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Message from the Editor-in-Chief

Dear Colleagues,

We are proud to say that TOJET publishes July, 2020 issue. This issue has international different papers from various fields are shared with professionals. It is a free online journal and offeres free Access to all articles. When the journals are free to access all published articles, it increases the level of impact factor.

TOJET is a multidisciplinary peer-reviewed journal in the field of educational technology. TOJET welcomes the submission of manuscripts that meets the general criteria. TOJET is dedicated to increasing the depth of the subject across disciplines with the ultimate aim of expanding knowledge of educational technology. TOJET is seeking for qualified and high profile researchers to join its editorial team as editors or reviewers.

TOJET thanks and appreciate editors who have acted as reviewers for one or more submissions of this issue for their valuable contributions. As always, issue v.19 i.3 – 2020 features contributions from many countries. Any views expressed in these publications are the views of the authors and are not the views of the Editor and TOJET.

TOJET will organize IETC-2020 (www.iet-c.net) at Cyprus International University. IETC series is an international educational activity for academics, teachers and educators. This conference is now a well known educational technology event. It promotes the development and dissemination of theoretical knowledge, conceptual research, and professional knowledge through conference activities. Its focus is to create and disseminate knowledge about the use of instructional technology for learning and teaching in education.

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TOJET invites 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 The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJET.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 it's 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.

July 01, 2020
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Table of Contents

Attitudes and Opinions of Turks in Germany towards the Western Europe Course Program

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Abstract
Western Europe Course Program (BAP) for various reasons, our compatriots living in Western European countries, in Turkey or complete their education when they were abandoned in Germany and programs are enabling a move to a higher education level. An inclusive education cannot be provided to our citizens living in these countries because the social structure is multicultural. With this study, it was aimed to determine the attitudes of BAP students living in Germany, a Western European country, towards BAP and to determine whether there is a significant relationship between their attitudes towards the German education system and their attitudes towards BAP. Screening model was used in the research and qualitative and quantitative research methods were included together. The sample of the study consists of 200 BAP high school students selected by cluster sampling method. In this context, an attitude scale and a semi-structured focus group interview form were developed by the researcher. ANOVA was used for one-way analysis of variance for data analysis. As a result of the research, it was observed that student attitudes differ significantly in favor of female students and there was a significant relationship between students' attitudes towards the German education system and their attitudes.

Keywords: Western Europe Course Program, attitude, migration

Introduction

Communities have migrated from their regions to other regions due to reasons such as war, disaster, discovering new places and the need for security. According to Yalçın (2004), migration is a social and cultural displacement movement and may have occurred for economic, political, ecological and individual reasons. Migration not only affects the population numbers of countries, but also many social fields such as economy, education and culture.

Migration can be within national or international borders. Between the years 1950-1960 the domestic market in Turkey, economic and social reasons and out migration began. The immigration of Turkish citizens to Western European countries took place in the first years of 1960 based on the lack of human capital in the labor markets that occurred due to the war in these countries (Özdemir ,imilar, Akbaş, 2009).

Today, a significant number of Turkish populations live in various countries of Europe, especially in Germany, due to foreign immigration. These citizens are actively involved in life in Germany and have difficulties in maintaining their connection with their homeland, mother tongue and Turkish culture.

Turks living in Germany, on the one hand, have to learn Turkish in order to protect their own cultures, and on the other hand, the language of the country in which they are living, in other words German, which is the language of education in schools. The school system in Germany fulfills its function more strictly for foreign children due to its elite structure and providing a hierarchy of transitions between schools (Aytaç, 1979). However, II. Of workers who came to Germany through immigration. the children of the generation III. It is seen that both countries have difficulties in their integration into the education system because their generational children are away from their national identities and do not speak both languages properly (Red, 2015). The adoption of Germany as the homeland of the children of the second generation and the whole of the third generation caused them to diverge from Turkish culture and values (Bekar, 2013). Considering all these components, it is very important for our country to inform Turkish citizens, who live in Germany, about the history, culture and homeland and to work effectively for individuals to speak their mother tongue.

From this point of view, Western European Course Programs (hereinafter to be used as BAP) are of great importance in terms of providing access to the education system of Turkish students living abroad. Our country is connected to national and cultural values outside the borders of our country. It is a necessity to raise individuals who can represent them in the fields. These studies are carried out within the scope of BAP by the

Ministry of National Education, Republic of Turkey. With the BAP, it is aimed for Turks in Western European countries to speak their mother tongue effectively and to be informed about their national and cultural values. He also received a high school diploma to continue their higher education in the education of half of the subjects with a significant opportunity diplomas from bap from other high schools in Turkey are considered equivalent. With these diplomas, individuals are given the right to continue their university education if they win the university entrance exam. From this point of view, is to permit a valid residence BAP overseas training in Turkey for any reason dropouts, abroad finished that those who live the problem of equivalence as educational and Europe (the Balkans) to individuals who have a residence permit in the built-in or a certain period of time to complete their education through distance education gives the opportunity.

In this research, as stated in the 2023 vision document of the Ministry of National Education, the determination of the attitudes towards the BAP, which contributes to the achievement of the goals of our citizens living abroad, and which is presented as a policy. For this purpose, answers were sought for the following sub-problems:

1. Do the attitudes of students towards BAP show a significant difference by gender?
2. Is there a significant relationship between the opinions of the students about the integration and education system in Germany and their attitudes towards BAP?

Method

This research is aimed at determining the attitudes of Open Education High School students towards BAP, determining whether these attitudes vary significantly according to gender, and determining the relationship between students' views on life and education system in Germany and their attitudes towards BAP. In this study, qualitative and quantitative research methods were used together.

Universe and sampling

The universe of the research consists of BAP students studying in an open high school program in Germany. In the research, cluster sampling method was used. For this, the cities where BAP is applied in Germany and the students enrolled in the open high school program in these cities are determined. Table 1 shows the distribution of students living in Germany and enrolled in the Open Education High School Program by city.

Table 1. Distribution of the Number of Students Living in Germany and Enrolled in the Open High School Program by City

CITY	OPEN EDUCATION HIGH SCHOOL
BERLIN	105
ESSEN	146
FRANKFURT	149
HAMBURG	104
COLOGNE	214
MUNICH	213
NUREMBERG	49
STUTTGART	181

When the numbers given in Table 1 are analyzed, it is seen that the total number of students participating in the open high school BAP program in Germany is 1161. Since the universe is large in volume and spreads over a large geographical area, the use of random sampling methods was not appropriate and single-stage cluster sampling was used in the study. In the study, the cities in Germany were determined as clusters and 25 students from each of these cities were randomly selected and included in the sample. In this way, the number of students in the sample that will represent the universe has been determined as 200 because there are 8 cities.

Measurement (Data Collection) Tools Used in the Study

Attitude Scale

An attitude scale was developed by the researcher to determine whether the views of the high school students attending the BAP on the German education system were significant predictors of their attitudes towards BAP. In this context, 20 of the BAP students were asked to write a text containing their views on BAP. These texts were examined and items that could form an attitude expression were written. These articles are structured as "I totally agree", "" I partially agree "," "I am indecisive", "" I disagree "and" I disagree ". The attitude scale consisting of 18 items was applied to 20 students studying in the BAP program. Factor analysis results showing how many dimensions of the scale are given in Table 2.

Table 2. Factor Analysis Items and Loads of Attitude Scale for BAP

		Load Value After Rotation		
Article	Factor Common Variance	Factor 1	Factor 1	Factor 1
ATTITUDE 1	0,861	0,914		
ATTITUDE 2	0,850	0,798		
ATTITUDE 3	0,845	0,876		
ATTITUDE 4	0,798	0,858		
ATTITUDE 5	0,765	0,840		
ATTITUDE 6	0,734	0,810		
ATTITUDE 7	0,782	0,756		
ATTITUDE 8	0,675		0,868	
ATTITUDE 9	0,582		0,860	
ATTITUDE 10	0,567		0,728	
ATTITUDE 11	0,543		0,589	
ATTITUDE 12	0,490		0,458	
ATTITUDE 13	0,485		0,637	
ATTITUDE 14	0,726			0,534
ATTITUDE 15	0,708			0,682
ATTITUDE 16	0,817			0, 593
Announced Variance Total: 74,122% Factor-1: 35.421% Factor-2: 28%, 148 Factor-3: 10.553%				

As can be seen from Table 2, the attitude scale prepared to measure students' attitudes towards BAP is three-dimensional. The factor representing the first dimension explains 35.421% of the total variance related to the scale, the factor representing the second dimension is 2.14% and the factor representing the third dimension is 10.553%. After the factor analysis, the first factor is composed of 7 items, the second factor is 6 and the third factor is 3 items. Based on the opinions of students and experts participating in BAP, it is seen that the first item can be classified as personal expectations, the second item as social expectations and the third item can be classified as services provided by BAP. The test-retest method was used for reliability and the Pearson Moments Multiplication correlation coefficient was found to be 0.76. The internal consistency of the scale was found as Cronbach Alpha coefficient 0.82.

In the examination of the items of the attitude scale, the reliability of the items forming the first factor was 0.84, the reliability of the items forming the second factor was 0.82 and the reliability of the items forming the third factor was 0, 81. As a result of the analysis, there are 16 items that remain functional. 10 of these items are positive and 6 of them are negative.

When the sub-dimensions in the attitude scale are analyzed, it is seen that BAP students have personal expectations under the Factor-1 sub-dimension. In this context, students think that they will be more successful than the German education system in the BAP system, are happy because they are educated at a higher level, have a high school diploma or they are excited about being excited to be able to study in the future. Expectations are grouped. Under Factor-2, expressions were collected in line with the expectations of the students with social bases, such as raising family dignity, adapting to the German society in which they live, and not forgetting Turkish culture and values. Under Factor-3, it was seen that the students expressed opinions about the functionality of the BAP services offered to them, and the attitude expressions about the sentences they set up on topics such as the attitudes of the education firings, the interest of the registration and application centers, when needed.

Focus Group Interview Form

One of the data collection tools used in the research is focus group interviews. According to Bowling (2002), focus group discussions are ways of generating ideas between a small group of participants and the person who conducts the meeting to obtain detailed information on a topic. Krueger (1994) defines the focus group meeting as a planned thought generation activity. Focus group interview is a qualitative data collection technique, and the characteristics and discourses of the people interviewed become important. The purpose of the focus group meeting held in this context is; The aim is to identify the problems faced by individuals who continue the BAP

program in their lives in Germany and their existing opinions on the education system, by associating them with their expectations from the BAP.

In this research, a focus group interview form was created by determining whether the students had previously joined the German education system, their opinions about this system, their problems or demands regarding their integration into this system. The focus group interview form created within this scope consists of 4 questions. With these questions, the problems faced by BAP students during the social interaction with the German society in daily life were tried to be understood, whether they were in any education system in Germany, if they did, the shape, place and reason, and finally, by asking the reasons for the students' participation in the BAP, the German education system and BAP the relationship was tried to be determined. As stated by Ekiz (2003), in focus group interviews, the number of people in the interview was determined as the size of the group is related to the quality of the research questions as well as how much the researcher can control the interview. In the presentation of qualitative findings, these students were mentioned in the study as K1, K2, K3, K4, K5,… K10. In this context, the opinions determined by the researcher were structured under 4 different expressions and the correlation between these expressions and attitude scores was examined.

Data Analysis

One-way analysis of variance ANOVA was applied and tukey test was used in the analyzes related to the sub-problems of the research and the effects of some variables on the attitudes of the BAP students towards the BAP program. Hierarchical regression analysis was used to analyze the data of the second sub problem of the research.

Results

In this section, findings about whether the attitudes of BAP students towards
the program show a significant difference according to the gender of the
students and the relationship between their attitudes towards BAP and their views on the German education system are included.

The first sub-problem of the research is “Do BAP students' attitudes towards the program show a significant difference by gender?” It shaped. The distribution of the sub-dimension scores of the BAP students' attitude scale by gender is shown in Table 3 and the independent samples t-test results are shown in Table 4.

Table 3. Distribution of Teachers' Attitude Scale Scores by Gender

	Gender	N	Average	Standard Deviation	Standard Error
Personal Expectation	Woman	109	29,128	5,456	,234
	Male	91	24,267	5,608	,246
Social Expectation	Woman	109	26,128	3,456	,134
	Male	91	24,267	4,208	,148
BAP Services	Woman	109	21,168	4,203	,167
	Male	91	22,108	4,278	,182

Table 4. Independent Samples t-test Results of Attitude Scale of Teachers

		Levene’s Test		T test for Equality of Means				
		F	p	t	sd	p	Average Difference	Standard Error difference
Personal Expectation	Variance Equation	0,189	0,578	2,53	400	0,108	0,362	0,282
	Variance Inequality			2,56	392	0,112	0,362	0,284
Social Expectation	Variance Equation	2,146	0, 068	1,78	400	0,110	0,284	0,346
	Variance Inequality			1,87	387	0,106	0,284	0,348
Bap Services	Variance Equation	1,897	0,012	2,78	400	0,192	0,460	0,169
	Variance Inequality			2,56	376	0,167	0,460	0,182

As seen in Tables 3 and 4, while the attitude expressions of BAP students towards social expectations and BAP services do not differ, the scores of attitude expressions collected under the personal expectation dimension show a significant difference according to gender. As seen in Table 4, the average of personal expectation of attitude of female students is 29,128, whereas the average of personal expectation of attitude of male students is 24,267. Here, it can be concluded that the attitudes of female students towards the personal expectation dimension in their attitudes towards the BAP program are higher than that of male students and that this difference is significant. In this context, it can be predicted that female students have more positive attitudes towards expressing personal expectations such as self-expression, continuing their education, and completing education that cannot be completed due to economic impossibilities, and therefore participate in the BAP program.

In the focus group meeting, the students were asked to answer the questions about the integration problems they experienced in social life in Germany and the German education system, and the answers given by the students were categorized under certain headings and examples of student answers were presented in Table 5.

Table 5: Titles Determined in Focus Group Interview and Sample Student Views

Phrase	Sample Student Views
I cannot use German according to the rules and at an advanced level.	K4: Although I was born in Germany, I speak a different German because I usually live with Turks, and it seems that I am a foreigner. K7: Grandfathers came to Germany. I speak the language, but they want a document to get a job that I speak a language at an academic level.
I feel like I don't belong here.	K10: Although I don't work here, I don't feel like I belong here. My close friends are always Turkish. K6: I live in a neighborhood with Turks. Growing up in Germany, though not feel like you have grown in Turkey. K7: I feel alienated. I feel excluded because of my religious practices and clothes.
I think that I will have difficulties in accepting or reading a higher education program I want in Germany.	K3: I want to study psychology or law. I want to go back to my country and continue my higher education there because I think I will have a hard time studying here. K6: YÇS win here because of a university in Turkey and YOS easier. I want to finish my high school here and study in my country.
I think it will be difficult to continue my education in the German education system, since my education has been left unfinished due to work.	K9: I realized this system late because my education was incomplete. After that, I wanted to continue here. K1: I heard about BAP from a friend. We cure together. I read both convenient and more comfortable.

As seen in Table 5, BAP students state that they have stopped their education for various reasons in the focus group meeting and emphasize that they think that they will not be successful in the German education system or they continue to BAP due to the problems arising from their integration into this education system. In addition, a large majority of the families of students to study any reason they left half stated that they would return to Turkey plans will continue in Turkey. It was seen that all of the students found the German education system strict and planned, they thought it was difficult for them to receive education in this system, and they agreed that BAP was a good alternative for them.

According to the discontinuous variables determined in Table 6, the results of the multidimensional hierarchical regression analysis carried out to determine whether the opinions of the students participating in the research have an impact on their attitudes towards the BAP were included.

Table 6. Results of Versatile Hierarchical Regression Analysis for the Effects of the Views on the German Education System on Attitudes

Predictive Variable	R	R^2	R^2CH	F	DF	B	B	P
Constant	0,168	0,027	0,027	5,976	4	24,302		
Expression 1							0,468	0,124
Expression 2							0,324	0,055
Expression 3							0,057	0,023
Expression 4							0,075	0,063

Considering Table 6, it is seen that there is a significant relationship between the opinions of the students who entered the model about the German education system and their attitudes towards BAP (R2 = 0.027, p <0.01). their attitudes towards students are higher than other students. Predictive findings of the research are that students who have difficulty in integration processes in the education system due to language problems prefer BAP programs or want to be in the Turkish education system. Kütük (2016) by in research in terms of families to provide them from re families of workers brought the family to Turkey for a nice result children he emphasized that create positive dont particularly emphasized that the underestimation in the form of German talk 'education system. In addition, Söhn and Özcan (2006) emphasized that immigrant children fail in the education system in Germany due to the strict and hierarchical structure of the system. In Sahin's (2010) study, this situation is expressed as follows in the words of a 61-year-old beret.

> *"We worked hard when we came to Germany, sometimes we went to both jobs to save money. The children were at home, they went to school at school age, but their language was not enough, they did not have a language, they put the children back, and they always fled school until they had completed the compulsory period. All five became workers. Now they want to teach their children, my grandchildren have no language problems. They went to kindergarden and learned language from the age of 3. Now one is studying at university and the other is at high school. When there is no language problem, children are reading (Şahin, 2010: 113) "*

It is understood from the table that students expressing the opinion of statement 3 and statement 4 have positive attitudes towards BAP, but this correlation is lower than other statements. Expression 4 shall state Taşdelen (2001) also highlighted, education or are reported to want to go abroad again the people who came to Turkey for other reasons.

Discussion

Problems in the field of education in Western European countries are fed by problems such as xenophobia. Education policies have not been determined permanently and realistically since the first immigration, and have not been arranged in a way that will contribute to the integration of foreign worker children into the education system. In multicultural societies such as Western countries, not giving the necessary priority to the education issue of immigrant children prevents Turkish youth from expressing and showing themselves (Tezcan, 2000).

This research shows that the education problems of Turks migrating to Germany continue relatively. Despite the measures taken in Kütük (2016) research, the rate of young people attending higher education is still lower than desired. In this regard, the education of Turks living in Western Europe still poses an important problem area.

When the findings of the research are examined, it is seen that Turks, who cannot speak German competently, do not find themselves a place in the German education system and that they give opinions regarding the requests of individuals to fulfill their requests for education through BAP programs. Yılmaz (2014) stated that in the study of the bilingual education problem of Turks in Germany, a bilingual individual is expected to know both his mother tongue and the language of the country in which he lives, and in addition to this, he is expected to be in accordance with the values of his nation and to be in touch with the German society. He also stated that appropriate training conditions were not created. He explains the reason for Germany's adoption of nation-state policy and the fact that there are obstacles to immigrant children 's education in their mother tongue because of this policy. In this context, BAP is a program that can meet these demands in terms of providing educational content that includes elements of Turkish culture, as well as providing educational opportunities to individuals of all ages. Research findings also show that BAP is a good option especially for people who cannot overcome the language problem or study in a competent higher education institution. However, in the study conducted by Tezcan (2009), it is stated that the schools in Germany differ, and academic success varies according to the types of schools to which the Turks are directed.

Findings obtained from the focus group meeting show that Turks in Germany continue to be "other" and that people still feel bad about it. The presence of students who stated that they were excluded or approached biased especially due to religious worship and clothing choices is similar to the results of similar research (Kütük, 2016; Yılmaz 2014). Gökçe (2006) stated in his research that Turks in Germany expressed their problems about exclusion and education as "as they wish" or "not being able to receive sufficient education" and "not being accepted by the dominant culture".

When the findings of the research are examined, it is observed that the attitudes of the students show a significant difference especially in favor of women under the title of personal expectations. Gökçe (2006) emphasized in their study that they stated that girls in Germany could not realize themselves due to reasons such as not being able to live their youth and having less freedom than men or because they were under family pressure. BAP of women born in this research in Germany, although not a study conducted previously covered by BAP express themselves, continue their education when he returned to Turkey step and providing attend a they want a higher education program in the subject shows that they see as an exit door.

Result

An inclusive education cannot be provided to many of our citizens living in Western European countries due to the high living standards of these countries and the fact that the social structure is multicultural but does not contain a multicultural education system. From this point of view, Western European Course Programs are of great importance in terms of providing access to the education system of Turkish students living abroad.

Educational policies developed for immigrant children in Germany are not sufficient. In addition, due to the absence of bilingual education policies in multicultural communities, Turkish education problems continue. In this respect, it should be remembered that BAP programs are a qualified solution for the education of our citizens living in these countries. It is recommended to increase the number of activities to increase the number of these programs and the quality of BAP services, and to increase the number of activities related to the announcement of BAP to large audiences.

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DROP-OUT in MOOCs

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ABSTRACT
Advances in information and communication technologies have been influenced on the learning-teaching practices that fostered development of new learning environments and implementations. The Massive Open Online Courses (MOOCs) are one of these new learning environments. Although it is believed that MOOCs have a great protentional in formal and informal education, high drop-out and low completion rates are considered as a major issue about MOOCs. This study examined the factors that effected the MOOC participants' noncompletion in the MOOCs Platform, entitled as AKADEMA, of Anadolu University, and their recommendations for improvement of these MOOCs. During this case study, data were collected by using an online questionnaire that included open-ended questions. A content analysis process was employed to reach the themes about noncompletion reasons. Three themes were drawn personal reasons, platform (program)-based reasons, and design-based reasons. Among personal reasons, the 'other responsibilities' was the most often cited reasons of noncompletion. Meanwhile, length of the courses (too long) among platform (program)-based reasons, and insufficient timely feedback from the instructors among the content design-based reasons were noted the most. In terms of recommendations for improvement, better announcements about start and end dates of the courses, quality of the videos, more user-friendly interface, and variety in course contents are listed as the major ones.
Keywords: Massive Open Online Courses, AKADEMA, Drop-out MOOC

INTRODUCTION
Changes in information technologies have affected learning–teaching processes and have led the development of new learning environments and applications. New emerging technologies especially have contributed to the development of new learning environments by affecting the functioning of learning–teaching activities, and have made the provision, circulation, and sharing of education of the same standard and quality possible on a global scale. One of the formations brought about by these developments is Massive Open Online Courses (MOOC), which have emerged as new learning environments. Through the use of technologies in learning environments within MOOCs, it is possible to meet with experts in the field, bring together participants at national and international levels in interactive environments, and to share many varied instructional materials (de Freitas, Morgan, & Gibson, 2015). MOOCs provide environments that enable lifelong learners to access the current information they need for both their professional and personal development without restrictions. MOOCs emerge as "digital learning environments", which are independent from time and place, and which provide learners with learner-centered flexible learning opportunities by removing education and teaching from the traditional classroom environment. In other words, with the help of developing and changing communication technologies, the concept of "learning" has spread to all moments and locations in life and has been transformed into a continuous lifelong concept.

MOOC applications—which provide the opportunity for a large number of learners to learn online and which are based on the philosophy of openness—were first used by Dave Cormier to describe *Connectivism and Connective Knowledge – CCK*, a course that was developed by George Siemens and Stephen Downes in 2008 (Yuan & Powell, 2013, p. 5). Evaluated as an extension of online learning approaches, MOOCs are educational models that provide learners with online content to individuals who need to "learn" anytime and anywhere in both the public and private sector (Yuan et al., 2013). The MOOC concept is formed by combining the initials of MOOCs, reflects the structure, scope, and components of emerging online courses. For example, with the concept of 'Massive', courses are designed according to a structure that can reach a large group of learners, and the diversity of learner characteristics participating in these courses and the different perspectives arising in courses are emphasized (Siemens, 2013: 5). The concept of 'Open' means that learners are free to participate in classes; they are interact and control their learning processes without any learning prerequisites and in line with their learning needs (Downes, 2013). The concept of 'Online' expresses that courses are offered through web and internet technologies. The concept of 'Courses' states that the interaction elements, learning materials, counseling services, and educational activities required for a learning environment are presented in a pedagogical context for a certain

period. Since MOOC applications are generally designed for mass learning, environments such as social media channels, forums, or blogs are often used to facilitate interaction among learners, or between learners and instructors.

As a requirement of the information age, the fact that individuals today are willing to join universities and other institutions on a lifelong basis—independent of time and place—in order to meet their existing information gaps, has naturally increased the popularity and spread of MOOC applications (Conole, 2015). While the opportunities of "individuality", "flexibility", and "independence" offered by the MOOC environment may cause a change in the philosophy of education, they might also result in certain practice-based problems. One of the problems experienced in practice is the attendance problem in educational activities because, although the MOOC practices provide learners with temporal and spatial flexibility and facilitate continuous education, it is observed that there are differences between learners' registration and completion rates. In some studies learner completion rates, or the reasons for drop-out, are questioned, and especially when compared with traditional face-to-face education, MOOC drop-out rates are quite high (Clow, 2013; Conole, 2015) and MOOC completion rates rarely exceed 10% (Daniel, 2012; Sandeen, 2013). The reasons leading this result are listed as lack of course accreditations (Bergelson, 2014), lack of resources for providing learning and social support (Clow, 2013; Booth et al., 2014), insufficient and ineffective feedback due to large class sizes (Solomon, 2013), low motivation caused by being free (Onah et al., 2013), lack of admission criteria (Chen, 2014), lack of a sense of belonging to a community, and enough time to attend and technology skills (Onah et al., 2013). When the reasons for drop-outs are examined, it is observed that these reasons are related to the pedagogical structure of MOOCs, as well as to a lack of authority imposed on learners (Bozna, 2016; Koutropoulos et al., 2012). Comparatively, the reason behind learners' attendance in MOOC applications is considered as another factor affecting dropout or completion rates. For example, while some learners try to complete the MOOC application for certification, others may prefer to complete the courses merely to ensure continuity of their personal development and to use materials prepared for their general interests (Liyanagunawardena et al., 2015).

One of the applications of MOOC practice in Turkey is the learning platform AKADEMA, which serves as a massive open course in Anadolu University. The aim of the AKADEMA application platform, which launched with seven courses in 2015, is to provide environments and materials that present learning opportunities to people of all ages, from all social strata, and by providing them with a structured learning experience to support the lifelong learning processes. As of 2019, AKADEMA continues to serve with a total of 107 courses in four different categories. The courses given within AKADEMA include xMOOC practices, which are described as "traditional" and adopt behavioral pedagogical approach; in other words, open online courses on the AKADEMA platform serve as course apps that are developed free and that are open to anyone who wants to learn. The content of AKADEMA courses—which serve as xMOOC applications—include short lesson videos, other lesson materials prepared by the instructor, discussion forums, and learner assignments for performing evaluations. Within the scope of this study, the reasons as to why the students who participated in the AKADEMA platform to obtain new information later dropped the courses were examined and their suggestions to continue the courses were also questioned.

METHODOLOGY

A case study method was employed in this study. It was conducted with 325 volunteer AKADEMA participants in March 2018. Participants were asked to answer the two open-ended questions: first, whether and why they had dropped their courses; second, how they would suggest the courses could be run more effectively. After having data collected, a content analysis was carried out to answer the research questions.

Content analysis is the gathering of similar data within a framework of certain concepts and themes, and the interpretation and organization of these data in a way that helps the reader understand these concepts and themes (Yıldırım & Şimşek, 2006). In other words, content analysis can be defined as a systematic, repeatable technique in which some words of a text, such as books, book chapters, articles, theses, letters, historical documents, newspaper headlines and writings are summarized into smaller content categories through coding based on certain rules (Sert et al., 2012). Content analysis can be used in both qualitative and quantitative research; the steps followed during the research process and the way the data are collected reveals whether a study is more suited to a quantitative or qualitative method. This study used a quantitative research method as it was conducted by considering the number (frequency) of certain concepts and themes that were determined in those answers given by the learners to the questions.

In this study the participant responses to the first open-ended questions were arranged and recorded in a Microsoft Word page. The data were independently coded by two researchers, and themes and sub-themes created in line with common opinions. As part of the coding phase, researchers selected and then coded the meaningful parts of the answers into words or sentences so that common themes could be extracted from their answers. Accordingly,

qualitative data obtained from participant responses were summarized into plain language, and themes for each sub-problem were created. In qualitative studies, it is important for experts to listen to the data-collection recordings and read the transcripts in order to ensure the reliability of the data collated using the interview method (Patton, 2001). Therefore, in the current study two experts performed the same procedure separately to ensure reliability of the study data. The data were then coded by the two researchers and the two sets of coded data were compared. At the end of this comparison, although there were different forms of expression in the two sets of coding, it was observed no semantic difference was observed, and the coherence level of the two sets of coded data were similar.

FINDINGS AND DISCUSSION

In the study, learners were asked to voice their suggestions as to why they dropped out the MOOC, and should be done to run these courses more effectively. The results of the analysis of these coded data are given in separate tables below.

Table 1. Reasons for Dropping out MOOC

Personal Reasons	
Obligation to prioritize to other jobs (family, school, work, etc.)	80
Lack of time	56
I was not thinking about completing anyway, I just signed up because I was curious	19
Lack of necessary technology skills	12
Program-related Reasons	
Long course duration	15
Difficult course activities	13
Lack of necessary support from course instructor	12
Others	26

On examination of Table 1, which shows the reasons for dropping out the MOOC, it can be seen that these reasons are gathered under two headings: personal reasons and program-related reasons. Concerning personal reasons, the most common reason given is that learners were working, attending an educational institution, or having to spend time with their family (n=80). They also mentioned lack of time as the reason for dropping out (n=56). According to the table, another reason is that some participants (n=19) signed up for the course just because they were curious and did not think whether they would actually complete the course. Finally, it is seen that 12 students dropped the courses because they did not think they had the technological competence to complete it. Considering the program-related reasons, it was found that the participants thought that the duration of the courses were too long (n=15), that course activities were difficult (n=13), or that they did not receive sufficient support from the course instructor (n=12). In addition to these reasons, learners also showed other reasons as to why they had dropped out the courses. Other reasons are presented in Table 2.

Table 2. Other Reasons for Dropping out MOOC

Personal Reasons	
Lack of technological equipment	5
Lack of time	5
Lack of self-discipline	3
Insufficient technology skills	2
Personal information is required	1
Content-related Reasons	
Lack of feedback from instructors	2
Excessive number of courses	1
Low visual quality of course videos	1
Absence of knowledge on learning outcome	1
Excessive number of assignments	1
Interface Design-related Reasons	
Complex structure of the system	3
Technological problems in the program	1

When Table 2 is examined, it is seen that the opinions of the learners about dropping out the MOOC are grouped under three titles: personal reasons, content-related reasons, and interface design-related reasons. Personal reasons voiced by learners are as follows: lack of technological equipment (n=5), lack of time (n=5), lack of self-discipline

(n=3), lack of technology skills (n=2), and being unwilling to share personal data (n=1). Regarding the reasons arising from content design, learners pointed to a lack of feedback from the course instructors (n=2), the excessive number of courses (n=1), low visual-quality of the course videos (n=1), absence of knowledge on learning outcomes (n=1), and excessive number of assignments given in the courses (n=1). Among the reasons stemming from the interface design, three of the learners found the structure of the system complex, and one learner dropped out the course because the program had technical problems.

The learners were asked about their suggestions to continue the courses and their answers are presented in Table 3.

