between pre-service teachers' teaching-learning approaches and their academic self-efficacy. For this purpose, "correlations survey method" was adopted in this study in order to find answers to the research questions. The sample of the study was students (n=329) attending Physical Education and Sports Teacher Education Departments. The data were collected by "Teaching-Learning Approaches Questionnaire (Aypar,2011)" and "Academic Self-Efficacy Scale (Ekici, 2012)". According to Pearson's moment correlation analysis, it was found out that there was a positive significant correlation between pre-service teachers' teaching-learning conception and their academic self-efficacy. On the other hand, according to the results of the regression analysis, it was found out that pre-service teachers' constructivist perception predicted their student academic self-efficacy significantly.

**Keywords:** Teaching-learning approaches, academic self-efficacy, physical education and sports teacher candidates.

### INTRODUCTION

Intense changes occurring in our world in every field, has also affected the educational system of the countries thus it causes changes in essential qualities of individuals who will maintain the existence of the societies. At the present it is expected from the individuals that instead of consuming information they should have the abilities like raising new information by making sense of the information that we have, having an information-oriented life, critical thinking, synthesizing, problem solving, and communicating.

It can be said that developments in education sciences in different periods reveal two different teaching-learning concepts naming traditional and constructive, which are contrasted with each other (Duffy & Roehler, 1986; Chen & Elliot, 2004; Schunk, 2008; Cheng & et al., 2009; Akpınar, 2010; Aypay, 2011; Oğuz, 2011, Bıkmaz, 2011; Şahin & Yılmaz, 2011). Today the way of change in education shifts from the traditional way to student centered constructivist approach. In our country since 2006 constructivist approach based on cognitive theory has supplanted the place of traditional approaches that based on the behaviorist theory. Behaviorist theory which had been dominant until the 70s in education applications emerged based on the assumption that learners were passive in teaching. When teaching-learning situations considered in which traditional approach is applied learning is pursued with gifts, punishment, and repetition. A situation in which everything is controlled by a teacher is created (Açıkgöz, 2005). The Teacher seems as the source of the knowledge and students seem as the passive receivers. Teachers give the knowledge to students in a didactic way and expect them to give correct answers to questions. In traditional approach students often study alone (Chan and Elliott, 2004; Cheng & Cheng, 2009; Schunk, 2009).

In new teaching approach it is thought that teaching is handled like a complicated process and teaching can only be done by the educated tutors (Crisp, 2006). Students and teachers share the responsibilities in constructivist teaching. It is expected from students to attend learning activities at every stage and teachers to guide and pave the way for students while gaining knowledge and skills. Thus, planning, execution, and evaluation of the learning process are different from the traditional approach. Today it is believed that learning is an inner and cognitive process rather than being a product of environmental factors (Biggs, 1996; Açıkgöz, 2005). Constructivists believe that some activities and rich experiences can activate learning process and affect the learners' learning levels

positively (Brooks & Brooks, 1999). Hence constructivist learning is grounded in the process of problem solving, critical thinking, and creativity (Fer & Cırık, 2007).

Self-efficiency is a popular and searched concept that is an important determiner especially in the process related to education like learning and performance within social-cognitive theory (Bandura; 1989, 1994, 1997). According to Schunk (1991) self-efficiency belief is the most important predictor of the individual behaviors. Learners having high self-efficiency beliefs are more adaptive while gaining a skill or learning a subject, more hard working, more determined, more durable against difficulties, and more successful than the students who are skeptical about their capacities and skills (Pajares, 1996; Zimmerman, 2000). Academic self-efficiency accepted as a type of self-efficiency is the perception of the individuals about succeeding a duty at a level of specified success level (Schunk, 1991; Zimmerman, 1995). Academic self-efficiency is like a self-esteem in academic subject students need to study (Cheemers & et al., 2001).

It is stated that in order to be successful in school students' affective skills are important as much as their cognitive skills (Alsop & Watts, 2000; Thomson & Mintzes, 2002; Açıkgöz, 2005). In constructivist approach, students need to attend actively to the learning process by adding already known information, processing the information, developing hypotheses and testing and interpreting them (Açıkgöz, 2005). Therefore, it is known that affective domain skills are important to join that process. In order to increase students' course attendances, attentions, motivations, and self-esteems, constructivist approach methods can be used and that can increase their academic beliefs. In this context, it seems that it is possible to have a relation between learning-teaching perceptions and academic self-efficiency.

All in all, although there are so much both domestic and abroad, research in relevant literature about either academic self-efficiency or teaching-learning perceptions (Clements and Battista, 1990; Schunk, 2009, Aypar, 2011; Baş, 2012, 2013, 2014; Saıcı, 2013), it is not encountered both of these subjects searched together. In an experimental research done by Kaya (2014), students' self-efficiency perceptions were examined about traditional and constructivist teaching methods in a chorus teaching. Therefore, it is thought that examining these two significantly interactive variables would be meaningful. Thus the problem statement of the research is "Is there any relationship between pre-service teachers' teaching-learning perceptions and their academic self-efficiencies." In order to find answers to the problem statement, these sub-problems are applied.

What is the level of pre-service P.E teachers' teaching-learning perceptions and academic self-efficiency points?

Is there any significant relationship between the teaching-learning perceptions and academic self-efficiencies of pre-service P.E teachers?

Do the teaching-learning perceptions of the pre service P.E teachers predict their academic self-efficiencies significantly?

## METHOD OF THE STUDY

The purpose of this study is to investigate the correlation between pre-service teachers', attending Physical Education and Sports Teacher Education Departments on 1st and 4th grade at Akdeniz, Ahi Evran and Erciyes University, teaching-learning approaches and their academic self-efficacy. For this purpose, "correlations survey method" was adopted in this study in order to find answers to the research questions. Correlational research investigates the relationship between two or more variables without intervention (Büyükoztürk and the others, 2011).

The sample of the study was students (n=329) attending Physical Education and Sports Teacher Education Departments on 1st and 4th grade at Akdeniz, Ahi Evran, Ege and Erciyes University. The mean age (age =  $21.92 \pm 3.33$ ) of 329 [130 women (39.5%) and 199 men (60.5%)] of students. 82 students (24.9%) are studying at Akdeniz, 97 (29.5%) students are studying at Erciyes, 84 (25.5%) students are studying at Ahi Evran and 66 (20.1%) students are studying at the Ege University. 176 (53.5%) students studying on the 1st grade and 153 (46.5%) students studying on the 4th grade. For the sample selection, appropriate sampling method was adopted. In this method, researchers start on the most accessible form the sample until they reach the needed size of responders (Cohen & Manion, 1998).

The data collection tools were "Teaching-Learning Approaches Questionnaire (Chan & Elliot, 2004)" and "Academic Self-Efficacy Scale (Owen & Froman, 1988)". Information about the scales is as follows.



### Teaching-Learning Approaches Questionnaire

In order to determine understanding of the teaching-learning of prospective teachers, Teaching-Learning Approaches Questionnaire which was developed by Chan and Elliot (2004) and was adapted Turkish by Aypay (2011). The sample of the study was teacher candidates. The scale consists of 30 items and five-point Likert. Cronbach's alpha coefficient of the scale was calculated as 0.84. In some sub-dimensions; Cronbach's alpha coefficient for first subscale (constructivist approach 12 items) is 0.88, the Cronbach's alpha coefficient for the second sub-dimension (traditional approach 18 items) was calculated as 0.83 (Aypay, 2011). The Cronbach's alpha coefficient for the traditional approach in this research (18 items) is .85, the Cronbach's alpha coefficient for a constructivist approach (12 items) was found at 0.80.

### Academic Self-Efficacy Scale

Academic self-efficacy is the perception of the individuals for doing academic tasks that have determined the level of success. For this purpose Academic Self-Efficacy Scale was developed by Owen and Froman (1988) and validity and reliability studies were carried out by Ekici (2012) in Turkey conditions. The scale was applied to 683 university students. It is a five Likert-type scale and contains 33 items. The scale consists three dimensions: social status (the number of items: 10), cognitive practices (the number of items: 19) and technical skills (the number of items: 4). For overall Cronbach alpha reliability coefficient is 0.86. In this study, the Cronbach's alpha coefficient was found at .91.

In this study, arithmetic mean, standard deviation, Pearson product moment correlation coefficient technique was used to determine the correlation between pre-service teachers' teaching-learning approaches and academic self-efficacy. The multiple regression analysis technique was used to examine the strength of procedure of teaching-learning approach to academic self-efficacy. SPSS 18.0 statistical software package was used for the analysis of the data in the study.

### FINDINGS

In this part of the research, correlation between pre-service teachers' teaching-learning approaches and academic self-efficacy and the strength of procedure of pre-service teachers' teaching-learning approach to academic self-efficacy is covered

**Table1.** The mean and standard deviation of scores, students obtained from the scales

Scales	n	$\bar{X}$	ss
<b>Traditional approach</b>	329	3.33	.66
<b>Constructivist approach</b>	329	4.14	.53
<b>Cognitive practices</b>	329	3.42	.63
<b>Social status</b>	329	3.47	.61
<b>Technical skills</b>	329	3.42	.77
<b>Academic Self-Efficacy Scale (Total)</b>	329	3.44	.59

When Table 1 is examined, the mean scores of students constructivist approach ( $x = 4.14 \pm .53$ ), traditional approach mean scores ( $x = 3.33 \pm .66$ ) was found. Students of social status, academic self-efficacy scale Students had mean scores on social status ( $x = 3.47 \pm .61$ ), cognitive applications ( $x = 3.42 \pm .63$ ), technical skills ( $x = 3.42 \pm .77$ ) and total scale ( $t = 3.44 \pm .59$ ) for Academic Self-Efficacy Scale.

Table2. Correlation between pre-service teachers' teaching-learning approaches and academic self-efficacy

	<b>Cognitive practices</b>	<b>Social status</b>	<b>Technical skills</b>	<b>Academic Self-Efficacy Scale</b>
<b>Traditional</b>	$r=.086$ $P=.120$	$r=.070$ $P=.151$	$r=.136^*$ $P=.014$	$r=.118^*$ $P=.032$
<b>Constructivist</b>	$r=.374^{**}$ $P=.000$	$r=.384^{**}$ $P=.000$	$r=.185^{**}$ $P=.001$	$r=.349^{**}$ $P=.000$

\* $p < .05$ , \*\* $p < .01$

Referring to Table 2, the correlation between pre-service teachers' teaching-learning approaches and academic self-efficacy was observed statistically significant. According to the results, correlation between cognitive applications and traditional teaching-learning approach ( $r = .086$ ,  $p = .120$ ), and social status ( $r = .070$ ,  $p = .151$ ), was observed not significant, correlation between technical skills ( $r = .136$ ,  $p = .014$ ) and total self-efficacy ( $r = .118$ ,  $p = .032$ ) was a significantly lower level in a positive way. Correlation between subscales, Constructivist-

learning approach and cognitive practices ( $r = .374$ ,  $p = .000$ ), social status ( $r = .384$ ,  $p = .000$ ), technical skills ( $r = .185$ ,  $p = .001$ ) and the total academic self-efficacy scale ( $r = .349$ ,  $p = .000$ ), was found significantly in a positive way.

Multiple regression analysis was used to examine the strength of procedure of pre-service teachers' teaching-learning approach to academic self-efficacy. There is the strength of procedure of pre-service teachers' teaching-learning approach to academic self-efficacy in Table 3.

Table3. Multiple regression analysis for the prediction of pre service students' academic self-efficacy

Variable	B	Standard error	$\beta$	t	p
Fixed	1.494	.282	-	5.296	.000
Traditional approach	.105	.046	.117	2.271	.024
Constructivist approach	.385	.057	.349	6.773	.000

$R = .368$ ,  $R^2 = .136$ ,  $F(2,326) = 25.564$ ,  $p = .000$

The predictor variables listed in Table 3 and it was found that the teaching-learning approach is a significant predictor of academic self-efficacy ( $R = .368$ ,  $R^2 = .136$ ,  $p = .000$ ). It was shown that teaching-learning approach (traditional and constructivist) explained the student's academic self-efficacy approximately 14%. When the teaching-learning approach was analyzed by considering separately, it was concluded that constructivist teaching-learning approach that the predictor variables (constructivist:  $R = .349$ ,  $R^2 = .122$ ,  $F = 45.393$ ,  $P = .000$ ) was a significant predictor of academic self-efficacy. It was shown that the constructivist approach explained the student's academic self-efficacy 12%. According to the standardized regression coefficients, the predictor variables of the order of importance on academic self-efficacy is; constructivist ( $\beta = .349$ ) and traditional ( $\beta = .117$ ) teaching and learning approaches

## CONCLUSIONS

In this study conducted to examine the relationship between physical education and sports teachers' teaching-learning perceptions and their academic self-efficacy, the following conclusions have been obtained.

Participant students' constructivist approach scores average have been found to be higher than the one of traditional approaches. It can be said that students have the constructivist teaching-learning perception. In the objectives, existing for teaching programs of physical education courses in schools, In the first place, it is expected the course to guide and build up students to improve their competency in movement and get the habit of living active and healthy. At the same time, it is stated that, through physical education and sports, students can improve their social and thinking skills as well (MoNE, 2013). In schools, physical education and sport curriculum (instruction programme) principles are based on learning through "physical activities, games and sports" and students' cognitive, affective and psychomotor improvement are handled as a whole. In student-centered environments, students should be given the opportunity to construct their own learning. When educating students, environment and experiences with other people are important. In learning-teaching environments, individual, pair, and group work are provided in a balanced way. During practices, ensuring students to feel safe physically and emotionally is important. Improving creativity, critical and reflective thinking are in the foreground (MoNE, 2013). As we have seen, the principles are arranged in accordance with constructivist approach. Prospective teachers who will give the courses in question should be educated key to constructivist approach which will form a basis for them to implement the curriculum successfully. Faculty members who work in the prospective teacher education are thought to play a major role in educating prospective teachers well qualified if they give lessons with active and student centered learning methods. In this study, the prospective teachers can be said to adopt mainly constructivist teaching-learning approach. When score averages of prospective teachers' academic self-efficacy were examined ( $= 3.44 \pm .59$ ), it is found to be above average. According to a literature review, in the studies conducted with physical exercise, it is emphasized that, adolescents participating regular exercise programmes make progress in terms of increase in their social competence expectations, a positive improvement in self-esteem, greater success in taking and fulfilling responsibility, also that exercise influence stress and social factors positively (Ryan and Dziewaltowski, 2002; Öztürk and Koparan Şahin, 2007; Cengiz and Ince, 2013).

