

THE USE OF INTERNET RESOURCES BY UNIVERSITY STUDENTS DURING THEIR COURSE PROJECTS ELICITATION: A CASE STUDY

Yasar Guneri SAHIN
Izmir University of Economics
Department of Software Engineering
Balcova / Izmir – Turkey
yasar.sahin@ieu.edu.tr

Sabah BALTA
Yasar University
Department of Tourism Management
Bornova / Izmir – Turkey
sabah.balta@yasar.edu.tr

Tuncay ERCAN
Yasar University
Department of Computer Engineering
Bornova / Izmir – Turkey
tuncay.ercan@yasar.edu.tr

ABSTRACT

Although technology is a very important, useful and indispensable part of the life, effective and appropriate usage of it still needs to be improved in education. This study presents the way university students gather their course project requirements during the project elicitation phase, how they access the Internet and other resources, and their trends in the literature review using the Internet. Furthermore, the diversity of Internet resources which are used for homework and course projects studies, and the reliability and accessibility of these resources have also been investigated and assessed. In addition, the results obtained from the study have been discussed and evaluated, the academic resources accessibility and usability in universities have been assessed and their importance discussed. The internet resources have been divided into sub categories according to their accessibility and reliability. Finally, the effects of reliable and limited accessible internet resources and unreliable and unlimited internet resources on university students' out-of-class works and projects have been presented and discussed.

Keywords: The use of Internet in Course Projects, Internet Resources Accessibility vs. Trustworthy, Educational resources

INTRODUCTION

The use of the Internet in the educational environment has enabled easy access to many resources, and information sharing has, therefore, significantly increased. Moreover, the prevalence of this sharing has brought additional benefits in that these resources can be used in any location and any time. Although the efficiency of this technology, it is evaluated with use of proportion of the desired results in student achievement does not exactly come out and is difficult to determine. Hence, much research has been conducted over time to understand the reasons for this situation.

Since adolescents, especially some university students sometimes, use the Internet for reasons other than educational (they explore the funny view of the Internet). The effect of the Internet in education is, hence, relatively limited. In this study, efficiency and effectiveness of access to resources on the Internet, rather than examination of Internet use has been investigated. In addition, we have sought to identify the impacts of Internet resources used by university students in their project, and which effects of the internet are observed during project elicitation phase.

Internet use, especially in education, has been investigated for sometime, and many different studies, exist in literature about that subject. In the study of D'Esposito and Gardner (1999), Internet usage trends of the university students, and college student perceptions of the Internet and a traditional library were presented. This study showed that when university students have the opportunity to use internet resources, almost all of them prefer to use these, rather than classical libraries for their studies, but when the information source satisfaction in research needs is considered, the students' trends are in the direction of using both. In addition, Cheung and Huang (2005) emphasized the effects of the Internet as an effective teaching tool in university education, and proposed that many university teachers publish their course materials via the internet. They suggested that it is

insufficient for university lecturers and administrators to use the Internet as a good teaching tool, and that students' internet use should also be investigated.

Chen & Pen (2008), in their study, examined the basic relationship between the internet use of university students and their academic performance, interpersonal relationships, psychosocial adjustment and self-evaluations. They prepared a questionnaire and collected 49,609 university juniors' comments about the questions. The results show that non-heavy internet users have better relationship with administrative staff, academic grades and learning satisfaction than heavy users. They claimed that the heavy internet users were likely than non-heavy users to be depressed. This study provoked us to search the raising trends in use trap sites among university students.

Peng et al (2006) in their study of university students' attitudes and self-efficacy towards the Internet, demonstrated the relationship between perceptions of the internet and their internet attitudes and self-efficacy. They showed that there is a positive effect if the students use the Internet as a functional tool or functional technology. In addition to those mentioned, there are many other useful studies which investigate the effects of internet and electronic resources on university students' self-efficacy and performance (Crews & Feinberg, 2002; Wu & Tsai, 2006; Wen & Tsai, 2006; Perry et al 1998; Wainer et al 2008; Odell et al 2000; Crouch, 2001; Mohammed & Al-Karaki, 2008).