Table 3. Suggestions for Massive Open Online Courses

Managerial Suggestions	
Courses should be diversified	13
Learners should be informed about the start and end dates of the courses	9
Learners should be certified upon completing the program	3
AKADEMA should be promoted more	3
Learners should be offered flexibility about starting and ending classes	2
Course notifications should also be given with the help of the mobile application	2
Course durations should be extended	1
AKADEMA courses can be opened for more than one semester during the year	1
Suggestions for Content Design	
Videos should be used more effectively	11
Learners should be given feedback on time	7
Learner–instructor interaction should be provided	6
Lectures should be more detailed and interesting	5
Suggestions for Interface Design	
The use of interface should be simpler and easier	6

Table 3 contains presents learners' suggestions for not dropping out the ACADEMA courses and how the courses could be more effective. On examination of their responses, learners' answers were grouped under three titles: managerial suggestions, suggestions regarding content design, and suggestions regarding interface design. On examination of participants' managerial suggestions, the first three suggestions expressed by the learners are that the courses should be diversified (n=13), the learners should be informed about the start and end dates of the courses (n=9), the course certificate should be given at the end of the program (n=3), and AKADEMA should be promoted more (n=3). The suggestions for content design showed that learners asked for course videos to be used more effectively (n=11). Participant responses also emphasized that feedback should be given to learners (n=7), with learners asking for increased learner–instructor interaction in particular (n=6). Finally, learners emphasized that the lectures should be more detailed and interesting (n=5).

RESULTS AND SUGGESTIONS

While MOOCs provide learners with massive-education learning opportunities regardless of temporal and spatial constraints, they increase the dropout rates due to certain issues common to MOOC platforms. The aim of the study is to reveal possible reasons stated by the students who started but dropped out AKADEMA courses, and to identify necessary suggestions for them continuing the course. Within the framework of this general purpose, students were asked about the reasons for dropping the courses, and then their suggestions as to what should be done to encourage them to continue the course and make the courses more effective and productive. Suggestions voiced by learners were grouped under two headings: personal reasons and reasons stemming from the course structures. Concerning personal reasons, participants stated that they had to give priority to other works, that they had insufficient time, that they attended merely out of curiosity, and that they did not have the ability to use the necessary technology at the required level. These findings are in line with those studies on the open and distance learners' dropping the courses and the fact that open and distance learners have to devote time to work, family, and social responsibilities, which can cause problems in regard to dedication of time. It is stated in the related literature that more than half of the reasons for learners dropping out—especially among learners undertaking open and distance learning—are due to the personal characteristics of the learners themselves (Lee & Choi, 2011). Similar to the findings of this study, another study emphasized that learners experienced problems managing their time in regard to a different MOOC application (Perrt et al., 2008; Horzum, 2016; Aybek, 2017). In the study conducted by the University of Minnesota on students leaving education who were enrolled in online learning environments, it was stated that the learners experienced difficulties managing time because they had to devote

time to their families and jobs (UNM, 2011). In Willging and Johnsons' (2009) study, it was stated that obligations to work resulted in learners dropping out of earners online courses because they could not carry out their work and education calendars concurrently. Similarly, in the study by Onah et al. (2013), lack of time was listed among the reasons for students dropping out of MOOC courses. Accordingly, it can be seen that the results of the present study are similar to the results reported in similar studies in the literature.

Among those reasons for dropping out reported by the students in the current study, it was found that learners enrolled the courses merely out of curiosity, and that they did not intend to attend classes. This finding is similar to those of studies in the literature. These studies in the literature report that showed learners participating in MOOC applications did not really want to complete their courses (Onah et al., 2013; Kolowick, 2013; Vries, 2013), that they enrolled for the predicted benefit (Xu, 2015), that they entered the system only to meet short-term requirements, and that they left the online course after reaching their desired goals (Xing et al., 2016). In many studies, it is also seen that learners' curiosity regarding their participation in MOOCs comprises one their primary reasons to enroll in the course (Jacobs, 2013; Kirschner, 2012; Martin, 2012; Feng et al., 2019; Young, 2013; Zutshi et al, 2013). In this regard, the findings of the current study accord with findings revealing that the learners dropped out MOOC courses after registering merely out of curiosity.

Learners also expressed insufficient technology skills as a reason for dropping out the courses. Learning activities are carried out through the use of technology in MOOCs, which bring together many individuals through web-based online lessons. Accordingly, it is imperative that participants are able to use technology at a certain level; otherwise they will experience problems in following lessons and participating in course activities. In studies from the literature, it is stated that insufficient digital skills is a reason for learners dropping out of MOOCs (Kolowick, 2013; Onah et al., 2013; Vries, 2013).

Additionally, the reasons listed for learners' dropping courses due to content design, include overly long course duration, difficult course activities, and lack of support from the instructor. Other studies in the literature (Kolowick, 2013; Onah et al., 2013; Vries, 2013) report insufficient and poor quality technical support, and difficulty of the courses themselves as among those reasons for learners dropping out of MOOCs. In the personal interviews held with AKADEMA management, the researchers learned that, from the second half of 2020 onward, lessons will be offered that have been designed so learners can receive their education at their preferred learning speed; furthermore existing courses are to be revised in accordance with this design. In addition, the management stated that they paid attention to having at least 25 hours of workload in order to earn at least 1 ECTS for the learners. They also stated that the learners have to perform sufficient activities for this workload.

In this study, the learners were asked to state those reasons why they had dropped out the AKADEMA courses other than the options given in the data collection form. Other reasons voiced by learners are grouped under three headings: personal reasons, content design-related reasons, and interface design-related reasons. Considering those personal reasons expressed by the participants, lack of technology, time barrier, lack of self-control of the participants, the lack of technology skills were the most frequently mentioned reasons. By its nature, the AKADEMA system conducts the learning process through technology, and in this regard it can be said that it is naturally difficult for those who experience problems accessing technology to receive education through AKADEMA. Another personal reason is participants' lack of self-control skills. It can be said that learners' psychological characteristics determine their attitudes towards the learning process, as well as those elements involved in this process; the fact that learners have self-control skills is one of the psychological characteristics that are effective in the learning process. It is important that learners possess self-control skills, especially in those online learning environments in which learners have more control, independence, and responsibility concerning their own learning (Kuo et al., 2014;You & Kang, 2014). Accordingly, it is imperative that learners take responsibility in their learning process, are able to motivate themselves, and are able to conduct learning planning within MOOC environments as online learning applications (Kuo et al., 2014). Therefore, it can be stated that learners' self-control skills are also an important requirement for MOOCs.

Regarding reasons stemming from content design, the learners reported a lack of feedback from teachers, excessive number of courses, low visual-quality of lesson videos, absence of knowledge concerning learning outcomes, and excessive number of assignments. Certain other studies from the literature, such as Yuan et al. (2013) and Ivankova and Stick (2007) show that feedback given by tutors to be an important part of the open and distance learning process, and that this decreases the possibility of learners dropping out of courses. Comparatively, it is stated that the inadequacy of the instructors to provide feedback to a massive student group is one of the problematic factors related to these courses (Solomon, 2013). In the study conducted by Aybek (2017), learners reported the insufficiency of feedback as a negative experiences concerning MOOC; learners found such feedback to be necessary on the grounds it facilitates learning throughout the learning process and that it increases the quality of

education. It can be stated that feedback provided by tutorials is particularly important in distance-learning environments requiring learners to engage in self-study to improve clarity, and research in the literature states that instructor feedback helps the learners actively participate in the lesson processes and focus their attention on lesson subjects (Dong & Goh, 2015). In addition, it can be said that one of the most important factors for providing a feeling of community among learners in online learning environments is the feedback provided by instructors (Marquois-Ogez & Bothorel, 2006; Feng et al., 2019). Accordingly, it can be stated that providing feedback in the MOOCs, which use a distance-learning model, is very important for motivating learners, increasing their attendance helping to foster a sense of community. Furthermore, it is important for learning to be controlled through feedback—regardless of whether student-teacher interaction is healthy (Brinko, 1990)—because it is a fact that the students reinforce their learning through feedback and that feedback positively affects information permanence. Horzum (2016) also reports a similar finding in his study, which investigates the reasons for leaving MOOCs, and identified the insufficient feedback as being among the reasons for dropping out the courses.

Another problem for learners in the study concerning content design was the low quality of course videos. It can be said that videos diversify ways of sharing information for learners in MOOC environments. Studies from the literature show that videos have positive benefits in terms of learning, concentration, and active-learning experience (Gökmen et al., 2016; Delen et al., 2014; Dong & Goh, 2015; Vural, 2013; Wachtler et al., 2016). Studies show that the use of quality video increases motivation in the learning process but that, conversely, they also create a reason for dropout (Bezerra & Silva, 2017; Clow, 2013; Wilkowski et al., 2014). Aybek (2017) found that the experiences of the learners were negative in those MOOCs with a general text-based content, where visuals and video were unused. In his study, Horzum (2016) finds that learners indicated boring lecture videos as one of the reasons for dropping out of MOOCs. Accordingly, it can be stated that that these studies in the literature support the findings of the present study. The number of lessons and the inability of learners to know learning outcomes were among the other problems expressed by the learners.

Under the title of interface design-related reasons, the participants stated that the structure of the system is complex, and that the program has technical problems. An important condition for learners to follow the program with interest is to design the interface so that it facilitates learning. Supporting this finding, Aybek (2017) found in his study that the learners stated that interface problems was one of their negative experiences concerning MOOCs. It is important for users that the MOOC interface is simple, easy, and user-friendly. Learners should be able to easily navigate the page, move forward, and return. In addition, the technical problems of the program voiced by the learners may be caused by problems related to the infrastructure of the program.

Finally, learners were asked to report their suggestions as to how the AKADEMA courses could be made more effective. Suggestions from the participants are categorized under three headings: managerial suggestions, suggestions for content design, and suggestions for interface design. Within the category of managerial suggestions, the most suggestions from learners came in regard to the diversification of courses. Additionally, learners stated that regular warnings should be given by the system as to the course end and start dates. Another suggestion expressed by the learners was the requirement of giving certificates to those who completed their courses. Today, those who successfully complete their AKADEMA training are given a course completion certificate, signed by the Rector of Anadolu University. The condition that must be met for a learner to be considered ‘successful’ in those courses supervised by the guides is that they must have commented those tasks expected of them from the course start and end dates. Course Completion Documents are delivered electronically to the learners (in .pdf or .jpeg format), but are not provided as a printed document. According to Young (2013), one of the reasons for enrolling in MOOCs is the desire to get a certificate at the end of the course, and studies from the literature highlight that a certificate on completion of a course might decrease dropout rates among learners (Waard, 2011; Zhou, 2016). Therefore, it can be thought that creating the conditions of giving certificates to those who complete the AKADEMA courses will make these courses more attractive. In addition to these suggestions, learners suggested that AKADEMA should be promoted more and that courses should be open for more than a single semester throughout the year. Another suggestion from the participants is that course notifications should be transmitted using mobile applications; the advantage of mobile environments that offer flexible learning environments to learners by removing spatial and temporal limitations could be used to MOOC applications. According to the suggestions provided by learners, mobile technologies can be used with particular efficacy by leaders to provide learners with information about the start and end dates of course lessons. Furthermore, they might also be used to send notifications to learners about the course schedule.

Some of the suggestions voiced by the learners were also categorized under the title of ‘suggestions for content design’. Accordingly, learners mentioned that videos should be used more effectively, and emphasized that they should be given timely feedback. These two issues have been previously discussed in the current study. In addition to the above suggestions, they stated that learner–teacher interactions should be provided.

In order for the learners to benefit from the MOOCs—where participation is massive and whereby learners and instructors participate in learning processes at different times and environments—interaction must be maintained, increased, and managed throughout the course itself. Studies show that effective structuring of instructor–learner interaction process remains an important indicator of the success of open and distance learning experiences (Artsın, 2019; Aybek, 2017; Aydın, 2016; Bozkurt, 2015; Hone & El-Said, 2016; Feng et. al., 2019). In the aforementioned studies, it is stated that the increase in learner–instructor communication positively affects learning; comparatively, lack of interaction negatively affects both dropout rates and student satisfaction. For this reason, it becomes evident that the instructors, who are among the most important components of this system, should possess certain competencies. Beyond being a content provider, instructors should also play the role of guiding and counseling learners, facilitate, nurture, and encourage quality communication and interaction (Kassandrinou et al., 2014). Instructors should pay attention to interaction to increase the quality, effectiveness, and efficiency of learning in the courses they conduct using distance-learning technologies (Huss et al., 2015). Another point emphasized by the participants is that the lectures should be more detailed and interesting.

As a final suggestion concerning interface design, participants of the current study stated that the interface should be simpler and easier to use. In related literature, it is also stated that online learning environments should have an effective interface design and should be easy to use; furthermore, they should include a user-friendly and aesthetic design incorporating effective navigation and search features, customizable content, and consistent interface and interface components (Bozkaya & Bozkurt, 2013). Accordingly, it can be said that the suggestions and expectations of the learners from the current study concerning interface design are in line with findings of studies in the literature.

As a conclusion, it is believed that the findings of the present study on MOOCs, which are the most up-to-date form of distance-education processes have reached, will help institutions offering open and distance courses, as well as and MOOC designers in Turkey to create more effective, efficient and attractive learning environments. It is hoped that this study will assist researchers and practitioners conducting in-depth studies on learners' views of the MOOC learning environment, and in shaping the environments, systems and processes based on the learners' needs. It is also believed that this study may be used as a ground for further research on those reasons as to why learners drop out of MOOCs.

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Examining the Differences of Self-Regulated Learning Strategies (SRL) - Cognitive and Metacognitive - For University ESL/FSL Courses in Canada, Chile, Turkey and Iran

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ABSTRACT
Analyzing the process of how students self-regulate their learning has always been an educational research interest due to changing demographics of Digital Native learners (Prensky, 2001). This research focuses on lesson planning adapted to the Self-Regulated Learning Strategies university students develop when learning English or French and the specific factors that play a major role in defining their Self-Regulation Learning Strategies and specifically the Metacognitive and Cognitive ones. Pintrich's (2000b) Motivated Strategies for Learning Questionnaire (MSLQ) standardized set of learning scales was used, and specifically the Cognitive and Metacognitive scales (CMS), each of which had a set of sub-scales of Rehearsal (ENS), Elaboration (ELB), Organization (ORG), Critical Thinking (PEC), and Metacognitive Self-Regulation (ARM). Data were collected from a sample of 491 students from universities in Turkey, Chile, Iran, and Canada. The research results indicated above mean average (M=3.4) use of each of the Self-Regulated Learning strategies by the students in the four institutions and slightly higher mean (M=3.5) for the Critical Thinking strategy. The results also indicated differences in the SRL strategies among the four institutions.

KEYWORDS: University Education, English/French courses, Self-Regulated Learning, Technology, Social Media, Digital native, ESL, FSL.

INTRODUCTION
The accelerated pace of technological inventions in language learning is multiplied by creating more useful online communication tools that has by default an impact on our communication, cognitive behavior, and consequently how students take control of their own learning. According to Pintrich (1999a, 1999b) and Zimmerman & Martínez Pons (1986), students use a variety of strategies to regulate certain cognitive, motivational and behavioral aspects as well as certain environmental characteristics. Hence, the need to understand the relationship between the use of technology and the cycle of SRL becomes more evident with the increase demand on the integration of learning technologies in formal and informal learning situations (Corrin et al., 2010; Margaryan et al., 2011).

Although Self-Regulated Learning first appeared as a personal form of directed learning, it developed into a process of a proactive, aggressive, and consciousness activities leading to motivational aspects and self-efficacy towards accomplishing learning goals (Nejabati, 2015). This idea is also aligned with Zimmerman (2002, p.65) definition of self-regulation as "not a mental ability or an academic performance skill; rather it is the self-directive process by which learners transform their mental abilities into academic skills". Such academic skills were inevitably impacted by the increased reliance of students on technological tools during the learning process, resulting in an adaptation of the Self-regulated learning process. This idea is supported by Kitsantas & Dabbagh (2011), who acknowledge that 2.0 social software technologies (communications tools, resource and experience exchange tools and social network tools) have ample potential to encourage self-regulation.

Nowadays, university lecturers who are "Digital Immigrants" (Prensky, 2001) face the challenge of developing lesson plans aligned to the profile of students characterized as the Web Generation or "Net Generation" according to Lee, Tan, & Goh (2004) or Digital Natives (Prensky, 2001). Digital Natives are also characterized as massive consumers of information, share in instances of online communication using the various existing tools such as Skype, Adobe Connect, Webex, Facebook, Twitter, etc. (Barnes, Marateo, & Ferris, 2007, Oblinger & Oblinger, 2005, Philip, 2007). Hence, the demographics of the learning profile for their students mandate the lecturers to understand how students self-regulate their learning. This research will provide answers, and

recommendations for lecturers on how to accommodate the Digital Natives SRL strategies into their lesson plans.

Throughout the last decades, many investigations have been published on the reach of communication technologies on memory, information processing, cognitive processing and, consequently, or way of learning (Pressley, M., Almasi, J., Schuder, T., Bergman, J., Hite, S., El-Dinary, P. B., & Brown,1994). Students (Digital Natives) became more independent and autonomous learners as they have almost unlimited access to a variety of web applications for language learning and specifically English or French. Schneckenberg, Ehlers & Adelsberger (2011) indicated that technology provided students with a gateway of options and alternatives for learning that support the use of self-regulated strategies (Bernacki, Aguilar & Byrnes, 2011). Hence, Digital Natives experienced an impact of their SRL as they extensively integrate technology into their learning process. As Valentín et al (2013) stated that the relation between SRL and technology may even become casual.

As a consequence of the accelerated development of new technological applications of web communication, teachers face the dilemma of having to reorganize their course plans to align their activities in order to optimize the learning process. In addition, the new Generation Z "Gen Z" (Carrington, Rowsell, Priyadharshini, Westrup, 2016) or "Digital Natives" according to Prensky (2001), who are already an integral part of society, focus on greater access to web, and therefore, are more exposed to the impact of the use of digital technologies in the cycle of regulating their language learning. From this point of view, Digital Natives are already ahead of the curve since technology can help learner to self-regulate (Azevedo et al., 2005; Hadwin, Oshige, Gress, & Winne, 2010).

OBJECTIVES OF THE RESEARCH

The objective was to determine the Self-Regulated Learning strategies (SRL), specifically the Cognitive and Metacognitive for university Digital Native students learning English or French as a Second/Foreign Language. We essentially attempted to address and answer the following questions fundamental in determining the Self-Regulation Learning profiles of the Digital Natives:

- What key Cognitive and Metacognitive learning strategies students use to guide and direct their own learning process?
- Are there differences in the SRL for the students coming from the four different institutions/countries?
- What are the differences in SRL among the students from the four institutions/countries?
- How would teachers use the results of this study in their lesson plans?

METHODS

In order to shed light and provide insights on the important question of how teachers would benefit from analyzing the SRL profiles and patterns of their students, we used a standardized questionnaire called Motivational Strategies for Learning Questionnaire (MSLQ) developed by Printrich, Smith, Garcia, & McKeachie (1991). For the focus of this research, we chose the Cognitive and Metacognitive Learning Strategies (CMS) component of the MSLQ. The CMS included 31 Sub-scales assessed on a Likert scale of 1 (Never) to 5 (Always). The questionnaire included a set of statements to measure the sub-scales of Rehearsal, Organization, Critical Thinking, and Metacognitive Self-Regulation. The quantitative data were collected online using Lime Survey, and the data were analyzed for their validity and reliability using SPSS statistical software.

SAMPLE OF PARTICIPANTS

The data collected was composed of samples from universities in Chile, Iran, Turkey, and Canada. A total of 491 responses were collected for the MSLQ-CMS questionnaire. The 491 respondents' gender demographic was 57.69% female, 26.16% male, and 16.15% preferred not to declare their gender. The age of the respondents was 69.47% under 21 (Digital Natives), 17.77% over 21 years (Non-Digital Natives) and 12.76% did not respond. This meant that the majority of the respondents fell within the range of the birth years of the "Digital Natives" from 1989 onwards (Bennett, Maton, Kervin, 2008). The participating students' distribution included 136 (27.7%) participants from Turkey, 164 (33.4%) from Chile, 170 (34.62%) from Iran, and 21 (4.28%) from Canada (all universities will stay anonymous as requested).

All the students were attending English or French courses at their universities. In their 2005 study of sample size for factor analysis, after comparing different ratios between subject and number of sub-scales, Costello and Osborne (2005) concluded that a ratio of 10:1 or 20:1 increases the correctness of factor structure in factor analysis. Based on these ratios, the correct factor structure increased to 60% or 70%, respectively. Since the questionnaire used in the present research consisted of 31 Sub-scales, the anticipated 491 participants taking part fell within the desired ration 1:15.8, and therefore the factorial analysis carried out produced solutions that were considerably accurate.

RELIABILITY

The data collected from the 491 participants were analyzed using the SPSS software in order to determine the stability of the data by applying a Cronbach's Alfa test, Normality Kurtosis Test using the statistical model for Kolmogorov-Smirnov (KS) and the Shapiro-Wilks (SW), ANOVA one way analysis to determine and identify the differences among the participating institutions, and factorial analysis to reduce the data with the KMO and Bartlett analysis in order to determine the most relevant factors of Self-Regulated strategies of learning.

The CMS component of the MSLQ included scales about Rehearsal (ENS), Elaboration (ELB), Organization (ORG), Critical Thinking (PEC), and Metacognitive Self-Regulation (ARM) strategies.

A Cronbach's Alpha reliability analysis was performed to test the internal consistency of each sub-scale by considering values greater than or equal to .70 as an acceptable level for data reliability, validating the range of correlations between elements between .15 and .85 to indicate a high internal consistency (DeVellis, 2003), and demonstrating high reliability of the average correlation between the scales, which had to fall between .15 and .50 (Clark and Watson, 1995). Table 1 presents the descriptive statistics of the Mean and Standard Deviation for each of the scales of CMS.

Table 1: Mean and Standard Deviation for Self-Regulated Learning Measures

Scale	M	SD
Rehearsal (ENS)	3.43	0.78
Elaboration (ELB)	3.44	0.74
Organization (ORG)	3.32	0.83
Critical thinking (PEC)	3.52	0.80
Metacognitive self-regulation (ARM)	3.38	0.56

Note. n = 491

Table 2 illustrates the Cronbach's Alpha correlations, between elements, and the average correlation between elements for each of the scales. The Cronbach's Alpha for all scales of the CMS showed acceptable results with levels greater than or equal to .70, showing a good internal consistency. The average correlation between elements for each sub-scale was between .15 and .50, which indicates a high reliability. The only exception was the Rehearsal sub-scale (ENS=.68). The correlations between the scales were between .15 and .85 in all the CMS sub-scales indicating a high internal consistency. The notable exception was the scale of Metacognitive Self-Regulation (ARM= -.10-.47).

Finally, the mean correlation between the scales for each scale was between .15 and .50, which also indicated a high reliability. We then examined the correlation matrix between elements and the statistics of total elements of the two scales to obtain a more complete picture of the matter in question. An examination of the sub-scales analysis of the Rehearsal (ENS) strategy revealed that Cronbach's alpha would decrease. As a result, the sub-scale elements were not removed. In the Metacognitive Self-Regulation strategy (ARM), two elements, namely ARM1 and ARM8, were negatively inter-correlated with the other elements. If these two elements were eliminated, the Cronbach's alpha would increase to .76 and .77 respectively. Given the fact that the Cronbach's alpha and the average correlation between the elements indicated a high reliability, Cronbach's alpha was minimal, it was not necessary to eliminate the two elements of the sub-scale.

Table 2: Cronbach's Alpha, Inter-Item Correlations and Average Inter-Item Correlation for Self-Regulated Learning Measures

Scale	Cronbach's α	Inter-Item Correlations	Average Inter-Item Correlation
Rehearsal (ENS)	0.68	.25-.55	0.35
Elaboration (ELB)	0.76	.20-.52	0.35
Organization (ORG)	0.72	.22-.53	0.40
Critical thinking (PEC)	0.82	.40-.57	0.48
Metacognitive self-regulation (ARM)	0.74	-.10-.47	0.20

Note. n = 491

KAISER-MEYER-OLKIN (KMO) AND BARTLETT'S TESTS

We also conducted suitability test of the data for structure detection using the KMO and Bartlett's tests. The results are shown in Table 3.

Table 3: Results of KMO & Bartlett's Tests

Scale	KMO Measure	Bartlett's test $\chi 2$	p
Rehearsal (ENS)	.67	341.39	< .001
Elaboration (ELB)	.80	651.22	< .001
Organization (ORG)	.73	409.23	< .001
Critical thinking (PEC)	.83	769.33	< .001
Metacognitive self-regulation (ARM)	.85	1102.91	< .001

The KMO Measure of Sampling Adequacy indicated the proportion of variance in the variables in a study that might be caused by underlying factors. High values (close to 1.0) indicated that patterns of correlations were relatively compact and so factor analysis would yield distinct and reliable factors. Kaiser (1974) recommended values greater than 0.5 as acceptable. As shown in Table 3, the ELB (.80), PEC (.83) and ARM (.85) sub-scales were considered as great, the ORG (.73) sub-scale was good, and the ENS (.67) sub-scale was mediocre (Hutcheson and Sofroniou, 1999, pp. 224-225). We also applied Bartlett's test of sphericity to verify that the variables were unrelated and consequently were unsuitable for structure detection (Cochran-Smith, 1981).

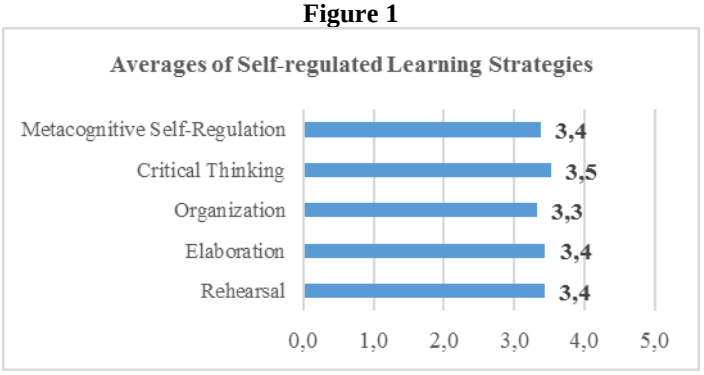
As shown in Table 3, Bartlett's test for each sub-scale was highly significant ($p < 0.001$), and therefore factor analysis was appropriate. We, then, applied the Tests of Normality- statistical model for Kolmogorov-Smirnov (KS) and the Shapiro-Wilks (SW)- yielded the significance results of .000 (or > .05), indicating a non-normal distribution of data, i.e. the hypothesis of a normal distribution was rejected. The Skewness numbers and the Std. Error of Skewness overall results yielded a positive skew of the data. However, when we analyzed each of the scales taking into consideration the K>1 or < 1 rule, and multiplying the Std. Error of Skewness by .2, we got a positive skewness greater than the Std. Error Skewness (.220) for ENS (-.383), ELB (-.329), ORG (-.270), PEC (-.490), and ACP (-.332). In contrast, the scales of ARM (-.189) and ESR (-.114) registered a skewness lower than the Std. Error of Skewness (.220).

SRL STRATEGIES DESCRIPTIVE ANALYSIS RESULTS

We identified the levels and percentages of the development of Self-Regulation Strategies during the learning process. The survey gave us the following overall results for the four participating institutions (Figure 1):

- A high average fluctuating between 3.3 and 3.5, indicating that most of the learners used Self-Regulated strategies.
- The strategy of Critical Thinking yielded the highest average of 3.5.
- The strategy Organization showed the lowest level of 3.3, an indication that most learners did not put a lot of emphasis on organizing their thoughts or ideas during the learning process.

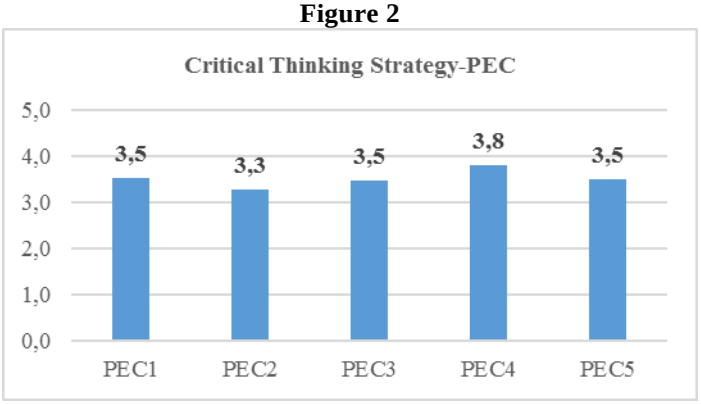
Figure 1



Taking a more in-depth look at the Critical Thinking sub-scales (Figure 2), we identified a high average of 3.8 for the PEC 4 statement "*When I study for this course, I go over my class notes and make an outline of important ideas."* This indicates that most students consider taking notes during class as important for their learning. We also identified an equal score of 3.5 for PEC1 (*When I study for this course, I outline the material to help me*

organize my thoughts.), PEC3 (*I make simple charts, diagrams, or tables to help me organize the course material.)*, and PEC5 (*Whenever I read or hear a statement or conclusion in this course, I think about possible alternatives*.), which supported the idea that learners did use critical-thinking strategies for their learning. The lowest score among the sub-scales, 3.3, was related to the PEC3 statement indicating lower focus from the learners on validating the ideas or conclusions presented in the class.

Figure 2



As far as the Organization strategy sub-scales (Figure 3), the results indicated that learners used the ORG2 strategy when organizing their learning (*When I study for this course, I go through the course material and my class notes and try to find the most important ideas.*). We also noted that ORG3 (*I make simple charts, diagrams, or tables to help me organize the course material.*) yielded the lowest score of 2.9, which indicated that learners did not organize synthesized information when learning.

Figure 3

SELF-REGULATION STRATEGIES PROFILE PER INSTITUTION/COUNTRY

Looking at the overall data for each SRL strategy per each institution, we came up with the following preliminary results of the Mean and *Standard Deviation* for each strategy (see table 4):

- Students from Iran highest score was for the Rehearsal strategy (3.25, *1.15*) followed closely by the Metacognitive Regulation strategy (3.24, *1.06*). Iranians also scored lowest for the Elaboration strategy (2.99, *1.08*).
- Students from Turkey highest score was for the Critical Thinking strategy (3.7, *0.94*) followed closely by the Metacognitive Regulation strategy (3.6, *1.05*).
- Students from Chile highest score was for the Elaboration (3.79, *1.00*) and Critical Thinking (3.79, *1.00*) strategies followed by the Rehearsal strategy (3.5, *1.23*). Their lowest score was for the Organization strategy (3.25, *1.29*).
- Students from Canada highest score was for the Elaboration (3.65, *1.14*) and Organization (3.65, *1.29*) strategies followed by the Metacognitive Regulation strategy (3.46, *1.19*). Their lowest score was for the Critical Thinking strategy (3.25, *1.12*).