In the research, positive significant correlations are found out between students' traditional teaching-learning perceptions ( $r = .118$ ,  $p = .032$ ), constructivist teaching-learning perceptions ( $r = .349$ ,  $p = .000$ ) and their academic self-efficacy. Pursuant to the result, it can be said that, the correlation between students' constructivist approach and their academic self-efficacy is stronger than the correlation between the traditional approach and academic self-efficacy. Additionally, in the study, it is decided that, students' teaching and learning perceptions are significant predictors of their academic self-efficacy ( $R = .368$ ,  $R^2 = .136$ ,  $p = .000$ ) and that prospective teachers'

constructivist and traditional perceptions, together, predict approximately 14% of the total variance of academic self- efficacy. When teaching- learning perceptions are examined one by one within the traditional and constructivist approaches; it is found that, whereas the traditional approach predicts academic self efficacy 1%, constructivist approach predicts academic self efficacy 12% in proportion. Hereunder, this result shows that constructivist teaching-learning approach is a significant predictor of student academic self efficacy. When relevant literature was reviewed, in an experimental study conducted by Kaya (2014), in choir training provided through constructivist and traditional approaches, students' self-efficacy was found to be higher with choir training course with a constructivist approach than the one with traditional approach. In that study, it was emphasized that constructivist approach which centralize students and encourage them to be active, changed their self-efficacy perceptions positively. This study supports our research.

As a result, positive significant correlations were identified between students' teaching and learning perceptions and their academic self-efficacy. However constructivist approach, compared to the traditional one, can be said to be more efficient in predicting academic self efficacy. Constructivist teaching-and learning approach provides students with the opportunity to understand the world in compliance with their own experiences and attach importance to working together, appreciating multiple perspectives, taking responsibility in learning and individual's self-awareness in constructing knowledge. Constructivist approach, strategies and techniques which make physical education prospective teachers active in courses and improve their psychomotor, cognitive, emotional and social abilities, can be included in the courses which in turn contributes to the improvement of prospective teachers' self-efficacy. Research can be conducted with different large sample groups. Moreover, experimental studies which investigate the relationship between the *courses* designed with traditional and constructivist approaches *and* students' *self efficacy perceptions* towards the course can be carried out.

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## The School Routine In The Brazilian Journal In Educational Studies (1984-2014)

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### ABSTRACT

The objective of this present research aims to investigate what the authors have written and analyzed about the school routine in Brazil between 1984-2014 through the publications published by the *Revista Brasileira de Estudos e Pedagógicos* (Journal of Pedagogical Studies) magazine. Thus, a mapping and analysis of the articles - published by the mentioned magazine - was done, related to the theme. A total of 79 articles were selected for this work. They indicate a fact: the importance that the researchers have given to the study of school routine. The analysis shows that the studies dealt primarily with Elementary Education and Teaching Practice with a focus on the teachers.

**Keywords:** Documental Research, Magazines, School Routine, Teachers Training.

### INTRODUCTION

The objective of this research is to investigate what the authors have written and analyzed about the school routine in Brazil between 1984-2014 by mapping and analysis of editions of the published productions of *Revista Brasileira de Estudos e Pedagógicos* (RBEP). The option of doing a research in the *Revista Brasileira de Estudos e Pedagógicos* is justified as the journal totals a long historical period.

The magazine was founded in 1944, and in July 2014 completed 70 years of existence, every four months it is edited by the Instituto Nacional de Estudos Pedagógicos do Ministério da Educação e Cultura do Brasil (Pedagogical Studies of the Ministry of Education and Culture of Brazil). It is the oldest journal of educational research organized by the federal government in circulation in the country and aims to expose and discuss general questions relating to education through unpublished articles resulting from studies, research and experiences related to educational area and alike. The main objectives of the journal are: to promote research and surveys, organizing documents relating to the history of education, approaching educational institutions of the country and abroad, provide technical assistance to all instances, whether they are private, municipal or state education and mainly disseminate the pedagogical studies. (RBEP / EDITORIAL, 1944, pp. 5-6).

We assume that the articles published in the journal portray the major concerns that have permeated the school routine during these years. Although the routine of a school has never identical to another, there are several common elements between the school units that unifies them, so that present issues in a school unit are present elsewhere and are broadcast in articles, research reports and educators and researchers in the education area in Brazil. Thus, it is expected that this study be constituted as an element that contributes to the action of the teacher and the school management to be focused on the routine of schools.

### CONCERNING THE SCHOOL ROUTINE

The school is the workspace where many freshmen start their journey when they leave university; where students learn to read and write, count and subtract; a space where they learn about philosophy, arts, history, geography, etc.; where parents or guardians seek to provide teachings to their children. The school is also the place where intra-school factors (such as differences in educational and pedagogical practices, type of relationship between teacher and student, interdisciplinary relationships in the classroom, discipline, curriculum, evaluation designs) and extra school (as social and income inequalities) are present. In other words, the school is a social space where there is a correlation between macro-social relations (originated at social level) and microsocial (originated at school level) resulting in multiplicities and complexities in its routine. Besides that the school routine is not something permanent and immutable, however, it is ever-changing. Educational policies that are being implemented, the changes in the contemporary human being's life, the way the school has been recognized in today's society, and the exclusion mechanisms that are present in schools modify its routine.

The first studies developed for school routine started up in the United States, with a research of Stake (1983a, 1983b) that contributed to add the need for observation of what occurs in the school routine. Within these studies, Stake states the importance of observing the school routine, providing practical supports to analyze qualitative



data. For the author, it is important to analyze both what is common as it is to a particular situation, in addition to historical aspects and the political and economic contexts in which this fact occurs.

In Brazil, researches made by Alves, André, Candau and Penin became reference in the subject in the country.

Alves (2000, 2003) seeks to relate the study of school routine exposed in classroom events, to the sociocultural dimension, which consequently refers to sociopolitical issues. Thus, according to her, studies on the school routine should be focused on all the complexity present in the school that imbricates micro with macro social issues.

For André (2004, 2008), studies in the area should focus on the social relations that are configured in this space. For him, the subjective/personal, institutional/organizational, instructional/relational and socio-political dimensions, are intertwined with each other and allow - when analyzed - to understand the social relations expressed in the school routine. The main objective of these four dimensions is that the researcher never forget the complexity and interrelationships in an investigation of everyday teaching practice. To do a search of the school routine, in the school routine and on the school routine, André (2008) suggests as a methodological basis, ethnographic research participant observation, interviews and direct contact of the researcher with the researched situation.

According Penin (1989) it is under a daily analysis that the actions of individuals can be best understood and move constitutive processes of school reality, in order to be transformed.

Under a intercultural perspective that consists in one of the dimensions present in the school routine, Candau (2002, 2008, 2011) points to the importance of analyzing the social and cultural groups that interact and act in the schools routine and the conflicts faced in schools from sociocultural and economic inequalities. As per Candau (2011), the school routine is the space of equalities and differences.

All this indicates that the school routine is complex, multiple, fragmented and multifaceted is a privileged space to understand: the practice of teaching, the teaching / learning process; conflicts between individuals; the practice of public management; the relations teacher / student; and how the knowledge of the area is linked. Given this complexity, then the dimensions in school routine, we understand that its analysis through periodic, allows tangency it in all its complexity.

## METHOD

The Articles of the Revista Brasileira de Estudos Pedagógicos in its title or its subtitle made reference to the school routine or contained words or phrases such as school or educational were selected for analysis. After this mapping, it was done a reading of the summary and keywords in order to verify the relevance of their inclusion in the study. Within the 91 copies published between May / August 1984 and May / August 2014, 79 articles were selected for analysis as these texts dealt directly from the subject, the object of this study.

## DEVELOPMENT OF THE RESEARCH

The school routine was a matter particularly more intense in the studies between 1984 to 1994. In the first decade of the corresponding search volume 65, number 149, May to August 1984, volume 74, number 178, September to December 1993, in which 45 articles have been published. The second decade of research that encompasses the production of the volume 75, numbers 179, 180 and 181 of 1994, volume 84, numbers 206, 207, 208 - January to December 2003 - with 15 published articles. The third decade of research corresponds to the volume 85, numbers 209, 210, 211 January to December 2004, volume 95, number 240 of May to August 2014, producing 19 articles on the topic, published in the Journal.

In the first decade only two copies did not present papers on the theme. The period in which more articles were written was between 1985 and 1986. In the second decade, there was a sharp drop in the Journal productions, returning to sheepishly increase in the third decade to 19 productions on the subject. However, there is a production regularity on the subject.

By checking a survey of scientific production, a way to identify the number of authors who contributed in the magazine was proposed, referring to the school routine. The 79 productions were written by 190 different authors, considering authorship and co-authorship, with 157 women and 33 men. The participation of men in the publications on this theme is 17.36% and 82.63% of women, so women had a greater contribution than men in this approach. This gender distribution is as expected since the literature indicates that the education sector is a largely female area.

Based on the data, it was found that 31 authors (16.31%) contributed individually and consequently 159 authors (83.68%) produced 48 works in co-authorship. It was found that only some authors contributed with their research more than once in the journal on the theme of school routine.

In order to present the 79 articles published about the school routine considering the kind of research, it was observed at first whether these were empirical research of texts or theoretical review. It was found that 91.13% of the texts chosen in search are empirical, especially the first decade with 44 productions, 11 productions in the second decade and 17 in the third decade, totaling 72 jobs. 07 works were detected and stood out by addressing

the issue based on the literature of authors who study and present the school routine, 01 production in the first decade, 04 in the second decade and 02 in the third decade of research.

With the objective of identifying the institutional affiliation of the 190 authors responsible for 79 articles published, it was resorted to the information contained in the texts themselves. Therefore, the authors were linked to 42 institutions, 39 national institutions representing all geographic regions of Brazil and 03 international located in Europe and the Americas.

It is worth mentioning that when analyzing the institutional affiliation of the authors, it was found that 16 productions were published together, involving researchers from more than one Brazilian university and in other cases, in partnership with researchers from foreign universities.

Upon identifying the institutional affiliation of these authors, it was done a mapping of the origin of these productions by geographic regions of Brazil. The highlight by geographic region was due to the Southeast, with 43 jobs over the 30 years, making 54.43%. In the first decade (1984-1993), the same region contributed 26 papers, a total of 32.91%. On the one hand this data could indicate a greater concern of the theme by researchers located in this region on the other is known that in Brazil the research concentrated mostly in the Southeast and South regions. Thus, such distortion can only be indicative of inherent inequalities in the Brazilian territory when there is a reference of the number of universities and graduate courses that exist in Brazilian states.

The Brazilian states of Alagoas, Ceará, Piauí, Maranhão, Paraíba and Rio Grande do Norte, in the Northeast, had no production identified in the survey. Similarly, the states of Amapá, Amazonas, Rondônia, Roraima and Tocantins, the Northern Region, also showed no research into the school routine.

The theoretical framework for analysis of school routine in *RBEP* journal focus on the following authors: Emilia Ferreiro, Paulo Freire, Denise Jodelet, Jean Piaget, Serge Moscovici, Maria Helena Souza Pato, Marli Elisa Dalmazo Afonso André, Pierre Bourdieu, Michel Foucault, Henry Giroux Philippe Perrenoud and Mary Rangel.

By analyzing the most cited authors in the articles distributed in the references, it can be seen that 34 of them appeared in more than a different work. These theorists, 15 are foreigners, especially Argentine Maria Emilia Beatriz Ferreiro with 05 citations. The French theorists were the ones that most bibliographically substantiated the productions on the school routine. However, the 15 Brazilians most cited in productions for the school routine, there is the Paulo Freire (he's from Pernambuco state), and his writings were used in 05 productions.

The articles related to elementary school were treated in 55 productions, 34 times in the first ten years, with a fall in production on the subject in the second decade up to 08, rising to 13 productions in the third decade. Among these items are the Cycle I productions, Cycle II, Youth and Adult Education of Elementary School and Preschool. There are still those articles in the journal that are in general, that is, addressing the elementary and high school education in the same research.

Thus, the 79 productions that address the issue, the elementary school is presented in 64 productions, that is approximately 81.01% of the work in which they were discussed. In total, among the analyzed articles, 12 papers focus on the high school and 03 higher education.

The productions have a central theme which is treated in each article. Although an article could deal with more than one theme, it was taken as a criterion to frame it in a category the central focus of it. Although the articles focus on diversity issues, mainly to address issues related to Pedagogical Practices, Social Representation and Teacher Training.

The Pedagogical Practices were the most discussed topics, being explicitly focused on 39 productions, that is 49.36% of the time indicating that this is a constant concern of studies on the school routine in the three decades encompassed by the research. Among them, only the Teacher Training is not continuously studied, which, however, does not necessarily mean a low interest in the subject, this only means the authors - who treated this subject - either have not published between the years of 1994-2003 his studies in the Journal or the Teacher Training has not been studied from the perspective of school routine.

By examining the articles it is clear that the main concerns were directed to teachers and then the students. On the other hand, the school routine, attached to the school management, appeared in only one production.

Therefore, teachers and students were the most examined in the research published by the Journal, indicating that studies of school routine are centered on intra-school relations. However, parents and communities do not tend to be the focus of attention.

## CONCLUSION

The mapping done indicated that the issue of school routine has been constant within the articles, although it was mostly studied in the early 80s, today continues to be investigated.

It also pointed out that there is a wide range of authors who work with the theme. The fact is that on the one hand it indicates the importance that researchers have given to the school routine, on the other this diversity of authors and theoretical references may indicate that there is no accumulation of knowledge about the school routine, as a text or an author does not refer to the text written by others.

Moreover, the map on the subject indicated that the studies deal primarily of Elementary Education and Teaching Practice with a focus on teachers. The school routine is also analyzed as a space to be unveiled through the

representations of each individual that makes up the educational field, prevailing, however, the teacher and the student as the study subjects.

But what seems to predominate is the diversity of themes, concerns and objects of study, which is, probably, related to the fact of school routine is complex, multiple, fragmented and multi-faceted as shown in the literature related to this area.

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## The Views Of Pre-Service Science Teachers On Modeling Process

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### ABSTRACT

Many concepts in the Science Education course content are perceived abstract and complex by the students. One of the activities can be used to render those abstract concepts in the science education course content observable, tactile by concretization is modeling. Modeling provides opportunity to student to explain the scientific facts by setting their on models and develop their own conceptual understanding levels. Setting a model process includes high learning activities for students such as planning, detecting variables, making relations and testing their own models. In this context, modeling activities are seen as a difficult process especially for science classes. Figuring out this knowledge firstly requires having experience about modeling. With this study, modeling activities were carried out with pre-service teachers and it was tried to create awareness regarding the way of thinking they use during process. This paper presents the views of pre-service science teachers on teaching with models and modeling process.