Table 4: Comparative Table for the Mean and Standard Deviation for each of the SRL Strategies

UNIVERSITY	Rehearsal ENS (M, *SD*)	Elaboration ELB (M, *SD*)	Organization ORG (M, *SD*)	Critical Thinking PEC (M, *SD*)	Metacognitive Regulation ARM (M, *SD*)
Iranian University	3.25, *1.15*	2.99, *1.08*	3.22, *1.08*	3.16, *1.06*	3.24, *1.06*
Turkish University	3.5, *1.05*	3.5, *1.02*	3.5, *1.03*	3.7, *0.94*	3.6, *1.05*
Chilean University	3.55, *1.04*	3.79, *1.00*	3.25, *1.15*	3.8, *1.00*	3.36, *1.09*
Canadian University	3.33, *1.23*	3.65, *1.14*	3.65, *1.29*	3.25, *1.12*	3.46, *1.19*

DIFFERENCES OF SIGNIFICANCE AMONG THE FOUR INSTITUTIONS-ANOVA

A one-way ANOVA analysis of variance was conducted to explore the differences, among the students from the four institutions. At first, the Levene Statistics Test results yielded insignificant levels confirming that the homogenous variance of the results was not violated ($p>.05$) for all the strategies: Rehearsal (ENS) was .858, Elaboration (ELB) .325, Organization (ORG) .065, Critical Thinking (PEC) .725, and Metacognitive Self-Regulation (ARM) .073.

Afterwards, a ANOVA analysis (Between and Within Groups) of the F and the significance differences among all strategies except for the ORG one was applied. The results indicated the following differences among the four institutions:

- ENS strategy $F (3, 487) = 3.38$, $p<.05$, with Chile (M=3.55, SD=.76) higher than Iran (M=3.29, SD=.78).
- ELB strategy $F (3, 487) =37.03$, $p<.001$, with Chile (M=3.79, SD=.61) higher than Turkey (M= 3.50, SD= .67) and Iran (M=3.03, SD=.70)
- ORG strategy $F (3, 487) =2.64$, $p<.05$, had no significant differences
- PEC strategy $F (3, 487) = 20.05$, $p<0.001$, with Chile (M=3.79, SD=.76), higher than Canada (M=3.25, SD=.87), Iran (M=3.18, SD=.76), and Turkey (M=3.65, SD=.73).
- ARM strategy $F (3, 487) =5.77$, $p=.001$, with Chile (M=3.36, SD=.55), higher than Turkey (M=3.53, SD=.57), and Iran (M=3.27, SD=.51).

FACTORIAL ANALYSIS

Based on the ANOVA analysis, we conducted a factor analysis dimension reduction of the 31 survey scales . In keeping with Bartlett's test ($p = .000$) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (.912), the data was adjusted for the application of the factor analysis. A Varimax rotation with a factorial load greater than 0.40 was considered. The results indicated that the number of factors should be 7 and would therefore explain a variation of 55.366% of the data. However, and given the fact that Factor 7 had only two scales, we decided not to include it in the factor structure and analysis (Costello and Osborne, 2005).

FACTOR 1: Linking knowledge from various sources. This factor refers to students linking what they learned in the course to their prior knowledge in order to understand content. Students also used various sources of information to help them form an understanding of the subject matter to help them engage in independent and active learning.

Table 5

Sub-scale	Factorial Load	*M*	*SD*
ELB1 - When I study for this course, I bring together information from different sources, such as lectures, discussions, text books, articles, and the internet.	.489	3.12	1.17
ELB6 - I try to apply ideas from the course material to other class activities such as lecture and discussion.	.584	3.29	1.10
ELB5 - I try to understand the material in this course by making connections between the course material and the ideas from the lectures.	.628	3.61	1.06
ELB3 - When studying for this course, I try to relate the material to what I already know.	.647	3.83	1.04
ELB2 - I try to relate ideas in this course to those in other courses whenever possible.	.727	3.59	1.09

As shown in Table 5, the most used strategy (ELB3: *M* = 3.83, SD = 1.04) among university students was linking what they already know to new material in order to help them comprehend the content. Also, students frequently tried to make connections between the course material and the ideas from the lectures (ELB5: *M* = 3.61, SD = 1.06) and tried to relate ideas from one course to another (ELB2: *M* = 3.59, SD = 1.09) while they were learning new course material. On the other hand, students did not frequently apply ideas from the course content to other class activities (ELB6: *M* = 3.29, SD = 1.10), nor did they bring together information from different sources (ELB1: *M* = 3.12, SD = 1.17).

FACTOR 2: Questioning and analyzing information learned. Factor 2 refers to reflecting upon and evaluating the validity of concepts encountered in the course. As Facione (1990) defined critical thinking as "*a purposeful and self-regulatory judgment which is concluded to interpretation, analysis, evaluation, and inference as well as explanations of different types of arguments based on logical judgment*". It also includes considering alternatives to accepted ideas and devising new ways of doing things. Another strategy included in this factor was the use of questions to better comprehend the subject matter. In the overall, these strategies promoted deep understanding and higher-order thinking.

Table 6

Sub-scale	Factorial Load	*M*	*SD*
ARM2 - When studying for this course, I make up questions to help me focus on the course material.	.470	3.16	1.05
PEC1 - I often find myself questioning things I hear or read in this course to decide if I find them convincing.	.657	3.53	1.08
PEC5 - Whenever I read or hear a statement or conclusion in this course, I think about possible alternatives.	.661	3.51	1.06
PEC2 - When an idea, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.	.709	3.28	1.05

Examining the sub-scales in Table 6, we saw that students often question things they heard or read in the course (PEC1: *M*=3.53, SD = 1.08), and thought of possible alternatives when they read or heard a statement or conclusion (PEC5: *M* =3.51, SD = 1.06). On the other hand, students did not frequently reflect upon whether there was good supporting evidence when arguments were presented in the course (PEC2: *M*= 3.28, SD = 1.05), nor did they create questions to help them focus on the course material (ARM2: *M* =3.16, SD = 1.05).

FACTOR 3: Metacognitive monitoring. Metacognitive monitoring strategies focus on the awareness, knowledge and control aspects of metacognition. This is in alignment with Pintrich and De Groot (1990) who stated that that "*students should acquire the necessary knowledge and skill to choose and apply cognitive, metacognitive, and behavioural strategies*." Students tried to organize what they know and what they do not know as regards course content. Likewise, students monitored the learning process and used appropriate learning strategies to ensure that they comprehended what they identified as important and challenging.

Table 7

Sub-scale	Factorial Load	*M*	*SD*
ORG2 - When I study for this course, I go through the course material and my class notes and try to find the most important ideas.	.511	3.81	1.00
ARM12 - If I get confused taking notes in class, I make sure I understand things later.	.591	3.50	1.11
ARM10 - When studying for this course, I try to determine what I do not understand well.	.621	3.74	1.00
ARM3 - When I become confused about something while I am studying for this course, I go back and try to understand it.	.646	3.87	0.99

In Table 7, students used a great many metacognitive monitoring strategies while studying in the course as a process of reflection on how to improve their learning (Anderson, 2002). Students usually went back to material they did not understand if they were confused while studying (ARM3: *M* = 3.87, SD = 0.99). They also typically went through the course material and class notes to identify the most important ideas during the course (ORG2:

M = 3.81, SD = 1.00). Students also frequently attempted to determine what they did not fully comprehend while studying (ARM10- *M*= 3.74, SD = 1.00), and were likewise sure to understand things later if they were confused while taking notes in class (ARM12: *M*=3.50, SD = 1.11).

FACTOR 4: Selecting and adapting learning strategies. Selecting and adapting learning strategies refers to how students adapted and regulated the way they study based on the nature of the course, including the material, tasks, and instructor's teaching style (Montalvo & Torres, 2008). This factor also included students' selection of learning strategies based on the goals they set to direct their learning in the course.

Table 8

Sub-scale	Factorial Load	*M*	SD
ARM11 - When I study for this course, I set goals for myself in order to direct my activities in each study period.	.419	3.34	1.11
ARM4 - If the course material is difficult to understand, I change the way I study the material.	.610	3.29	1.11
ARM7 - I try to change the way I study in order to fit the course requirements and instructor's teaching style.	.623	3.17	1.09
ARM5 - Before I study new course material in detail, I often look it over first to see how it is organized.	.629	3.24	1.17

As shown in Table 8, students did not usually select and adapted their learning strategies while studying. They did not often set goals for themselves to direct their own learning (ARM11: *M* =3.34, SD=1.11), nor did they modify the way they study the material if the material was hard to comprehend (ARM4: *M* =3.29, SD=1.11). Likewise, students did not frequently familiarize themselves with how material was organized before studying the material in detail (ARM5: *M*=3.24, SD=1.17), and they did not often make an effort to change the way they study in order to suit the instructor's teaching style and the course requirements (ARM7: *M* =3.17, SD =1.09).

FACTOR 5: Organization of information. Organization of information refers to the ways in which students identified important constructs and related these ideas to each other. This strategy included outlining material as well as using tables and charts to enhance one's understanding of the course material and improve one's learning performance.

Table 9

Sub-scale	Factorial Load	*M*	*SD*
ORG1 - When I study for this course, I outline the material to help me organize my thoughts.	.673	3.24	1.10
ORG4 - When I study for this course, I go over my class notes and make an outline of important ideas.	.683	3.38	1.11
ORG3 - I make simple charts, diagrams, or tables to help me organize the course material.	.717	2.86	1.26

As shown in Table 9, students did not often use specific strategies to help them organize the information they learned in the course. More specifically, they did not tend to go over their class notes and made an outline of important points when studying for the course (ORG4: *M*=3.38, SD=1.11), nor did they outline the material to help them organize their thoughts (ORG1: *M*=3.24, SD=1.10). Moreover, students rarely organized course material by creating basic visual representations such as charts, diagrams, or tables (ORG3: *M* =2.86, SD=1.26).

FACTOR 6: Memory rehearsal strategy. This factor refers to students using memorization / rehearsal strategies to remember basic information such as facts, points, and names from the course.

Table 10

Sub-scale	Factorial Load	*M*	*SD*
ENS4 - I make lists of important information (vocabulary items, idioms, verb tenses, etc.) for this course and memorize the lists.	.439	3.43	1.19
ENS3 - I memorize key words to remind myself of important ideas discussed in this course.	.473	3.73	1.05
ENS2 - When studying for this course, I read my class notes and the	.772	3.38	1.06

course material over and over again.			
ENS1 - When I study for this course, I practice saying the material to myself over and over.	.802	3.16	1.07

Table 10 shows that students typically memorized key words to help them remember important ideas dealt with in the course (ENS3: *M* =3.73, SD=1.05). They did not frequently create and memorize lists of important information for the course (ENS4: *M* =3.43, SD=1.19). Likewise, students did not often re-read class notes and course material when studying for the course (ENS2: *M* =3.38, SD=1.06), nor did they practice repeating the material to themselves (ENS1: *M* =3.16, SD=1.07).

FINDINGS AND RECOMMENDATIONS FOR TEACHERS

The approach to draw conclusions and recommendations for teachers of the four institutions was based on looking at the factorial analysis to determine the Scale Mean (*M*) and Standard Deviation (SD) as a benchmark for each of the sub-scales.

IRANIAN UNIVERSITY

Starting with Iranian students, the following analysis of the factors were:

Factor 1: ELB1 (*M*=2.84, SD=1.17) and ELB 6 (*M*=2.94, SD=1.07) were below Factor 1 (*M*=3.05) In both ELB1, which referred to collecting data and information from different resources. Iranian students showed lower levels of activities. Hence, our recommendation for the lecturer to plan activities that will emphasize and enhance data and information collection and how to apply and link ideas from the data and information to the specific activities in the classroom.

Factor 2, ARM2 (*M*=2.93, SD=1.08) was lower than Factor 2 (*M*=3.11). Iranian students need more emphasis or activities to develop questions that will help them focus on the materials.

Factor 3, ARM10 (*M*=3.36, SD=1.04) was lower than Factor 3 (*M*=3.44). This indicated that students need help to determine the parts of the lesson or materials they do not understand.

Factor 4, ARM7 (*M*=3.05, SD=1.02) was lower than Factor 4 (*M*=3.15), which indicated that students have difficulty in changing their study habits to improve their understanding.

Factor 5, ORG3 (*M*=2.93, SD=1.24) was lower than Factor 5 (*M*=3.17). This indicated that the lecturer needs to incorporate more activities that will help students draw diagrams, charts or tables to help them better understand the materials and the activities.

Factor 6, ENS4 (*M*=3.21, SD=1.19) was lower than Factor 6 (*M*=3.25), which indicated that students need more exercise listing the vocabulary, idioms and verb tenses to help them better memorize.

TURKISH UNIVERSITY

Examining the results from the Turkish institution, we detected the following:

Factor 1, ELB6 (*M*=3.32, SD=0.97) was lower than Factor 1 (*M*=3.57). For ELB6, which referred to applying ideas related to the course materials, Turkish students showed lower levels of activities. Hence, our recommendation for the lecturer to plan activities that will emphasize and enhance data and information collection and how to apply and link ideas from the data and information to the specific activities in the classroom.

Factor 2, ARM2 (*M*=3.21, SD=1.18) was lower than Factor 2 (*M*=3.51). Turkish students need more emphasis or activities to develop questions that will help them focus on the materials.

Factor 3, ARM12 (*M*=3.65, SD=1.00) was lower than Factor 3 (*M*=3.85). This indicated that students need help determine the parts of the lesson or materials they did not understand.

Factor 4, ARM7 (*M*=3.38, SD=1.11) was lower than Factor 4 (*M*=3.47), which indicated that students had difficulty in changing their study habits to improve their understanding.

Factor 5, ORG3 (*M*=2.91, SD=1.25) was lower than Factor 5 (*M*=3.34). This indicated that the lecturer needs to incorporate more activities that will help students draw diagrams, charts or tables to

help them better understand the materials and the activities.

Factor 6, ENS1 (*M*=3.13, SD=1.08) was lower than the Factor 6 (*M*=3.51), which indicated that students need more exercise listing the vocabulary, idioms and verb tenses to help them better memorize.

CANADIAN UNIVERSITY

Examining the results from the Canadian institution, the results indicated the following:

Factor 1 ELB6 (*M*=3.57, SD=1.12) was lower than Factor 1 (*M*=3.71). For ELB6, Canadian students showed lower levels of activities. Hence, our recommendation for the lecturer to plan activities that will emphasize and enhance data and information collection and how to apply and link ideas from the data and information to the specific activities in the classroom.

Factor 2, ARM2 (*M*=2.62, SD=1.24) was lower than Factor 2 (*M*=3.04). Canadian students need more emphasis or activities to develop questions that will help them focus on the materials.

Factor 3, ARM12 (*M*=3.38, SD=1.36) was lower than Factor 3 (*M*=3.83). This indicated that students need help determine the parts of the lesson or materials they do not understand.

Factor 4, ARM7 (*M*=3.19, SD=1.16) was lower than Factor 4 (*M*=3.35), which indicated that students have difficulty in changing their study habits to improve their understanding.

Factor 5, ORG3 (*M*=3.38, SD=1.40) was lower than Factor 5 (*M*=3.56. This indicated that the lecturer needs to incorporate more activities that will help students draw diagrams, charts or tables to help them better understand the materials and the activities.

Factor 6, ENS1 (*M*=3.05, SD=1.16) was lower than Factor 6 (*M*=3.33), which indicated that students need more exercise listing the vocabulary, idioms and verb tenses to help them better memorize.

CHILEAN UNIVERSITY

Examining the results from the Chilean universities, we can detect the following:

Factor 1, ELB1 (*M*=3.06, SD1.19) was lower than Factor 1 (*M*=3.85). For ELB1, which referred to applying ideas related to the course materials, Chilean students showed a lower levels of data collection activities. Hence, our recommendation for the lecturer to plan activities that will emphasize and enhance data and information collection.

Factor 2, PEC2 (*M*=3.18, SD=1.12) was lower than Factor 2 (*M*=3.54). Chilean students need more emphasis or activities to help them assess the validity of the idea, interpretation, or conclusions about certain materials or ideas.

Factor 3, ARM12 (*M*=3.58, SD=1.36) was lower than Factor 3 (*M*=3.92). This indicated that students need help determine the parts of the lesson or materials they do not understand.

Factor 4, ARM7 (*M*=3.19, SD= 1.16) was lower than Factor 4 (*M*= 3.3, which indicated that students have difficulty in changing their study habits to improve their understanding.

Factor 5, ARM1 (*M*=2.40, SD=1.20) was lower than Factor 5 (*M*=2.90). This indicates that the lecturer needs to incorporate more activities that will help students focus more and not get deviated or distracted during the exercises.

Factor 6, ENS1 (*M*=3.17, SD=1.04) was lower than Factor 6 (*M*=3.55), which indicated that students need more exercise listing the vocabulary, idioms and verb tenses to help them better memorize.

COMMUNALITIES AMONG THE FOUR INSTITUTIONS

The study also showed some of the communalities of learning strategies shared by the four institutions, which we thought would be interesting to highlight as a reference for the overall framework of the strategies students mostly shared when learning a language. All of the commonly shared sub-scales registered high Mean levels, and had 1 SD. These sub-scales were ELB3 and ELB5 (Factor 1), PEC5

(Factor 2), ARM3 (Factor 3), ORG4 (Factor 5), and ENS3 (Factor 6).

DISCUSSIONS

This research adopted the SRL-MSLQ Questionnaire to determine and assess the level of the self-regulated strategies students (Digital Natives) use when learning ESL or FSL. The results from the four institutions involved indicated that there is above the mean average for all of the SRL strategies. However, the mean average does not lend itself to an exceptional above 4.0 mean, which leads to a conclusion that despite the fact that Digital Natives are by definition natural users of technology in support for their learning activities, their use of SRL strategies did not necessarily translate into effective and high levels of self-regulation (above the 4.0 mean). The idea that technology favors and open gates for alternative learning options is somewhat evident, yet does not go beyond a casual use of technology in both informal and formal situations (Corrin et al., 2010; Margaryan et al., 2011). This idea is also supported by a study carried out by Hannafin and Hannafin (2010) who claimed that use of technology in classrooms supports the self-regulation which in turn promotes learning income. Another finding in this study showed that although the SRL strategies profile of the students from the four institutions registered the same level of mean (M=3.4) in some of the SRL strategies (Rehearsal, Elaboration, and Self-regulated Metacognition), they are different in Critical Thinking (M=3.5) and Organization (M=3.3) strategies. Among the sub-scales of the Critical Thinking strategies, the results indicated that the statement related to "*I try to relate my own ideas to what I am learning in this course*" registered the highest mean level of M=3.8. This result indicated of an autonomous self-regulating learning process teachers could enhance by providing activities for concept mapping; an activity that could trigger shared cognition (Cheng et al, 2014).

Although the study was conducted to determine the use of SRL strategies in ESL/FSL courses, it did not go further than the discovery stages. Subsequent studies could focus on the other variables that could have an impact on the use of SRL strategies such as gender, teaching strategies, context of ESL/FSL versus EFL/FFL, or even the specific technological tools (ICT and social media) use during the learning process.

CONCLUSION

The study focused on highlighting the overall picture of the use of SRL when learning English/French as a Foreign Language in four institutions in four countries. Preliminary results confirmed our assumptions that there are differences in the SRL profile among the four institutions.

The results indicated a moderate-high level of use for all the strategies with an average mean above 3.4, with an exception of the Critical Thinking Strategy registering a 3.5 mean. At the same time, when examining the results from the 6 Factors, we detected higher level in Factor 1 mean (3.57) for Canadians, Factor 2 mean (3.32) for Chileans, Factor 3 mean (3.92) also for Chileans, Factor 4 mean (3.47) for Turks, Factor 5 mean (3.56) for Canadians, and lastly Factor 6 mean (3.55) for Chileans.
The survey also resulted in lower than the average mean of each of the scales among the four different institutions. For Factor 1, Iranians registered a mean of 3.05, Factor 2, Canadians registered a mean of 3.04, Factor 3 registered a mean of 3.44 for Iranians, Factor 4 registered a mean of 2.90 for Chileans, Factor 5 registered a mean of 2.95 also for Chileans, and Factor 6 registered a mean of 3.25 also for Iranians.

The overall conclusion for the teachers would be to use the SRL questionnaire as a tool to adjust and adapt some of the planned activities according to the SRL of the students; an idea supported by Cunningham (2009) who stated that having a well-designed lesson plan actually determines the teaching success. Emphasizing certain activities and capitalizing on others would lead to a more effective, individualized, and critically planned lessons leading to a more significant process of Self-Regulated Learning for students learning a foreign language. The enhancement of the learning strategies would also result in a more autonomous learner profile adapting their strategies as they progress in their language acquisition.

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Experiential Learning for Health Sciences Education Students: An Open Distance Learning (ODL) Context

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ABSTRACT
The purpose of the study was explore and describe experiences of student teachers currently registered for the BCUR degree studying in an ODL university. The degree comprises nursing education and management and the students had attended the teaching practice workshop, a component of nursing education programme. An explorative, descriptive, interpretative and qualitative design was conducted to explore student teachers' experiences of the teaching practice workshop they have attended. The interviews were conducted on twenty student nurse educators who participated in the study. Purposive sampling which is based on the belief that the researcher's knowledge about the population can be used to hand pick sample elements was used. The study yielded both positive and negative experiences. The positive was the provision of environment, which exposed them to teaching, and acquisition of pedagogical skills. Negative experience were also reported including poor and inaccessible orientation, outdated study guide and workbook, ineffective feedback and a very short period of exposure to teaching practice. Workshops to be divided into two phases, first phase for orientation and second phase for teaching practice and assessment. Students to be thoroughly prepared re on-line teaching.
KEYWORDS: Experiential learning, ODL, student nurse educators, teaching practice.

INTRODUCTION

Practical teaching (also known as the practicum, teaching practice or experiential learning) forms an integral part of teacher training. Teaching practice is a valued and a very necessary part of education for students to become competent teachers. It grants student teachers experience in the actual teaching and learning environment, Ngidi & Sibaya (2003) as quoted by Kiggundu & Nayamuli (2009, p. 345). Teaching practice has three major connotations: the practicing of teaching skills and acquisition of the role of the teacher: the whole range of experiences that students go through in schools: and the practical aspects of the course as distinct from theoretical studies (Mukumbang & Alindekane 2017, pp. 1-3). During teaching practice, a student teacher is given the opportunity to try the art of teaching before actually getting into the real world of the teaching profession and for student teacher of nursing, the real world of nursing education. Teacher training education institutions like the University of South Africa (UNISA), which offers open distance learning (ODL) are under pressure to prepare their student teachers for the actual world of teaching and the practicums/teaching practice provides an avenue by which this expectation may be, addressed (Swee-Choo Goh and Mathews 2011, pp. 1-13). Teaching practice constitute a bridge between theory and practice and enables the student teachers to develop the knowledge, skills and attitudes that will equip them to work effectively with all students regardless of their life experiences, gender, background, race or socio-economic status (Marais & Meier 2004). According to Komba & Kira (2013) during teaching practice, student teachers observe subject teachers at work so as to learn about teachers' skills, strategies and classroom developments. Students are also able to evaluate their own teaching experiences through interactions with the teachers and lecturers. Through self-reflection student teachers are able implement a variety of approaches, strategies and skills with a view of bringing about meaningful learning. Exposing student teachers to teaching practice is a global phenomenon. In Germany, teacher candidates are expected to apply their declarative knowledge to authentic classroom situation (Stumer, Konings & Seidel 2013, pp. 467-483). In Romania, a study conducted by Gabriela (2016) indicated that mentoring and coaching done during teaching practice is of critical importance in the practical training of future teachers. For nursing students enrolled at the institution under study, teaching practice represents the range of experiences from which they are exposed when they work in the classroom and provide lessons in the simulated setting for a period of one week as opposed to observing subject teachers at work. Nursing students enrolled for the degree in Nursing Education at the institution under study will be referred to as student nurse educators in the subsequent discussion.

This study aimed at exploring and describing the experiences of student nurse educators who attended the teaching practice workshop during the 2018 academic year and how these experiences influence their perception of nursing education. The word teaching practice/experiential learning/practicum will be used interchangeably with nursing education practice/workshop. The more is known about the concerns faced by student teachers

during their practicum, the greater the possibility of reducing stress and improving their success and maximizing the benefits of the practicum for them.

CONCEPTUAL FRAMEWORK

Open distance learning has become an integral part of higher education globally, mainly to cater for the increasing demand for higher education. ODL has proved to be effective in providing students with relevant knowledge, professional competence and enhanced emotional competence such as taking responsibility for personal and professional development, emotional maturity, self-motivation, self-discipline, dedication and perseverance (Olivier 2016, pp. 3-12). Higher education institutions in South Africa that are providing teacher education programmes including those offering open distance learning are required in terms of the provisions of the Department of Higher Education and Training (DHET) to ensure that their students are exposed to teaching practice where they can interact with the realities of classroom teaching (Minimum Requirements for Teacher Education and Development in South Africa 2011-2015; Minimum Requirements for Teacher Education Qualifications 2011). Therefore, teaching practice is part of teacher Education and Training Programme at ODL institutions in South Africa (Mokoena 2017, pp. 122-124).

Out of the 26 public universities in South Africa, 13 of them have departments of nursing science that are providing postgraduate nursing education programmes and are required to comply with the provisions of the (DHET) policies in terms requirements referred to in the afore-mentioned discussion when it comes to teacher education and training.

The institution under study has a department of nursing science called Health Sciences Department. Health sciences department started offering the Bachelor's degrees since 1975 of which Nursing Education is one of its majors. The degree is aimed at preparing nurse educators tasked with the responsibility of preparing nurse practitioners capable of providing efficient and competent service to the citizens of South Africa. It was established to address the challenge of the shortage of nurse educators, which to date is still evident as alluded to by Mulaudzi, Daniel and Direko (2012, p. 1) who stated that South Africa like all other countries in the world is faced with the shortage not only of nurses, but also nurse educators which is anticipated to be further impacted by the high number of nurse educators who are close to retirement. Therefore, Higher Education Institutions (HEIs) are under pressure to increase nurse educator education and training in sufficient numbers to meet national health care needs of South African citizens.

Teaching practice for student nurse educators is organized in a variety of ways in Institutions of Higher learning providing programmes on nurse educator preparation. In contact universities student nurse educators are exposed to lesson observations in a real classroom setting, lesson presentations under the supervision of subject lectures at the institution where studying. Once these steps are completed, student nurse educators are then sent to colleges of nursing (where a memorandum of cooperation exist with the higher learning institution) to give ten more lessons over a [period of one week. They are then exposed to final critiquing by lectures where studying for certification as nurse educators.

Student nurse educators at the institution under study are exposed to experiential learning for a period of one week in a simulated environment where peer teaching takes place. During the presentation, critiquing is done by facilitators and constructive and corrective feedback is given to students after each lesson presentation. A number of lesson plans need to be prepared beforehand so that the student is eligible to attend. The South African Nursing Council (SANC) a statutory body that regulates nursing education in South Africa has stipulated competencies, which student nurse educators need to acquire before, registered as nurse educators. These are:

- Scholarship of teaching and learning
- Academic and student management
- Curriculum development
- Leadership and management
- Research and knowledge production

These competencies are in line with those of the World Health Organization (WHO) which focusses on the following domains: Theories and principles of adult learning; Curriculum design and implementation, nursing practice; Research and evidence; Communication, collaboration and partnership; Ethical/ legal principles and professionalism; Monitoring and evaluation and Management and leadership (World Health Organisation [WHO], 14-36).

This model of simulation at the institution understudy is also practiced in America as alluded to by Fitzgerald, Gordon, Katz & Hirsch (2012, p. 5) in their study on "Advanced Practice Nursing Education: Challenges and

Strategies" where they stated that simulation for student teachers fosters collaborative practice and provide clinical experiences that emphasize the optimization of student practice outcomes. Also in the United Kingdom (UK), the use of simulation experiences to enhance practice learning for student teachers is increasingly applied in nursing education (Merrell, Khanom & Olumide 2014, pp. 490-501).

The research was undertaken following concerns raised by managers of some of the nursing colleges through informal discussions with the researcher that the performance of the majority of nurse educators particularly those prepared in the ODL context is below acceptable standards. However, no research could be found on the competencies of nurse educators prepared in the ODL context in South Africa The same concern raised by some nursing college managers came up in a study conducted by Poindexter (2013, p. 559) in America. The study indicated that graduate nursing education focuses in specialty roles in clinical practice and clinical research and there is growing concern that these skills are necessary but not sufficient to assume a nurse educator role. The fact that student nurse educators in the context of this study are exposed to practice teaching for a period of only one week (5 days) constitute an unequal link between theory and practice. During this period student nurse educator are expected to develop themselves as pedagogical experts as well as didactical knowledge experts as they engage in a simulated teaching experience.

Purpose of the study

The purpose of the study was to explore and describe the experiences of student nurse educators currently registered for Health Sciences Education in the Bachelor of Curationis (BA Cur) offered in an ODL university in South Africa.

Research objectives

The objectives of the study were to:

- Explore and describe the experiences of student nurse educators regarding the teaching practice workshops, a component of Health Sciences Education.
- To identify strengths and weaknesses of the workshops as experienced by student nurse educators.
- To determine the teaching and learning practices that will enhance the teaching practice workshops.

Research method

Study design

A qualitative, explorative, descriptive and interpretative design was use to understand the experiences of student nurse educators attending the teaching practice workshops. Qualitative research design was compatible with the study's focus because it enables researchers to dig deep into the phenomenon under study with the purpose of describing and understanding the experiences of student nurse educators regarding nursing education practicum (Marshall & Rossman 2011).

Study setting

The study was conducted in South Africa, UNISA and specifically in the Department of Health Studies, one of the biggest department in the College of Human Sciences. The department of Health Studies at UNISA is the only university in SA that provides student nurse education and training programme in an ODL context and is the largest producer of nurse educators in the country.

Study population and sample

The participants in this study were student nurse educators attending the teaching practice workshops between July and August 2018 at the Durban Regional center of UNISA. A total of 32 student nurse educators attended the two workshop sessions (15 and 17 respectively). Nine participants who volunteered to participate were from the July group and eleven from the August group making a total of 20 participants. They were enrolled for the BA Cur degree and registered with the Health Sciences Education module. A non-probability, purposive sampling of student nurse educators attending the teaching practice was used. The sample size was determined based on the fact that these student nurse educators have lived experience of the teaching practice workshops.

Data collection and procedure

Written narratives were used to obtain experiences of student nurse educators during teaching practice. A structured question guide was designed by the researcher and was distributed to all student nurse educators who were willing to participate in the study. The question guide consisted of 3 items:

- What are your experiences of the workshop (from the preparation done by the department, to participants' preparation and during the workshop)?
- What are the strengths and weaknesses of the workshop?
- Which teaching and learning practices could enhance the teaching practice workshops?

Two groups of workshop attendees were met on two different occasions. The first group was met on 13 July 2018 which was the second day of the workshop during their lunch break to avoid disruption of the programme. Briefing on the purpose of the research project, voluntary participation and written consent was provided. The question guide and consent forms were distributed to those willing to participate and were collected on the last day of the workshop so that they were able to capture all workshop proceedings in their narratives. The second round of data collection took place on 15 August and the above-mentioned process was followed. Twenty student nurse educators participated in the study.

Data analysis

Qualitative content analysis was used to allow the researcher to interpret the underlying meanings of the text as suggested in literature (Creswell 2013). Open coding was done and similar codes were categorized together. Themes and sub-themes were developed from the codes.

Ethical considerations

The question guide contained a section that explained the purpose of the study, confidentiality, that participation was voluntary and a section where participants had to sign if willing to participate in the study. To maintain confidentiality participants were requested not to put their names or student numbers in the question guide. Two boxes were provided so that consent forms that bear students signatures were not mixed with question guide to avoid linking question guide the signed consent forms. Ethical approval for the study was obtained from the Higher Degrees Committee of the Department of Health Studies at UNISA as well as the College of Human Sciences (HSHDC/821/2017).

Findings

The raw data from written narratives were studied, analysed by the researcher and categorized into themes derived from three research questions in the question guide. After axial coding was applied to the data, codes sharing the same characteristics were grouped into subthemes and categories were developed and are presented in table 1 below.

THEMES, SUB-THEMES AND CATEGORIES

TABLE 1. Themes, sub-themes and categories

Theme 1	**Sub-themes**	**Categories**
Experiences during the workshop	Orientation	• Information lacks clarity • Online orientation does not give adequate guidance. • Online orientation availability
	Preparations	• Study guide used outdated • No feedback after booking • Lack of support and direction
Theme 2	**Sub-themes**	**Categories**
Strengths/weaknesses of the workshop	Technology Study guide	• Use of PowerPoint • Guides outdated
Theme 3	**Sub-themes**	**Categories**
Teaching and learning practices to enhance workshop	Improved orientation practices	• Technology

THEME 1: Experiences during the workshop

Sub theme 1: Orientation

Seven out of twenty participants shared frustrations that they experience with online orientation provided. The general feeling was that the information lacks clarity, does not give adequate information and video broadcast not available all the times for those not able to attend session.

Supporting verbatim quotes

Participant 1

"The only criticism I have is that I feel that orientation should be clearer so in the future nursing students will be more ready. The lesson plan for the case study maybe should be called Problem solving or indicated."

Participant 5

"I was not happy with the online orientation because I was unable to watch it later that day. As an open distance learning, I feel the online presentations should be available anytime for those who were busy during the presentation time to watch it later."

Participant 11

"It would be better if the orientation is done live not online where students can be able to ask questions and get clarity where they don't understand. Example: personal analogy strategy is not clear what students are expected to do during personal analogy, other than that everything went well.

Participant 14

"There is a strong possibility that we could have performed better if we had orientation and preparation and a practice run before the assessment could be done."

Participant 3

There should be more orientation before the workshops so we can prepare more effectively and efficiently. Unsure of certain things like case study-should be clearer – should state it is "problem solving" was misinterpreted."

Participant 18

"The study guide did not give direct guidelines; some aspects were left update is needed. Feedback for practical sessions booking need attention, letters not receiving us on time to book leave."

Sub-theme 2: Preparation

Participants were asked to share their experiences on the preparation done by the department for the workshop as well as their individual preparation. Mixed responses were gleaned from this sub-theme, some responses were positive and others negative. A small number of participants (8) experienced preparation of the workshop by the department as good and the overwhelming majority viewed it as very poor.

Supporting verbatim quotes (positive)

Participant 12

"The preparation done by the department was very organized. Venue booking, orientation, discussions, online additional resources and interactive broadcast proved highly beneficial with regards to completion of the practical session".

Participant 7

"It was a well prepared practical. I had a wonderful and empowering week My tutor was so insightful and allayed our fears. I had excellent practical session and enjoyed every moment".

Participant 10

"Department preparation was good. We had everything which is part of the presentation and the equipment was available. The small groups, which were formed, help me a lot to get used to present in front of a small group before presenting to a big group. Power point was a little bit challenge but with the help of the facilitator and other fellow students, I acquired the skill."

Participant 15

"Orientation was good. I think more interactive action must be done to students. Decentralize the practical workshops according to centers. Students find it costly to travel far from practical centers to venues. Example have practical's in Richards bay, Durban and so on."

Supporting quotes (Negative)

Participant 16

It was. said we should do bookings via e-mail, fax or post. I did fax mine and I did not get the response from the department. By then I started calling, calling and calling. It seems as if the offices I was calling was closed because not a single day was answered. I sent e-mails, they were not answered. Nevertheless, at the end someone replied to my e-mail and said they are sorry, their fax was not working and no one was informing us. Anyway, it was a part of learning. I am grateful about all the department did for me to give me a chance to be their student."

Participant 2

Nursing education practical's are very strenuous, as you prepare by yourself and there is no good guidance on how to tackle the lesson plans. You have to do a lot of follow up concerning the bookings. Do not get feedback in time for arrangements. The online orientation is not enough as you remain with information that lacks clarity. The study guide that we have used was outdated. Our lecturer made it much simpler for us on the 1st day explaining what was expected of us"

Participant 8

"According to me the UNISA failed to provide conducive environment for us to do practical's. The environment was noisy, poor light and dirty. UNISA still using equipment that is old, the projector is not suitable for new laptops. The students in the campus they were very disturbing wanted to come in by force to take chairs and tables (it was too disturbing for us as students who were doing practical's) Infection control poor, poor. The toilets were very dirty, noticed students using one hand towel to wipe hands (towel roll) not changed it was wet and dirty)

Participant 19
"There was a delay in getting feedback regarding the booking. Although the booking form was sent. There is no help when you phone. The guide is not updated as it says use transparencies. Some students came prepared with the transparencies and had to be sent away as they did not have power point presentations. Nowhere in the guide did it talk about power point. The online interaction did not give much information."

THEME 2: Strengths and weaknesses of the workshop
Sub-themes: Technology and study guide
Participants under theme 2 mainly focused on the use of technology during the workshop as well as the study guide, which is supposed to direct them on how to prepare for the workshop.
Strengths
Some participants hailed the workshop as useful and successful. They reported having acquired skills and confidence in teaching using the power point.
Supporting verbatim quotes
Participant 11
"The lecturer was so knowledgeable, accommodating and respectful. The workshop helped to improve my teaching skills and improve confidence on presentations. Use of power point as technology is improving every day; this gave me opportunity to learn power point and presentation. The whole experience was so fruitful".
Participant 9
"It was good that the institution is up to date with technology. But arrangements should be made for students to be taught on the use of power point".
Participant 12
"Well structured workshop. Tutors good role models".
Participant 10
"I received good constructive feedback. I gained skills, confidence and ease to be a good educator. I gained knowledge and am now empowered to teach and share this knowledge."
Participant 1
"The workshop definitely assists one in getting rid of bad practices that one has taught oneself and adapt the correct guidelines to ensure that we emerge as well trained practical educators."
Weaknesses
The participants also pointed a number of weaknesses; most glaring was poor environmental conditions and the study guide which is very old and outdated. Almost all participants cited the environment that is poor and not conducive to teaching and learning.
Supporting verbatim quotes
Participant 10
"Tutor disorganized, not prepared. No sequence in carrying out workshop. Tutor allows personal view to interfere in students' view e.g. If I decide to present a lesson but the tutor does not like topic, I am asked to change topic because she does not approve of topic. Very poor toilet facilities, dirty, smelly toilets. We pay fees but security complains to hand out toilet paper to students. Classroom not conducive for teaching, dirty dusty, floors not scrubbed, and light bulbs not changed. Poor lighting. White board damaged. Air cons not working."
Participant 15
"One media dominating teaching session- power point. No equipment- have to buy laptop to de presentation. The university must provide venues fully equipped with teaching aids. Tutors must score students based on criteria no other v students- never verify from class the performance strength."
Participant 3
"Study guide outdated and not applicable to certain parts of the workshop. Need orientation on what will be done for the week."
"Information on tutorial letter was not stressing the use of power point as entry to workshop but when we are there is no option about it. For future colleagues I will plead for them that tutorial letter must be updated for what is needed because that turn workshop to be stressful.
Participant 2
"Little /no guidance with preparation of the lesson plans.
Participant 16
"Lack of orientation about the physical layout of the campus. There was no tea time lunch of 5-10 minutes. There was racism. Our lecture was White. Students we were five, 4 blacks and one Indian. The lecture was siding with the Indian being against Black. She was giving Indian lady to comment on the other student's work. Of which was annoying to be facilitated by other students. There was a day where the student (Indian lady) suggested that 2 Black students be fired and book for the practical's in August."
Other weaknesses cited by participants:

- Not all students were assessed in the same way- lecturers each had their own way of assessing students.

- The noise levels and disruption from fellow students not part of the practical's was extremely disruptive.
- The toilets were filthy, no hand paper towels, jumbo fabric roll to wipe hands very unhygienic and poor infection control practices.
- Time allocated for these workshops too short- only 5 days
- All lectures should be approachable and be friendly to students- to reassure them. All lectures must have a standard method of correction and expectations from students.
- The first day there was no classroom for our group- we wasted so much time.
- The study guide is very old and has not been updated hence we are not updated with current information

THEME 3: **Practices that will enhance the teaching practice workshops**
Sub-themes: Improved orientation practices; Technology and Study guide
The researcher sought ideas from participants as important stakeholders of the educational programme as to how nursing education workshops could be enhanced to improve outcomes and to equip them with relevant pedagogical skills so that they become better nurse educators of the future. Two main subthemes emerged, that is, improved orientation practices and use of technology during their preparation for the workshop. What also kept on coming up from the narratives was the urgent need to streamline the study guide for teaching practice (HSE2603) so that guidance provided is effective, current and beneficial

Practices to enhance appropriate orientation
The following are some of orientation practices as quoted verbatim from students' narratives:

- "An orientation day a week before the practical's where corrections are given so students have time to redo or re-prepare their content." Participant1

- "The practice workshop is planned well but time is limited and online orientation should be done on campuses to allow students one on one questions and answers otherwise the whole plan is perfect for me." Participant 11

- "It would be nice to have workshops for orientation of 1-2 days where we would get training on what is expected from us during the practical's." Participant 2

- "Have a skills laboratory so that students can be able to teach (demonstrate). For example, student wants to teach about hand washing there must be at least a tap available." Participant 5

- "I think a little guidance and expectations should be given the day before the lecture. This was done during my session by my lecturer and I found it most beneficial. Colleagues from other groups reported that lecturers were so harsh and critical. This is first time exposure for some and can be very daunting, Lecturers should all be on the same page with regard to expectations, guidance and support. Feedback from previous students and current colleagues were horrific and enough to make a young student "freeze". Participant 1

- "Need more guidance with preparation." Participant 4

- "Demonstration before practical's to be given the chance to learn as we are here to learn." Participant.

Technology related practices
The following regarding technology was suggested

- "To have a teaching session on power point to teach students how to use it." Participant 7, 13
- "Improvement on technical issues during video broadcast live streaming." Participant10

- "Able to use electronic media effectively while teaching Participant 7

- "University to provide equipment for students. We are from disadvantaged backgrounds. Media must be explained to students on how to use it." Participant 15

- "Teaching methods for rural areas and college must also be accommodated. Not every student has access to computer or college for that matter." Participant 9

Study guide review

There was a unanimous call from the majority of participants to urgently update the study guide for nursing education workshops. Some of the assertions were:

- "The study guide must match what is expected on the actual practical session. UNISA uses outdated study guides." Participant 6

- "Study guide to be updated." Participant 13

Discussion

This paper examined experiences of student nurse educators regarding nursing education workshops generally known as teaching practice workshop in general education. The results addressed three research questions namely: share your experiences during the teaching practice workshop, what are strengths and weaknesses of the workshop and what are the teaching and learning practices that can enhance workshops outcomes. Participants in their narrative reports shared both negative and positive experiences.

Positive experiences

Surprisingly and perhaps worryingly, very few students hailed the preparation of the workshop as good and highly beneficial, useful and successful. They viewed orientation as good but suggested that more student/ teacher interaction is needed. They reported having acquired skills and confidence in teaching and in particular using the power point. Participants also acknowledged having received guidance from knowledgeable, accommodating and respectful lectures/ facilitators .(It is worth mentioning that the department of Health Studies employ facilitators as mentors on a contractual basis to assist Health Sciences Education lecturers to run the workshops throughout UNISA regional centers across South Africa).Constructive feedback received from educators assisted in shaping their teaching skills and development of qualities expected from an educator. One of the primary responsibilities of mentors during facilitation of teaching practice workshops is to give guidance on immediate challenges faced by mentee (Lindhard, 2008) as quoted by Mapolisa & Tshabalala (2014, p. 17). The development of confidence as mentioned by participants was also reported in a study conducted by Kyriacou & Stephens (2010, p. 19) which revealed that student teachers acknowledged and celebrated development of confidence that came from the teaching practice experience.

Negative experiences

Findings of the study also revealed that while student nurse educators had positive experiences about the workshops, these were outweighed by the negative experiences with preparation, orientation and assessment during the workshops, outdated study guide and poor preparation for use of technology. Environment according to a number of participants was not conducive to teaching and learning, it was described as filthy, noisy with poor ablution facilities and poor working equipment. According to literature, a conducive environment physical and psychological environment is conducive to effective teaching and learning. Kuncoro & Dardiri (2017, p. 2) a conducive teaching environment helps teacher to do their job and obligations well and wholeheartedly and learners to achieve their educational goals. Study guide for HSE2603 requires urgent update so that it provides appropriate guidance to student nurse educators and orientation need to be properly structured and communicated to all stakeholders (lectures/facilitators and students) so that uniformity is ensured in terms of guidance given to students and outline expectations of the workshop to them. This will ensure maximum support is provided to students. Saricoban (2010, p. 707) propounds that lack of audio visual equipment and other supplementary materials such as internet and course book that is considered to include communicative tasks and activities all negatively affect the outcome of learning and teaching. Participants viewed period of only 5 days as very short. This is true because according to Mokoena (2017, p. 123), practice teaching for student teachers at the same ODL institution under study is organized in block periods of six weeks.

LIMITATIONS

The study provided rich data that the institution understudy including others providing student nurse teacher programmes can use to improve teaching practice for student nurse educators. However, the study was conducted only at one regional center and the findings cannot be generalized to other centers.In addition, the study findings are based on the experiences of 20 participants who volunteered to participate. Other participants who did not participate may have had more positive or negative experiences then those who participated.

CONCLUSIONS

The study yielded a mixed bag of experiences and that not enough orientation was provided to student nurse educators to prepare them effectively for the workshops. The following conclusions were drawn:

- Student nurse educators' experiences of the teaching practice workshop were both positive and negative.
- Support given to student nurse educators was not similar. In some instances limited assistance or no assistance at all was given during teaching practice. Although some facilitators were viewed as very friendly and provided good guidance, others were described as unfriendly, harsh and relied other students for decisions to rate students after lesson presentation. General student supervision was found to be different.
- Environment provided by the university was explained as deplorable and not at all conducive to teaching, learning, and equipment poor.
- Orientation need to be well-planned and online orientation to be accessible whenever required. Study guide and workbook to reviewed as a matter of urgency and aligned to on-line teaching and learning. Currently the study guide and workbook is still talking about transparencies and overhead projectors.

RECOMMENDATIONS

Based on the findings of this study, suggestions were made on how teaching practice could be improved to effectively prepare student nurse educators for their future role as nurse educators. They are as follows:

- Suitable venues that are well equipped with the necessary technological gadgets, away from the mainstream student activities to avoid disturbances and ensure privacy. The teaching practice workshops are provide to professional nurses who are pursuing their studies and I am of the opinion that they should be accorded the necessary respect.
- University contracted facilitators should be continuously empowered and updated so that they are able to provide appropriate guidance, support and supervision during teaching practice.
- Good orientation for both facilitators and student nurse educators cannot be overemphasized. It must stress uniformity with how students should be treated during teaching practice. For student nurse educators, it must be informative, precise and accessible. It should include teaching on the use of PowerPoint.
- Update of the study material.

BIOGRAPHICAL DETAILS

Professor TE Masango is Associate professor at the University of South Africa (UNISA) department of Health Studies who is passionate about nursing education and philosophies. She has been teaching for the past 32 years and has supervised 10 masters and 2 doctoral students to completion.
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Exploring Teacher and Student Perceptions on the Use of Digital Conferencing Tools when Providing Feedback in Writing Workshop

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ABSTRACT
Writing teachers often express they have insufficient time to provide adequate feedback during writing workshop conferences. Existing research has identified the importance of providing feedback to students and acknowledges the difficulty in finding the vast amount of time this requires. Educators have considered using digital tools as a means of solving this dilemma. This study explores the perceptions of teachers and students who used traditional face-to-face conferencing and digital conferencing tools as methods of delivering feedback during writing workshop. Participants from six middle school classrooms used face-to-face conferencing and provided feedback through Screencastify during a writing workshop. A survey of all participants and select interviews were conducted. Both a descriptive and content analysis were performed to examine the ratings and themes identified by the participants. The mean was used to compare the ratings for each conferencing method. An independent-sample *t* test was used to compare the perceptions of teachers and students regarding each conferencing methods' effectiveness and ease of use. The quantitative results indicated that teachers and students found face-to-face conferences and Screencastify conferences to be equally effective and easy to use. The qualitative results identified several advantages and disadvantages for each type of conferencing method. Overall, teachers and students found benefits in each method and indicated that each method might be useful in different circumstances.

Keywords: Writing workshop, student and teacher perception, Digital conferencing tools, Screencastify, Feedback.

INTRODUCTION
Digital tools have provided teachers with the opportunity to forge a new direction in education. Many school districts have capitalized on this change by implementing one-to-one programs which provide every student in a classroom with his/her own digital device (Warschauer & Tate, 2015). This phenomenon has changed the way teachers can provide instruction, communicate with students, and assess students. Teachers must ask themselves new questions when examining their pedagogical practices and the use of technology. When should digital tools be used? Will the use of the digital tools simply offer another way of doing the same old thing? How should digital tools be used to enhance instruction? Teachers must carefully contemplate these questions and determine whether their pedagogical practices would be advanced using digital tools and whether these tools will amplify student learning.

Research by Russell, Bebell and Higgins (2004) identified that schools with one-to-one device programs are using digital devices more in their language arts classes. Students are using their devices as part of a writing workshop. According to writing education experts such as Lucy Calkins, writing workshop is a framework that allows teachers to differentiate their writing instruction and includes the use of conferencing (Feinberg, 2007). Conferencing is necessary; it is when teachers communicate their knowledge of writing and their insights as a writing expert. Most importantly, conferencing must be done in a way that is beneficial to the students (McIver & Wolf, 1999, 56). Conferences are at the heart of writing workshop and provide students with individual feedback that improves students' writing skills. Thus, when finding ways to use digital devices in writing workshop, it is imperative that the quality of its features, such as conferencing, are not impaired.

Ruben R. Puentedura developed the SAMR model which is a framework for incorporating technology into instruction (Hamilton, Rosenberg, & Akcaoglu, 2016). In this model, he suggests that simply substituting technology with what was done before is not the most beneficial use of technology. In the case of writing workshop, substitution would be replacing paper and pencil with typing. The SAMR model suggests that it would be more advantageous to use technology to enhance the writing workshop process.

Digital tools are continuing to evolve. Now, there are apps such as Google Hangouts, YouTube Live, and Screencastify that teachers and students can load onto their digital devices. These apps can be used to make screencasts which "are digital recordings of the activity on one's computer screen, accompanied by voiceover narration" (Thompson, 2012). Teachers are just beginning to use these digital tools to provide audio and visual feedback to their students. Thompson's research asserts that feedback delivered through screencasts provides more in-depth explanations and creates a more personal experience than traditional written comments. His research was conducted in a college-level writing course with students; these results may not pertain to younger students. With all the digital tools available, how can teachers make sure they are taking advantage of technology to provide feedback to students during writing workshop? Indeed, there is much research still needed regarding these new digital tools, especially in the areas of online feedback and video feedback.

Writing workshop has become a common teaching method used in many elementary and intermediate language arts classrooms (Boone, 1996). This instructional model consists of creating a writing environment that encourages students to engage in the writing process with the support of their peers and their teacher (Feinberg, 2007). Students work at their own pace through the process of prewriting, drafting, revising, editing and publishing (Whitaker, 2005). The delivery of a writing workshop may vary by teacher, but it has a general framework. Most workshops begin with a mini-lesson for whole class instruction, work time for writing, conferencing with the teacher, and a sharing time for students to receive peer feedback (Rog, 2010).

Much research has been conducted about writing workshop. This research has demonstrated a positive correlation between writing workshop and students' achievement in writing. Research by Coleman (2000), studied first and second-grade students' writing skills for a year. Teachers assessed the students' growth in writing and determined that at the end of one year, the students had made significant growth in their writing skills. Kelly (2003) had similar findings when he conducted a study at a school in a Delaware which had achieved high writing scores on standardized assessments for three years. After examining the school-wide use of writing workshop, Kelly's study concluded that the workshop model had led to the increased scores. This resulted in writing workshop being adopted as an instructional model to be used throughout the state of Delaware.

The studies aforementioned recognized the value of using writing workshop to help students improve their writing skills. These studies also identified the significance of feedback on achievement, particularly in a writing conference. However, many studies came to the same conclusion that finding enough time for adequate feedback to occur was a problem. If teachers could find timesaving means of providing quality feedback during a writing conference, it would benefit student achievement. It is possible that technology can be used in such a way as to help alleviate the time-consuming nature of conferencing.

METHODOLOGY

This mixed method approach included the use of surveys and interviews to explore the effectiveness and ease of using digital conferencing tools to provide feedback during writing workshop.

This study was conducted at school site in central Illinois. There are approximately 738 students enrolled at research site, which the Illinois Report Card (2015) breaks down into the following categories: Racial/Ethnic Diversity, low-income Students, and Students with Disabilities. The racial/ethnic makeup of this participating school included 67.1% White, 12.7% Asian, 10.7% Black, 4.6% Hispanic, 4.6% Two or More Races, 0.3% Pacific Islander, and 0% American Indian students. It is also recorded that 22.4% of the students come from low-income families, and 10.4% of students have special needs.

The population of this study included the students and teachers of the sixth, seventh, and eighth-grade levels. Quantitative data was gathered from individuals at all three grade levels and included feedback from four sixth grade classes, one seventh grade class, one eighth-grade class, and one special education class. Qualitative data was collected from a subgroup within the sample: participating language arts teachers and six randomly selected students from each classroom.

After participating in conferences teachers and students completed a Likert scale survey using a Google Form. This survey included six questions asking participants to rate the effectiveness and ease of using each of the digital conferencing tools.

Qualitative data was collected using group interviews. All teachers who participated in the study were invited to participate in the group interview. A random sample of the students from participating sixth, seventh, and eighth-grade classes were selected to participate in a group interview. Responses made during the group interview were recorded using a recording device (phone, computer, etc.) and were captured digitally. A word and phrase frequency counter were used to identify a pattern of commonly used words used during the interviews.

Interviews were used to elicit more details about experiences using the digital conferencing tool. The questions used in the interview were open-ended and encouraged teachers and students to elaborate on the advantages and disadvantages to using the digital conferencing tool. The interview questions for the teachers and students have the same intent but were worded slightly different; the student questions were broken down into simpler, single step questions. The following research questions were used to address the perceptions about using digital conferencing tools to provide feedback during writing workshop.

RESEARCH QUESTIONS

The following research questions guided this study:

1. What are teachers' perceptions about the effectiveness and ease of using a face-to-face conference to provide feedback during writing workshop?
2. What are students' perceptions about the effectiveness and ease of receiving teacher feedback in a face-to-face conference during writing workshop?
3. What are teachers' perceptions about the effectiveness and ease of using Screencastify when providing feedback during a writing workshop conference?
4. What are students' perceptions about the effectiveness and ease of receiving teacher feedback in Screencastify during a writing workshop conference?

DEFINITION OF TERMS

Some terminology was consistently used throughout this research and, therefore, is briefly defined.

- Writing workshop is a model for structuring classroom instruction in an authentic, meaningful way. Although every writer's workshop is bound to look different, they generally include a mini lesson, time for individual writing, and the sharing of written work (Peha, 2003). Conferencing between peers, or between teacher and student, often occurs as part of the shared time of writer's workshop. This is a time for an individual student to receive feedback regarding their writing: style, flow, grammar, spelling, et cetera (Peha, 2003).
- Screencastify is an application that allows screencasting. During screencasting, users can provide audio-visual feedback to others while displaying what is on the user's computer screen.

RESULTS

The purpose of this study was to explore the perceptions teachers and students had about the use of digital conferencing tools to provide feedback during a writing workshop conference. Teacher and student impressions about the traditional face-to-face conference were compared to the use of Screencastify.

RESEARCH QUESTION ONE

The first research question was designed to determine teachers' perceptions about the effectiveness and ease of using a face-to-face conference to provide feedback during writing workshop.

The data revealed as shown in Table 1 that 71% of teachers had a positive perception of the effectiveness of this type of writing workshop conference. Descriptive analysis showed a mean of 4 and a standard deviation of approximately 0.82. Overall, the data shows that the participating teachers had a positive perception of the effectiveness of conducting face-to-face conferences during writing workshop.

With respect to the ease of face-to-face conferencing the data shows that 86% of teachers had a positive perception of the ease of this type of writing workshop conference. Descriptive analysis showed a mean of 4.14 and a standard deviation of approximately 1.46 (Table 1). Overall, the data shows that the participating teachers had a positive perception of the ease of conducting face-to-face conferences during writing workshop.

Table 1. Teachers' perceptions regarding the effectiveness and ease of using face-to-face conferences to provide feedback

Survey questions	Ratings		
	Negative	Neutral	Positive
The effectiveness of providing feedback to students using a face-to-face	0%	29%	71%
The ease of using face-to-face conferences to provide feedback to students	0%	14%	86%

In addition, teachers identified many advantages and disadvantages to using face-to-face conferences. Three main themes emerged: the ability to ask students questions, the value of a back and forth conversation, and the use of positive feedback. Several teachers shared that they gained valuable information when they were able to ask questions and have a conversation with the student about their writing. These conversations were a formative assessment and a chance to determine what students needed help with to improve their writing. The teachers also agreed they were more likely to provide positive feedback in their words, tone, and nonverbal responses.

The teachers also acknowledged there were some disadvantages when using a face-to-face conference. The themes that emerged included, distractions, quality of feedback, time, and room. The teachers recognized that the classroom environment often causes distractions which can reduce the quality of the feedback. These distractions may keep the students from listening to the feedback or they may cause the teacher to lose their train of thought. In addition, if a teacher needs to correct a distraction in the classroom, they may be pulled away from the conference. Teachers also discussed the tendency to not have enough time to provide a quality conference to each student. Some teachers remedy this by having short conferences, while other teachers focus on having conferences with students who demonstrate a greater need for the conference. Lastly, teachers shared that some classrooms do not have a lot of space and make having a face-to-face conference cumbersome. Kneeling next to a student isn't very comfortable and tends to make the conference shorter.

RESEARCH QUESTION TWO

The second research question was designed to determine students' perceptions about the effectiveness and ease of receiving teacher feedback in a face-to-face conference during writing workshop.

The data revealed as shown in Table 2, that 82% of students had a positive perception of the effectiveness of receiving this type of feedback during a writing workshop conference. Descriptive analysis showed a mean of 4.32 and a standard deviation of approximately 0.77. Overall, the data shows that the participating students had a positive perception of the effectiveness of face-to-face conferences during writing workshop.

With respect to the ease of face-to-face conferencing the data shows that 80% of students had a positive perception of the ease of receiving this type of feedback during a writing workshop conference. Descriptive analysis showed a mean of 4.27 and a standard deviation of approximately 0.86 (Table 2). Overall, the data shows that the participating students had a positive perception of the ease of face-to-face conferences during writing workshop.

Table 2. Students' perceptions regarding the effectiveness and ease of using a face-to-face conference to provide feedback

Survey questions	Ratings		
	Negative	Neutral	Positive
The effectiveness of providing feedback to students using a face-to-face	0%	18%	82
The ease of providing feedback to students using a face-to-face	4%	16%	80%

Further, students recognized several advantages and disadvantages of using a face-to-face conference. Three main themes emerged: better quality and detailed feedback, conversational feedback, and the use of positive feedback. Several students shared that when they could have a conversation with the teacher, they were able to ask specific questions to meet their needs. They believed this provided them with better quality and more detailed feedback to help improve their writing. The students also felt their teacher tried to provide positive feedback during their conference. This was noted in the teacher's word choice, tone, and facial expressions.

The students also acknowledged there were some disadvantages when using a face-to-face conference. The following themes emerged during the discussion: distractions, feedback not as effective, forgetting feedback, teacher not able to conference with everyone, and intimidation. The students recognized that the classroom environment often causes distractions which can reduce the quality of the feedback. These distractions interfered with the students' ability to hear and comprehend the information the teacher was sharing during the conference. Students also noted that since there was no written record of the feedback, they often forgot the feedback and what they should be doing to improve their writing.

Another common statement was the frustration of not getting a writing conference. Students expressed the frustration of raising their hand and seeing that the teacher didn't have time to get to their questions. They also felt that this made the teacher feel rushed as the conferences that were taking place, which made the teacher hurry and perhaps not provide as good of feedback. Finally, several students made comments relating to eavesdropping and privacy. When a teacher is having a face-to-face conference, the information being shared is often heard by others in the class. Some students reported that this intimidated them and discouraged them from asking questions or seeking help.

RESEARCH QUESTION THREE

The third research question was designed to determine teachers' perceptions about the effectiveness and ease of using Screencastify when providing feedback during a writing workshop conference.

The data shows that 72% of teachers had a positive perception of this type of writing workshop conference. A descriptive analysis was performed, uncovering a mean of 3.7 and a standard deviation of approximately 0.95 (Table 3). Overall, the data shows that the participating teachers had a positive perception of the effectiveness of using Screencastify during writing workshop. Moreover, 72% of teachers had a positive perception of the ease of using Screencastify. A descriptive analysis was performed, uncovering a mean of 4 and a standard deviation of approximately 1.16 (Table 3). Overall, the data shows that the participating teachers had a positive perception of the ease of using Screencastify during writing workshop.

Table 3. Teachers' perceptions regarding the effectiveness and ease of using Screencastify to provide feedback

Survey questions	Ratings		
	Negative	Neutral	Positive
The effectiveness of providing feedback using Screencastify	14%	14%	72%
The ease of using providing feedback Using Screencastify	14%	14%`	72%

Teachers pointed out several advantages and disadvantages using Screencastify conferences. There were three main themes that emerged: time to have more conferences, the ability to provide quality feedback, and feedback could reflect a positive tone. During the interview, the teachers discussed the value of having time to do more conferences and the time it takes to conduct a quality conference. Several teachers felt that the feedback they provided on Screencasting was generally more thought out and thorough. Since the Screencasting was conducted outside of the language arts classroom, teachers found they were able to conduct more conferences overall. Teachers also felt they could be animated and positive in their screencasts which would help the students feel that the feedback was more positive.