Current study which aims to investigate the views of pre-service science teachers on model and modeling is a qualitative design by its nature. Participant in this study comprise 45 pre-service teachers who study at department of Science teaching of a state university. The study was carried out as part of Science Laboratory Applications II course and applications related to Biology were conducted. With parallel to the aim of the study, participants were asked to design experiments and set models by researcher/lecturer of the study towards given objectives. Secondly, focus group discussions were conducted with participants and their views on model and modeling were taken. Finally, content analysis technique was used and obtained codes and themes were presented by frequency tables.

As a result of the study; it has observed pre-service teachers have got incomplete information about model concept. In this context, modeling and model types should be introduced to pre-service teachers. Teachers should be discussed about meaning of models and similarities and differences between models and real structures with their students. Teacher should be reminded models can not exactly reflect real structures to their students. These results obtained from this study, supported opinion of pre-service teachers and literature, if people want to create a model, they need to have some skills as creativity. In this context, it should be taken into account necessary skills for modeling and skill education course should be opened for development of necessary skills for modeling.

### INTRODUCTION

The main purpose of the nowadays educational system is to spread the stunning developments and changes in the science and technology, rapidly outgoing knowledge to the all members of the society in the best way. The flow of information never been so fast in history as it is now require the existing educational philosophies to be changed and several issues from teaching methods to What, Where and How to teach to be revised. Nowadays, as we are entering the 21th century, educational activities shaped by the needs of the time and society are forced to change in the areas of purpose and implementation. As a result of this, the pressure on the traditional education approach gradually increased and research carried out to make the educational activities become not a part of the one's life but the one's oneself. Within this respect, many curriculums revised and radical changes were made. When those programs were examined, it is seen that activities used in the lecture processes changed along with the teacher's and students' roles. In the curriculums, it is possible to see that teachers are leaders more than information-deliverer and students are practitioners more than listeners. It is seen that students are raised to become as ones working to

reach the information from various sources instead of only one source (teacher), interpreting the knowledge by experiencing instead of memorizing and producing and selling the products instead of just observing.

Analyzing the issue from the view of Turkey, Science Education Curriculum is one of these changing programs. Many concepts in Science Education course content are perceived abstract and complex by the students. So, in order to make these abstract concepts observable and tactile through concretization, new methods, technics, activities and materials enabling daily life connections are needed (Gobert & Buckley, 2000; Gümüş, Demir, Koçak, Kaya & Kırıcı, 2008; Güneş & Çelikler, 2010). With the changes made in the science education curriculum in the 2013, it is tried to fulfil those needs. In the analysis of this new curriculum, it is observed that there is an increase especially in the number of objectives about using and setting a model.

The experts and science educators, to a great extent, benefit from those modelling activities because of the advantage (or feature) that they include real life activities supporting student learning. Evaluating the outcome models of the modelling process as science product and methods, Harrison and Treagust (2000) assert that the model setting process contributes to the students' scientific progress. In the science education based on (related to) Daily life problems, it has an important role that in this process students use several models and set their own models (Karagöz & Sağlam-Arslan, 2012). Modeling provides opportunity to student to explain the scientific facts by setting their on models and develop their own conceptual understanding levels since it includes physical and oral representations of the ideas, objects and events (Treagust, Chittleborough & Mamiala, 2002). In this manner, modeling activities play an important roles in terms of reach the goals of science education which is a course conceptually and technically weighted. Attending the modeling activities enlarge students' subject area knowledge and provides them expertizing in the understanding, defining and visualization of the scientific facts (Schwarz & White, 2005; Lehrer & Schauble, 2006). When the students set model, they develop better problem solving skills about newly meet problems and deeper understanding capacity about the content (Wynne, Stewart & Passmore, 2001; Lehrer & Schauble, 2005). Besides, modeling activities provides to render students make coherent with epistemological purpose of the science and to develop higher order ideas about scientific entrepreneurship (Schwarz & White 2005; Windschitl, Thompson & Braaten, 2008). In addition to this, modeling process includes some processes such as abstract thinking, estimating, making estimations and decision making. This process requires some cognitive skills such as be able to construct models mentally and transfer information belongs to similar situations as a consequence of reasoning (Gruber, 1992; Seel, 2001). Besides that, setting a model process includes high learning activities for students such as planning, detecting variables, making relations and testing their own models. In this context, modeling activities are seen as a difficult process especially for science classes (Sins, Savelsbergh & Van Joolingen, 2005; Svoboda & Passmore, 2013). In order to eliminate the mentioned difficulty, it's important to recognize possible difficulties during in-class modelling activities and thinking processes those students engage (Sins, Savelsbergh & Van Joolingen, 2005). Figuring out this knowledge firstly requires having experience about modeling. With this study, modeling activities were carried out with pre-service teachers and it was tried to create awareness regarding the way of thinking they use during process. This paper presents the views of pre-service science teachers on teaching with models and modeling process.

## THE STUDY

Current study which aims to investigate the views of pre-service science teachers on model and modeling is a qualitative design by its nature. Participant in this study comprise 45 pre-service teachers who study at department of Science teaching of a state university. The study was carried out as part of Science Laboratory Applications II course and applications related to Biology were conducted. Within the scope of the study, pre-service teachers were divided into groups by considering objectives associated with modeling in primary school science curricula. Scale modeling activities were considered while determining objectives. Table 1 represents the matrix of the mentioned objectives and models set by pre-service teachers.



**Table 1.** Objectives included within the content of the study and models list

Group	Objective Code	Objectives	Model
1st group (n=8)	5.5.1.1	Exemplify specifies and classify them according to their similarities and differences.	Unicellular specify models (Paramecium, Amoeba, Euglena)
2nd group (n=8)	6.1.1.1	Compare animal and plant cells with regards to their main parts and functions.	Plant cell model Animal cell model
3rd group (n=8)	6.1.2.1	Explain the components of musculoskeletal system and state their functions by exemplifying.	Opposing muscle work model
4th group (n=7)	6.1.4.1	Explain the components and organs of circulatory system with their functions.	Heart model
5th group (n=7)	7.1.2.1	Explain the functions of components and organs of urinary system by showing them on a model.	Kidney model
6th group (n=7)	7.1.4.1	Explain components belong to sense organs by showing them on a model.	Eye model

\*Objective codes represent respectively *grade level*, *unit*, *topic* and *objective*

When Table 1 examined, it is seen that one of the objectives is in the 5<sup>th</sup> grade, 3 of them are in the 6<sup>th</sup> grade and two of them are in the 7<sup>th</sup> grade level. The objectives in the 8<sup>th</sup> grade level were not taken place, because there was no available objective to make experiment within the scope of the course.

Firstly, with parallel to the aim of the study, participants were asked to design experiments and set models by researcher/lecturer of the study towards given objectives. Secondly, focus group discussions were conducted with participants and their views on model and modeling were taken. In the third step, data gathered from discussions were transcribed. Finally, content analysis technique was used and obtained codes and themes were presented by frequency tables.

In order to provide reliability of the study, data were analyzed and coded by independent researchers. As the next step, researchers views were taken again for codes those consensus weren't been built and a re-coding was made. In this way, reliability of the study was calculated using  $r = \frac{\text{Pr}(a) - \text{Pr}(e)}{1 - \text{Pr}(e)}$  formula where Pr(a) is the agreement Pr(e) is the disagreement among researchers (Miles & Huberman, 1994). Consequently, reliability co-efficient rate was found .84.

## FINDINGS

The data obtained from the analysis of the conducted interviews to examine the perceptions of prospective teachers modeling definition, modeling skills, material selection, model advantages, tables are presented in their problems and model environment title. The first question is directed to teacher candidates as “what is model and what comes to your mind when you hear the concept of model”. The findings are presented in Table 2.

**Table 2.** According to teacher candidates "What is model?"

Themes	Codes	f
Material Dimension	2 or 3 dimensional material	18
	Designs for a topic to better understand visually.	5
	Materials for subject are not visible	5
	The closest representation of a real substance	3
	Simple representation forms	2
Learning Dimension	Concretization of abstract concepts	17
	Facilitating the understanding	3
	Providing permanency of a concept	2

When Table 2 is examined, it's observed that the model definitions of pre-service teachers consider two different themes. They consider material and learning dimensions while defining concept of model. Also, they prefer mostly definition of “2 or 3 dimensional material” and emphasize definition of “concretization of abstract concepts” in learning dimension.

Secondly, pre-service teachers were asked “which features should the one has to be able to set a model” question. The findings are presented in Table 3.

**Table 3.** According to pre-service teachers “Which features should the one has to be able to set a model?”

Themes	Codes	f
Skill	Be able to think creatively	41
	Should have hands-on skill	41
	Be able to good observation	29
	Be able to criticizing and open to be criticize	20
	Organization skill should be sufficient	16
	Be able to sufficient communicate	12
Knowledge	Should be familiar about the content	39
Affective	Be able to take responsibility	30
	Be able to make decision	8

When Table 3 is examined, it's observed that pre-service teachers reach a consensus on knowledge, affective and skill that the one who has to be able to set a model should have. They assert that person has “*content knowledge*” and “*responsibility*” for set a model. Also, future teachers stated that especially creative thinking and hands-on skill should be improved to setting up model.

The third question is directed to pre-service teachers as “what according to you determine when material supply in modeling process”. The findings are presented in Table 4.

**Table 4.** According to pre-service teachers “What are the criteria to be considered in material selection?”

Main Theme	Sub Theme	Codes	f
Supplying Process	-	Usability	41
		Being economical	38
		Easy availability	37
Construction Process	As a structural	Formal similarities	29
		Please the eye	20
		Color	13
	As a functional	Mission overlap	31
		Literalism	29

When Table 4 examined, pre-service teachers take account material selection as two different theme include supplying and construction. In supplying process, they emphasize that material should be “*useable*”, “*economic*” and “*easy availability*”. They bring structural and functional dimensions into the forefront in the process of construction. Participant emphasize “*formal similarities*” situation as a structural and “*mission overlap*” as a functional.

Pre-service teachers were asked “What are the advantages provided by modeling process?” question. The findings are presented in Table 5.

**Table 5.** According to pre-service teachers “What are the advantages provided by modeling process?”

Themes	Codes	f
Knowledge	It helped me understand the content well	37
	It provided to me concretize the topic	36
	It provided to me learning the investigation	24
Skill	I developed to my hands-on skills	29
	It developed to my planning skill	19
	I learned to team working	18
	It increased to my communication skills	13
Affective	It made me enjoy the course	32
	I gained responsibility	25
	It increased to self-confidence	18

When considering pre-service teachers' answers related to advantages of modeling question, modeling provide some advantages knowledge dimension in addition to skill and affective dimensions. When Table 5 examined, participants stated that modeling in content knowledge dimension mostly provides advantage to “*concretize the topic*” and “*help to understand the content better*”, on the other hand, in skill dimension it provides to “*develop hands-on skills*”. In affective dimension, modeling provide advantages like “*enjoying the course*” and “*gaining*”

responsibility”.

The question is directed to pre-service teachers as “What are the problems encountered in the process of set a model”. The findings are presented in Table 6.

**Table 6.** According to pre-service teachers “What are the problems encountered in the process of set a model?”

Themes	Codes	f
Before Modeling	I don't know how and where I can start it.	24
	I have some troubles getting materials.	18
	I have some troubles while preferring materials.	18
	It's caused for me to spend much money.	17
	I have troubles while process of making planning	13
	I cannot gain enough information about context	2
	I cannot design in which order the materials should be placed	2
	I have difficulties on making research	2
During Modeling	I cannot reach in time	22
	I am disturbed my friends for group working	14
	I am not good at cut and paste	2
	I am not good at using materials effective	2
After Modeling	I have difficulties on presenting the model that I set to my friends	4

When pre-service teachers were questioned what is difficulties in the setting of model, it has been seen that they emphasized that before modeling, during modeling and after modeling troubles. When Table 6 examined, it is seen that the problems during the modeling process are during modeling more than others. While pre-service teachers stated that how and where they can start it in before modeling process, they added to preferring materials and getting materials. And it is seen that they have time problems in during modeling. After modeling, a few pre-service teachers stated that they have difficulties while presenting the model.

The question is directed to pre-service teachers as “how learning environment should be in the process of set up model”. The findings are presented in Table 7.

**Table 7.** According to pre-service teachers “how learning environment should be in the process of set up model? Why?”

Themes	Codes	f	Justification
Technological Environment	Internet connection	45	*Obtaining the detail information
	Computer	45	*Eliminating the missing information,
	Projector	36	*Investigating the example of model
Mechanical Environment	Tables and chairs which is suitable for group working	26	* Effective and convenient communication with group mates
	Rich material and equipment cabinets	45	*Reaching the intended material as fast as possible
			*Rising the variety of alternative materials
Social Environment	Providing expert	25	* Getting feedback
	Blocking interaction between groups	20	*Preventing the groups affected by other groups

When Table 7 examined, it's observed that pre-service teachers take account suitable environment that technological, mechanical and social. Pre-service teachers think that internet connection, computer and projector in technological environment, for mechanical environment tables and chairs which is suitable for group working, rich material and equipment. And pre-service teachers state providing expert and blocking interaction between groups for social environment.

## DISCUSSION and CONCLUSIONS

The result of the answers when it was asked to pre-service teachers “what is the first thing come to your mind when you hear model concept?” The answers were examined and the result was students' limitation of model just as 2 or 3dimensional concrete materials. It has been emerged from the answers of pre-service teachers that they refer to scale model because they associate models with concrete materials. When they talk about models, they

do not refer to other type of models, it can be interpreted as effect of generated models remaining limited with systems subject in biology lesson. At the same time it can be thought that small number of pre-service teachers who refer to teaching and learning process approach modeling with viewpoint of analogical model. When codifications in table 2 were analyzed, it has been observed that some of pre-service teachers substantiate models with concept what they represent for. Harrison and Treagust (1998) explain the reasons of this because almost any book examined did not tell about models are products of human and not tell about in some points they cannot express exactly real object that they represent for and students are not warned about that. From this it can be made conclude that science pre-service teachers can have misconception towards that models representing for concepts have copies (McComas, 2002; Kang, Scharmann & Noh, 2005).