The teachers also acknowledged that there were some disadvantages when using Screencastify for conferences. The following themes emerged during the discussion: background noises during recording and the lack of back and forth conversation. The teachers shared the issues they had with background noises when they were recording their screencast. One teacher's computer was very noisy, which caused problems with the recording

process. Others discussed problems with dogs barking or the realization that they were saying "um" and "uh" repeatedly. This caused the teachers to re-record several times, until they decided that the screencasts didn't have to be perfect. The teachers again explained the dilemmas that occur when there is no back and forth conversation with the student. The teachers brainstormed what it would be like to have the students respond with their own Screencastify to the teacher. However, the teachers didn't feel like this would be much better since it would not create a *real-time* conversation.

RESEARCH QUESTION FOUR

The fourth research question was designed to determine students' perceptions about the effectiveness and ease of receiving teacher feedback in Screencastify during a writing workshop conference.

The data revealed that 82% of students had a positive perception of the effectiveness of receiving this type of feedback during a writing workshop conference. Descriptive analysis showed a mean of 4.14 and a standard deviation of 1.05. Overall, the data shows that the participating students had a positive perception of the effectiveness of receiving feedback using Screencastify during writing workshop. In addition, the data indicated that 84% of students had a positive perception of the ease of receiving this type of feedback during a writing workshop conference. Descriptive analysis revealed a mean of 4.16 and a standard deviation of 0.95 (Table 4). Overall, the data shows that the participating students had a positive perception of the ease of receiving feedback through Screencastify during writing workshop.

Table 4. Students' perceptions regarding the effectiveness and ease of using Screencastify to provide feedback

Survey questions	Ratings		
	Negative	Neutral	Positive
The effectiveness of providing feedback using Screencastify	7%	11%	82%
The ease of using providing feedback Using Screencastify	5%	11%`	84%

Students noted numerous advantages and disadvantages for of using Screencastify conference. There were four themes that emerged: better quality feedback, better understanding of what to do with the feedback, feedback was not intimidating, positive feedback was provided. Students acknowledged that they liked the idea of working with new technology. They also found several benefits from using Screencastify. Resoundingly, they felt that the feedback the teachers provided was better feedback and they understood how to use the feedback. Students elaborated by sharing that they felt like the teachers weren't as rushed on the screencast and that the information they provided was more detailed. In addition, they preferred seeing their own document and having the teacher use the pointer to show exactly where they were providing the feedback. The ability to put in headphones and be the only person to hear the feedback from the teacher was also preferred. Several students shared that they enjoyed hearing their teacher's comments and the tone in the teacher's voice as they were providing the comments. They felt the tone was positive and helpful. The tone and privacy of the comments made the students feel less intimidated to receive the feedback on their writing.

The students also acknowledged there were some disadvantages when using Screencastify. The following themes emerged during the discussion: distracting noises, feedback took longer to use, and no back and forth conversation. The students noticed the distracting background noises that the teachers mentioned in their interview. Some students found the noises interesting and focused on trying to figure out what was making the noise, instead of focusing on the feedback. The students also didn't like the amount of time it took to use the feedback provided with Screencastify. The students felt the teachers were providing a lot more information and, thus, they had a lot more to correct. They also found having to pause the recording, fix the problem, and then continue the recording a little cumbersome. Finally, the students also recognized the lack of back and forth conversation with the teacher. They said they like being able to ask the teacher a question when they have it, rather than having to wait.

DISCUSSION

The purpose of this study was to explore the perceptions teachers and students have when using digital conferencing tools to provide feedback during a writing workshop conference. This included what teachers and

students perceived as the advantages, disadvantages, concerns, and suggestions surrounding the use of Screencastify as compared to traditional face-to-face conferencing.

FACE TO FACE CONFERENCING

Overall, the data suggests that teachers and students had similar perceptions regarding the use of face-to-face conferencing. The outcome of the survey showed that the perceptions of both teachers and students was positive regarding both the effectiveness and ease of using face-to-face conferencing, although there was some variance in the data. While a minimal amount of previous quantitative data was found on this topic, the results obtained as part of this research corresponded with the qualitative data collected during the group interviews.

Teachers and students both discussed the importance of having a conversation when providing and receiving feedback during a writing conference. The consensus among teachers was that a back and forth conversation made the conference more productive and authentic. Some teachers felt better equipped to provide feedback when stopping at a student's desk. They believed a conversation was an easy way to assist students in improving their writing. In addition, having a conversation in real-time provided feedback based on what the students were currently working on and thus made the information more valuable to the students. Past research supports this belief. Kelley (2003) noted that conferencing is most beneficial when it is a conversation between the teacher and student, with both parties listening and speaking.

Many students also expressed the value of having a conversation during the face-to-face conference. One student noted that when they had a conversation with the teacher, "I could ask questions about the comments the teacher provided and get quick answers." The importance of this type of response was also articulated in research conducted by Algrim (2013) which identified that students "crave immediate feedback" from their teachers. Students also asserted that conversations provided an opportunity to ask questions about the feedback they received. A student explained, "I can have a conversation between me and my teacher instead of just listening to what they are saying or reading what they typed and then trying to fix my writing." Students' statements revealed that they also valued the real-time conversation. Many comments related to discussing what they are currently working on and receive feedback on that instead of getting feedback from their teacher on something they worked on a couple days ago. It was obvious from the comments of both students and teachers that the ability to have a conversation when providing and receiving feedback was considered very valuable.

While teachers and students acknowledged the benefit of having a conversation during a face-to-face conference, they also recognized the amount of time it requires. Most teachers expressed frustrations regarding trying to meet with all the students who needed assistance. This obstacle was well documented in prior research as well. Research by Algrim (2013), Christopher, Ewald, and Giangrasso (2000) and Smithson (2008) concluded that writing conferences are valuable, but time-consuming, and result in teachers having very limited time to confer with students. A few teachers shared that due to time constraints, they often must choose which students to spend their time with during class. This may mean that students who struggle more in writing receive more feedback and time from the teacher than students who tend to do well.

Students also expressed frustration about the lack of time to meet with their teacher. As noted earlier in Algrim's (2013) research, students "crave immediate feedback." Thus, it was not surprising when several students echoed the frustrations of raising their hand to meet with their teacher only to find themselves having to wait. One student summarized the problem as, "If you're one of the people waiting for the teacher, then you end up waiting for a long time. The teacher might get sucked into a conversation while there are other kids waiting. Finally, you just give up." Another student added, "Or even worse, you wait forever and then the teacher begins walking toward you. Then, someone suddenly puts their hand up in front of yours and steals the teacher away from you." The anger and resentment in not getting help in a timely manner was tempered with students understanding that the teachers were trying to get to all the students. They realized this was a flaw in the conferencing method instead of a problem with the teacher.

SCREENCASTIFY FEEDBACK

Overall, the data suggests that teachers and students had similar perceptions of both the effectiveness and ease of conferencing using Screencastify. The perceptions tended to be relatively positive, although there was some variance in the data.

Teachers and students found a variety of advantages and disadvantages to using Screencastify to provide and receive feedback during a writing workshop. During the interviews, teachers and students stressed the importance of having a conversation during conferences. Both groups felt the best conversations took place during the face-to-face conferences. Losing the back and forth of comments and the ability to ask and answer

questions in real-time was a definite disadvantage of Screencastify. One student described it by saying, "You can't just talk to the teacher and explain to them why you did something, and you also can't ask them questions." One student did note that it was possible for the students to use Screencastify to send a screencast back to the teacher. This fact surprised several of the students; however, they still felt this would take too much time to do and then they would still have to wait for a response.

Teachers and students did appreciate the fact that teachers could provide feedback more frequently because of Screencastify. The dilemma of having many students to conference with and not enough class time to do it in was not a problem with Screencastify. Teachers were able to create the screencast outside of class and give students a link to watch and listen to the feedback. Since conferencing was no longer confined to just class time, teachers and students felt that more conferences could be conducted, thus providing students with more feedback. This finding could provide a new understanding of how to deal with the obstacles created by time-consuming conferences as note in Smithson's (2008) research. Smithson noted a need for studying time-saving measures when using the workshop model. Screencastify could provide an answer to this problem.

With respect to the positive nature of Screencastify conferences, several teachers expressed that they could share their excitement for what the student wrote during a Screencastify and provide more positive comments. One teacher explained this by saying,

> Writing is such a personal thing – you're sharing your inner thoughts and your words with the reader. I know I get so busy in the classroom trying to bounce around to everyone that my love for the student's writing doesn't necessarily show through. Instead, I am all business trying to quickly get through as many conferences as possible. But when I used Screencastify to provide my feedback, I found myself laughing, and smiling, and expressing my interest and appreciation for what they student had written. I felt more positive about that type of conference and I think the student did too.

This thought was echoed by many of the teachers. Indeed, the students did feel that conferences provided with Screencastify were generally more positive and less intimidating. Several students shared they felt more comfortable receiving feedback through Screencastify. They noted that there were more positives provided during a screencast and as one student stated, "I could hear the tone and emotion in my teacher's voice which helped me understand that the comments were not mean, but meant to be helpful instead." Several students also shared that they felt more comfortable getting the feedback through Screencastify. The student explored this thought by sharing that they could get the information without the awkward or intimidating feeling of having to look at you teacher and hearing them tell what they need to work on. They also appreciated that feedback provided with Screencastify was private. They wouldn't feel the embarrassment of other people hearing about their errors like they do in face-to-face conferences.

Both teachers and students believed that the Screencastify conference provided quality feedback. Several teachers shared that during the creation of the screencast, they didn't feel as rushed as they had with the face-to-face conferences. They were able to spend more time thinking and talking through the feedback without any interruptions. Subsequently, this created detailed feedback that included asking students questions to promote thinking.

Students also noticed the thorough feedback provided when their teacher used Screencastify. They felt they received "a lot more detail and good information." One student shared, "My teacher really told me what they liked and why they like it instead of just saying *Good Job*." The students agreed that the teachers could spend time explaining what was wrong so they could fix their writing and make it better. An eighth-grade student explained,

> During face-to-face conferences, the teacher is too busy because she has lots of kids to get to, so you don't get a good quality analysis with that type of conference. But with Screencastify, I get so much more and better-quality comments from her because she isn't so rushed.

This finding supports previous research by Thompson (2012), who asserted that feedback delivered through screencasts provides more in-depth explanations and creates a more personal experience than traditional written comments.

Most students agreed that using the feedback from a Screencastify conference required more time than using other conferencing methods. Students found that they were revising and editing their writing as they were going through a screencast. They weren't sure if this made it just feel like it took longer, or if it took longer. One student explained, "It can be kind of annoying to use Screencastify because you have to pause it, fix your writing, unpause, and do that over and over again." Other students shared that using the feedback in

Screencastify took more time because the teachers were providing more feedback than they did with the other conferencing types. It was interesting to note, that even though the students felt it took more time to use the feedback, none of the students reported ignoring the feedback, as they had with the other two conferencing types. This is similar to the results Lunt and Carran (2010) reported in their research. They found that students were "ten times more likely to open audio feedback than written feedback" (as cited in Leibold & Schwarz, 2015, p. 43).

While students may have found using the feedback from Screencastify more cumbersome, they reported that they had a better understanding of the feedback when the teacher used Screencastify. During the interviews, several students shared that the combination of: seeing their writing on the screen, watching the pointer moving around on their writing, and hearing their teacher elaborate on comments, really helped them understand how to improve their writing. They also noted that with Screencastify, they were able to listen to the feedback repeatedly until they completely understood what the teacher was saying. One student shared, "If my mind started to wander during a face-to-face conference, I would have missed the information, but if that happened during Screencastify, I could just go back and listen to it again." Others shared that hearing and seeing the feedback helped them stay focused and understand the feedback better.

One of the implications from the research is to help teachers consider which type of conferencing method to use based on the type of feedback necessary at the time. This study and past research indicated the difficulty with finding enough time to conduct a conference in class. The research also determined that having a conversation created the most effective feedback. Thus, teachers may want to examine what type of feedback a student needs as they are looking over a student's writing. If the student is at the beginning stages of their writing piece and appears to be on track, then perhaps a face-to-face conference is not necessary and using a digital tool would be a better, time-saving option. However, if the teacher is confused by the student's writing or notices that they need significant help, using a face-to-face conference might provide better feedback. Teachers can save class time for conferences that would be best served through a face-to-face conversation, and then provide feedback to the remaining students using digital tools outside of class time. Organizing conferences in this manner would be a better use of the teacher's time and could provide a solution to the overall dilemma of conferencing.

Finally, it would be beneficial to learn whether a student's academic ability, social-emotional needs, or learning style would impact the effectiveness of a conferencing method. This information might compel teachers to adjust the conferencing method to one best suited for the student. Thus, combining further research with this study can provide a better overall perspicacity of how teachers can provide feedback in a way that is most beneficial to student learning.

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Investigation of the Relationship between Facebook Addiction and the Level of Free Time Satisfaction of the Recreation Department Students

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ABSTRACT
The purpose of this study is to examine the relationship between recreation department students' Facebook addiction and free time satisfaction levels and to determine whether they differ according to certain variables. 212 Turkish students, 108 males and 104 females studying at the Faculty of Sport Sciences Recreation Department in the 2018-2019 academic years, were included in the study. As the data collection tool, the personal information form prepared by the researcher, "Facebook Addiction Scale (FAS)" developed by Çam and İşbulan (2012), and "Free time Satisfaction Scale" (FTSS) developed by Bearli and Ragheb (1980) and adapted in Turkish by Karlı et al. (2008)"were used. Descriptive statistics, independent groups t-test, one-way analysis of variance (ANOVA) and Pearson correlation tests were used in order to analyze the data. When the findings of the research are examined; there was no significant difference between Facebook Addiction and Free Time Satisfaction Scale sub-dimensions according to gender, age and monthly family income variables (p> .05). Among the findings, only a significant difference was found in the "daily free time period" variable in the FTSS "relaxation" sub-dimension (p <.05), and no significant difference was found in the other sub-dimensions and Facebook addiction level (p> .05). In conclusion, while there is no significant relationship between recreational department students' Facebook addiction and free time satisfaction levels (p> .05), it can be said that student' free time satisfaction levels do not influence the level of addiction towards Facebook usage.
Keywords: Recreation department students, Facebook addiction, Free time Satisfaction

INTRODUCTION
Today, there is a difference in time management with the ever-evolving technology, and concrete activities regarding effective and efficient evaluation remain in the background, and an intense change occurs for individuals to use the Internet and social network. Particularly, the sharing made for socialization and education in the virtual environment increases the interaction between individuals and reveals the importance of the social network. A large part of social networking or media applications are the methods of finding and using important points which will attract individuals.

Social networking is used to maintain existing offline relationships or support offline connections and to meet new people (Hergüner, 2011). Social networking sites are primarily based on friendship, relationships, interests and activities. Social networking sites are not only comprised of family and friends, but also links between teachers, school staff, neighbors, and society (Kwon and Wen, 2010; Çam and İşman, 2012). In addition, the use of the Internet and social networks for field education also facilitates individuals' rapid spreading knowledge and writing skills and learning motivation (Yaman, 2008). Therefore, the use of social networks is becoming widespread and several social networking websites come to the fore in this regard.

Founded in 2004, Facebook has gained an important role in this regard by becoming one of the world's leading social networking sites. Although it remained mostly within the academic community in 2005, it reached its general masses in 2006 by reaching its current qualifications. In the second quarter of 2016, it has been announced that the social media giant Facebook has more than 1 billion active users (Gulec, 2018). Its main purpose is to enable you to interact with people you know in real life. Facebook is used more frequently by users aged between 18 and 25. The main reason why Facebook usage is so common is seen as the entertainment and psychological benefits it provides to its users (Kim & Lee, 2011).

Facebook has become the most widespread social networking site in the world today and its use has become widespread all over the world. The use of Facebook has become an activity which is particularly popular among young people. Young people now spend most of their time on Facebook (Hacıefendioğlu, 2010). Facebook provides maintaining existing friendships rather than expanding the circle of friends, especially among university students. However, it is seen that the user thinks that they control the information about themselves and therefore their limits are defined, and surveillance of friends rather than sharing is at the forefront (Şener, 2009).

Therefore, Facebook users now have the opportunity to perform most of their real-life activities in a virtual environment.

In addition, in some studies conducted on university students in our country, it was found that Facebook is the most used among social networks (Öztürk & Akgün, 2012; Göker, Demir & Doğan, 2010) and the frequency of using Facebook is high. (İşman and Hamutoğlu, 2013; Öztürk & Akgün, 2012; Göker, Demir & Doğan, 2010). There are many reasons why Facebook's rate of being preferred is so high (İşman and Albayrak, 2014).

Facebook provides its users with a rich variety of virtual environments. In addition, the frequent use of Facebook of university students takes place mainly in free time and enables them to interact with their environment. Therefore, the use of Facebook as part of leisure activities influences the level of happiness and satisfaction on university students and positively affects the level of satisfaction by revealing the concept of leisure time.

Free time concept involves good use of time; as well as enabling the person to express themselves, developing their creativity, gaining new experiences, developing social environment and increasing productivity. The wise use of free time is a result of development and education (Kılbaş, 2004). When leisure time activities are evaluated in terms of social, psychological, cultural and education, they can directly affect work efficiency and sports performance (Yaşartürk & Aydın, 2020). In addition, efficient usage of free time activities will affect the education and training process, and will provide experience and gains in university students' self-confidence, academic achievement and satisfaction levels (Yaşartürk, 2020).

Leisure time activities can bring positive effects not only to the individual but also to group activities. (Lloyd and Auld, 2002). The concept of satisfaction develops as a result of positive perceptions in leisure activities (Beard & Ragheb, 1980) and is assessed as an indicator of the degree of satisfaction towards meeting the individual's needs (Rojek, 2013).

The concept of free time satisfaction is defined as positive emotions that individuals acquire as a result of meeting their individual needs at the end of free recreational activities (Siegenthaler and O'Dell, 1998). Free time satisfaction is expressed as satisfaction or emotions gained as a result of free time activities and preferences of positive perceptions (Beard and Ragheb, 1980).

In this process, the students of the recreation department, which is the study area of the university students and especially the education process, comes to the fore. Recreation department students, who are in theoretical and practical training, receive training for effective usage of free time, especially for sports and entertainment activities. In addition, the students of the Recreation Department attain gains for the development of leisure activities on individuals and continue their evaluation processes in the most efficient way. In the light of this information, the aim of the research is to examine the relationship between the Facebook addiction and leisure time satisfaction levels of the students of the recreation department and to determine whether they differ according to some variables.

METHOD

Model of the Study

In the research, "Descriptive and Relational Screening Model" were used in accordance with the research objectives. Descriptive screening models are defined as the screening arrangements made on the whole universe or a group of samples or samples to be taken from it in order to make a general judgment about the universe in a universe consisting of many elements. (Karasar, 1994). Relational scanning models; are research models which aim to determine the presence and / or degree of co-exchange between two and more variables (Karasar, 2017).

Study Group

The research group is composed of 212 Turkish students, 108 males and 104 females studying in the Faculty of Sport Sciences Recreation in the 2018-2019 academic years.

Data Collection Tools

The research group is composed of 212 Turkish students, 108 males and 104 females studying at the Faculty of Sport Sciences, Recreation Department in the 2018-2019 academic years.

Facebook Addiction Scale (FAS)

The Facebook Addiction Scale used in the research was developed by Çam and İşbulan (2012) and consists of a single-factor structure. The load values of the 19 items in the scale ranged from 0.57 to 0.73, and it was found to consist of 19 items and a single factor. As a result of the confirmatory factor analysis performed later, the factor

load varies between .55 and .77 for Facebook Addiction. The total internal consistency coefficient of the Facebook Addiction scale with 19 items was found as .93.

Free Time Satisfaction Scale (FTSS)

The Free Time Satisfaction Scale used in the research was developed by Beard and Ragheb (1980) and its Turkish adaptation was made by Karlı et al. (2008). The measurement tool consists of 39 items and six sub-dimensions (psychological, educational, social, relaxation, physiological and aesthetic). In the evaluation of the expressions in the scale, a 5-point Likert-type scale was used. In the Turkish validity and reliability study of Free Time Satisfaction scale, the total internal consistency coefficient is .92 for psychological sub-dimension, .86 for educational sub-dimension, .84 for social sub-dimension, .82 for relaxation sub-dimension, 79 for physiological sub-dimension, and .82 for aesthetic sub-dimension. This situation is in harmony with the internal consistency coefficients (Table 1.) made in the present study and it was determined to be reliable in its application.

Data Analysis

In the analysis of the data, along with descriptive statistics, the distribution of variables by groups were examined, since the parametric assumptions were met, independent groups t-test and one-way variance analysis (ANOVA) were used. The source of the difference was determined by the Tukey test. Pearson Correlation Analysis was applied to reveal the relationship between free time satisfaction and Facebook addiction. The significance level was accepted as 0.05 for statistical analysis and 0.01 only for correlation analysis.

Table 1. Free time satisfaction and Facebook addiction scale internal consistency coefficients

	Cronbach alpha
Psychological	.92
Education	.92
Social	.90
Relaxation	.87
Physiological	.89
Aesthetic	.90
FREE TIME STATISFACTION (FTS)	.97
FACEBOOK ADDICTION (FA)	.77

FINDINGS

Findings related to the examination of the relationship between recreation students' free time satisfaction and Facebook addiction are presented below.

Table 2. Demographic Features of Recreation Students

(N=212)		**n**	**%**
Gender	Male	108	50,9
	Female	104	49,1
Age	18-21	136	64,2
	22-25	76	35,8
Family Monthly Income	1000-2000	89	42,0
	2001-3000	65	30,7
	3001-4000	30	14,2
	4001 and above	28	13,2
Daily Free Time	2-3hours	35	16,5
	4-6 hours	70	33,0
	7 hours and above	107	50,5
Adequecy of Free Time	Insufficient	57	26,9
	Somewhat sufficient	70	33,0
	Sufficient	85	40,1
Doing Sports Actively	Yes	166	78,3
	No	46	21,7

Table 2 shows that 50.9% of the students are male and 49.1% are female, the majority of the students are in the 18-21 age range (64.2%), the average family monthly income is 1000-2000 (42.0%), daily free time is an average of 7 hours or more (50.5%), those who find free time sufficient (40.1%) and do active sports (78.3%) are higher.

Table 3. Recreation Students' Free Time Satisfaction and Facebook Addiction Levels

	N=(212)			
	$\bar{x}$	sd	Min	Max
Psychological	31,07	7,35	9,00	40,00
Eğducation	35,35	7,94	9,00	45,00
Social	30,66	6,76	8,00	40,00
Relaxation	15,82	3,60	4,00	20,00
Physiological	23,05	5,35	6,00	30,00
Aesthetic	15,70	3,93	4,00	20,00
FREE TIME SATISFACTION (FTS)	151,65	31,69	46,00	195,00
FACEBOOK ADDICTION (FA)	59,71	10,89	29,00	99,00

When the leisure time satisfaction levels of the recreation students are examined in Table 3, it is seen that the recreation students have the highest average in the relaxation sub-dimension (15.82 ± 3.60). When the averages are analyzed in general, it is seen that the recreation students' free time satisfaction levels (151.65 ± 31.69) and facebook addiction levels (59.71 ± 10.89) are at a moderate level.

Table 4. Comparison of Recreation Students' Free Time Satisfaction and Facebook Addiction Levels according to Gender

	Gender	n	$\bar{x}$	sd	t	p
Psychological	Male	108	30,72	7,74	-,702	,483
	Female	104	31,43	6,95		
Education	Male	108	34,97	8,06	-,704	,482
	Female	104	35,74	7,82		
Social	Male	108	30,64	6,69	-,047	,963
	Female	104	30,68	6,87		
Relaxation	Male	108	15,75	3,58	-,291	,771
	Female	104	15,89	3,64		
Physiological	Male	108	22,97	5,27	-,220	,826
	Female	104	23,13	5,46		
Aesthetic	Male	108	15,65	4,01	-,188	,851
	Female	104	15,75	3,85		
FTS	Male	108	150,70	32,29	-,443	,658
	Female	104	152,63	31,17		
FA	Male	108	59,30	10,53	-,559	,577
	Female	104	60,13	11,29		

The results of the t-test performed to test the free time satisfaction levels of the recreation students according to gender revealed that there was not a statistically significant difference according to gender in psychological, [t (210) =, 483; p> 0.05], education [t (210) =, 482; p> 0.05], social [t (210) =, 963; p> 0.05], relaxation [t (210) =, 771; p> 0.05], physiological [t (210) =, 826; p> 0.05], aesthetic [t (210) =, 851; p> 0.05] sub-dimensions and free time satisfaction levels [t (210) =, 658; p> 0.05]. Similarly, students' Facebook addiction levels did not display s statistically significant difference according to gender [t (210) =, 577; p> 0.05].

Table 5. Comparison of free time satisfaction and Facebook addiction levels of recreation students according to age

	Age	n	$\bar{x}$	sd	t	p
Psychological	18-21	136	31,05	7,65	-,051	,959
	22-25	76	31,11	6,84		
Education	18-21	136	35,35	8,03	,010	,992
	22-25	76	35,34	7,81		
Social	18-21	136	30,57	7,07	-,250	,803
	22-25	76	30,82	6,22		
Relaxation	18-21	136	15,88	3,76	,332	,740
	22-25	76	15,71	3,33		
Physiological	18-21	136	22,74	5,67	-1,127	,261

	22-25	76	23,61	4,72		
Aesthetic	18-21	136	15,69	3,94	-,034	,973
	22-25	76	15,71	3,94		
FTS	18-21	136	151,29	32,98	-,219	,827
	22-25	76	152,29	29,43		
FA	18-21	136	59,46	11,11	-,436	,663
	22-25	76	60,14	10,55		

The results of the t-test performed to test the free time satisfaction levels of the recreation students according to age, showed that there was not a statistically significant difference in psychological [t (210) = -, 051; p> 0.05], education [t (210) =, 010; p> 0.05], social [t (210) = -, 250; p> 0.05], relaxation [t (210) =, 332,771; p> 0.05], physiological [t (210) = -1,127; p> 0.05], aesthetic [t (210) = -, 034; p> 0.05] sub-dimensions and free time satisfaction levels [t (210) = -, 219; p> 0.05] according to age. Similarly, students' level of Facebook addiction did not differ significantly according to age [t (210) = -, 436; p> 0.05].

Table 6. Comparison of recreational students' free time satisfaction and Facebook addiction levels according family monthly income

	Family Monthly Income	n	$\bar{x}$	sd	F	p
Psychological	1000-2000	89	29,96	7,53	1,389	,247
	2001-3000	65	31,74	7,45		
	3001-4000	30	31,33	6,48		
	4001 and above	28	32,79	7,27		
Education	1000-2000	89	35,48	7,51	,282	,838
	2001-3000	65	35,11	9,12		
	3001-4000	30	34,53	6,86		
	4001 and above	28	36,36	7,67		
Social	1000-2000	89	30,80	6,39	,275	,843
	2001-3000	65	30,54	7,43		
	3001-4000	30	29,83	6,25		
	4001 and above	28	31,39	7,10		
Relaxation	1000-2000	89	15,76	3,59	,150	,929
	2001-3000	65	15,86	3,77		
	3001-4000	30	15,57	3,39		
	4001 and above	28	16,18	3,60		
Physiological	1000-2000	89	23,08	4,76	,270	,847
	2001-3000	65	22,86	6,06		
	3001-4000	30	22,67	5,73		
	4001 and above	28	23,82	5,16		
Aesthetic	1000-2000	89	15,60	3,57	,296	,828
	2001-3000	65	15,80	4,04		
	3001-4000	30	15,30	4,89		
	4001 and above	28	16,21	3,76		
FTS	1000-2000	89	150,67	29,76	,326	,806
	2001-3000	65	151,91	34,75		
	3001-4000	30	149,23	29,97		
	4001 and above	28	156,75	33,09		
FA	1000-2000	89	60,55	10,45	,321	,810
	2001-3000	65	59,28	11,27		
	3001-4000	30	59,07	12,07		
	4001 and above	28	58,71	10,49		

The results of one-way variance (ANOVA) made to test the free time satisfaction levels of the recreation students according to amount of monthly income revealed that there was not a statistically significant difference in psychological [F (3,211) = 1,389; p> 0.05], education [F (3,211) =, 282; p> 0.05], social [F (3,211) =, 275; p> 0.05], relaxation [F (3,211) =, 150; p> 0.05], physiological [F (3,211) =, 270; p> 0.05], aesthetic [F (3,211) =, 296; p> 0.05] sub-dimensions and free time satisfaction levels [F (3,211) =, 326; p> 0.05]. Similarly, according

to the monthly income amount of the students, the level of Facebook addiction [F (3,211) =, 321; p> 0.05] did not significantly differ.

Table 7. Comparison of recreation students' free time satisfaction and facebook addiction levels according to daily free time

	Daily Free Time	n	$\bar{x}$	sd	F	p
Psychological	2-3 hours	35	29,77	8,90		
	4-6 hours	70	30,51	6,91	1,367	,257
	7 hours and above	107	31,86	7,06		
Education	2-3 hours	35	34,26	10,13		
	4-6 hours	70	34,77	7,03	,976	,379
	7 hours and above	107	36,08	7,68		
Social	2-3 hours	35	29,34	9,39		
	4-6 hours	70	30,19	6,20	1,486	,229
	7 hours and above	107	31,40	6,05		
Relaxation	2-3 hours	35	14,34	5,24		
	4-6 hours	70	15,73	3,02	4,321	,015*
	7 hours and above	107	16,36	3,17		
Physiological	2-3 hours	35	21,86	7,18		
	4-6 hours	70	22,89	4,65	1,378	,254
	7 hours and above	107	23,55	5,06		
Aesthetic	2-3 hours	35	15,49	4,69		
	4-6 hours	70	15,63	3,75	,107	,898
	7 hours and above	107	15,81	3,80		
FTS	2-3 hours	35	145,06	43,10		
	4-6 hours	70	149,71	27,66	1,521	,221
	7 hours and above	107	155,07	29,60		
FA	2-3 hours	35	59,37	10,17		
	4-6 hours	70	61,11	11,16	,895	,410
	7 hours and above	107	58,90	10,96		

*p<0.05

The results of one-way variance (ANOVA) performed to test the free time satisfaction levels of the recreation students according to the daily free time showed that while there was not a statistically significant difference in psychological [F (2,211) = 1,367; p> 0.05], education [F (2,211) =, 976; p> 0.05], social [F (2,211) = 1,486; p> 0.05], physiological [F (2,211) = 1,378; p> 0.05], aesthetic [F (2,211) =, 107; p> 0.05] sub-dimensions and free time satisfaction levels [F (2,211) = 1,521; p> 0.05], there was a significant difference in relaxation sub-dimension [F (2,211) = 4,321; p <0.05]. Accordingly, it is seen that those who state that their daily free time is 2-3 hours have lower free time satisfaction than those with 7 hours or more. There is not a statistically significant difference between the students' daily free time and levels of Facebook addiction [F (2,211) =, 895; p> 0.05].