When pre-service teachers' options about needed features for an individual who will form model were examined, it was observed that they emphasized on skills field often. Pre-service teachers have emphasized on requirement to able to form original model they need to skills like creative thinking skills, handicraft and communication skills. It is observed that almost all pre-service teachers touch upon creative thinking skills and hand craft especially. Like in forming model, to able to produce an original product in process of designing any material require creative thinking skills and it is emphasized in literature too (Yelken-Yanpar, 2009; Birişçi & Karal, 2011). Yanpar-Yelken (2009) has emphasized on especially using pre-service teacher's preliminary life experiences and combining his/her skills related to creativity is needed in process of choosing elements like color, shape and stress. At the same time, it has been referred to creative thinking skills in science education programs too (MEB, 2013). Similarly Bilal (2010), emphasized that before not starting forming model process students should do preliminary activities to improve their skills in that field and students' familiarity in this situation should be increased. From this point of view, it can be concluded that pre-service teachers' creative thinking skill should be improved to improve their ability to forming model (Yanpar, Koray, Parmaksız & Arslan, 2006).

Besides this, it has been observed that most of pre-service teachers emphasized on forming model activities embody abstract concept and this contribute to comprehension of subject very well. Based on statements of pre-service teachers, it can be concluded that joining in forming model activities is effective in increasing knowledge in subject field, improvement in conceptual understanding level and effective in forming more deep understanding capacity related to subject (Schwarz and White, 2005; Lehrer and Schauble, 2005). On the other hand, it is stand out forming model activities contribute to students in the sense of hearing field. Considering literature, it has been remarked that teacher candidates joining in forming model activities contribute to developing positive attitude toward lesson and contribute to increasing self-confidence (Brewer et al, 2009; Cakmak, 2009).

It has been took attention pre-service teachers attach importance to forming model by considering table intended for materials choosing structural similarities as well as visuality for forming model. To care outstanding material and similarity of colors pre-service teachers make think that they do not have enough knowledge about models. Harrison and Treagust (1998) have stated that most of students just pay attention to outside appearance similarity not more; structure of model, goal of model and the idea model wants to give is not took into account and they evaluate model just considering outside appearance. When table examined, however it has been observed that pre-service teachers have difficulties especially before modeling, to decide about model, choosing materials and in process of designing model. In that sense it has been have come into question model and modeling process and education with way of modeling by informing, and organize activities which will contribute to increase experiment and effort to fulfill minus by the teacher candidates and teachers, universities and MEB (Bilal, 2010).

When examined in Table 7, a specialist, who can guide about use of technological equipment to student and can confirm students' behavior in the modeling environment, is required to pre-service teachers. Sins, Savelsberg and Van Joolingen's (2005) study is emphasized modeling process is quite complex process and students need to support in this process.

## SUGGESTIONS

The purpose of this study was examined opinion of pre-service teachers about modeling. This study has observed pre-service teachers have got incomplete information about model concept. In this context, modeling and model types should be introduced to pre-service teachers.

Teachers should be discussed about meaning of models and similarities and differences between models and real structures with their students. Teacher should be reminded models can not exactly reflect real structures to their students.

These results obtained from this study, supported opinion of pre-service teachers and literature, if people want to create a model, they need to have some skills as creativity. In this context, it should be taken into account necessary

skills for modeling and skill education course should be opened for development of necessary skills for modeling.

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## Those Blessed With Muse Are Gifted In Teaching "In Need Of Musician, Artist, Singer, Actor And Dancer Teachers"

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### ABSTRACT

Is it an art or just a job? Born or made? Sufficient knowledge of subject, organization skills, patience or effective classroom management? The list goes on. Most of us have already been enlightened on and experienced about the qualities students or principals look for in a teacher that is in an effective teacher. What's more, in this world of teaching or more precisely the world of ELT, many of us have read, met, witnessed and acknowledged the privileged place and the features of inspiring teachers who are a few steps ahead in the path of success. Some of the features might be gained, improved and cultivated, some of them not. However, unlike the stereotyped attributions and characteristics, what makes a teacher an effective one is his/her being gifted which means a talent, bestowed on only a few, in any branch of art such as drama, music or dance... Through this paper the focus point is to shed light upon the redefinition of the word "effective teacher" which has come to light with the talented teachers' astounding performance in the classroom, in other words their stage, studio or shop where they craft, create, produce, but more importantly inspire while teaching, which makes them remarkably more effective teachers. The study will be supported with an interview with teachers so as to bring forefront their talents, if any, in any branch of art and to analyze their students' academic and personal development in the classroom in regard to teachers' performance accessorized with their talents.

**Keywords:** effective teacher, talent, any branch of art

### INTRODUCTION

It is an undeniable fact that teaching requires skills and hard work to realize the real teaching and to foster students' learning. However, teaching can not be reduced to skills, techniques and labor (as cited in Fraser and Mcgee, 2011). Being "effective" and practice is a sine qua non in this profession. Walker (2008) defined the terms *effective* as a particular teacher who is the most successful in helping students to learn; *characteristics* as a particular teacher's special personal qualities that the students feel and enable the teachers to achieve success. Effective teacher and teaching has undergone a number of studies and researches that have brought many characteristics to forefront such as:

- Plays a central , dominant role in the classroom but involves student in planning and organization
- Sets high academic standards and communicates those standards to students
- Works mostly with the entire class but often with small groups, sometimes providing independent work
- Maintains a brisk of lesson pace requiring student participation
- Uses little criticism, shapes student responses so that they are correct
- Holds students responsible for their work
- Treats students equitably
- Sets and maintains clear rules for students' academic and social behavior

(Henson and Eller, 2012)

When what is described in effective teaching is closely examined, it can be stated that the behaviorist position of a teacher plays an important role which means teachers tells, does, demonstrates something and the learner responds and learning takes places. However, we can not say that this is adequate and accurate interpretation of an effective teacher. According to Westwood (1996), reciprocal and dynamic interactions between instructors and learners are sine quo non of learning and teaching (p. 68). Kraayenoord and Elkins have claimed that teaching encompasses interactive process and requires teacher's sensitivity towards the characteristics of the students, which means use of a wide variety of techniques (as cited in Westwood, 1996, 68).

Another study was carried out by Burns (2000) on the issue of the essential essence in excellent teaching which dwells on two approaches to elaborate the term. One is the balanced development of the teachers personally and intellectually. The other is the issue of effective teaching in the learning/understanding context (p. 64). In addition, it is interpreted that Burns (2000) touched upon the non-existence of reliable, objective and universal criteria of teacher effectiveness and the impact of socio-cultural and professional perspectives on judgment of effectiveness (p. 65). Furthermore Burn (2000) commented that the general theme substantially ignored is that: Effective teaching measured in terms of student performance or ratings by students of teachers appears to require teachers

who not only have command of and enthusiasm for their subject but who are also able to form satisfactory human relationships and create a warm supportive accepting classroom ethos (p. 67).

Socrates: I will try and explain to you what excellent teaching is. What do you say to this answer ? *Excellent teaching is that which produces learning and understanding.* Will you be satisfied with it ?

Meno: It is such a simple answer.

Socrates: You have my answer, and if I am wrong, your business is to take up the argument and refute me.

(as cited in Westwood, 1996, 66)

The major purpose of this paper is not to refute Socrates but to reframe and redefine the term "effective teacher". Nobody can deny the truth of these specific features of an effective teacher who is equipped with the characteristics mentioned above. However, it is not wrong to say that, the "effective teacher" is used in a much broader sense and redefined in this paper rather than the certain characteristics attributed to them and performed in the classrooms. In addition, in spite of the diverse studies on effective teaching/ teacher, there is a degree of consensus on genetic features of effective teaching (Alma, 1998). While the attributions to an effective teacher are highly appreciated, the underlying process and practice which are the inspiration they have innate or get from something and reflect it to their learners on their stages are equally significant. As Ward (as cited in Fred, 2010) perfectly stated in his quote:

The mediocre teacher tells,  
The good teacher explains,  
The superior teacher demonstrates,  
The great teacher inspires.

"The great teachers inspires" is our focus in this paper in order to take the word "effective teacher" from a different perspective. The questions to be asked are if we are not inspired as teachers, can we still inspire or how is this inspiration activated in the classroom? The research based on the effective teacher/teaching has shed light on the innate talent or gift in any branch of art -music, drama, poetry- which seen as the source of inspiration. It is believed that teachers who have any talent bestowed on them by God can perform better as they have a different spirit, mental state and imagination. As human being, we all can't help being fascinated by musicians with their melodies, songs; artists with their thought provoking art of works-paintings; writers with their novels- power of story telling; poets with their emotional and touching poems-power of language use; actors/actresses with their breathtaking-real-like acting and performance. All these people whose lives are occupied with creativity and inspiration are looked with an admiration and wonder.

### DEAD POET'S SOCIETY: TEACHER IN ACTION

As Kompf, Bond, Dworet and Boak (1996) defined the phrase "The Work of Art", as having two meanings: the first one is interpreted as the object created by any artists such Picasso, Monet or Beethoven; when it comes to the second one, it means the acts of artistry that are performed by someone in the course of doing one's work. Teachers are engaged in the latter rather than the former one. This is closely related to an actor or dancer's performance and a teacher's teaching where the art is. When a dancer finishes his/her performance, so does a teacher.

There are four specific tasks teachers are engaged in and artistry emerges within them; curriculum planning, explaining, interpersonal relationships and assessment. If we consider planning curricula, teachers make choices about the organization, modification of lesson and pace in order to fit the achievement of the class. This means creation new materials or design of the materials so that they suit better the student and the purpose of the teacher. This is a task which requires imagination-creativity-inspiration if done well (Kompf and et.al., 1996). This is unequivocally a task of art to me.

The second aspect of teaching which occupies a big place in the profession of teaching is explanation and it's friend narration. It is relatively important to explain the topic or sometimes relate the topic to a story with the purpose of arousing curiosity in learners and attract their attention. If there is no an ability to have a feel of language for its use, pacing and connotative meaning, is it that easy or possible for every teacher or just for those endowed with a talent? Therefore, both explanation and narration require creation and imagination to sustain attention and curiosity.

The other locales in which artistry of teaching have paramount importance are interpersonal relationship and assessment. In interpersonal relationships, Kompf, Bond, Dworet and Boak (1996) discuss that this is the interaction in the classroom to set a stage for engagement of the students for any type of communication activities such debate, dialogue or role play. To make a productive discussions in a good way, a teacher can be perceived as

a conductor of an orchestra; who is going to play which instrument and when s/he is going to play it. It is the teacher's role to decide if these moves are right, really work and the result is an amazing performance garnished with an aesthetic quality.

Artistry does not only mean the production of work of art such as painting, poem and play, it can also be thought of as an appreciation of the work, ideas created and the meanings of things conveyed by someone. The students' production and work of art to be exhibited are the sentences, ideas s/he articulates and expresses through interaction and writes on the exam paper. In short, teachers, if one of the gifted ones, knows how to read, listen and analyze the significant features of the work of art under consideration. Dewey says that someone has to go through the same experience and operation spiritually that the artist has gone through in the creation process to appreciate a work of art (as cited in Leddy, 2006). When we consider the assessment or evaluation, can we say that there is artistry in these areas? The answer is positive.

If we continue with another talent bestowed on some teachers, it might be acting. Actors and teachers have much in common such as impressing the audience, being heard by the people from the front row to the back, being seen and understood. When we scrutinize the teachers' acting, it occupies a huge place in a his/her life spent in the classroom. A teacher has to leave his/her personal problems out of the classroom which means acting. A teacher has to model any role play before his/her students which means acting. What's more, a teacher has to make use of his/her acting out talent to explain any vocabulary or s/he is expected to be active not stable in the classroom to keep students' interest up and awake which means a more vibrant atmosphere.

The movie *Dead Poets Society* is a fantastic example to have shot the teacher acting and in action. The teacher is John Keating whose artistry is displayed in his teaching. Mr. Keating is a young and exciting English and poetry teacher, who has a deep impact on his students and committed himself to teach them to live passionately. His most powerful weapon is his poetry to stimulate, encourage them to challenge the life. A poet's talent is to be able to create poems which is the bridge between him/her and the reader to communicate. A teacher's talent can be divided into two parts; the first one is to be able to write poems. You can find many inspirational tendencies in a teacher whose talent is in poetry in the aspect of motivating and encouraging students inspirationally like Mr. Keating stated: "Boys, you must strive to find your own voice. Because the longer you wait to begin, the less likely you are to find it at all. And he continues with Thoreau's saying: 'Most men lead lives of quiet desperation.' Don't be resigned to that. Break out!" (Haft&Weir, 1989). A teacher who is blessed with a muse is gifted in inspiring his/her students to have personal self-determination while teaching.

### **ASSOCIATING MUSICAL TALENT WITH LANGUAGE TEACHING**

The other talent which is under scope is music. if a teacher is talented in playing any instrument, s/he is inspired inborn and can inspire students in the aspect of learning/ acquiring the language. As they have a higher intelligence and are engaged with musical activities, it is can not be denied that they have a huge impact upon their classroom performance and their students performance. The people who are talented in music; playing instrument, singing or composing any piece of music have a big portion of reasoning and critical thinking and come up with creative techniques. According to a study which aimed to analyze people who are naturally creative looking at problems which is described as thinking "out of box", musicians were studied. As part of this Folley, Gibson and Sohee said that (2009) :

We studied musicians because creative thinking is part of their daily experience, and we found that there were qualitative differences in the types of answers they gave to problems and in their associated brain activity.

If we associate the outcomes of the study with the teachers and their classroom performance, there is no reason not to think that they can be more effective in classroom management if the classroom is defined as an orchestra and the teacher is a conductor.

### **BREED OR CREED?**

When it comes to artists, we should ask first if it is a different breed or creed which is not very different from the question we pose for teachers "born or made? In reality this question must be asked for all the talents mentioned above if they are breed or creed or if it is creed, does it put the same effect on teaching practice?

When you visit an exhibition consisting of eye-pleasing paintings, you might stop in front of one of them for a while to make sense of and express your admiration for it. Many might also conclude that these creative individuals are different from everyone else with their uncommon gift or brain wiring in a special way. Nobody can deny the fact that they are a different breed and go through their lives with different motivations.

The belief supported in this paper is the gifted teachers ,in any branch of art, are different in the classroom like artists, musicians, singer and dancers. So how can a teacher whose artistry is in painting be different from other teachers? S/he can bring this gift to light while standing on the stage and want to see the class in a harmony like colors. They might also show significantly more involvement with a range of activities that encapsulate the capacity to imagine and combine visual imagery. To illustrate, we can refer to Burmark's comments (as cited in Enhancing Teaching and Learning Through Visual Imagery, 2000): "When we use words, we leave a lot to interpretation" .