Table 8. The relationship between recreation students' free time satisfaction and Facebook addiction levels

		Psychological	**Education**	**Social**	**Relaxation**	**Physiological**	**Aesthetic**	**FTS**
Facebook	r	-,067	-,027	-,037	-,067	-,005	-,019	-,041
Addiction	p	,334	,695	,591	,332	,939	,778	,552

*p<0,01

According to the results of Pearson correlation analysis conducted to reveal the relationship between recreation students' free time satisfaction and Facebook addiction levels, no significant relationship was found between total score and sub-dimensions of free time satisfaction and Facebook addiction (p> .05).

DISCUSSION AND CONCLUSION

The purpose of this study is to investigate the relationship between the addiction and free time satisfaction levels of recreation department students.

As a result of the t-test performed according to the gender variable of the participants, no statistically significant difference was found in the scale of Facebook Addiction and FTSS sub-dimensions ($p > 0.05$). Soysal (2016) concluded that Facebook addiction did not make a significant difference between men and women in the study of Facebook addiction and psychological addiction. This shows that the level of addiction of male and female students towards Facebook usage is similar. However, in a study conducted by Çam (2012) with prospective teachers, it was concluded that there was a significant difference in prospective teachers' Facebook addiction levels according to their gender. Facebook teacher addiction levels of male teacher candidates were significantly higher than Facebook teacher dependency levels of female teacher candidates. In other words, male teacher candidates were found to be more dependent on using Facebook than female teacher candidates (cited Soysal, 2016). In their study, Balcı and Tiryaki (2014) reached the conclusion that women spent more time on social media than men, and their Facebook addiction level was higher. Regarding the level of free time satisfaction, Yiğit (2018) did not find any significant difference in terms of gender variable in their study with individuals participating in recreational activities at university communities and university students studying in Huang (2003) Taiwan. In addition, Ardahan and Yerlisu Lapa (2010), Yaşartük and Bilgin (2019), Ayyıldız (2015) and Çelik (2011) did not find any significant difference in terms of gender, and are in parallel with our study. However, Vong Tze (2005) found a significant difference in terms of gender variable, and in another study conducted by Yaman (2016), it was concluded that women were higher than men in education and relaxation sub-dimensions. Most studies in the literature have revealed that there was no difference in gender of free time satisfaction levels of female and male participants. The reason for this is that although free time activities vary according to gender, the satisfaction level is similar.

As a result of the t-test performed according to age variable, no statistically significant difference was found in the scale of Facebook addiction and FTSS sub-dimensions. Hayes, Stolk-Cooke and Muench (2015), in the study of how adults between the ages of 18 and 70 use Facebook and how these usages affect people's happiness found that social media use predicted happiness, but this effect was negative. In addition, when other studies are taken into consideration, it can be said that when we rank generations from younger to older age, the usage of technology decreases accordingly, in other words, younger generations are more intertwined with technology than older generations (Köroğlu & Tutgun Ünal, 2013). Facebook User Stats of Turkey (2009) the usage of Facebook is more intense in the range of 18-24 and 25-30 age groups. Therefore, the young population has higher Facebook addiction. So, the age range of the students which the present study focuses on complies with the Facebook Turkey User statistics and this is the reason why there is not a significant difference. Yaşartürk (2019) and Çakır (2019) who investigated the levels of free time satisfaction did not find statistically significant differences in university students according to the age variable. Many studies in the literature show that university students have a similar level of satisfaction with their free time activities.

As a result of the one-way analysis of variance (ANOVA) test conducted according to the family income variable, no statistically significant difference was found in the scale of Facebook addiction and FTSS sub-dimensions. Similarly, in their study, Soysal (2016) did not detect a significant difference in terms of Facebook addiction levels according to income levels. In other words, it is concluded that there is no difference in Facebook addiction levels of people with high or low income levels. There are various studies comparing the personal or family income variable to free time satisfaction. Vong Tze (2005), on the other hand, stated that in their study on 993 people living in the Macao region, the level of free time did not differ according to income. However, Ardahan and Yerliu Lapa (2010) found a difference between the income levels of university students and the level of satisfaction they feel from free time activities and reached the conclusion that the level of satisfaction increased as the income increased. Yiğit (2018) found a significant difference between free time satisfaction and income level in their study on individuals participating in recreational activities at university communities. Borke et al. (2007) also found a positive relationship between income and free time satisfaction. Although there is no significant difference between income level and free time satisfaction in the present study, according to the studies in the literature, free time satisfaction of the participants increases as income increases. We can say that the recreation department students in the sample group have similar family income levels and their satisfaction levels are close, although their leisure time activities differ.

As a result of the one-way analysis of variance analysis (ANOVA) performed according to the daily free time variable, there was not a statistically significant difference in the scale of Facebook addiction and psychological, educational, social, physiological and aesthetic sub-dimensions of FTSS, while a significant difference was found in the relaxation sub-dimension. In recent years, changes in education and training have been made for the

free time of university students to be effective and for the development of academic self-achievement. Therefore, we can explain the absence of significant differences due to the thought that university students with an existing Facebook account participate in the remaining free time at a sufficient level. Similarly, there is a direct relationship between the comfort of free time and the level of satisfaction. Yaşartürk et al. (2019) did not find a significant relationship between free time duration and satisfaction level during the study of university students' free time satisfaction and quality of life. However, rather than having a lot of free time, efficient evaluation is more prominent. Therefore, according to the results of the study, it can be said that there is a difference in the level of relaxation and it affects the satisfaction level among students only if the free time increases.

As a result, no significant relationship was found between Facebook addiction and free time satisfaction scale sub-dimensions. The level of satisfaction of the students at the recreation department does not influence their level of addiction towards using Facebook. Therefore, it can be concluded that recreation department students consciously satisfy their free time activities and their Facebook addiction levels do not differ, which is one of the most frequently used programs of the social network.

Suggestions

Within the scope of this study, the Recreation department, which dominates the concept of free time, was considered as a sample. It can be applied to other departments within the Sport Sciences and the difference between them can be investigated.

Research can be conducted on other social network programs, Internet or smartphone usage addictions, just as the present study focused on Facebook, which is a widely used social network.

The relationship between free time satisfaction and other social networking programs, Internet or smartphone addiction can be examined. In this way, a relationship can be made between the result of Facebook addiction of this study and others.

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Relationship between Teachers' Attitudes towards Technology Use in Education and Autonomy Behaviors

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ABSTRACT
With the advances in science and technology, the use of technology in education continues to become widespread. This situation also increases importance of studies on teachers' attitudes towards the use of technology in education. The present study aimed to examine the relationship between teacher attitudes concerning technology use in education and autonomy behaviors. Analyzes were carried out with the data collected from a total of 440 teachers. According to the analysis results, teacher attitudes concerning technology use in teaching do not change according to gender and school type, but according to their education level. While the autonomy behaviors of teachers do not vary in relation to their gender and education level, it differs according to the type of school they work. The attitudes of teachers regarding technology use in teaching and autonomy behaviors do not differ according to their professional seniority. According to the order of importance, the teacher's teaching process autonomy and professional communication autonomy behaviors significantly predict their attitudes regarding technology use in education. These two variables together explain 30% of teachers' attitudes toward technology use in education.
Keywords: Use of technology, technology attitude, teacher autonomy, educational technology.

INTRODUCTION
The developments in science and technology continue continuously, and these developments affect social life in different ways. The rapid advancement of technology leads to changes in many areas such as health, industry, education and so on. Along with the technological developments, different needs emerged in the education and instruction environments, which led the educators to use technology actively.

The current changes in technology affect the education and competencies necessary for the individuals in the information society to benefit from technology effectively and to be successful in the technological environment (Durak & Seferoğlu, 2017). In order to keep up with these changes, teachers' acquiring the necessary technology usage skills is among the important topics in education. Along with the technological developments, the changes in the education systems also make changes compulsory in the learning-teaching activities. Especially in secondary and higher education institutions, the use of technology is increasing and teachers' use of technology is becoming almost mandatory (Yılmaz, 2016).

Reflections of technology, defined as the organized application of scientific or other systematic information (Galbraith, 2007), has led to emergence of the field of educational technology in the educational process. Educational technology was initially limited to the tools and materials used in education, but it has developed over time and has become a discipline covering a wide range from human and technology interaction to application technologies (Şimşek et al., 2008). According to Alkan (1998), education technology is a functional structuring of learning and education processes provided that the necessary knowledge and skills are used to control education in general and particularly learning. Educational technology is a process that includes the design, implementation, evaluation and development of learning-teaching processes (Alkan, 2005). Similarly, educational technology is expressed as a process in which technological tools are put into the service of education, including the planning, design, production, presentation and evaluation of education by Girginer and Özkul (2002). İşman (2003), on the other hand, explains educational technology as the application of all theoretical and practical studies as a program in enrichment and development processes of teaching areas in order to ensure effective learning.

Öksüz et al. (2009) state that many educators and researchers agree that technology use in teaching improves the education system. Through technology, solutions are sought for possible problems in education and an optimistic perspective is presented that this search will produce positive results (Alkan, 1998). It is possible to increase the quality in learning-teaching processes and to make these processes more efficient and effective for teachers and students through educational technologies (Uşun, 2000). Providing multiple learning environments, meeting the individual needs of students and increasing their interest are some of the benefits of educational technologies

(Yalın, 2003). With educational technologies, it is easier to reach the goals, lessons become more interesting, time is saved and more permanent learning can be provided (Katrancı & Uygun, 2013). It is stated that with technology use in the classroom environment, the interest, learning, curiosity and willingness of the students increase, the work of the teachers becomes easier, and a rich teaching environment is provided to the teachers and students (Kenar, 2012).

The use of technology in education brings various changes with it in the roles of teachers. Technology knowledge of teachers is seen as an important component that should be included in professional competencies (Mishra & Kohler, 2006; Zhao, 2003). The ability to use technology effectively in educational processes is closely related to the competencies and attitudes of teachers in the field of technological development (Yılmaz, 2016). It is suggested that an interaction and cooperation between students and teachers have developed with the use of technology in education (Alexiou-Ray et al., 2003). However, it is not known how the use of technology in education affects teacher autonomy.

Teacher autonomy refers to teachers' having desire, freedom and competence to control their teaching and learning processes (Huang, 2005). It represents the power and freedom to make decisions about teachers' professional activities (Feldmann, 2011). According to Öztürk (2012), teacher autonomy is the free movement of teachers to plan, implement and decide on professional activities. Of course, this freedom comes with accountability and competence. Teacher autonomy is based on the professional competencies of teachers, making decisions concerning the teaching process, school and students (Çolak, 2016). Ramos (2006) states that teacher autonomy should be handled within the framework of awareness, self-awareness, responsibility, struggle with difficulties, participation and cooperation, and role changes. While autonomy in the traditional sense is seen as the teacher making decisions independently from colleagues and managers and acting alone, in contemporary sense, it is expressed as teachers acting in cooperation with colleagues and managers, making decisions based on their professional competencies (Çolak et al., 2017).

Teacher autonomy has an important place in teaching processes (Gurganious, 2017). Teacher autonomy, gaining importance increasingly, is seen as an important determinant in the effectiveness of education. However, the autonomy of teachers is not adequately supported in Turkey and many factors that limit the autonomy of teachers exist. Taking all decisions about teaching issues from the center precludes teachers from organizing the educational setting by considering the needs of their students and by utilizing their competencies (Çolak & Altınkurt, 2017; Çolak et al., 2017). Instead of just waiting for teachers to perform the tasks assigned to them, supporting them to have the freedom to make decisions in the education and training process by using their knowledge and skills will produce more positive results (Çolak & Altınkurt, 2017). Therefore, determining how technology use in education relates to teacher autonomy is important.

In the literature, it is understood that studies concerning the use of technology in education are generally carried out within the framework of teacher competencies, opinions or attitudes (Çil, 2008; Emiroğlu, 2016; Dargut & Çelik, 2014; Demir et al., 2011; Durak & Seferoğlu, 2017; Öztürk, 2006; Şahin. and Namlı, 2018; Şimşek & Yıldırım, 2016; Yılmaz, 2016). As a result of a comprehensive content analysis study that examines the international studies concerning technology use of teachers, it is seen that the most discussed topics are teachers' using information and communication technologies as well as the factors that affect their use of those technologies (Sert et al., 2012). According to a similar survey conducted in Turkey, the most extensively studied issues are teachers' using information technology for instructional purposes, teachers' competencies in using technology, attitudes, perceptions and beliefs and their opinions about technology usage (Kurtoğlu & Seferoğlu, 2013). In the studies related to teacher autonomy, various variables such as school climate (Blömeke & Klein, 2013; Çolak & Altınkurt, 2017), job satisfaction (Çolak et al., 2017; Perie & Baker, 1997), learner autonomy (Vieira, 2010; 2020; Yazıcı, 2016) student achievement (Ayral et al., 2014; Gurganious, 2017) and teaching styles (Baradaran, 2016) are discussed. However, there is no study investigating the relationship between the use of technology in education and teacher autonomy. Accordingly, the current study aimed to examine the relationship between teacher attitudes regarding technology use in education and teacher autonomy. For the purpose of the study, answers to the following questions are sought:

1. Do teachers attitudes concerning technology use in education differ according to gender, school type, education level and professional seniority significantly?
2. Do teachers' autonomy behaviors differ in relation to type of school, gender, education level and professional seniority significantly?
3. Do autonomy behaviors of teachers (teaching process autonomy, curriculum autonomy, professional development autonomy, and professional communication autonomy) significantly predict their attitudes concerning technology use in teaching?

METHOD

Research Model

A survey and correlational model were utilized in the study. Survey models are defined as research approaches that aim to describe a situation that existed in the past or already (Karasar, 2005). In correlational model, the degree and direction of the changes are tried to be determined (Fraenkel et al., 2011).

Study Group

The study group are composed of 440 teachers that work in various public and private schools affiliated to the Ministry of National Education. The group was determined by convenience sampling technique. In this technique, in accordance with the objective of the research, accessible groups are selected from which comprehensive data can be obtained (Fraenkel et al., 2011). Descriptive statistics related to the study group are provided in Table 1 below.

Table 1: Descriptive statistics related to demographical status of participants

		f	%
Gender	Female	266	60.5
	Male	174	39.5
Branch	Primary school teacher	100	22.7
	English teacher	55	12.5
	Mathematics teachers	48	10.9
	School counselor	28	6.4
	Science teacher	23	5.2
	Information Technologies teacher	20	4.5
	Other	166	37.8
Seniority	1-5 years	114	25.9
	6-10 years	93	21.1
	11-15 years	85	19.3
	16-20 years	70	15.9
	20 years and over	78	17.7
Education level	Associate	6	1.4
	Bachelor	346	78.6
	Graduate	88	20.0
School level	Primary School	137	31.1
	Middle School	169	38.4
	High School	134	30.5
School type	Public	388	88.2
	Private	52	11.8
Technological devices used mostly	Computer	274	62.3
	Smart board	252	57.3
	Phone	102	23.2

As seen in Table 1, 60.5% of the participants are female, while 39.5% are male. Primary school teachers (22.7%), English teachers (12.5%) and Mathematics teachers (10.9%) constitute the most frequent group of participants in terms of their branches. In terms of seniority, participants working for 1-5 years (25.9%) constitute 78.6% of undergraduate degree graduates in terms of education level, 38.4% of middle school level employees in terms of school level, and 88.2% of public-school teachers in terms of school type. When the technological tools that teachers use most frequently in the educational process are taken into consideration, it is understood that computers (62.3%), smart board (57.3%) and telephone (23.2%) are used respectively.

Data Collection Tools

In this study, Demographical Information Form, Scale of Attitude towards Technology and Teacher Autonomy Scale were used to collect data.

Demographical Information Form: It was developed by researchers to collect data on the demographic characteristics of the participants. In this form, there are questions about participants' gender, age, professional seniority, type of school they work, etc.

Scale of Attitude towards Technology: Yavuz (205) developed Scale of Attitude towards Technology in order to determine teacher attitudes concerning technology. The scale, which consists of 19 items, has five factors. The total variance explained by these five factors is 60.64%. Factor load values of the items in the scale range between .53 and .78. Item-total correlation values for the scale varying between .24 and .68 and Cronbach's

Alpha coefficient is .87. Cronbach's Alpha coefficient of the scale used in the current study was calculated as .87.
The scale includes 13 positive, and 6 negative items. Each item in the scale is evaluated with a five-point rating that is expressed as "I strongly agree (5)", "I agree (4)", "I am indecisive (3)", "I disagree (2)" and "I strongly disagree (1)". Negative items are coded reversely while scoring.
Teacher Autonomy Scale: Teacher Autonomy Scale was developed by Çolak and Altınkurt (2017). The scale, consisting of a total of 17 items, has four factors. These factors are; teaching autonomy, curriculum autonomy, professional development autonomy, and professional communication autonomy. The variance explained by this four-factor structure is 63.84%. The factor load values for the items in the scale ranged from .51 to .86. Goodness of fit indices that were obtained by confirmatory factor analysis of the scale are $\chi 2$ / sd = 2.23, GFI = .90, AGFI = .86, RMSEA = .06, SRMR = .06, CFI = .97, IFI = .97, NFI = .94, NNFI = .96, PGFI = .66. The item-total correlation values of the scale ranging between .47 and .76, while the Cronbach's Alpha coefficient was found to be between .78 and .85 for the factors and it was .89 for the entire scale. In this study, Cronbach's Alpha coefficient of the scale was calculated between .81 and .93 for factors and .95 for the entire scale.

Total score can be obtained from the scale. The increase in the score obtained from the scale shows that the autonomy behaviors of the teachers increases. Items in the scale are answered between “strongly disagree (1)” and “strongly agree (5)”. There are not any reverse coded items in the scale.
Statistical Analyses

SPSS 25 was used to analyze data. Depending on the research questions, independent samples t test, one way variance analysis (ANOVA) and stepwise regression analysis were conducted. The upper limit of the margin of error is taken as .05.

Normality assumption for independent samples t-test and ANOVA was checked by examining the kurtosis and skewness coefficients and histogram graph. The kurtosis and skewness coefficients between -3 and +3 show that the normality assumption is met (Kline, 2011). The Levene test result established that the variances were distributed homogeneously for all subgroups, and the analyzes were performed assuming the variances were homogeneous. After independent samples t-test, "Cohen's d" values were examined to find out the effect size of independent variables on dependent variables. That Cohen's d value is less than 0.2 shows that the effect size is low, 0.5 is medium, and greater than 0.8 is considered high (Cohen, 1988).

For stepwise regression analysis, sample size, univariate and multivariate outliers, normality, linearity, homoscedasticity, multicollinearity and independence of errors assumptions were examined (Hair et al., 2014). No outliers were found in the data set and it was concluded the sample size of 440 people was adequate in accordance with the criteria [$n \geq 50 + 8m$ (the number of independent variables in m]] provided by Tabachnick and Fidell (2012). The scatter plots of the residues were examined, and it was observed that the assumptions of normality, linearity and homoscedasticity were met. For multicollinearity assumption, that the correlation coefficient between variables is less than .90 (Field, 2009), VIF (Variance Inflation Factor) is less than 10 and TV (Tolerance Value) is greater than .10 are taken into consideration. Bivariate correlations between variables are given in Table 2. That VIF values of independent variables were between 1.79 and 5.01 and TVs are between .20 and .56 showed that multicollinearity assumption was met. Finally, the Durbin-Watson value was calculated as 1.57 and the assumption of independence of errors was met (Field, 2009). Then stepwise regression analysis was performed.

Table 2: Results of analysis of correlation between dependent and independent variables

	M	*SD*	1	2	3	4	5
1.Technology attitude	4.01	.61	1				
2. Teaching autonomy	4.05	.87	.53*	1			
3. Curriculum autonomy	4.03	.90	.49*	.89*	1		
4. Professional development autonomy	3.82	1.02	.42*	.71*	.68*	1	
5.Professional communication autonomy	3.83	.96	.44*	.66*	.62*	.58*	1

*p < .01

FINDINGS

Independent samples t test was conducted to determine if teacher attitudes towards technology use differ in terms of gender, school type and educational level. The results are given in Table 3 below.

Table 3: Independent samples t test results on teachers' attitudes towards technology use in terms of gender, school type and educational level

		n	*M*	*SD*	*t*	*d*
Gender	Female	266	4.05	.60	1.60	
	Male	174	3.96	.61		
School type	State	388	4.00	.62	-.76	
	Private	52	4.07	.49		
Education level	Bachelor	346	3.98	.63	-2.04*	.26
	Graduate	88	4.13	.53		

*p < 0.05

The attitudes of teachers regarding using technology in teaching do not vary significantly in relation to their gender and the type of school they work in as seen in Table 3 (p > .05). With regard to education level, the statistical difference is significant with a moderate effect [t (434) = -2.04, p <.05, d = .26]. Accordingly, it can be stated that graduates' attitudes towards technology use in teaching are more positive than those of undergraduates.

ANOVA was conducted to determine whether teacher attitudes concerning use of technology in teaching differ depending on their professional seniority. ANOVA results are shown in Table 4 below.

Table 4: ANOVA results on teachers' attitudes towards technology use in education according to their professional seniority

	Sum of Squares	*df*	Mean Square	*F*	*p*
Between Groups	3.14	4	.79	2.17	.07
Within Groups	157.96	435	.36		
Total	161.11	439			

Table 4 shows that teachers' attitudes towards the use of technology in education do not differ significantly according to their professional seniority [F (4, 435) = 2.17, p> .05].

Independent samples t-test was conducted to determine if teachers' autonomy behaviors vary in relation to gender, school type and educational level. The results are provided in Table 5 below.

Table 5: Independent samples t-test results on teachers' autonomy behaviors in relation to gender, school type and educational level

		n	*M*	*SD*	*t*	*d*
Gender	Female	266	3.99	.83	.87	
	Male	174	3.92	.81		
School type	State school	388	4.00	.80	2.21*	.32
	Private school	52	3.73	.90		
Education level	Undergraduate	346	3.94	.85	-1.25	
	Graduate	88	4.06	.68		

*p<0.05

As seen in Table 5, autonomy behaviors of teachers do not differ significantly in relation to their gender and education level. With regard to the type of school they work, the statistical difference is significant with a moderate effect [t (438) = 2.21, p <.05, d = .32]. Accordingly, it can be said that teachers that work in public schools have more autonomous behaviors than teachers working in private schools.

ANOVA was conducted to determine whether teachers' autonomy behaviors differ according to their professional seniority. ANOVA results are presented in Table 6 below.

Table 6: ANOVA results on teachers' autonomy behaviors according to their professional seniority

	Sum of Squares	*df*	Mean Square	*F*	*p*
Between Groups	1.20	4	.30	.45	.78
Within Groups	293.32	435	.67		
Total	294.52	439			

Table 6 shows that teachers' autonomy behaviors do not differ significantly according to their professional seniority [F (4, 435) = .45, p> .05].

A stepwise regression analysis was carried out whether teachers' autonomy behaviors (teaching process autonomy, curriculum autonomy, professional development autonomy and professional communication autonomy) predict attitudes concerning technology use in teaching. The results are displayed in Table 7 below.

Table 7: Stepwise regression analysis results on prediction of teachers' attitudes towards the use of technology in education

	Predictor	*B*	*SE B*	*β*	*R*	R^2	ΔR^2
Step 1	Constant	2.50	.12		.53	.28	
	Teaching process autonomy	.37	.03	.53**			
Step 2	Constant	2.42	.12				
	Teaching process autonomy	.30	.04	.43**	.55	.30	.02
	Professional communication autonomy	.10	.03	.15*			

*p < .01, **p < .001

When Table 7 is examined, in the first stage of the stepwise regression analysis, 28% (R^2 = .28, $F_{(1, 438)}$ = 173.44, p = .000) of teacher attitudes concerning use of technology in teaching is explained by teaching process autonomy (β = .53, $t_{(438)}$ = 13.17, p < .001). In the second stage, when professional communication autonomy is added (β = .15, $t_{(437)}$ = 2.84, p < .01), this ratio advances to 30% (R^2 = .30, ΔR^2 = .02, $F_{(2, 437)}$ = 92.16, p = .000). It was determined that other variables related to autonomy behavior (curriculum autonomy and professional development autonomy) did not significantly predict the attitudes of teachers regarding technology use in teaching.

DISCUSSION AND CONCLUSION

This study, which examines the relationship between teachers' attitudes towards use of technology in education and autonomy behaviors, firstly examined whether technology attitudes vary in relation to gender, school type and education level. According to the results obtained, teacher attitudes concerning technology use in education do not change in relation to gender and the type of school studied, but change according to the level of education. The attitudes of graduate teachers towards technology use in educational practices are more positive than undergraduates. According to a study conducted by Dargut and Çelik (2014) with prospective teachers, female teachers were found to hold more positive attitudes concerning technology use compared to males. The results of Çil (2008), Yaman (2007) and Öztürk (2006) are also in this direction. On the other hand, the studies conducted by Şimşek and Yıldırım (2016) and Menzi et al. (2012) with teacher candidates found that there was no gender difference in technology use in education. According to Şahin and Namlı's (2018) study, male teacher candidates' attitudes regarding technology use in teaching are more positive. Upon examining the studies conducted with teachers, it is seen that the results obtained are congruous with the findings of the current study and attitudes towards the use of technology in education do not change according to gender (Bahar et al., 2009; Çelik & Bindak, 2005; Çınarer et al., 2016; Yılmaz, 2016). This shows that in the technology age we are in, teachers whether male or female have similar attitudes concerning technology use in the educational process. Teacher attitudes concerning use of technology in teaching do not differ in terms of their work in private or public schools. The fact that private schools have better conditions than public schools in terms of physical facilities does not change the attitudes towards technology use. Whether they work in a private or public school, teacher attitudes concerning technology use in teaching are similar. That the attitudes of graduate teachers towards technology use in education are more positive than those of undergraduates is consistent with the findings of Yılmaz (2016). In addition, in the study conducted by Baltacı (2005), it was found that the frequency of use of educational technologies increased with the increase in the education levels of teachers. This result can also be evaluated in the same direction.

According to another result of the study, autonomy behaviors of the teachers do not vary in relation to their gender and education levels, they differ according to the type of school they work at. Accordingly, it is understood that teachers that work in state schools display more autonomous behaviors than teachers working in

private schools. Also, according to Çolak's (2016) study, teachers' autonomy behaviors do not vary according to their gender and educational level. In addition, the study results conducted by Pearson and Hall (1993) and Çolak et al. (2017) show that teachers' autonomy behavior does not vary according to gender. The roles of men and women in the society are encouraging men to grow up more autonomously. However, it is possible to state that the level of education eliminates the stereotypes that exist in the society, although the autonomous behaviors of teachers do not change according to their undergraduate or graduate degrees in the study. The study group consists of university graduates. Therefore, it can be considered as a normal result that autonomous behaviors do not differentiate according to gender in this group. Nevertheless, that teachers working in state schools exhibit more autonomous behaviors can be interpreted due to the low job anxiety of these teachers. Most of the teachers working in private schools can adapt to the general practices in the school and the demands of the school administrators in order not to lose their jobs. In this case, it is possible to state that this situation also reduces autonomy behaviors.

According to another result of the study, teacher attitudes concerning use of technology in teaching and autonomy behaviors do not change according to their professional seniority. Most of the studies on this subject (Bahar et al., 2009; Çınarer et al., 2016; Namlu, 1998) shows that teachers' attitudes concerning technology use in teaching do not differ according to their professional seniority. However, according to Yılmaz's (2016) study, the attitudes of teachers regarding using technology in teaching vary according to their professional seniority. Teachers with low professional experience have more positive attitudes in this regard. The widespread use of technology today affects everyone equally. Therefore, it can be stated that having more or less professional seniority does not affect the attitude concerning technology use in teaching. With regard to seniority, different study results are encountered. According to the studies of Çolak (2016) and Çolak et al. (2017), teachers with lower professional experience have more autonomous behaviors while according to Şakar's study (2013), teachers with higher professional experience have more autonomous behaviors. In this study, no difference was found in teachers' autonomy behaviors in terms of professional seniority. The teachers, who have started the profession newly, can act autonomously because they do not adopt the corporate culture yet. As time goes by, institutional culture is adopted, however, autonomy behaviors can continue with the comfort of experience.

According to the conclusion reached in the study, the teachers' teaching process autonomy and professional communication autonomy behaviors positively and significantly predict the attitudes concerning technology use in educational practices. According to this result, autonomy of teaching process has a critical role with regard to attitude concerning technology use in teaching. As teaching process autonomy increases, positive attitudes of teachers concerning technology use in teaching also increase. Çolak (2016) addresses autonomy of the teaching process as the decisions made about teaching and classroom management. The amount of time to devote to certain activities in the lessons, the selection of instructional methods and techniques, determining the methods of assessment and evaluation, rewarding students, the way of communication in the classroom, class order and rules are evaluated within teaching process autonomy.

Professional communication autonomy reflects the way in which teachers can express their opinions with colleagues, managers and parents without anxiety and fear. This type of autonomy allows teachers to organize the teaching process according to their professional competencies (Çolak, 2016; Çolak and Altınkurt, 2017). Teaching process autonomy and professional communication autonomy positively affect teacher attitudes concerning use of technology in teaching. There are rapid changes in the field of education. However, there are some areas where there is no change. These areas are the rights of teachers to determine teaching methods, use technology, plan and present materials, and select appropriate measurement and evaluation tools (Gacoin, 2018). It is important to support the autonomy of teachers in these areas. According to Froese-Germain et al. (2013), teachers state that the use of technology provides them autonomy. Thanks to the use of technology, teachers can direct the teaching process as they wish. According to Sehrawat (2014), teachers can teach more efficiently when they are autonomous. Autonomous teachers hold discussions about the pedagogical applications of technology use in education, their decisions and what is the best use of technology for students (Gacoin, 2018). The findings revealed by this study show that teachers who are autonomous hold more positive attitudes about technology use in teaching. Therefore, it is possible to state that technology use in teaching and autonomy affect each other mutually.

As a result, the findings of this study show that teachers' education levels, teaching process autonomy and professional communication autonomy are important in internalizing positive attitudes concerning technology use in teaching. It is thought that these results will be guiding in applications to be carried out regarding the use of technology in education. In this study, the variables that predict teacher attitudes concerning use of technology in teaching are limited to their autonomy behaviors. Therefore, future studies may examine the predictability of

different variables. The fact that the study is a cross-sectional one can be expressed as another limitation. The attitudes of teachers regarding using technology in teaching can also be investigated longitudinally.

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The Effect of Intelligence and Mind Games on Secondary School Students' Writing Success

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ABSTRACT
Language, which is the main tool of communication that consists actions without understanding and explaining, has vital importance in every field of life. Mother tongue teaching is a process that enhances school-type learning in all disciplines starting from the primary education level. It is also an area that links to deveoplment of thinking skills. In this context, there is a need for applications that encourages mother tongue development and enriches higher tninking skills based on active learning in educational settings. One of the educational activities that develop high-level thinking skills is Mind-Intelligence Games. Intelligence Games are defined as activities offered for individuals to realize their own potentials, to make fast and correct decisions, to produce their own unique solutions to problems, and to renew themselves continuously. In this study, the applicability of Mind Games in writing Turkish lessons was investigated. The aim of the study is to examine the effect of the Intelligence and Mind Games selected in accordance with the content and achievements of the Turkish Lesson Curriculum on the writing process. The research was carried out by quantitative research method on two equivalent groups studying in the 7th grade of a public secondary school. Semi-experimental design with experimental and control groups was used in this research. In the experimental group, the process to be tested on the dependent variable, namely the lesson taught with the Mind Games, was applied. In the control group, a standard course was taught with the ongoing method. Intelligence and Mind Games discussed in this study were effective especially in the preparation phase of writing The data received from the two groups selected by matching were evaluated by the experts on the writing skills assessment scale. It was found that the students in the group where the lessons were taught with the Mind Games were more successful in writing than the students in the group where the classical lesson was taught. It was observed that the interest and attention of students in the experiment group increased.also
Keywords: language teaching, writing skills, mind and intelligence games

INTRODUCTION
Success in using the mother tongue affects academic success in general in school type learning that starts with the primary education process. Academic activities are based on understanding and expression. Therefore, it is aimed to develop these skills in students during teaching process. Language teaching is a field of knowledge, not knowledge. In this context, there is a need for practices based on active learning through the educational process. It is a necessity to create multi-stimulating educational environments instead of single source-based applications such as textbooks in language teaching to gain skills (Sever, Kaya and Aslan 2006). However, in Turkish teaching, a teaching approach generally connected to the textbook that limits students'learning to the selected textbooks. In the current Turkish teaching programs reading, listening, writing and speaking skills, which constitute the communication skills, are developed only on the basis of the texts and activities in the textbooks.
Nowadays, it is important to raise people who can meet the needs of the age. So, the aim of education is to provide high-level skills such as communication, collaboration, creative thinking, critical thinking, problem solving, decision making and using information media and technologies. In language teaching, it is also important to acquire high-level thinking skills such as comprehension, application, analysis, synthesis, and creation as well as knowledge.

One of the applications that is based on learning by living and active learning during the education process is game based learning (McFarlane, Sparrowhawk, Heald, 2002). Intelligence and Mind Games, a game-based learning tool, is one of these applications in stimulating learning environments. It seems more rational to turn learning into a kind of game rather than giving up the game, which is an indispensable occupation for the child. The child improves personality, skill and intelligence integrity by playing games. He learns more easily and easily, without getting bored through things that interest him. "The most serious challenge of the child is the

game and the most important job is the game again" (Montaigne). Another need as much as nutrition and sleep is a game for the child's physical, mental and healthy development. (Ayan and Memiş, 2012). playing games, the emotions of the child become sharper, their skills develop, their skills increase since the game creates the most natural learning environment for the child. Play is the freedom of the child. Games are one of the most important tools of language teaching. In addition to entertaining, they are activities with goals and rules (Hadfield, 1999). Article 7 of the Declaration of the Rights of the Child, published in 1959 in connection with the United Nations Human Rights Act, states: "The child should be given full opportunity to play as well as in educational settings. Society and public authority should try to fulfill this right. " Based on all this, it can be said that turning the game, into the tool of learning will be functional in terms of academic success.

CONCEPTUAL FRAMEWORK

Contemporary Approaches and Principles in Language Teaching

According to contemporary learning approaches that envisage structuring and easy recall of knowledge in mind, some principles can be mentioned in language skills and grammar teaching: Instead of memorizing, concrete examples should be used that grasp the subject; the teacher should act as a guide / guide, not dictating knowledge; understanding the text-based approach must be used in the context of information; emphasizing meaning should be focused, not form; starting out with the awareness that grammar must not be a purpose, but must be regarded as a tool; functional grammar based activities must be preferred; definitions and rules must be reached with students through an inductive approach; giving the topics in a way to provide an environment for student inferences must be followed; teaching subjects through hands-on activities to stimulate intellectual skills must be placed; giving the subject to be taught in part-whole relationship, adopting holistic approach in language teaching must be followed.

Writing Process and Stages

Mother tongue teaching is a process that affects the success of all courses in school-type learning starting with the primary education process. In this process, it is aimed to develop students' comprehension and expression skills. This general purpose is achieved through four types of activity areas called "listening", "speaking", "reading" and "writing", called linguistic skills. These areas include complementary applications. These practices for gaining skills are carried out with an understanding appropriate to the developmental characteristics of the students starting from the first grade of primary education (Sever vd., 2006).

Writing, which is one of the four skill areas, not only meets the needs of individuals to communicate but also helps theirlearning. As students' writing process improves, they need to go beyond how they have learned the information they have acquired about written expression. In addition, students control their thinking skills during writing and use their minds more effectively. Thus, the learning process becomes more effective (Raimes, 1983). In addition, students' anxiety about writing should be eliminated before the planned writing phase.

Witte and Cherry (1986) defined the teaching of writing as a three phase process. The first phase is a cover letter. The aim of this phase is to provide the experience of designing the text at an intellectual level. In pre-writing studies, the purpose of determining the content scheme is to determine the purpose and how to design the discourse, how to select and translate thoughts, how to establish the concept network, the linguistic signifiers of the concepts and the variation in the linguistic signifiers.

In the second stage, it consists of the work of producing the written text. The work of producing text in writing involves providing the student with the following experiences:
• Establishing cohesion regulations in the text
• using linguistic arrangements to demonstrate subject development,
• using linguistic pointers specific to the type of text.

The third stage in the teaching of writing is to examine the written text in terms of its conformity with the textuality criteria and to make the necessary corrections and rewrite the text. Therefore, this phase is called the rewrite phase. At this stage, the student receives feedback that will create permanent information. It questions whether it focuses on the subject, performs and controls the linguistic arrangements specific to the type of text and the narrative frameworks in which they become evident. Getting feedback is carried out primarily under the direction of the teacher. However, it is aimed for the student to internalize this process and gain experience in operating it on its own.

The regular operation of the phases of writing instruction enables the student to explain both his/her awareness of intellectual planning and the linguistic ties in the text causally (Keçik and Uzun 2001).

During preparation for writing, the aim is determined first. Activities for writing purposes and existing information are remembered. Information on the subject of writing is collected and subject limitation is made. Feelings, thoughts and events to be written are planned, the main idea is determined. Questions are prepared to improve writing. The writing is primarily drafted. When the materials to be used and the duration are determined, they are ready to write. “Before the transition to the writing study, students' prior knowledge of the writing studies to be done will directly affect the quality of the resulting product. To do this, students should first create technical knowledge and pedagogical infrastructure, and be prepared to write and practice” (Göçer, 2010). During writing introduction, development and conclusion sections are planned. Expression is strengthened by using writing methods and techniques. It is necessary to comply with the page layout, spelling, punctuation and spelling rules. The title can be determined before or during writing. It is expected to be short, impressive and compatible with the content. The article is not considered to be finished before the writings are evaluated (Yılmaz, 2013). After writing, writing should be evaluated in terms of format, spelling rules and punctuation, subject and content, language and expression. In Tompkins (1998) and Jones (2002), an effective writing process has been classified as five stages and this approach has been named as “process-based writing approach”. These stages are: pre-writing preparation, drafting, reviewing and editing by writing, editing (editing), publishing and sharing. Writing is a process work and the desired product is achieved by repeating. Murray (1982) thinks that 70% of the time spent writing should be spent on this stage. In the pre-writing stage, studies should be made on choosing a topic, setting a target, determining the target audience, determining the type of writing, revealing and organizing thoughts on the topic (Akyol, 2016). As can be seen, in all of the writing process classifications in the literature, a preparation process for writing is mentioned. This study is planned with the assumption that the Intelligence and Mind Games discussed in the study will be effective especially in the preparation phase of writing.

Intelligence and Mind Games

In line with technological developments, reading and writing habits of today's youth have also changed. This change makes us think that the writing habits of the students in the classical sense should be supported by the game world in which they live. In the international literature, studies in this field are found. Today, popular culture has increased interest in what is fun, simple and fast. Accordingly, it can be said that a negative attitude towards writing, which is a gradual and demanding process, has developed. In this context, it is assumed that intelligence and mind games will increase the interest in writing especially at lower grade levels.

Intelligence and Mind Games are one of the educational activities that contribute to the child's physical, psycho-motor, emotional, social, linguistic and cognitive development. "These are the activities that are offered to individuals so that they can realize their own potentials, make fast and correct decisions, produce solutions specific to them in the face of problems and renew themselves continuously" (Devecioğlu, Karadağ,2014). According to another definition, "Using Intelligence Games is a training method that increases motivation, develops attention power, employs the mind, increases the speed of learning, improves the ability to predict, and provides strategy use" (Koç, 2008).

Intelligence and Mind Games are effective ,n enhancing students' problem solving, reasoning, self-regulation, communication, three-dimensional thinking. It helps to develop such skills in students, as well as types of intelligence such as linguistic, mathematical, visual, and social intelligence. As can be seen, Mind Games can be used in all areas of intelligence. In addition, it is stated that it addresses verbal and logical areas, as well as developing creative and critical thinking. For this reason, it is thought that teachers can use Intelligence and Mind Games as a technique in lessons in order to develop intelligence types in the light of Multiple Intelligence Theory(TTKB, 2013).. All these features increase the importance of Intelligence and Mind Games, so learning becomes more attractive.

Intelligence Games consists of six different categories: Reasoning, transaction games, verbal games, geometric-mechanical games, memory games, strategy games, intelligence questions (TTKB, 2013). Anagram, Word Hunt, Finding Hidden Words, Word Derivation, Direction Finding, Dixit, Tik Tak Boom, Word Completion, Word Ladder, Story Cubes are examples that can be adapted to Turkish lessons.

“It is seen that traditional, that is, knowledge-based rote learning is common in schools. Whereas, 21st century learners; Along with high-level thinking skills such as creative thinking, critical thinking, problem solving, skills such as communication skills, skills to use information and communication technologies are waiting. " (Kay, 2010).

It is observed that there is a need for applications and studies that will develop high-level thinking skills and activate students in writing education in addition to information in order to raise people who can meet the needs of the age.

Although there are studies examining the effects of Intelligence and Mind Games in different fields, there are no researches in Turkish teaching. Our study was developed considering the similarities between the aims of Turkish teaching and the physical, emotional, social, linguistic and cognitive development areas that Mind Games aims to develop.

The study can be seen as important in terms of enabling the Turkish lesson that enriched with various applications approaches, methods and techniques. In addition, it can be said that an application that will contribute to the development of cognitive and linguistic skills, which is one of the important achievements of the Turkish course, is important in terms of bringing it to the field.

PURPOSE

The aim of the research is to examine the effects of Intelligence and Mind games, selected in accordance with the course content and outcomes, on the writing skill of students within the context of the Turkish course.

METHOD

Research Pattern

This research is designed as a quantitative study based on the assumption of the applicability of Intelligence and Mind Games in Turkish lessons. The Static-Group Comparison Design, which is one of the experimental designs (half experimental), was used in the study. In this pattern, while applying to one group, no application was conducted on another group. At the end of the application, the last measurements of the two groups are compared. Assignments to groups are not random, there are ready-made groups. One of these groups is determined as the control and the other as the experimental group (Büyüköztürk et al., 2013; Fraenkel & Wallen, 2009, p. 266).

The working group of the application formed two groups at the same grade level. In the experimental group, the process to test the effect on the dependent variable (course with the Mind Games) was carried out, while in the control group a standard course was taught using the traditional method.

Experimental and Control Groups in the Study	
Experimental Group (25 students)	Control Group (25 students)
Classroom with a Mind Games	Classroom with a course

Sample

The sample of the study was 7th grade level students in a public middle school in Ankarafrom two sections that is taught by same teacher.

Data Collection Tools and Analysis

The Writing Skills Evaluation Scale, developed by Hamzadayı (2019), was used as a data collection tool to measure the difference in writing success between the Experimental and Control groups.
Compositions printed to test student achievement were evaluated in accordance with the criteria in this scale by 3 field experts. In the analysis of the qualitative data obtained SPSS 20. 0 program were used and the findings t-test analysis were conducted.

Application Process

The application stages can be summarized as follows:

With both groups, firstly, the study of “poetry and unknown words” was conducted on the theme of National Culture, which is the subject of the writing study. The main difference in the content of the educational situations prepared for the Experimental and Control Groups is the play of the “Tik Tak Boom” game in the experimental group. With this game, the student's ability to make quick decisions by using the word in a certain period of time has been transferred, a context has been created for the word or group of words, and a beginning has been provided for the transition to the writing process.

The experimental group is also divided into groups within itself, with the aim of developing students' team spirit, solidarity and teamwork skills.

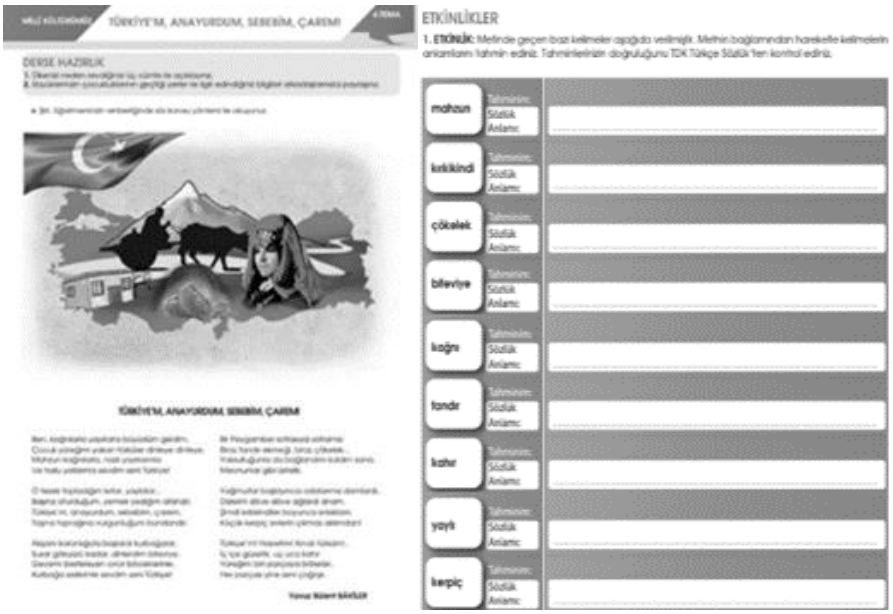
Tik Tak Boom game cards have been made suitable for writing education. For this purpose, the cards that make up the material for the production of sentences are arranged by the researcher. It was tried to make learning permanent by using the visual elements and applying the activity in the form of play in the learning of the concepts on the theme in the experimental group.

After the TTB game, other activities in the Turkish textbook were also held. With these activities, the request and information infrastructure that will contribute to writing has been established.

Later, the game “Let Us Tell Story Cubes” was started. In order to increase the interaction between students, 5 separate groups of 5 people each were createdand each student contributed to form a plot with a common decision, With this game, they were asked to create a story with creative expression by transforming the images on the upper surface of nine cubes into sentences that related to the theme. These two studies are intended to have a cognitive and affective preparation feature for the composition that they were asked to write.

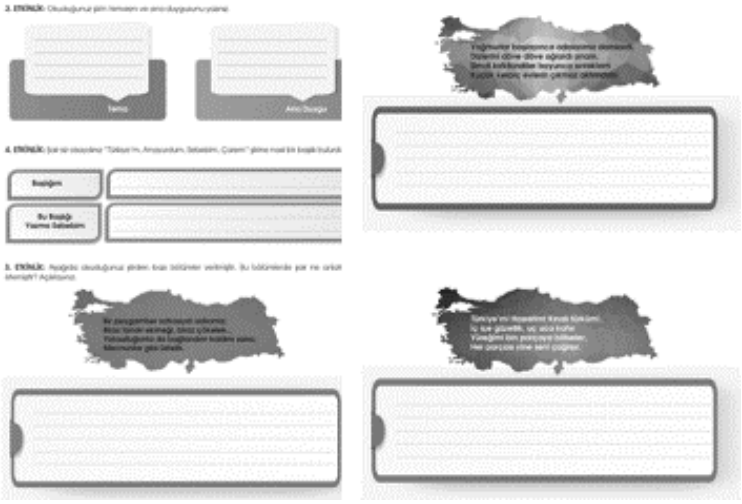
1. ACTIVITY: Firstlythe meaning of unknown words in poetry was estimated and then dictionary meaning is written.

In Experimental and Control Groups:
Preparation questions for the lesson were answered.
The poem named "Turkey, my homeland, my reason, my remedy" was read as a choir.



"Tik Tak Boom" "Mind Game was played in Experiment Group.
While playing the game, the Turkish lesson is taught; that is, adhered to the theme, text and activities.

The purpose of the game;
- To teach words, to repeat the words he/she learned before, to make meaningful sentences with words and to prepare for written expression,
-To provide students with the skills of quick thinking, decision making, visual perception and team spirit.
Activities continued in both groups.
2. ACTIVITY: Six text questions were answered.
3. ACTIVITY: The theme and main feeling of the poem are written.
4. ACTIVITY: Writing a title has been done.
5. ACTIVITY: In the sections of the poem given in the activity the poet's intent and its' sense is written.



2. ETKİNLİK: Aşağıdaki soruları okuduğunuz şiirden hareketle yanıtlayınız.

1. Şiirdeki anlatıma göre şairin nasıl bir yerde yaşadığını tasvir ediniz.
2. Şair çocukluk günlerini hatırlarken hangi duygularını öne çıkarmıştır?
3. Sizce şairin çocukluk günlerini memleket sevgisi ile beraber anlatmasının sebebi neler olabilir?
4. Şair, çocukluk günlerindeki yaşamından hareketle günümüzden yaklaşık kaç yıl öncesini anlatmaktadır? Şiirdeki ifadelere atıf yaparak cevaplayınız.
5. "Türkiye'm, Anayurdum, Sebebim, Çarem" şiirini daha önce okumuş olduğunuz "Vatan Destanı" şiiriyle verdiği mesajlar açısından karşılaştırınız.
6. Çocukluğunuzun geçtiği yerleri siz yıllar sonra nasıl anlatırsınız?

To the Experiment Group; " TELL ME! " The Mind Game was played.
Students created a story with story cubes, adhering to the theme, subject, text and words. The students shared their ideas, dreams and communicated effectively with their group in this game. They united their imaginations and created creative stories in their group work.

At the end of the application, writing activities aiming to measure the success of writing were realized in both groups. Student writings were evaluated by 3 field experts considering the criteria of success in writing.

ACTIVITY
The subject of writing is as follows:
"We have seen in the past in poetry of Turkey. We talked about the National Culture items. Today, we live and keep some of our cultural elements alive. Imagine we were in 2070. How do you think Turkey, where is our national cultural elements of our lives? Write a text using the words you just learned. (Letter, travel article, essay, diary, etc.)"

RESULTS
According to the Writing Skills Evaluation Scale, the results of independent t-test analysis comparing writing sucses of control and experimental groups are presented in Table 1.

Table 1.

Group	**N**	**X**	**S**	**sd**	**t**	**p**
Experimental	25	61.76	5.98	48	3.803	.000
Control	25	51.48	12.11			

As seen in Table 1, according to the results of the data obtained from the writing skills evaluation scale, a significant difference was found between the writing success of the experimental and control groups in favor of the experimental group.

Observations in the application process:
Positive observations were obtained in the students in terms of their ability to act in accordance with the instructions.

It has been observed that the application provides important gains both in terms of the sub-skills required by the teaching of writing and high-level skills to be acquired in the writing process.

It was observed that students of this age group, who are familiar with computer games, quickly adapt to the games in practice.

The main issues that we observed that mind games can improve were:
- Willingness to write, motivation
- Improved readiness
- Realizing that writing is a process
- Integrating writing and speaking skills in a holistic way
- Improved communication skills
- Strengthening collaborative work when there is group work

- Responsibility to the group and discovering its own potential
- Following the instructions
- Fast thinking and decision making
- To be able to manage time

CONCLUSION

In this research, the effect of Mind and Intelligence Games on success in writing skill was examined. The study was conducted as a semi-experimental study with experimental and control groups. It is mentioned in the literature that writing is a three-step process. The ones suitable for the Turkish lesson and the level of secondary school students were selected from the Mind-Intelligence Games. In practice, two games suitable for the themes, subjects, texts and activities were used related to teaching language skills. In order to measure the success of writing, students were asked to create a composition. After evaluating the written texts, data analysis related to the measurements were made. In the statistical analysis of the data a significant difference between the writing skills of the two groups were found. The results of the data on the success of the writing skill of the group in which the Mind Games were played were higher than the group in which the standard course was taught.

The games were used in the first stage of writing education given to the experimental group, called "pre-writing" or "preparation for writing". It was found that there was a significant difference between the writing success of the control group and the writing success of the experimental group. This result confirms the opinions of the teachers in Demirel and Yılmaz (2015)'s study.

In addition to creating skills to write the subject of the research, observations about the development of speaking skills were also conducted. During the games played on story cubes and word cards before writing, the sentences were first produced orally. In this respect, it can be said that the application also contributes to speaking skills.

In addition to the results of the data, observations and student views on learning with mind games were significantly positive during the implementation process. In writing education lesson taught using Mind Games, a democratic environment has been created in the classroom. Each student attended the lesson voluntarily and learned with fun.

With this study, it was ensured that Mind Games were integrated with writing education learning outcomes and course contents within the context of mother tongue teaching. The benefits of these games in the educational context were pointed out.

RECOMMENDATIONS

It was observed that mind and intelligence games had a role in students' positive attitude towards writing. Based on this observation and assuming that it will increase the interest in writing especially at lower grade levels, it can be suggested to develop and implement the study for these grade levels.

This study is thought to lead new studies on other mind and intelligence games. More efficient results can be obtained in conditions where the choice of theme, time and acquisition can be determined by researchers.

In this study, it was concluded that mind games have a significant role in developing writing skills in traditional classroom setting. In order to measure whether these games will advance the success of writing in digital writing activities, a digital environment should be designed and the development of the study should be planned.

Moreover digital storytelling could be considered as a tool in preparatory stage for applications also which is already widely used in educational settings. Taking into account the ability to improve the writing skills of mind games, especially in terms of contributing to the pre-writing preparation phase, digital story telling had a potential. This study will be continued with an experimental study on application of digital story telling in this subject.

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ANNEX 1. WRITTEN EXPRESSION EVALUATION SCALE
Student's Name and Surname:

1: Very poor 2: Inadequate 3: Partially sufficient 4: Adequate 5: Very sufficient

SKILLS	**1**	**2**	**3**	**4**	**5**
FORMAT					
1. Leave appropriate spaces on the edges of the paper, between paragraphs and lines					
2. Using proper and legible writing					
CREATING CONTENT					
3.Size the subject sufficiently					
4. Supporting thought and emotion with helpful thoughts and feelings					
5. Reaching the main thought to be given in the article					
6.Start with an appropriate entry statement					
7. The conclusion statement to be binding and impressive					
CONTENT EDIT					
8. Title to be related to the subject					
9. Explanation of the subject in logical consistency and integrity					
10. Processing one emotion and thought in each paragraph					
11. Not making repetitions in the text					
WORD CHOICE					
12. Using words in place and in the right sense					
13.Not using words that can have the same meaning in the sentence					
GRAMMAR					
14. Follow the writing rules					
15. Using punctuation marks in the right place					
16. Conformity of sentence institutions with grammar rules					
TOTAL					
THE OVERALL TOTAL					

User Experience of Mobile Virtual Reality: Experiment on Changes in Students' Attitudes

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ABSTRACT
Contemporary technological advancements, such as augmented reality and virtual reality, have extended smartphones' capabilities further than ever before. These devices are especially popular among students for performing their educational activities. However, students are skeptical or hesitant to try new technologies for various physical and psychological reasons, such as lack of knowledge, wrong attitudes, and misperceptions of the ease of installation and usage. In this study, we investigated students' mental models and perceptions of mobile virtual reality (MVR) application installation and usage. To achieve the research objective, we designed and developed an MVR case study application and conducted a usability evaluation, a user-experience assessment, and pre- and post-questionnaires. The questionnaires helped us compare the students' attitude changes from before and after the case study experiment. Based on the results of this study, we elaborate the challenges, opportunities, and best practices associated with the MVR application's design and development in an educational context. The results of this study will help practitioners design and develop robust MVR applications in an educational context and open up a new research domain for academicians on MVR design and development.

INTRODUCTION
The application design process and a brief evaluation of the case study were presented as a conference paper (Saballe, Le, & Dirin, 2018). In this paper, we present the opportunities, challenges, and best practices of a mobile virtual reality (MVR) application based on a case study evaluation. Advancements in mobile technologies have brought new opportunities for providing and offering new ways to teach and learn. Hallikainen, Alamäki, and Laukkanen (2018) demonstrated that people tend to use merely functional touchpoints, such as email, websites, search engines, and instant messaging. Motivating new users to try new technologies and acquiring new customers for new brands or technologies have been major concerns (e.g., Kaski, Alamäki, & Pullins, 2018). The lack of motivation to use new technology and acceptance of new technology are rooted in many factors, such as socioeconomic factors (Sife, Lwoga, & Sanga, 2007), psychological factors, including user perception (Davis, 1993), and emotional and cognitive factors (Huang, 2017).

Advancements in immersive technologies, such as MVR and mobile augmented reality (MAR), have shifted the concept of mobile learning into a new era. Virtual reality (VR) is not a new technology; it coexisted with desktop computers for many years. Steuer (1992) defined VR as a "presence and 'telepresence', which refers to the sense of being in an environment, generated by natural or mediated means, respectively" . VR has been applied in various disciplines, such personal computer- (PC) based VR applications for rehabilitating stroke patients (Jack et al., 2001) and applications of VR in motoric rehabilitation (Sveistrup, 2004). In recent years, VR has especially been applied in the neurosciences because it creates interactive, multimodal sensory stimuli that offer unique advantages over other approaches to neuroscientific research and applications (Bohil, Alicea, & Biocca, 2011). Additionally, VR technologies are applied widely in the tourism sector (Guttentag, 2010), for example, as entertainment media and in heritage preservation and marketing. Sánchez, María, & Maojo (2000) recommended a cognitive approach in designing VR systems for education. VR applications in education focus mainly on improving the learning process, for example, by creating a real-time welding training system (Xie, Zhou, & Yu, 2015) in constructional design and for building lighting (Sampaio, Ferreira, Rosário, & Martins, 2010). Further, VR has been applied to assess user experience (UX). For example, Kuliga, Thrash, Dalton, and Hölscher (2015) presented a multi-method VR model that constructed a virtual conference environment and used virtual environments as empirical research tools.

In MVR, we use our sensory inputs along with our sensory information processing in our brains to digest the flow of information (Virtual Reality Society, 2017). This unusual information flow through sensory inputs often results in so-called cyber sickness. Cyber sickness has similar symptoms to motion sickness, resulting in nausea, headaches, and dizziness (Rebenitsch & Owen, 2016). Besides physical symptoms, VR applications impact users' emotional behavior. VR glasses fully cover the eyes and field of vision; therefore, users lose awareness of

their surroundings. This results in feelings of anxiety and stress. Therefore, VR application design requires careful planning to provide a positive experience for the application users. The rest of the paper is organized as follows. We start with an overview of the previous research on mobile UX and its relationship with MVR. Next, we present the research design, methods, and process and then describe our Virtual Campus Tour application design, which was used as a case study for this paper. In the results section, we present various evaluations of the case study. In the discussion section, we describe the challenges, opportunities, and best practices associated with the MVR UX.

Background

Defining Mobile User Experience

With the popularity of smart devices and applications' complexity of design and development, the role of UX has become an important element of mobile applications' success (Roto, Law, Vermeeren, & Hoonhout, 2010). It has become a viable supplement to traditional human–computer interaction (HCI) design, as indicated in practitioner discussions (Sakhardande & Thanawala, 2014). UX design is a multidimensional phenomenon in which many factors influence success. Mobile UX has been researched within various disciplines, such as graphics, psychology, and usability. These studies have demonstrated that UX by nature is a multidisciplinary concept. Hassenzahl (2008) referred to UX as the "quality of interactive technology" focusing on the human and not on the product. Furthermore, Hassenzahl and Tractinsky (2006) argued that with the advancement of technology, interactive products and services would become not only useful and usable but also trendy and fashionable. Nielsen and Norman (2015) defined UX as the simplicity of a product, accompanied by elegance, which users enjoy owning and using. In this study, UX was defined as the emotions that the user encounters while using a service, a product, or an application. Mobile UX design approaches often differ from web-based or PC-based applications because of unique mobile device features and characteristics, such as screen size or processing power.

Mobile Virtual Reality

Despite more than three decades of existence, the VR research still lacks a proper study from the UX perspective. The main focus of previous research has been on VR-based application development. Therefore, UX studies in VR in general and MVR specifically are vague and scattered. In the following, we elaborate few relevant UX-related VR studies. Rebelo et al. (2012) applied VR to assess user experience since VR provides a realistic virtual environment for the interaction. Shin (2018) demonstrated that personal traits correlate with immersion in VR and concluded that UX in VR depends on individual traits and the cognitive process, which impact how strongly users immerse themselves in the VR storyline. Various factors impact an individual's experiences in a virtual environment. For example, McCreery et al. (2013) identified the role of presence in virtual environments. They defined presence as "the psychological state where virtual experiences feel authentic". Therefore, presence impacts user behavior. Furthermore, individual experiences are constructed according to the user's emotional engagement and connection to the virtual environment and with the avatar (Dirin & Laine, 2018). Shin (2017) proposed a foundation of VR technology through heuristic evaluation based on the human cognitive process. Through this model, designers may validate and assess the utility of the design of a VR concept.

Virtual Reality Applications in the Educational Context

VR application as a research and development topic has existed in different research institutions for more than two decades. The unaffordable cost and psychological and physical inconvenience have impacted the use and popularity of VR in the educational context. In recent years, however, the advancement of this technology and the introduction of affordable peripheral devices, such as Google Cardboard (Yoo & Parker, 2015) have increased the popularity of VR. Olmos-Raya et al. (2018) studied the emotional and immersive effects of MVR in the learning process. Their findings highlighted a correlation between positive emotions and knowledge acquisition. Hussein and Nätterda (2015) investigated the benefits of VR application in comparison with a similar mobile application. Their findings revealed that students derive the most benefits from VR in astronomy and medicine (see also Davies, Crohn, & Treadgold, 2018) and also that VR is effective for performing tasks associated with safety. Similarly, VR provides an in-depth learning solution in situations requiring simulation and 3D printing. History and geography were also fields in which students could benefit tremendously from VR.

Changes in Attitude and Behavior

Bhattacherjee and Premkumar (2004) demonstrated that attitude and behavior directly impact perceptions of technological usage. Crano and Prislin (2011) argued that attitude changes occur in three different critical contexts. First, attitudes change because of values, goals, emotions, and human development. The second context is related to social relationships, including persuasive messages, culture, and social media. The third context is socio-historical, including socio-political changes, unique events, and economic impact. Petty (2012) defined

attitude changes as a reshaping of an individual's overall evaluation of a person, object, or issue. Wilson, Lindsey, and Schooler (2000) demonstrated that changes in attitude override the previous attitude, but do not replace the old attitude. Hence, they argued for the presence of dual attitudes—that is, different evaluations of the same attitude object. Glasman and Albarracín (2006) demonstrated that there is a correlation between attitude changes and behavior. In their study, they examined how the formation of an attitude guides future behavior. Hannula (2002) suggested a conceptualization model for attitude based on four different aspects: emotions aroused in a situation, emotions associated with stimuli, expected consequences, and relating the situation to personal values. In his study, Hannula (2002) showed children's attitude changes toward mathematics over the time.