These teachers are the ones who are able to reach students much efficiently and effectively when they emphasize what they say with images that help learners to get the point and visualize the abstract words. The teachers who are gifted in painting can help students to acquire visual imagery and activate it when needed. This is just a different look at talented teachers' teaching through a more meaningful window.

Experts deliver speeches and publish articles on the stress-relief effects of art to encourage people to pick up a brush or enroll a dance or music course. With regular and long-term practice, you might develop these talents such as dancing, painting or playing any instrument but to me it is not as effective and natural as innately gifted. The difference between non-native and native English speaker might be a good example to better express our stance in this argument and to answer the questions posed at the very beginning of this part. Non-native English speaker have learnt/learns and improves this foreign language through practice, however native English speaker acquires and its his/her mother tongue. No matter how much practice a non-native speaker does, she/he can not go beyond being native-like. It is not very different for someone who desires to be "good enough" or "make it" as an artist, dancer, musician or actor who inspire and guide their activities. However, the gifted ones always will be one or two steps ahead.

### VOICES OF GIFTED TEACHERS

The teachers who were interviewed work at universities located in Istanbul. A few questions were addressed to them to bring their talents to light and better understand how being gifted in any branch of art make them different and effective, also how it affects their students personal and academic achievement.

1. What is your artistic talent? In which branch of art do you think you are gifted?
2. Do you think that these talents have an impact on your teaching practice?
3. If yes, how?
4. As you know, your performance can not be divorced from your students' performance. So, do you think that this gift affects your students' academic and personal development?

The first interview was conducted with Gayane Pozharina who is an English teacher at Istanbul Aydın University for almost 4 years. Gayane shared her own talents and how it affects her teaching and her students' academic and personal development, achievement (personal communication, May 22, 2015). She is a singer, dancer and artist. She has been taking vocal lessons from Istanbul University, Conservatory Department. However, she said that she this is not because of the lessons she has taken, it is a gift. When she was very young, she realized that she could memorize the songs at first listening even if she couldn't speak or understand that language in which the song is sung. She continued with how she applies this talent in teaching. She uses drilling which is a technique in language teaching and places emphasis on repeating structural patterns through oral practice. If she teaches present perfect, she makes her students to repeat the sentences like the chorus of a song and they never forget this specific structure. As she is talented in this branch, she is a regular of concerts and she shares her experience with her students which attracts their attention. She also sings in the class from time to time to relax her students and creates a different atmosphere in the classroom.

The other two gifts bestowed on her are dancing and painting. It was really exciting to hear that she is very talented and reflect them into teaching. The classroom she teaches more is embellished with colorful posters and students' works. As mentioned above, the artistic people have visual imagery and want to see everything in an harmony. To exemplify, Gayane is using board very well and draws some shapes on the board to explain something or make her explanation more colorful. Also she is helping her students to acquire visual imagery and activating it while learning.

Gayane is also a dancer which is a gift makes her more active in the classroom. Another teacher named Eylem Altuntas who has been working at Ozyegin University as an English teacher (telephone communication, May 29, 2015). They both stated that this talent inside moves, motivates, directs and jumps them while teaching which makes them successful in classroom management. Using gestures, body language has become a significant part of



their teaching instead standing and talking. As a result, their students are viral, lively and motivated enough while learning. They described their classroom as their stage where they perform and pursue their art.

With the help of all these artistic performance, it is inevitable for students to improve themselves academically and personally since they are being taught the lessons along with being enlightened on art knowledge. Gayane thinks that songs shelter cultural knowledge in them, she visits museums, art galleries, joins concerts and carries the world knowledge to the classroom to contribute to and sustain her students personal development in a way.

Another lecturer named Selçuk Bayram who has been working at Istanbul Aydın University for 4 years is one of those who is blessed with muse is believed to be gifted in teaching. Selçuk is a musician and he said that (personal communication, May 22, 2015) not only him but also his family members are interested in music. Defining it as an innate talent, he continues with the musical instruments he can play such as violin, guitar and oud. Musical talent played and plays an important role in his personal development before his teaching practice. People's admiration towards his talents made him a very self-confident person in many fields of life and a teacher in classroom.

As he is a musician, he attends social occasions which is an effective way to socialize. When he socializes, he is presented many chances to improve himself personally and have different perspectives of life. Musical talent has something to do with finding topics easily to talk with students or adapting the topics according students' needs and interests. Bayram also expanded the discussion adding creating good interpersonal communication with his students (personal communication, May 22, 2015). He stated that one of the reasons why he has good relationship with his students is his musical talent as it creates curiosity in students.

The reflection of this talent in teaching is his competency in making them involved in lessons that is one thing satisfying for him. In reality, he touched upon his being incompetent in nothing and good at handling the mishaps. He compares it with playing an instrument with an orchestra; he describes teaching as a collaborative profession done with learners who are the members of the orchestra. It also enables him to create an enjoyable atmosphere for learners to have fun.

## CONCLUSION

The principles of effective teaching and teachers are reasonably known to professional educators and have been in ELT world for some time. However, my perception of an effective teacher is his/her being gifted in any branch of art which is the root and the source of inspiration, imagination and creativity. Conceiving and redefining effective teachers does not require us to give up scientific sources or pursuing the known features of effective teachers that are helpful. However, science, I mean the features of effective teachers mentioned in the previous parts of the paper does not tell the whole story. Artistic performance of teachers, in other word, artistry in teaching, provides us with a way of thinking and reflecting upon features of effective teachers we might not have thought about before. These gifted teachers' performance in the classroom might isolate the mechanistic approaches to the study of teaching.

Being gifted in or engaged with a branch of art encourages teachers to make their professional lives interesting as they are at their best and creates a different classroom environment for learners. Their teaching goes beyond routine and they better express themselves through their engagement in art and their artistic side. This is also reflected in their interpersonal relationships with students, curriculum design, assessment and explaining the subject in the classroom atmosphere.

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## Traditional Toy And Its Significance To A Child

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### ABSTRACT

The article is concerned with the pedagogical question associated with the significance of a traditional toy for a kid. A toy has gone through many historical changes throughout its evolution and even at the present time it has an irreplaceable significance because its nature stays the same. When a child plays with a toy, it positively contributes to the cognitive, emotional and physical development of a child. In the article we are also concerned with the criteria for the quality of toys.

**Keywords:** concern, historical changes

### INTRODUCTION

Most of the games need a material impulse – a physical object, a real thing from the surroundings of a child or an object specially made for a play – a toy. For a child a toy represents the world in a realistic or stylized way, the world which surrounds them, motivates their activity, living and acting. During a play the children use toys which define the type, manner and richness of their playing activities. Actually, a toy defines, influences and develops a playing activity and because of that a variety of toys and its social, art and creative value is important. A play with a good, functional toy encourages the fantasy and creative thinking, it supports the physical development and it helps a child to integrate into the world of other people and into their present and future life.

The disciplines which are concerned with the study of a toy are ethnography, archaeology, pedagogy, psychology and cultural anthropology. From their findings it results that the basic repertory of toys in different historical eras has not essentially changed. It differed only in the level of visual realization and the quality of the used materials. The toys were almost exclusively the miniaturized objects from the working area, family life, combat activities, taking care of a family or human amusement. Such toys fulfilled the didactic and socializing function, they reflected the real life and they helped children to be prepared for it.

There is a number of time-proved toys. The requirements for a good toy come from the fact that through them the motional, sensorial, mental and emotional development of a child should be encouraged. The social attitudes and habits of a child should also be developed and the fantasy of a child should be encouraged. The requirements for the hygienic and safety-related quality of the toys and their aesthetic level are also non-negligible. A toy should also be durable and safe and the price of a toy is also important.

In the most cases, the choice of a toy is not given to the children. Exceptions are the cases when a child chooses an object from the surroundings, an object which is not primarily meant to be a toy.

### SIGNIFICANCE OF A TOY TO A CHILD

Parents and the relatives who buy the toys have the impact on how valuable and beneficial is the toy in the didactic, artistic and emotional respect. Duplinský (1993) cites the American research which shows that a child has an opportunity to choose a toy in only 20 % of the cases. In 40 % of the cases a toy is picked by the parents with intention to amuse the child and so that the children do not disturb them. 87 % of the parents are willing to buy a militaristic toy. Only a third of the parents (with a higher education) state that the educational aspect of a toy is more important to them.

This many requirements on the quality and the level of the toy of course make it harder for the parents to choose a proper toy, mainly when they also need to take into account the developing and psychological aspect. The role of the teachers, psychologists and nursery teachers steps forward so that they make sure that they choose toys which are suitable for the specific age of the children. Very important is also the role of the mainstream effect on the parenting society so that they don't choose the toys only according to the market and financial mechanisms.

Children should get their toys in an appropriate age. In this regard, Zdeněk Matějček (1995) defines two meanings of a toy – developmental and stimulating, whereby he finds the developmental meaning as the crucial one. He definitely insists on the fact that “a toy needs to match the mental age of a child” and he criticizes the situation when the manufacturer states on the packaging of toy a very vague information as “recommended age is from 3 to 8 years”, whereby this interval covers four different development stages. On the spread idea that the toys suitable for older kids stimulate and accelerate their development he reacts “...we do not give simpler toys to small children because we think they are too stupid for them, but simply because their nervous system needs them at the given development stage...the most modern toys are very perfect but rather monothematic and that fact takes away the possibility from children to use their own creativity.

Also Stoppard says that adequacy of a toy to age plays an important role when choosing the right toy. She emphasizes the importance of a stimulating environment for a realization of a play that means enjoyable and for a

child attractive environment, organization and presentation of the toys should not be in boxes or on a pile but in the motivating configurations and positions, in the situations which stimulate the imagination and creativity of a child (Stoppardová, 1992).

E. Opravilová (1995) and A. M. Dostál (1988) are of the same opinion: “Continual integration of the children to the world of adults secured by educational influence in the broadest sense (but of course also by a toy) takes for granted the existence of an environment, where a child can play in the manner of what the patterns of their mental and physical development demand.

In the conditions of a nursery it is a question of so called pedagogically adapted environment, that means it is adjusted so that a child has a constant opportunity to a rich and stimulating playful activity and a sufficiency of toys and game impulses. In the conditions of a family it is also a question of where and how to place the toys so that they are not dead and expensive investment but so that they are always pedagogically and motivationally accessible and ready to use. In the both environments a child should have a freedom of movement and they should not be restricted by anything else but safety aspects.

The price of a toy is not a crucial aspect for a success of a toy with kids. The children play with a toy, they are satisfied with it, they are focused and they develop if the toy meets the criteria of the age suitability, i.e. an appropriate period to give the toy. In the connection with this M. Stoppard (1992) states the experience of most of the parents, that a child often plays with an object that is not a toy, that is not made for playing but a child is interested and fascinated by it and returns to it. The fact that a child wants to imitate the role of the adults probably also plays a role and maybe the objects of normal use should be used as toys and they should supplement the set of the “main” pedagogically and psychologically important toys.

Whichever object from the surroundings of a child hides a potential to become a toy. Such a toy helps to gain experience of the real world, development of the fantasy and to a natural integration to the world of the adults. However, it is not possible to agree with an opinion that “the children mostly make the toys themselves.” (Vocilka, 1995)

It is mostly said about a toy that it is a miniaturized or stylized object from the real world and through it the children gain knowledge about the reality by which they are not surrounded at the moment. From this point of view there are two possible levels of understanding a toy. A child can either choose an object as a toy (its purpose is different) itself, - Dostál calls this level the primary function of a toy or a child chooses a toy, which is an object directly made for a play, when the choice and schematization is made by an adult. Then the same author speaks of the secondary function of a toy. (Dostál, Opravilová, 1988)

Very little children (until the age of 1) need such toys that develop all of the five senses. Because of that the toys which offer enough experiences with the knowing of colours, surfaces, materials, shapes and sounds are considered to be appropriate and age suitable toys. By the toddlers the age suitable games are for “putting things in and out” so cubes, circles which are put on a vertical sticks, pyramid puzzles can be used.

Children around the age of two are adopting the ability to rotate their wrists, which enables them to rotate things, unscrew the caps, and open the doors. Because of this such a toy is suitable, which enables such a manipulation – shapes which fit into each other, differently shaped blocks which fit only into specific shapes, planks in different shapes and plates.

Despite the development of technology and modernisation of the toys and against the expectations of the parents it is a known fact that the less shaped and simpler toy is handled to a child, the more opportunities it offers to the child’s imagination. A piece of wood can represent to a preschool aged child a sword, a magic wand, a baton, a tower, an object for passing, a bridge across a river, a tollgate and many other things, while for example a costly dressed and even a talking and walking doll, which is mostly more expensive, has only one function (Stoppardová, 1992).

When choosing a toy a parent or a tutor should ask these kinds of questions: is the toy safe, is it stimulating, is it worth the play, is it universal enough so that it suits more types of games, will it “grow” with a child, is it fun to play with? Ideally a box (set, collection) of blocks which spans a longer age period and it stimulates the imagination and activity meets these criteria. Mechanical toys are in this aspect very often a let-down because their use is very often one-sided, unrepeated and the children often get bored because their imagination is not activated.

Otokar Chlup (Chlup, Kubálek, 1938) emphasized (same like Matějček, 1995) the importance of choosing the toy by a child itself and he dealt with the question of suitability of toys and their adequacy to age and development stage of a child. He also says that there is no need for the redundancy of toys, too big selection of toys rather distresses a child than pleases. Further he says that the toys should be made from a proper material and “they should not imitate other material from which they are made” – as if he anticipated the later era of plastic, which “looked” differently, than the artificial material should or they substituted other material. He emphasizes the level and quality of folk toys unlike many industrially made toys. He states that the toys do not only occupy the children but they also train and educate them in many ways. They develop a child’s memory, attention and fantasy. Because of that mainly very simple but thorough and solid toys are the most favourite ones with the children. According to Chlup, the toys which a child can observe and use only in the presence of an adult or toys which seduce to vulgarity or brutality are totally inappropriate. Toys which offer to children an opportunity to act superior above other

children, do not have a good educational influence on them.

### ABOUT THE MEANING OF THE WORD TOY AND CATEGORIZATION OF TOYS

In the broader sense of a word we can call a toy anything that a child uses during a play. A child can play with nearly everything, with every object of daily need; they sometimes even prefer these objects to the real and costly toys. The toys in real sense of the word are the objects, specially made for children playing activity. The toys can be made of various materials – wood, plastic, paper, textile and others. If we talk about the industrially or handily made objects, Mišurcová (Mišurcová, Fišer, Fixl, 1980) states these toys as suitable ones for the category of preschool children.

- A doll with accessories (clothes, toiletries, a bed, a stroller, a room, a medical bag),
- A miniature doll with travelling equipment,
- A dummy, teddy bear or other textile animal,
- Puppets, or puppet theatre, building blocks (constructive, consisting of wooden cubes, plastic),
- Thematic toys (cities, villages),
- Vehicles (a train, a truck, a crane truck, miniature cars),
- Board games (domino, bingo, flashcards, mosaics, shape sorters, picture puzzle),
- Motion toys (a ball, a hoop, a jump rope, circles for throwing, ninepins, a windmill, a rocking-horse, tricycle, a scooter, children bicycle, roller-skates, sledge, skates, bobsled, skis),
- Creative toys (black boards, chalks, crayons, tempera paints, pencils, brushes, modelling materials, modelling clay, cut-outs, colouring books, magnetic board, stringing beads and shapes),
- Work tools (a hammer, pliers)
- Gardening tools (a spade, a rake, a shovel, watering-can),
- Toys for a sandbox (a pail, a scoop, shapes, trolley for sand)
- Toys to water (plastic and rubber animals, inflatable toys),
- Sound toys (drums, a whistle, a trumpet, xylophone, triangle).

This list is of course only informative, it is aimed to educative influence in the nurseries and it would be possible to add new types of toys (Duplo, Lego) or to divide the desirable (possible) set of toys according to shorter age periods. For example like this:

Toys for babies until 6 months:

- Hanging toys moving with the airflow,
- Toys which can be squeezed or sucked on,
- Soft toys and balloons,
- Rattles, bells, squeaking toys.

Toys for babies from 7 to 12 months:

- Standing rattles,
- Books made of hard paper, textile, wood or vinyl,
- Balls,
- Motion toys,
- Big, soft cubes,
- Stuffed animals,
- Buckets, forms and toys to water.

Toys for toddlers from 12 to 18 months:

- Picture books with variously adjusted surface,
- Music toys,
- Puzzles,
- Cars,
- Things for colouring and colouring books,
- Toys which fit into each other,
- Toys for putting on each other,
- Toys which are pulled.

Toys for toddlers from 18 months to 2 years:

- Dolls,
- Toys that can be hit, sorting and stringing toys,
- Toys with wheels,
- Child mobile phone,
- Music toys.

Toys for children from 2 to 3,5 years:

- Changing clothes of the dolls,
- Tempera paints or water paints and pieces of paper,
- Building blocks of many kinds



- Simple games and puzzles,
- Manipulating toys,
- Tools and objects of daily need in the household.

Toys for children from 3,5 to 5 years:

- Set of various constructing models and cars,
- Magnetic or flannel boards,
- Miniature situational models (a house for dolls, game on a shop),
- Sport equipment in children modification,
- Books, gramophone, tape recorder, magnifying glass, binoculars.

Toys for children from 5 to 7 years:

- Dressing dolls,
- Miniaturized machines from the adult world (cash registers, typewriters, a simple camera),
- Simple handicraft tools,
- Trains, cars
- Books with several chapters, musical instruments (a flute, a mouth organ),
- Group games. (Stoppardová, 1992)

### QUALITY OF THE TOYS

There are many attempts in the literature to define a set of toys that are necessary to secure an opportunity for versatile psychological development of a child. Besides the two above stated it is O. Elmanová (1964), activities of the international organization ICCP (International Council for Children's Play) – founded in Ulm already in 1959. This organization defined the criteria and requirements for a good toy. The aspects of academic disciplines which are concerned with a play and a toy as well as the aspects and requirements of practical disciplines which are concerned with a toy are contained in these criteria:

- The age of a child for which the toys are suitable, so that a toy is up-to-date from the aspect of current development stage of a child;
- The necessity of a full usage of child's imagination when playing – if a child learns from a young age to use simple objects and shapes with which the imagination must be used, it can later better and more creatively manipulate with the miniaturized and stylized toys, to take more out of them;
- The variability or the multitude of playing possibilities. The more possibilities a toy offers the more interesting it is for a child and the more developing value it has. Single use toy can tire soon and it creates disinterest and passivity;
- Comprehensibility of a toy – the design and shape design of a toy contain an information, which should be comprehensible mainly during the first phase of contact of a child with a toy;
- The size of a toy – a younger child needs for example with a construction toy bigger parts because its motor skills are not evolved enough to manipulate with smaller parts;
- Number and composition of toys – the selection of toys in families is random and in the nurseries it is controlled in so that the number of toys is not abundant or insufficient;
- Suitability of the materials – for every toy a different material is suitable and typical. It should correspond to aesthetical and pedagogical purpose of a toy, its function and character;
- Shape and colour of a toy – which play role by the acceptance of a toy by a child; an opinion that a child clearly prefers bright colours is not really proven; experiences from the practice indicates that bright brown tones (natural wood) are optimal, supplemented with areas of bright saturated colours (white, yellow, red); a colour does not have to match the reality;
- Solidity and durability of a toy – it is important mainly by the toys which are with a child for a longer period (a doll, a teddy bear, a puppet) or by a construction toys, which is being dismantled by a child in the analytical age;
- Construction and mechanics with regard to comprehensibility of a toy; comprehensible toy is the one which is well and logically constructed; a technical complexity of a toy is a mistake in regard of young age of a child
- Safety of a toy – nontoxicity of the paints, resistance saliva and sweat, resistance to fire, sanitariness, a safe size of a toy and its parts, roundedness;
- Price of a toy – it needs to be viewed with regard to its playing meaning, durability and life span. (Dostál, Opravilová, 1988)

It is interesting that the especially defined pedagogical value of a toy, latently hidden in the manner of presentation of a toy to a child is not stated or it is stated in different context than the criteria of quality and selection of toys. In this regard we must realize the danger of two extremes – excessive control over the child playing activities on one hand and complete freedom for a child during the manipulation with a toy on the other hand. Both extremes occur in dependence on whether a child play in a nursery or at home, whether the parents are pedagogically informed or not, whether they devote more or less time to a child, whether a child has the majority

of toys that are artificially made or most of the toys are made by a child using the objects of a daily use and using the imagination. Social environment of a child is important for its development stage. A good parent and of course a good teacher tries to find a reasonable degree of controlling and influencing of the child playing spontaneity.

Almost the whole nonfiction literature agrees on the opinion that a toy is irreplaceable in the development of a child and in the pedagogical and educational work of the teachers in the nurseries. It must be stated that there is also a controversial opinion which (maybe in the connection with antipedagogics) denies the role of a toy. For example, there is a project called “A nursery without toys” which comes from a massive preference of imaginative abilities of a child. It claims that taking the toys away from the children, makes them more creative. In this project a child makes toys out of ordinary objects, instead of taking an intentionally methodically offered toy. A theoretical way out of this approach is an opinion (maybe even reality) that a child mostly reaches for an attractive thing instead of a pedagogically, ethically or life beneficial object – so at older age a child can reach for a drug, for example. However, according to the authors of the project if a child is from the beginning systematically led to creating an own world and own values through the objects of the surroundings and own abilities, under inconspicuous and indirect leadership and influence, without any purposeful manipulation by a pedagogue, it will not create a harmful and wrong values and it will not reach for a drug or any other dangerous objects. Only one thing needs to be added to this opinion and that is the fact that it is in the stage of tests and verification and here not even these tendencies are visible.

Of course not even in the ideal case it cannot mean that a child under a kind oversight of a teacher only plays on its own and “creates its own world”. And also it cannot mean that the work of the teachers would be easier in this case. It is much more effective to work with a child according to pre-made plan with the use of toys, or eventually didactic materials and to, as Opravilová says “manipulate” a child in some way for a good and pedagogically and human justified purpose, than to “bring every single child to a self-realization and a self-expression in a play”, to analyse its actions and build upon that with some indirect, but creative, however unsystematical creating of its individuality. (Opravilová, 1994)

The basic question for classification of toys from the aspect of the type and kind of a toy in the connection with the age and development aspect is “with what and when to play?” This question is asked by Opravilová and it connects the adequate (recommended) age of a child with a type of a toy, not with a specific toy like Stoppard (1992).

The significance of a toy lies in the development of various aspects of child’s psychic, knowledge and socializing processes, in the process of maturing and learning, in the development of independence, in gaining the sensual experiences, experiences in movement in the room, in discovering and searching of the new by means of a playing activity, in adopting the surrounding world and the world yet hidden to a child.

The most appropriate classification of toys with the acceptance of generally known and proven influences which a toy has on a child, like: growth of the needs of a child, its socialization, influencing the maturing and learning, gaining the sensual experiences, growing of independence, gaining experiences in movement in the room, growing fine motor skills, searching and discovering in a creative activity, seems to be the one made by Opravilová, which comes from an older concept (H. S. Hertzke 1964), whose main criteria is the development of a child and a link-up of this activity on the process of knowing.

Because of that Opravilová (Dostál, Opravilová, 1988) sorts the toys into twelve basic categories:

1. First toys (2 to 9 months) – objects for hanging above the crib, circles, a rattle, simple animals, hygienic materials, polished wood, plastic.
2. Hollow forms (till 2,5 years) – versatile usage, they strengthen and exercise the grip of a hand and an arm of a child and coordination of both hands, they soften the movements and muscles of fingers. Joining of the hollow forms with water and sand is proving well. Material: wood with a natural colour or lively varnished, perhaps even simply ornamented with stylized pictures.
3. Forms, shapes and stringing games (1,5 to 4 years) – around the second year a child gains an ability to make simple shapes, put various pieces together and take them back to pieces. Inserting of objects into holes and delicate manipulation with material exercises the position of fingers against each other. A colour and shape differentiation also comes later. Choosing of puzzles, stringing and pyramid shapes, assembling figures, cars, trains, trolleys or even bigger shaped mosaics offer a vast range of opportunities for a child’s activity.
4. Spinning and screwing (1,5 to 4 years). Around the second year a child begins to orientate itself for searching of belonging shapes and pieces. That is a great exercise for cooperation between both hands and motion coordination. Various assembling and screwing dolls and figures, boxes and plates with a possibility to screw various shapes on them belong here.
5. Building and constructing (1,5 to 4,5 years). Approximately from 7 months a child can hold two things at the same time and later it can place them on each other. That is a basis for building for which highly coordinated movements are needed. A natural wood with simple shaping is the most suitable material for building blocks. Plastic is not so convenient, because it has smaller surface roughness and with that a smaller static balance and stability.

6. Balls and throwing (1 to 7 years, later balls specific for a sport activity). A ball accompanies a child throughout the whole childhood. It should be optimised with its size to the age of a child. A ball can be used since year one for practicing the coordination of muscle movements on hands, fingers, arms. Balls, ninepins, hoops and throwing rings has a special significance for children with eye defects and lack of motion coordination because they help with removing the spatial uncertainty of a child.
7. Dolls, animals, villages, cities (6 months to 7 years). Since a young age there are miniaturized objects which accompany a child. They enable them to live through relations which a child in reality only sees as a spectator. By means of these toys a child can reproduce all of its experiences. The toys themselves are not the only important thing but also other additional accessories, mainly if they are made by the children itself or with a help from an adult: clothes for dolls, accessories for an apartment, shop, household. For children who are limited in movement, have a long term illness, live in an institutional environment has this category a value in helping them to mediate many impressions which they cannot experience themselves. V. Borecký (1982) notices a special meaning of these kinds of toys that are being applied in so called mimetic (displaying) plays. He also suggests the possibility to diagnose the educational problems with the help of these plays, where a child combines the pieces into a picture of the world in the way it comprehences and understands the world.
8. The first mechanics (15 months to 4 years). One of the main principles for this kind of toys is that they should be constructed in a way that a child can control their functions and motional mechanism. We find various types of these toys in the folk creations – pecking chicken, a fight of two bears, working craftsmen or a figurine with moving limbs and they are represented in almost all cultures. Various pulling toys and rollers are industrially made. A child brings them into motion by pulling it behind, or the better option is if the children push it in front on a stick so that they can watch the movement.
9. The first machines (1,5 to 6 years). The principle of mechanism should also be available to a child. It is not necessary to imitate the reality perfectly, it is enough to represent the typical features. A correct functionality and durability is important with these toys, because a quick malfunction of the mechanism can discourage a child from this toy. More complicated mechanical toys – trains, remote control cars, electronic building kit, planes, and models of ships belong to the much older children, where a elementary understanding of the principle of movement is presumed. Simple wooden cars, cranes, a lift, a digger on which they can load things, transport and control them are the first machines that will serve to pre-school children.
10. The first working material (1,5 to 7 years). A possibility to have a contact with water and sand is one of the most important conditions of the upbringing of a young child. A possibility to manipulate with them should be everywhere, where are the children. The same goes for drawing, painting and the whole artistic expressing, clay or plasticine modelling, cutting out and making collages. For these activities there are various kinds of colours, first the ones that a child can put right on the fingers, later use a brush or a stick, crayons, chalks and various boards and surfaces where a child can perform these artistic activities.
11. Placing and assembling (1,5 to 7 years). A special didactic significance has always been given to these activities in theory and in practice as well. Searching for specific geometrical shapes, inserting of specific shapes to exact holes, assembling a whole out of parts, so called jigsaw puzzle belong to this category. Unlike from sooner, where more abstract shapes were used (e.g. by Montessori), these shapes are coming closer to real objects in contemporary approach, and there is an effort to keep not only the shape but also a logical context (e.g. a triangle as a traffic sign). These activities are offered to a child in the form of board games, dominos, puzzles and mosaics.
12. Various (1,5 to 7 years). A number of small things belong to this category, which are intended mainly for the joy and amusement of a child, but that can also lead to practicing of some of the functions. Examples are windmills, soap bubbles, inflatable balloons, marbles, yoyo, brain-teasers, card pairs and triplets, cut-outs, colouring books and object made to create collections. It is also important to leave time and space to a child for these objects and their arrangement. Buttons, match boxes, stickers from cheeses, chewing gum and chocolate wrappers can also be very good materials, because also with these a child can learn a formal operation of sorting.