Research Design, Methodology, and Process

The following sections describe the research questions, participants, and methods used to evaluate the case study application.

Research Questions

1. How do attitudes change as a result of the experiment?
2. What are the major opportunities and challenges associated with MVR UX?

Participants

The case study evaluation was conducted in the media lab at the Haaga-Helia University of Applied Sciences in December of 2017. During the usability test, six participants (four females and two males, aged 18–30 years) who matched the user profiles were asked to spend 15 to 20 minutes using the application. The participants were recruited on a voluntary basis. No rewards were given for participation. All the collected data were anonymized so that the participants could not be identified from the results presented in this paper. Table 1 presents an overview of our test plan.

Table 1. Participants in the case study evaluation

Methods	Participants	N	Male	Females	Age (Average)
Usability evaluation	Haaga-Helia (4), other (2)	6	4	2	18–30 (25)
User experience	Haaga-Helia (4), other (2)	6	4	2	18–30 (25)
Questionnaire	Haaga-Helia (35)	35	22	8	18–33 (26)

Research Method: Case Study

- **Data Collection**

In this study, we applied both quantitative and qualitative data gathering and analysis methods.
We created a questionnaire to assess the students' mental models of, and attitude toward, our MVR application. The questionnaire consisted of 10 statements pertaining to the students' perceptions of MVR in the educational context. Further, we extended the questionnaire with statements associated with their feelings about MVR. A five-point scale was used with "Strongly disagree" as 1 and "Strongly agree" as 5. We received 35 responses by the given deadline. Among the participants, 66% were male and 34% were female. Most participants (77.14%) were between 20 and 30 years old, 17% were over 30, and less than 6% were below 20.

We also conducted additional controlled evaluations of UX with three test users and usability evaluations with six test users at the Haaga-Helia media lab. The three participants in the UX test included a male and two females between the ages of 20 and 30 with backgrounds in business information technology (BITe) and media engineering from Haaga-Helia University of Applied Sciences (UAS) and Metropolia UAS. These three participants were asked to spend 20 to 30 minutes using the application. During this time, they were asked to perform given tasks, samples of which are presented in Table 2, while thinking aloud (Concurrent Think Aloud method).

Table 2. Sample pre-defined tasks

Step	Action	Expected result	Pass/Fail	Time, other comments
1	Move from the first floor lobby to Riitta's room on the sixth floor.	User successfully reaches Riitta's room and is greeted by the campus tour guide.		
2	Move from Riitta's room to the library on the third floor	User successfully navigates to the library and is greeted by the campus tour guide.		

Additionally, to assess the test users' attitudes (like/dislike) toward the scenes, we created various scene transitions. We developed the application with varying types of scene transitions—most with a loading wheel and two scenes transitioned without a loading wheel.

For the usability evaluation, the test users were recruited from among the students (male and female) at Haaga-Helia (n = 4) and other UAS (n = 2) in the Helsinki area. Each test user was given a Samsung Gear VR or cardboard VR viewer with a smart phone already plugged into it. We did not have any prerequisites for the test users, but we provided test instructions on how to use the gear and cardboard VR. We installed our MVR application in the test phones, and the users could see the content through VR glasses. An internet connection was not necessary for the application to run. We also used a smart phone (iPhone 10) that recorded the elapsed time. Furthermore, we prepared in advance the testing case forms, semi-structured interview questions, and papers for noting the participants' comments.

During the usability test session, the test users were asked to spend 15 to 20 minutes using the application. During this time, participants did the following:

1. Completed a user research questionnaire before the test
2. Performed the given tasks on the site while thinking aloud
3. Completed the same research questionnaire after the test
4. Answered questions about their overall attitudes and satisfaction through semi-structured interviews

The main purpose of the interview in the usability evaluation phase was to assess the users' perceptions of, and attitudes regarding, MVR during, before, and after they learned about our MVR application. Table 3 presents the sample of our test plan.

Table 3. Sample of our test plan

Facilitator	**Provides VR gear, smart phones, and the test instructions**
Pre-test	Briefing about the test process
Tasks	1. Go to Riitta's room on the sixth floor 2. Proceed to the library and be welcomed by the avatar 3. Go to the entrance to the lobby on the first floor
Data collection	Audio recording, written notes, short interview
Debriefing	About the hardware Application About users' emotions while using the application
Time management	
Introduction	5 minutes
Test tasks	10–15 minutes (UX) 5–10 minutes (usability)
Debriefing	5–10 minutes
Reporting	120 minutes
Total	15–30 minutes per user 1.5–3 hours for 6 users

During the test sessions, the test facilitator briefly introduced the MVR application prototype and the purpose of the user testing to the participants. Additionally, the facilitator provided the basic guidelines for using the gear, responded to participants' questions, assisted participants in conducting the test, and debriefed the users during the interview.

The observer followed the users' performance during the test and recorded the time elapsed in each test case. Further, the observer followed the users' language and facial expressions and took notes on the testers' actions and comments, procedural errors, and problems and assisted the facilitator in writing down the participants' answers during the interview.

At the end of each evaluation session, we conducted a semi-structured interview and asked the following questions: What is your overall impression of the application? How do you feel after trying the application? What do you like best about the application?

- **Data analysis**

To analyze the collected data, we applied usability evaluation metrics, such as time spent on performing the predefined tasks and the number of tasks performed in a given time, to measure the application's efficiency. The qualitative dataset comprised transcribed think-aloud videos, observations, and semi-structured interviews. We applied transcript coding (Gorden, 1998) to the semi-structured interviews. Additionally, we applied comparative usability evaluations (Molich & Dumas, 2008) to report the findings of the usability evaluations. We utilized SPSS (Pallant, 2011) and Excel to analyze the questionnaires.

- **Case Study Design**

The aim of our MVR application was to provide a virtual tour of the Pasila campus for those students who received admission to the BITe degree program for the fall 2018 semester at Haaga-Helia UAS. The application concept was initiated by conducting a feasibility study on the essential needs of potential users. A potential application prototype based on users' requirements was designed and developed. The MVR application enables users to navigate through the main areas, such as the information desk, library, computer rooms, classrooms, and cafeterias. The MVR application starts the tour in the main lobby on the first floor, proceeds to certain places on the third and sixth floors, then returns to the main gate on the first floor. Figure 1 presents the application prototype.

Figure 1. Prototype of the application

The MVR application was mainly developed by students as a project for which the results have been published (Saballe et al., 2018). They used Unity (version 2017.3.0p4), with scripts written using C# and some assets imported from Google VR SDK (for controlling the GVR Reticle). The 360-degree background images used in the application were taken using an Insta360ONE camera. These were then wrapped as background by rendering them as Skybox components. A skybox is a panoramic view rendered around the whole scene to give the impression of complex scenery at the horizon. The hotspots were implemented and animated using Unity's particle system. A particle system displays and moves small, simple images to simulate fluid, smoke, or light effects. Unity's Collaborate service was also used for the team's seamless workflow and collaboration. The application was built on the Android platform on Samsung S7 and Honor 8 devices with the import of Android SDK and JDK.

Results

User Experience and Usability Evaluation Results

The average time to execute the predefined tasks was three minutes. The task performance depended on the user's previous experience with the MVR application. Expert users executed the tasks faster than novice users. Table 4 presents the average execution time in seconds.

Table 4. Task execution in seconds

Task1	Task2	Task3	Total
61	50	49	160

The data analysis indicated that more than half (57.14%) of the test users reported feeling dizzy after trying out the MVR application. For example, Markku, 25, stated, "I feel dizzy and nauseous; I can still feel it in my stomach. I also noticed that my eyes feel a little bit weird." When probed about why users felt dizzy, they gave the following potential causes:

- "The ground (plane) is a bit skewed; maybe that messes with my sense of balance." Markku, 25
- "The background looks blurry." Li, 26
- "The screen appears to be too close to my eyes." Yuki, 29

- "It takes some time to get used to the red dot (reticule). Sometimes I see the dots double, which feels uncomfortable, and I have to focus and concentrate on the dot all the time." Theo, 24

Three of the six participants who did not feel dizziness disclosed that they play online games.
The participants were asked about the time they would expect to spend on the MVR application. This question was asked before and after the experiment. Almost all test users (n = 15) anticipated spending 0–15 minutes on the application. One user expected the time to exceed 15 minutes. The scene loading time varied from 0.5 to 3 seconds. All participants preferred a loading wheel, and most of them preferred the loading time to be 1–2 seconds. For example, Victor, 23, stated, "I like the loading wheel because it gives me feedback and I have time to change my mind. It also prepares me mentally for the change of scene."

There were also some failures in the tasks: some users got lost due to the lack of instructions, signs, or maps to help with their current location and guide them where to go. Thus, they did not know how to proceed to the next location. Further, some elevator buttons did not work like the others, and the loading wheel disappeared from time to time, confusing them. In addition, the welcoming avatar was too big, according to Fung, 25: "I was overwhelmed by the picture; it was so big and covered the destination room so that I couldn't see anything else." Finally, wearing the head-mounted display device for a long time could eventually make some users' heads feel heavy. "This head-mounted VR gear would make me, and especially my head, feel heavy if I used it for a long time," said Mary, 22, who had played VR games before.

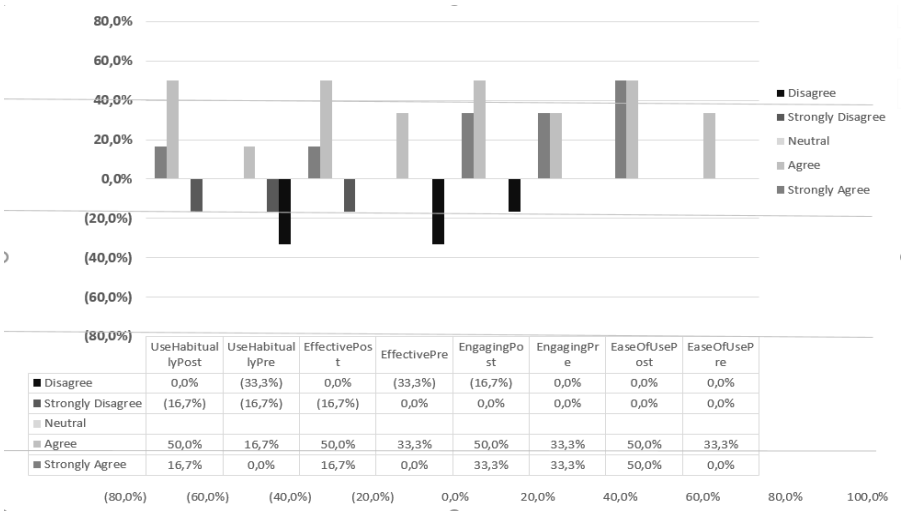
Questionnaire Results
To learn about the users' attitudes prior to and after the actual MVR application experiment, we asked the following question: *How do attitudes change as a result of the experiment*?

We endeavored to learn about the users' mental models of MVR applications as an educational tool. Figure 2 presents the participants' mental models of MVR applications. The figure displays the participants' general perceptions of MVR as a medium for educational purposes. It shows that about 75% positively answered that they were curious to try an MVR application in their educational activities. However, only about 31% perceived that they would use an MVR habitually for their studies. Additionally, 65.7% of participants agreed or strongly agreed that they had heard good things about MVR applications, and 57.1% positively perceived MVR as an engaging medium. However, less than one third of participants perceived MVR as an effective medium for studying. Only about 31% agreed or strongly agreed that MVR applications would help them focus on what they were studying. More than 63% of participants did not agree that there were currently many MVR applications for learning in the market. Figure 2 presents the students' perceptions of MVR.

	Curiosity ToTry	EaseOfUse	Useful	Engaging	HelpFocus	Effective	VRAppAvailability	Positive	Negative	UseHabitually
Strongly Disagree	(2,9%)		(8,6%)		(2,9%)		(11,4%)		(17,1%)	(11,4%)
Disagree	(2,9%)	(17,1%)	(8,6%)	(11,4%)	(28,6%)	(25,7%)	(51,4%)	(5,7%)	(25,7%)	(28,6%)
Neutral	20,0%	40,0%	37,1%	31,4%	37,1%	45,7%	22,9%	28,6%	40,0%	28,6%
Agree	42,9%	34,3%	37,1%	45,7%	22,9%	20,0%	8,6%	48,6%	14,3%	20,0%
Strongly Agree	31,4%	8,6%	8,6%	11,4%	8,6%	8,6%	5,7%	17,1%	2,9%	11,4%

Figure 2. Students' perceptions of MVR

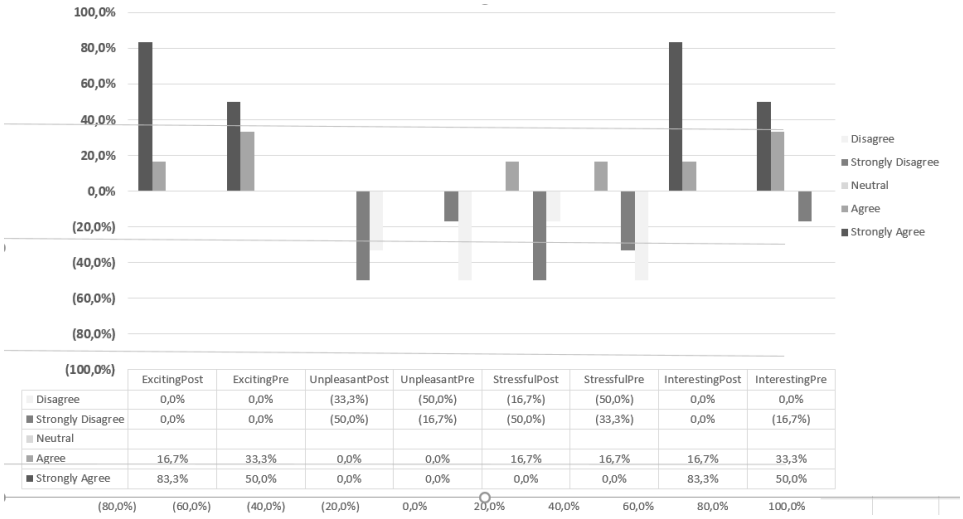
The post-questionnaire analysis demonstrated a change in the participants' perceptions of MVR mainly in four statements: "MVR applications are easy to use"; "I will use MVR apps habitually for my studies in the future"; "MVR is an effective medium for studying"; and "MVR is an engaging medium for studying." Figure 3 presents the percentages of agreement/disagreement among these factors.



	UseHabitualyPost	UseHabitualyPre	EffectivePost	EffectivePre	EngagingPost	EngagingPre	EaseOfUsePost	EaseOfUsePre
Disagree	0,0%	(33,3%)	0,0%	(33,3%)	(16,7%)	0,0%	0,0%	0,0%
Strongly Disagree	(16,7%)	(16,7%)	(16,7%)	0,0%	0,0%	0,0%	0,0%	0,0%
Neutral								
Agree	50,0%	16,7%	50,0%	33,3%	50,0%	33,3%	50,0%	33,3%
Strongly Agree	16,7%	0,0%	16,7%	0,0%	33,3%	33,3%	50,0%	0,0%

Figure 3. Students' perceptions of VR as an educational medium – pre- vs post-test

Among the testers, the perception that MVR applications are easy to use changed from 33% agreement to 100% agreement. Agreement that participants would use MVR applications habitually for studying also increased considerably from 17% to 67%. Agreement on the effectiveness of MVR as a medium for studying also increased from 33% to 66%. Lastly, the perception of MVR applications as an engaging medium for studying increased from 67% to 83% positive agreement. Figure 4 presents the users' pre- versus post-test feelings about the MVR application.



	ExcitingPost	ExcitingPre	UnpleasantPost	UnpleasantPre	StressfulPost	StressfulPre	InterestingPost	InterestingPre
Disagree	0,0%	0,0%	(33,3%)	(50,0%)	(16,7%)	(50,0%)	0,0%	0,0%
Strongly Disagree	0,0%	0,0%	(50,0%)	(16,7%)	(50,0%)	(33,3%)	0,0%	(16,7%)
Neutral								
Agree	16,7%	33,3%	0,0%	0,0%	16,7%	16,7%	16,7%	33,3%
Strongly Agree	83,3%	50,0%	0,0%	0,0%	0,0%	0,0%	83,3%	50,0%

Figure 4. Students' feelings about MVR – pre- vs post-test

Changes in feelings about MVR as an educational medium were noted in four factors: *interesting*, *exciting*, *stressful*, and *unpleasant*, as presented in Figure 4. Both the statements "I feel that MVR apps are interesting" and "I feel that MVR applications are exciting" with 83% of participants strongly agreeing with statements in the post-questionnaire. Those who disagreed that MVR applications are unpleasant changed from 67% to 83%. However, those who disagreed that MVR applications are stressful changed from 83% to 67%, which suggests that some participants felt stressed during the tests.

Challenges, Opportunities, and Best Practices for Mobile Virtual Reality User Experience

MAR and MVR are gaining momentum among students. Therefore, the UX designs of applications of these technologies are becoming vital. The author has already published an article on MAR UX in the *Journal of Computers* (Dirin & Laine, 2018); to align with those findings on MVR UX, the next sections apply the same style as in the previous article.

Challenges of Mobile Virtual Reality User Experience

The main challenges identified during the case study experiment are summarized in Table 5.

Table 5. Main challenges associated with MVR UX

Challenges	Description
Physical	While using the MVR application, the user needs to completely focus on the application. The whole body needs to be involved: eyes focused only on the application, hands ready for possible interaction with the application through the control panel. It is impossible to perform any other task while using the MVR application.
Mental	New MVR applications often require that the user installs them first and then uses them through glasses. Installing new and possibly unknown applications requires extra effort and trust from users. Another mental challenge is the cognitive load caused by the bridging of the virtual and real worlds via rich multimedia contents. Moreover, the new ways of gathering and processing information can be mentally exhausting.
Prototyping	Technologies for supporting MVR application design and early prototyping are still in an early phase despite recent development.
Technical	There are still many technical challenges associated with MVR design and development. Technical immaturities, such as battery drain, required processing power (i.e., how to make it available on low-end devices), glasses, and screen size, can impact MVR application UX. From the perspectives of students, these technical deviances are UX drawbacks to using the MVR application in the long term.
User interface	Designers have already managed to construct user interface and interaction metaphors for non-AR mobile applications. Not all mobile application design metaphors are necessarily applicable to MVR applications; hence, new interface and interaction metaphors specific to MVR applications are needed.
Development	To develop a robust MVR application, application developers must utilize multiple integrated development environments. For example, in our case study, we worked with Unity 3D, C#, Android SDK and JDK, and Google VR SDK.
UX design	The mind-set change from mobile application to MVR concept design is associated with some challenges. Designers are required to adjust their design approaches, which are based on 2D sketching of non-VR objects using a pen and paper or mock-up tools, toward sketching 3D scenes and objects, which are viewed from a 2D perspective (i.e., the camera). Connected to this, as mentioned above, MVR UX designers lack robust prototyping tools to create prototypes for MVR objects and interaction.
Timing	The experiment demonstrated that participants got frustrated if MVR objects took up too much of their time, especially considering that the application's purpose is to entertain the user. The optimal presentation time needs to be carefully assigned depending on the context and the target user group.
Psychological and physical impacts	The unawareness of personal surroundings while using the MVR application resulted in stress and anxiety for users. These psychological impacts can cause users not to use the MVR for long periods. Furthermore, the experiment demonstrated that users became dizzy after using the application. However, this was only for the first few tries; then the brain adapted to the new information gathering and processing.

Opportunities for Mobile Virtual Reality User Experience

The main opportunities associated with MVR UX are presented in Table 6.

Table 6. Main opportunities associated with MVR UX

Opportunity	Description
Marketing potential	MVR creates a unique opportunity for practitioners to promote products and services. MVR can be applied in product advertisements, product training, and the exploration of various aspects of a product. MVR helps users perceive the product better. Further, it helps users become involved more closely with the product features and performance. MVR enables users to construct an emotional engagement with the product. Traditionally, the achievement of this type of emotional engagement with tangible products has been feasible through video advertisements. MVR can enable this emotional engagement through richer, multi-directional interactions (e.g., eyes, ears, hands).
Emotional engagement	Emotional engagement is the key result that MVR can bring to the user. Emotional engagement was also demonstrated in this study. After the experiment, the users' attitudes toward the MVR application changed (e.g., perceiving MVR as fun).
User interface	MVR provides alternative options to create novel user interfaces. Voice commands and virtual and handheld MVR object controls are examples of novel user interface components that can be associated with MVR applications.
Interaction	VR enables unique interaction experiences for mobile applications that previously were not feasible, such as voice commands, natural communication with an avatar, and rich visualization of the user interface, instead of using text-only labels and 2D graphics to guide the user.
Experience development	MVR enables designers to create context-sensitive illusions that ease the cognitive process for complex teaching, such as teaching welding to beginners by developing a complex 3D model, which enables the user to learn the welding process.

Best Practices for Mobile Augmented Reality User Experience Design

The best practices and a sample example based on our case study experiment are presented in Table 7.

Table 7. Details of best practices based on MVR UX design

Best practice	Description	Examples
Spatial correspondence	MVR object dimensions and locations should match the real-world object dimensions.	In our case study, the MVR panel dimensions and locations were situated in the exact places that the users expected. In our example, we aimed to construct a mental model of the real environment for our new students.
Tolerance of movement	MVR objects should be tolerant of movement.	In our case study, novice users experienced cyber nausea. Therefore, the objects' designs must be planned and organized properly.
Object detail	The details of MVR objects should be sufficiently precise (within the limits of the target hardware) to make them recognizable and appealing.	The avatar in our case study was a 3D cartoon object, which occupied the screen properly. We designed a zooming circle to help the user identify an object with finer details.
Object correspondence	Establishing correspondence between an MVR object and a real-world object creates a metaphorical link that increases familiarity and might lower the learning curve.	The avatar in our case study had high resemblance to Riitta, the academic advisor at BITe, Haaga-Helia.
Natural interaction	Allowing users to interact with MVR content via multiple natural methods (e.g., speech, touch, gestures) promotes realism.	The interaction in our case study was based on zooming in on an object's user interface and hard controls.
Personalized experience	Making the MVR experience personal to each user increases the likelihood of emotional	Our case study provided a one-size-fits-all experience to all users. Participants

	engagement. This can be done, for example, by allowing the user to customize the application or by automatically adapting the application to the user's context and preferences.	were unable to change preferences or otherwise customize the content.
Emotion-evoking avatar	It is recommended to include an avatar in MVR applications to make the interaction with the application more natural. Moreover, the avatar should have emotion-evoking properties, such as a pleasing appearance and body language that signals how the avatar feels.	The Riitta avatar in our case study was found to be appealing and was able to evoke emotions among the participants.

DISCUSSION

The latest technological advancements in MVR and affordable peripheral devices, such as VR glasses and remote controls, have allowed MVR to become an alternative medium to support educational offerings (Hussein & Nätterdal, 2015). Therefore, MVR applications are expected to arise increasingly in the educational context. In this study, we assessed how students perceive MVR and investigated whether their attitudes changed after they experienced the new technology. We developed a simple MVR application for first-year students in the BITe department. The aim of the MVR application was to familiarize them with the university campus, classrooms, library, and key staff. Through the case study application, we pursued answers to the initial research questions. We applied various methods to determine the users' perceptions and attitudes toward the MVR application, such as conducting a usability evaluation, interviews, and pre- and post-questionnaires. The usability evaluation helped us learn about the application's performance, effectiveness, and efficiency as well as user satisfaction (Riihiaho, 2017). Through the semi-structured interview, we learned the students' expectations for potential MVR application functionalities and performance. Livesey (2010) recommended using a semi-structured interview that allows participants to express their opinions on a specific subject. Furthermore, Livesey revealed that the objective of the semi-structured interview is to learn participants' viewpoints on a specific issue rather than identifying general behavior. A semi-structured interview is often conducted with a focus group. Longhurst (2010) recommended 6 to 12 participants who represent the target users. Additionally, the questionnaires provided information for measuring how perceptions changed after the MVR experiments.

The test users (n = 6) were able to perform all the predefined tasks in 4–6 minutes. They did not encounter any special obstructions or challenges with the tasks or the application performance. However, almost all the test users felt dizziness or nausea. Other researchers have identified this problem (e.g., Rebenitsch & Owen, 2016; Sharples, Cobb, Moody, & Wilson, 2008). Cyber sickness is common among novice users, which the designers may reduce or even overcome through proper background design approaches, such as color, movement of the background picture, short application periods (10 minutes), and decreasing the range of view, as Fernandes and Feiner (2016) recommended. Furthermore, providing visual feedback on the application's execution and processing (e.g., loading the application) helped users be involved and engage with the application and avoid frustration. The loading time affected users' frustration level significantly, as they were unaware of their surroundings due to the glasses and dark screen. We did not measure the optimal loading time, but users showed satisfaction with 0.5–3 seconds for each interaction in our case study. This time range depended on the individual user's previous experience with MVR. Advanced users showed more tolerance for loading the application than novice users. The questionnaire analyses indicated that the students' perceptions significantly changed after the experiment (Figure 3). This is understandable and aligns with the findings of Aarts and Dijksterhuis (2000), who found that goals and actions change habit and behavior.

1. *What is your overall impression of the MVR application?*

Prior to the experiment, most students (74.3%) agreed or strongly agreed that they were curious to try the MVR application. This aligns with *Forbes*' statistics, which show that people are increasingly using VR for social engagement (Koetsier, 2018) . The students' curiosity may have come from the fact that they would prefer to utilize mobile devices more and more for their educational activities (Dirin, Nieminen, & Kettunen, 2013). Among all the students who answered the questionnaire, 40.0% were neutral and 42.9% agreed or strongly agreed that the MVR application would not be easy to use. This indicates that even ICT students felt that they may have difficulties in using MVR. Despite this, some students (34%) thought the MVR application would be challenging but not boring (75%) and were curious (42.9%) to try the MVR application. Furthermore, our results indicate that the majority of students (66.7%) thought that the MVR application would be positive and effective in an educational context. Similarly, Özgen, Afacan, and Sürer (2019) showed that in an educational context,

students prefer a VR conceptual design to a paper-based one despite the challenges associated with VR design. Table 8 presents the participants' attitudes toward the MVR application before and after usage.

Table 8. Users' attitudes toward the MVR application before and after the experiment

	Prior to experiment	**After the experiment**	**Variations**	**Comments**
Ease of use	Only 30.3% agreed that MVR would be easy to use.	Of the participants, 100% agreed or strongly agreed that the MVR application was easy to use.	Agreement that MVR was easy to use increased by 69.7%.	The MVR application experiment changed participants' perceptions of the ease of use of the MVR application.
Engaging	Of the participants, 66% agreed or strongly agreed that MVR would be engaging.	Of the participants, 88.3% agreed or strongly agreed that the MVR application was engaging.	Agreement that MVR was engaging increased by 18.3%.	The MVR experiment changed participants' perceptions of MVR engagement.
Effective	Of the participants, 33.3% strongly disagreed that MVR would be effective.	Of the participants, 16.7% strongly disagreed that the MVR application was effective.	Disbelief in the effectiveness of MVR decreased by 16.6%.	The MVR experiment had a positive impact on participants' attitudes toward MVR's effectiveness.
Use habitually	Of the participants, 50% strongly disagreed or agreed that they would use MVR habitually.	Of the participants, 16.7% strongly disagreed that they would use the MVR application habitually.	Attitudes toward the habitual use of MVR changed by 33.3%.	The experiment showed significant improvement in users' attitudes toward the potential use of the MVR application.

2. How do you feel about MVR application?

Our experiment revealed that despite initial doubt, the majority of participants would like to incorporate MVR in their learning process. Merchant, Goetz, Cifuentes, Keeney-Kennicutt, and Davis (2014) similarly showed that VR is an efficient learning instrument for students and yields positive outcomes for students (Lau & Lee, 2015). For example, our questionnaire results revealed that the majority (82%) of our participants agreed or strongly agreed that the MVR application is an interesting technology to be utilized in educational offerings. Furthermore, 79.9% considered the MVR application as fun to use. Similarly, Von Mammen, Knote, and Edenhofer (2016) demonstrated that despite the cyber sickness associated with VR, users nevertheless had fun using the VR application. Table 9 presents the users' attitude changes toward MVR application use.

Table 9. *Attitudes toward the MVR application from an emotional perspective*

	Prior to experiment	**After the experiment**	**Variations**	**Comments**
Interesting	Of the participants, 80% agreed or strongly agreed that MVR would be interesting.	Of the participants, 100% agreed or strongly agreed that the MVR application was interesting.	Agreement that MVR was interesting increased by 20%.	The MVR application experiment changed participants' perceptions.
Stressful	Of the participants, 33% strongly disagreed that MVR would be stressful.	Of the participants, 50.0% strongly disagreed that the MVR application was stressful.	Disagreement that MVR was stressful increased by 17%.	The MVR experiment changed participants' perceptions.
Unpleasant	Of the participants, 16.7% strongly disagreed that MVR would be unpleasant.	Of the participants, 50.0% strongly disagreed that the MVR application was unpleasant.	Disagreement that MVR was unpleasant increased by 34.7%.	The MVR experiment had a positive impact on participants' attitudes.
Exciting	Of the participants, 50% strongly agreed that MVR would be exciting.	Of the participants, 80.3% strongly agreed that the MVR application was exciting.	Agreement that MVR was exciting increased by 30.3%.	The experiment results showed significant improvement in users' attitudes toward the MVR application.

The results are accurate and valid in the context for which the application was designed, developed, and assessed. The main limitation of this study was the length of the MVR application. We may obtain different results in the case of a lengthier application. The gathered data provide an overview of students' perceptions and general attitudes toward MVR at the time of the study. Due to these limitations, we cannot generalize the results. Hence, the results are only valid in the context of this study and for the segment that this target group represents.

CONCLUSIONS

The study demonstrated a change in students' perceptions of new technology through a simple experiment. Our study also revealed that the majority of students are unaware of MVR applications in an educational context. Despite the improvements in smart device capabilities, such as memory, processing power, and affordability of cardboard glasses, students still have the wrong perception of MVR application installation and usage. Additionally, the results of this study reveal that novice users experienced more cyber sickness than experienced users. This is already a known issue and has been tackled in various studies. Therefore, we recommend special attention to MVR application design and development, such as selecting the proper colors for objects, movement of objects, and time to present the concept. We recommend 10–15 minutes as the optimal time for each chapter of the MVR application. The main limitations of this study were the number of test tasks and the VR application. The number of test tasks could have been greater to test the learners' attitudes for a longer period. The application, however, was designed and developed for students at the university on the basis of their needs. Therefore, the results regarding the application are valid, but the findings cannot be generalized.

As future work, we aim to design and develop new VR applications in an educational context and recruit more test users to generalize our results.

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