Jarmila Svobodová (1989) suggests a simple but also well-arranged and methodically interesting proposal for assortment of toys for pre-school children, where she takes in account the age and related abilities of a child:

Toys for 0 – 6 months old:

- Toys for sensomotorics games – for development of visual perception, hearing perception, tactile perception, for development of gross motor skills (motional), manipulative toys – (toys for hanging into the field of vision, a hanging bar for the crib, rattles, rubber toys with sound, inflatable animals, figurines, hollow forms, first building kits, cubes),
- Toys developing emotional and aesthetic experiencing (first dolls, soft toys),

- Toys for sensomotoric games – fine motor skills, hearing perception, gross motor skills – (cubes, hollow forms, inserting cubes with holes, toys for spinning and screwing, puzzles, jigsaw puzzles, vehicles, cars, trains, balls, ninepins, scooter, tricycle),
- Toys for development of intelligence and personality – constructive toys, toys for imitative games, creative games – (the first building kit, children dishes, vehicles, kitchens, objects from household, working tools, toys for a play in the sand),
- Toys developing emotional and aesthetic experiencing (dolls, puppets, marionettes, textile and plush toy to a crib, first mechanical toys).

Toys for 3 – 6 years old:

- Toys for imitative and sensory games – gross motor skills, fine motor skills, visual perception – (see previous period, throwing rings, ninepins, toys for a play in the water, a jump rope, mosaic building kits, stringing and slip-on shapes and beads, marbles, simple musical instruments),
- Toys for development of intelligence and personality – constructive toys, toys for thematic games, toys for creative games – (building kits with various types of materials, sets for imitating various occupations, miniatures of objects, houses, work machines and tools, figures of animals and figurines, sets of materials and additional objects),
- Toys developing emotional and aesthetical experiencing (plush, textile toys, sets for completion, sets for dramatizing and role plays, toys for joy and amusement),
- Toys for group games (board games, picture dominos, Ludo, sets of games).

Svobodová in this summary states to every type of a toy also its characteristics and main contribution for the development of a child including the appropriate time specification for the usage of the individual toys, their presumable psychological influences and material or technical execution of the toys.

Any list of all the possible types of toys in connection with an adequate child's activity is not and never can be entirely complete. One of the reasons is that the market, inventiveness of the toy makers, industrial production and advance in technology is bringing and will always be bringing new toys corresponding to the state of technological development of society. In connection with scientific and technological development, for example electronic toys, models, remote control vehicles, electronic building kits (Logotronik, Elektronik), computer games are penetrating into the market and also into the educational practice.

## DISCUSSION AND CONCLUSION

Ethical, pedagogical and communicative problems emerging with the use of electronic toys are usually pushed back by unquestionable significance of these toys for the development of cognitive processes. Electronic toys have besides the informatively cognitive value some danger in the fact that they strengthen the bond with the audio-visual resources too much and they push back the primary life experience and they limit the interpersonal communication. A question thus emerges – how and to what extent shall we use the electronic toys, so that the rate of development of children's cognition would guarantee an advance in technology of the mankind in the future and at the same time it would not mean the loss of specifically human dimension of communication, contact, understanding and experiencing. Contemporary opinions of the experts say that the electronic toys are suitable for children older than the pre-school age, even though in the future there probably will be logical, programmable machines also in the nurseries, on which the children will practice the speed of thinking, readiness and decision making activities.

The second and it appears that more serious reason, that a clear classification of toys is difficult is, that a toy as an object and a play as an activity are very changing variables and the relationship of a child to a toy is itself a phenomenon very difficult to grasp. Josef Duplinský even eliminates such an option and says: "... a child is the only real expert in the domain of a play and a toy on one side and a specific toy on the other side, because a toy is an emotional phenomenon and it also emotionally affects a child in the play...the play expressions of a child and its virtuosity and the situational varying of the play expressions exceed the professionally accustomed schemes very often...a very inappropriate term standard child is used when trying to make a classification of toys". This author is because of that sceptical about the classification of toys and he only accepts the following principles:

- A toy should only be developed in the presence of the children and in social interaction with them,
- A toy must be multidimensionally reviewed from different aspects,
- It is necessary to respect the circumstances, under which the toy is really used,
- Repeated and long-term observation of the specific playing activities with a toy and their consequences plays an important role,
- A toy must correspond to the physical and mental abilities of a child,
- A toy should invoke a positive emotional satisfaction,
- A toy should include a certain educational effect in some playful form. (Duplinský, 1991)

However, a human factor and a role of pedagogically adapted environment will not (hopefully) lose its significance in the future, because the development of the intelligence is besides the genetic sources also dependant on emotional sources, which cannot be fully replaced by an electronic toy.

Similarly disputable toy is the Barbie doll, when the originally good intention was almost completely destroyed by the mechanism of the market. We can also discuss the combat and war toys from many points of view. However, if a toy is a representation and reflection of reality, then also the war toy has its justification.

A basic characteristic of a pre-school age is spontaneity and liveliness. The effort of the teachers is resolution and directedness of the development of motor, perceptual and cognitive functions, which make the socially adaptable behaviour easier. A child should for its own sake and for the sake of the society, of which it is a member, adopt the physical agility, skilfulness, swiftness, fine muscle coordination, ability to observe, sort and evaluate, social literacy and communication skills and many other mental and physical operations. Due to the age of the pre-school children and to their intellectual level, there is no other option to implement these goals than a purposeful, directed, but natural play with the use of appropriate, motivating, didactically, emotionally and aesthetically important toys that are correctly and sensitively used. This applies mainly to the environment of a nursery, where by the means of intentional and planned choice of the object made specifically for that, toys and other additional objects, a playing activity is directed in a way that it fulfils educative goals, mainly from the aspect of gaining the experiences needed for the future life of a child. Also because of that, all of the premises of a pre-school facility should be adjusted in a way that a child has a constant and permanent opportunity to rich and stimulating playing activities, to which a child is encouraged by a toy.

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## Training Of Engineers In The Aerospace University With Application Of Technology Research And Education Centers

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### ABSTRACT

The issues of engineers training in the aerospace university on the base of Research and Educational Centers (REC) are discussed. In order to improve the quality of education in the Siberian State Aerospace University the research work of students, as well as the practice-oriented training of engineers are introduced in the educational process. It was made possible as a result of joint efforts of university with research institutes of the Russian Academy of Science and industrial enterprises. The features of the engineers training are discussed on the example of a jointly created with JSC "Information Satellite Systems", JSC "Krasnoyarsk Machine Building Plant" and the Krasnoyarsk Scientific Center of the Siberian Branch of the Russian Academy of Science the research and educational centers such as REC "Space Research Institute and High-tech", REC "Space Systems and Technology", REC "Closed Space Systems" and the REC "Rocket and Space Technology". The use of learning technologies based on the scientific and educational centers allows improving the quality of engineers training for aerospace industry and the efficiency of joint research work on the development of new techniques and technologies through the development of scientific, educational and industrial potential of participants. Within the framework of research and education centers the students perform researches, diploma works and master's theses; the postgraduates are trained in advanced scientific and technical areas of enterprise development.

**Keywords:** Aerospace engineering, engineering education

### INTRODUCTION

The innovative development of the territory is impossible without the support of high-quality vocational education. This involves the development of the university innovative educational technologies and the formation of a unified system of continuous education, increase design and research development and the achievement of the desired concentration of highly qualified teaching and research staff. The current conditions require improving the quality of education and related to the introduction in the educational process the research component, as well as practice-oriented training. This is possible as a result of joint efforts of the state educational institutions of higher education in Russia with the research institutes of the Russian Academy of Sciences and industry.

### TRAINING OF ENGINEERS IN THE SIBERIAN STATE AEROSPACE UNIVERSITY ON THE BASE OF RESEARCH AND EDUCATION CENTERS

The Siberian State Aerospace University (SibSAU) for many years trains engineers for the aerospace industry. Here are the main competitive advantages of the University:

- Unique location of the university in the Siberian center of satellites production and developed relations of the University with the space enterprises;
- Presence of all levels of vocational education including secondary, higher, additional and postgraduate;
- Wide range of educational programs that meet the main objectives of the space industry development;
- Integrated system of aerospace education, based on a combination of theoretical study and production work on the base enterprises or research work in academic institutions, have proven very effective and adapted to modern educational standards and market conditions;
- Wide range of the scientific fields of fundamental and applied research on the creation of advanced space systems; the presence of leading scientific schools in the main areas of research and development;
- Presence in SibSAU required production and test facilities for the development and manufacture of spacecraft.

The scientific research in SibSAU focused primarily on solving the problems of rocket and space industry. The subjects of scientific solutions and technical problems, directions and specialty of training included in the promising areas of the University and justified the tasks set by the Federal Space Program and tasks assigned to

space industry. The most important element of adopted in the university training system is the integration of the University with research institutes of the Russian Academy of Science (RAS). The strategic partnership agreement concluded between SibSAU and Krasnoyarsk Scientific Center of the Siberian Branch of Russian Academy of Sciences (KSC SB RAS), has allowed at qualitatively new level create a system of joint scientific and educational activities, attracting potentials of the RAS institutes, on the basis of which the scientific and educational departments of the university were created (Kovalev, Loginov & Zelenkov, 2015).

The "Space information systems" is the main priority, in which the University holds a leading position in Russia in training and research related to the development and modernization of the domestic space information systems, improvement of spacecrafts, systems and complexes for various purposes, fixed and mobile communications, television, navigation, geodesy and retransmission. The University conducts applied research in the design and development of advanced platforms unmanned spacecrafts, small satellites; spacecraft control systems in orbit and methods of use of space-based information systems.

A special place in the university activity occupy jointly created with base enterprises and institutions of RAS *The Scientific and Educational Centers* (SEC) "Institute of Space Research and high-tech" (SEC ISHRT), "Space systems and technology" (SEC SST), "Closed space systems" (SEC CSS), "Management of space systems" (SEC MSS) and "Rocket and space technologies" (SEC RST).

### **THE SCIENTIFIC AND EDUCATIONAL CENTER "SPACE RESEARCH INSTITUTE AND HIGH TECHNOLOGIES"**

The Space Research Institute and High Technologies SEC was created in cooperation with KSC SB RAS and JSC "Information Satellite Systems". The center consists of the department of Technical physics, Space materials and technologies, Space and technology, Space monitoring center and space research, laboratory of Nanotechnology and space materials, Physical properties of semiconductors and nanomaterials with modern research and analytical equipment. In SEC ISHRT provides training in the field of "Study of natural resources by aerospace methods" and "Physics". The scientific work of the students is organized on the basis of joint scientific laboratories SibSAU and institutes of KSC SB RAS under the personal guidance of leading scientists. To solve the problems of applied scientific observation and determine the orbits of satellites and asteroids in the university operates the center of space exploration and the observatory with two telescopes. The staff of SibSAU created the telescope remote control system and digital images delivery via the Internet (sky.sibsa.ru). The Centre is part of the international cooperation within the framework of a scientific network of optical instruments for astrometric and photometric observations, which brings together 18 research institutions and observatories from 9 countries. The observatory of Center officially registered in the International Minor Planet Center at Harvard with the assignment of code - C06. On this basis, the educational process for students of natural science and engineering disciplines are organized. The observations and research are conducted in the field of astronomy in cooperation with the State Sternberg Astronomical Institute of Moscow State University and the Institute of Astronomy RAS.

In order to use the results of space activities for socio-economic development of the region at the University in 2013 established the Regional scientific and technological center of space services. The equipment for remote sensing data from space is installed and functioning on the basis of SibSAU and Siberian Federal University. This is a promising new research and innovation activities of the University, which is currently being actively developed in close cooperation with academic institutions of RAS. In the field the students, graduate students and staff participate in the development of methods to improve the accuracy characteristics of GLONASS / GPS, development of tools and methods for monitoring natural resources and remote sensing, as well as radar and radio thermal sensing from space. The university staff together with the JSC "Information Satellite Systems" developed a methodology for the use of GLONASS for remote sensing of humidity and identification of frozen or thawed state of the soil cover surface using small LEO spacecraft. The students participate in ground and flight testing, testing equipment in order to clarify uncertainties and spatial resolution data sensing. The Centre carries out works on the development of GIS and image processing techniques from satellites of Russia, the US, Israel and other countries, develops methods of fire detection and determination of forest fire danger based on satellite imagery. The objectives of the center are also the evaluation of air pollution, the forecast meteorological state of the atmosphere, the study of snow cover.

The logical development work in the field of space activity results is yet another new direction in the University associated with entry of SibSAU into a major international project to create the International Global Monitoring Aerospace System (Kovalev & Loginov, 2012). Currently, under the auspices of the International Academy of Astronautics started practical implementation of large-scale project of the International Global Monitoring Aerospace System - a system for effective and adequate forecasting of natural and man-made situations, through the integration of all available information on the monitoring of the ionosphere, atmosphere and lithosphere, as well as near-Earth space (Menshikov, 2010).

### THE SCIENTIFIC AND EDUCATIONAL CENTER "SPACE SYSTEMS AND TECHNOLOGY"

The Space Systems and Technology SEC developed in cooperation with the JSC "Information Satellite Systems". The center implements an innovative training program of engineers for JSC "ISS" on the basis of project-oriented learning technologies. JSC "ISS" is one of the leading enterprises of the Russian space industry and has a technology of complete cycle of space systems creation from design to control automatic spacecraft in all orbits - from low circular to geostationary.

The Space Systems and Technologies SEC has been engaged in the design and assembly of a series of scientific and educational small satellites (SmallSat) for a number of years. The project is carried out by a team of students, postgraduate students, young scientists, and specialists of JSC ISS; the team is also responsible for conducting scientific and technological experiments in space. The SEC includes the Student Design Bureau for the design of small satellites, "clean room" for the assembly and testing of small satellites, laboratory of prototyping and satellite electronic systems, laboratory of mechatronic systems and precision mechanics, which equipped with modern high-precision control, measuring and test equipment. The SEC's equipment enables the assembly and testing of satellite mechanical systems, electronic equipment prototyping, conducting vacuum and climate tests, researching spacecraft electronic equipment.

The development of program on creation a series of technological, scientific and educational small spacecrafts provides to undergraduate and graduate students an unique opportunity to take part in the development, design and assembly of satellites in the development of new engineering solutions, creating elements of space systems and space experiments. In the field of development and improvement of spacecraft's elements and nodes the University actively participates in the development and testing of advanced integrated onboard systems control, improvement of on-board power supply system of spacecrafts and developing large-scale transformable satellite structures (Kovalev & Loginov, 2011).

Here are the objectives and tasks of the program for building a series of scientific, educational, and technological microsatellites:

- Development of an integrated system of engineering education (distance learning systems, laboratory sessions, using special control ground stations designed for the microsatellites, etc.);
- Implementation of a design-oriented educational technology for the preparation of aerospace engineers; forming their professional competencies (student participation in the design and assembly of satellites, service systems, and scientific instruments);
- Scientific experimentation in space (space methods for monitoring the Earth's natural resources, multifunctional nanomaterials, exploitation of high-temperature superconductors and other smart materials in space);
- Technological development: obtaining flight qualification for advanced service systems, instruments and satellite elements (attitude determination and control subsystem, electric power subsystem, thermal control subsystem, and other subsystems with an increased lifetime).

Currently, on the Earth's orbit are two student satellites "Yubileyniy" and "MiR" (Figure 1).

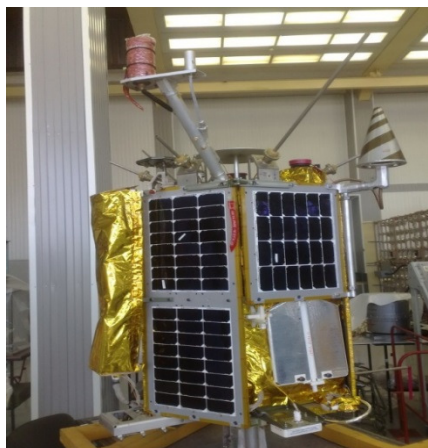


Figure 1. Small satellite "MiR"

All organizations that participated in the development and assembly of the small satellite acquired significant technological experience for future contribution to the training of engineers for the national space industry.

The monitoring and operational control of the small satellites is performed at the students' Satellite Control Center (SCC), which is located at the university. Students obtain telemetry data from the satellite in a real-time mode, learning to decode it and control the satellite. During their course, engineering students have a unique opportunity to directly control, receive, and process telemetry from the following Russian small satellites – *YUBILEYNIY*, *MOZHAETS*, *CHIBIS*, *BAUMANETS-2* and satellites of the Technical University of Berlin – *DLRSAT*, *TUBSAT*. The Control Center also provides access to the *Express-AM* program simulator, imitating the flight of a modern functioning telecommunication satellite. The simulator completely imitates the operation of all service subsystems of *Express-AM* and is used for conducting tests on the onboard control system, learning how to operate a real satellite. This is a joint development of SibSAU and JSC ISS. The students' SCC is an essential ground segment for the orbital group of technological, research, and educational small satellites, assembled by the university and its partners.

Besides accomplishing existing scientific-technical and experimental tasks, the small satellites are designed to perform an educational function, which is just as significant as the scientific investigation. The production process of these satellites is essential for the preparation of aerospace engineering specialists, who undergo training through a project-oriented educational technology course. This is the first time such a course is introduced at a Russian aerospace university. It has been mentioned that students of SibSAU take part in all stages of satellite production, from writing design documentation to controlling the satellite's orbital path. Implementing the project allows to identify the students who have shown their best effort and enjoyed laboratory work not only during their main curricula, but in related extracurricular activities. This experience shows that such students subsequently become the most qualified and responsible professionals.

The construction project of the students' satellite is divided into twelve directions. This models the number of main satellite subsystems – the thermal control subsystem, the electric power subsystem, the attitude determination and control subsystem, etc. The scientific work of each member of the student team must be done in one of these areas. When the student accomplishes his first year on the project, he or she becomes a tutor for younger student of the same direction, sharing the acquired experience. The final results of the student's scientific work in the selected direction, including the graduation project and diploma thesis, is the design and manufacturing of a functional satellite component or constructional element. This part will be installed inside an actual satellite, which will be then launched into space. One of the major projects in 2014, which was attended by students, has been associated with the production of precision structural elements of telecommunications satellites with high-modulus composite materials geometrically stable in space (Figure 2).

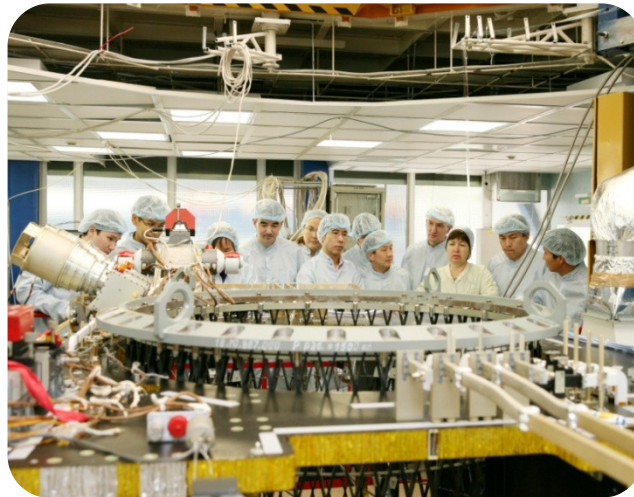


Figure 2. Student participation in the fabrication of dimensionally and weight models of spacecraft

A specialized internet-portal has been developed at [www.smka.sibsau.ru](http://www.smka.sibsau.ru) along with a projects management system for project monitoring. This enables the remote coordination of joint projects between different higher education facilities, bringing together students from different cities. The project-and-team education technology enables the student to acquire a high degree of preparation, guaranteeing the alumni will have significant competitive advantages on the labor market as effective workforce at space engineering and high-technology manufacturing enterprises. Typically, after finishing the course most of the graduates are offered employment in the field of their specialization.



In the process realization of scientific and educational projects becomes important the inter-university cooperation with other aerospace universities. Each of the participants, solving their specific problems, contributes to the common fund their experience and their achievements. The inter-university partnership has great potential for expansion of tasks and enhances the level of student training of different specialties. As a result of inter-university collaboration the tasks in the organization of promising scientific and educational spacecraft and satellite systems are solved. The joint development and manufacture of the satellite, its service systems, special and scientific equipment are discussed. Takes place the joint satellite control, the preparation and use of satellite data in the educational and research processes. The block diagram of the ground control of the educational satellite group is shown in Figure 3.

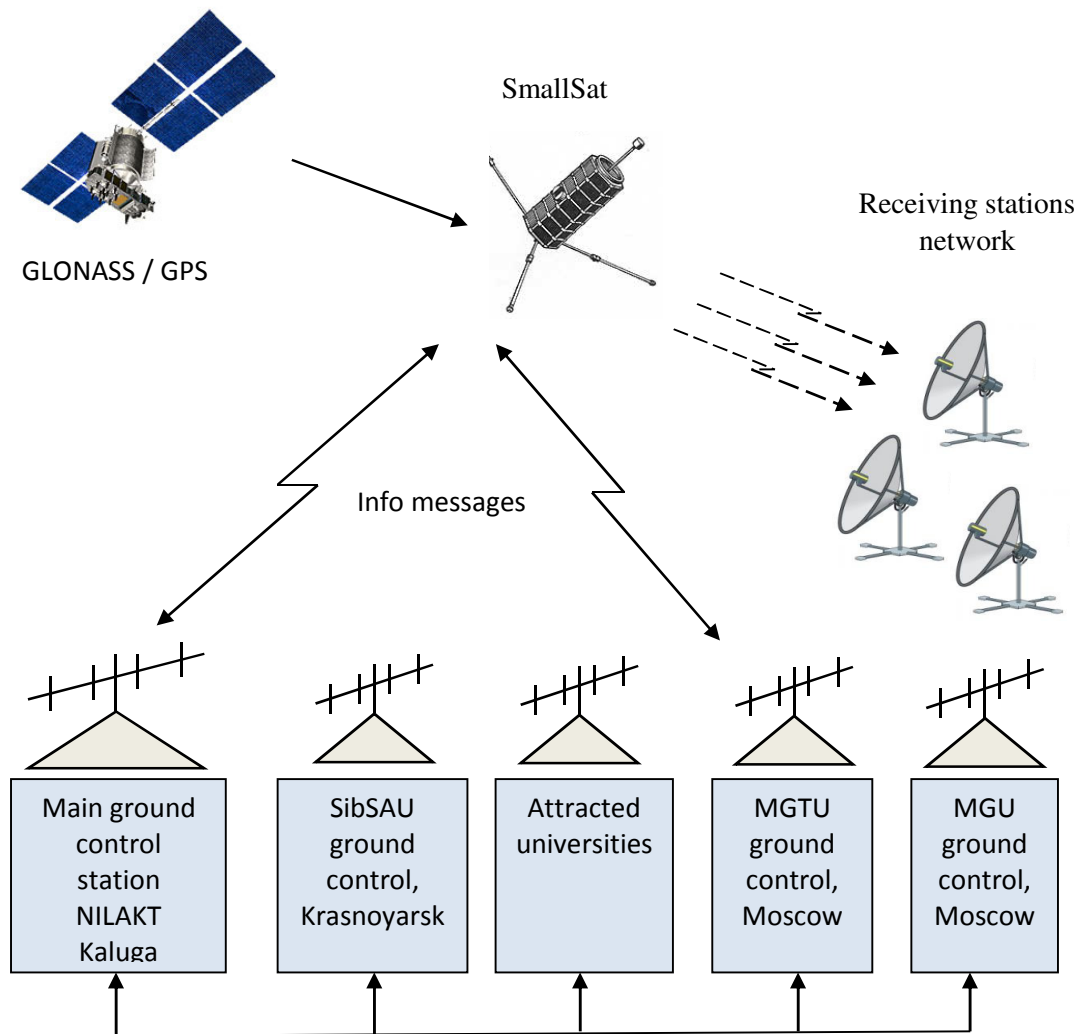


Figure 3. Block diagram of the ground control system of research and educational satellites

The experience of creating and using Russian scientific and educational satellites shows great potential and importance of the inter-university partnerships development in these activities. Significant potential of university research combined with creative energy, innovative thinking of students and a good command of modern computer technologies can give new impetus to the development of the national space exploration. Immediate participation of students in the practical work on the design, construction, testing, preparation for the launch and flight control the research and educational satellites significantly increases the level of engineers training to work in the aerospace industry and reduces the risks of care of young professionals in other fields of activity. The practical experience gained by students in the process of work on the creation of university satellites significantly reduces the time to adapt them to perform specific industrial problems on the space industry and the formation of the young specialist as an authoritative member of the labor collectives.



### **THE SCIENTIFIC AND EDUCATIONAL CENTER "MANAGEMENT OF SPACE SYSTEMS"**

The Management of Space Systems SEC was created in order to integrate the scientific and educational potential of SibSAU and the Institute of Control Sciences RAS for implementation of innovative projects, training of masters, postgraduate and doctoral students, practical training, carrying out research in the field of mathematical, algorithmic and instrumental providing of the spacecraft control systems of a new generation.

### **THE SCIENTIFIC AND EDUCATIONAL CENTER "CLOSED SPACE SYSTEMS"**

The Closed Space Systems SEC was created in collaboration with the Institute of Biophysics. The SEC trains scientists and engineers, engaged in the scientific and technological development of a new generation life-support system, based on the unique BIOS-3 simulator; it simulated mass transfer processes during a high degree of isolation, imitating potential long-term space flights and life at stationary space stations on the Moon and Mars. By now, among all the artificial bio-technical life-support systems, which were created earlier, only the system BIOS-3, working on the base of Institute of Biophysics SB RAS, allowed to support life independently of 2-3 men during 4-6 months through cycle closure of water and gas almost to 100% and of food – more than 70% (Tikhomirov, Ushakova and et al., 2007). BIOS-3 is an experimental complex, simulating closed ecological life-support system with independent control, and it represents 315 m<sup>3</sup> air-tight space, divided into 4 units: orangery, residential cabins, kitchen and work zone (Gitelson, Lisovsky & MacElroy, 2003).

The structure of SEC includes basic departments "Closed Ecosystems" and "Security of Engineering Systems", which together with the department of "Information Control Systems" are involved in the training of graduate and postgraduate students. During training the undergraduate and graduate students need to create an information environment, automate the receipt and storage of databases, computerize a control system of environment, organize remote monitoring of the experiment from anywhere in the world. The variety of scientific problems and directions of the educational process create favorable conditions for attracting on the basis of BIOS-3, on the one hand, scientists from different directions in the field of environmental biophysics, and on the other hand, students and postgraduates from SibSAU. This ensures an integrated approach to addressing the creation of a new generation of closed life support systems and the involvement of young researchers in the process of scientific and engineering creativity.

### **THE SCIENTIFIC AND EDUCATIONAL CENTER "ROCKET AND SPACE TECHNOLOGIES"**

The Rocket and Space Technologies SEC is formed on the basis of long-term integrated system of engineers training for JSC "Khrushchev", as well as research and applications in the field of space engineering and technology. The purpose of the SEC RST is to further improve the quality and structure of the engineers training in accordance with the needs of the aerospace industry in contemporary conditions, as well as improve the efficiency of joint research work on the development of new techniques and technologies through the integration of scientific, educational and industrial potential of participants.

Here are the main tasks of the SEC RST:

- Development of new methods and forms of educational activities, including on the basis of a design-oriented educational technology for the preparation of aerospace engineers, identifying promising areas of specialization and training of qualified personnel for JSC "Khrushchev" and other industrial enterprises, research institutions and universities;
- Coordination the work of departments and other units of SibSAU to ensure the educational process in workshops and departments of JSC "Khrushchev" in accordance with the needs of the target training and effective use of scientific and industrial potential of the university and the company, including the coordination of practical training of students and graduates employment;
- Obtaining a new scientific knowledge, execution of joint research and their use in the educational process during the preparation of highly qualified specialists;
- Organization of special workshops, implementation of research papers and dissertations, master's theses, training of graduate students and doctoral students on advanced scientific and technical directions of "Khrushchev" development;
- Implementation of joint research and development, the implementation of innovative scientific, technical and educational projects, participation in industry and federal target programs, contests Russian and international funds;
- Creating conditions for the participation of young scientists and students in research, attracting talented young people to work in the scientific and educational center, ensuring their further work in the area of industry, science and higher education.

The structure of SEC RST includes academic and industrial divisions of participants on the basis of which carries out scientific and educational activities of the center. The Coordinating Council of SEC RST defines promising

areas of training and scientific and technological research, as well as reviews and approves the plans and results of joint research projects.

## CONCLUSION

Thus, the university established a successful integrated system of training engineers for the space industry on the basis of scientific and educational centers using the unique technologies of project-and-team students' work, balancing between innovations and traditions, education and scientific research and maintaining the flexibility in educational trajectory construction. A high level of specialist training, extensive development of fundamental and applied sciences in collaboration with the research institutes of RAS and the high technology enterprises of space industry allow the university to lead the engineers training for aerospace industry and other high-tech enterprises. The dynamic development of the university and increasing the quality of engineers training provided by continuous improvement the educational process, the implementation of modern educational technologies, the development of basic and applied scientific research and using them in educational activities.

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