A number of publications have studied internet addiction among university and college students. They have attempted to show there can be negative effect of internet use on these students, which may cause the students to become addicted and to digress from their educational studies. In order to assess internet addiction, many new diagnostic tools have been developed in literature. Chan & Law (2008) evaluated the Young's Internet Addiction Test (IAT) for better understanding the structure, validity and reliability of such assessment tools. In their study, they defined the three dimensions of the problem: Withdrawal and social problems, time management and performance, and reality substitution. Moreover, this study showed clearly that academic performance was negatively correlated with internet addiction. Furthermore, they presented another and very important finding that internet addiction is highly related to online activities, cyber-relationships, and online gambling and hence, these kinds of internet sites and usage can be seen as trap sites for education. In the literature, there are other studies about internet addiction and its effects on students and adolescents, the relationship between internet use and culture, and the relationship between educational performance and internet addiction (Siomos et al 2008; Ghassemzadeh et al 2008; Del Castillo et al 2008; Recabarren et al 2008; Tahiroglu et al 2008). Many of these studies indicate that there is a strong relationship between internet use trends and educational performance, and wrong use of the Internet can cause a major decrease in students' academic performance. In our study, the effects of those internet sites which can easily be accessed and are thus called Trap sites are also investigated.

Apart from above studies, in literature there are many others related to internet use in the many different education fields such as medical education, special education, college education, K12 education, engineering education, and so on. In these studies, the effects of the use of technology on students' academic performance and efficacy have been investigated (Limpach et al, 2008; Rouibah & Hamdy, 2009; Scott et al, 2008; Johnson, 2008; Lin et al, 2008; Yeh et al, 2008; Rochester & Pradel, 2008; Barak & Sadovsky, 2008). The common point of the studies is that internet use can have a positive effect on students' performance if it is properly used.

Another important study has been conducted to evaluate the skills of freshmen in universities regarding educational technology standards, and to examine the factors that influence these skills (Kurt et al, 2008). In a similar study, Akbulut (2008) has investigated the motivational aspects of computer-assisted instruction in terms of writing and mailing over freshmen of foreign languages using Warschauer survey (Warschauer, 1996). His findings suggest that the learners had positive attitudes towards CALL (Computer Assisted Language Learning). He clarified these positive attitudes an independent learning environment, collaboration, instrumental benefits, empowerment, comfort and communication.

Some studies suggested that students usually prefer to use search engines instead of e-libraries to review the literature regarding their project or home-work elicitation. Brophy & Bawden (2005) compared Google as an internet search engine with academic library resources in their study. Surprisingly, their finding showed that while Google is superior for coverage and accessibility, library systems are superior for quality of results, and that precision is similar for both systems. Finally, they concluded that using them together for a good coverage is important because both have many unique items. Lazonder (2000) investigated the novice users' training needs in searching for information on the www, noting that locating a website is more important than locating the information on a website.

Although many studies emphasize the importance of academic resources, some studies present the accessibility problems of these resources. “Despite huge efforts to position information and communication technology (ICT) as a central tenet of university teaching and learning, the fact remains that many university students and faculty make only limited formal academic use of computer technology” (Selwyn 2007). The author suggests some reasons for this situation, such as operational inadequacies on the part of students, faculty, and universities.

As a result, the findings of most studies showed that use of the internet is useful for education, in that it can supply many beneficial opportunities to find different resources. However, a basic rule should be considered while using the internet for successful research, that is, how the resources should be properly accessed by the students. Furthermore, the students must be disciplined in keeping themselves away from trap sites and entertainment in order to obtain the best achievements in their studies. This study examines both the attitudes of the university student towards the Internet use as a research tool and difference between more reliable-less accessible and less reliable-more accessible resources during their project elicitation.

INTERNET RESOURCES FOR STUDENTS

The most effective communication resources, computers and the Internet, are part of our daily life and have become one of the important tools in the education. The Internet helps transfer information between different points therefore this saturation makes the Internet a very powerful information system. People in different age groups and jobs, students and academicians who do scientific research and prepare projects prefer using the Internet because it is the easiest, fastest, and cheapest ways of accessing necessary information (Cloud, 1989).

Even though the Internet is a very important and indispensable source for students, the issue of whether the referenced source is trustworthy and/or credible, has been raised. This is because there is no control on any particular piece of information published through the Web, in opposition to the scientific and professional journals published by the scientific institutions, business world and the organizations known to the public. Additionally, other journals and books issued by commercial organizations do not have a control unit including editors and referees. Many of the sites on the Internet enable anybody to submit any kind of information without being controlled, and many of the sites known as reliable are restricted to open access for commercial purposes or security requirements (IP restriction, membership). This limits the accessibility for students and deprives them of these sites. Figure 1 explains the different resources and their accessibility for the students through the Internet.

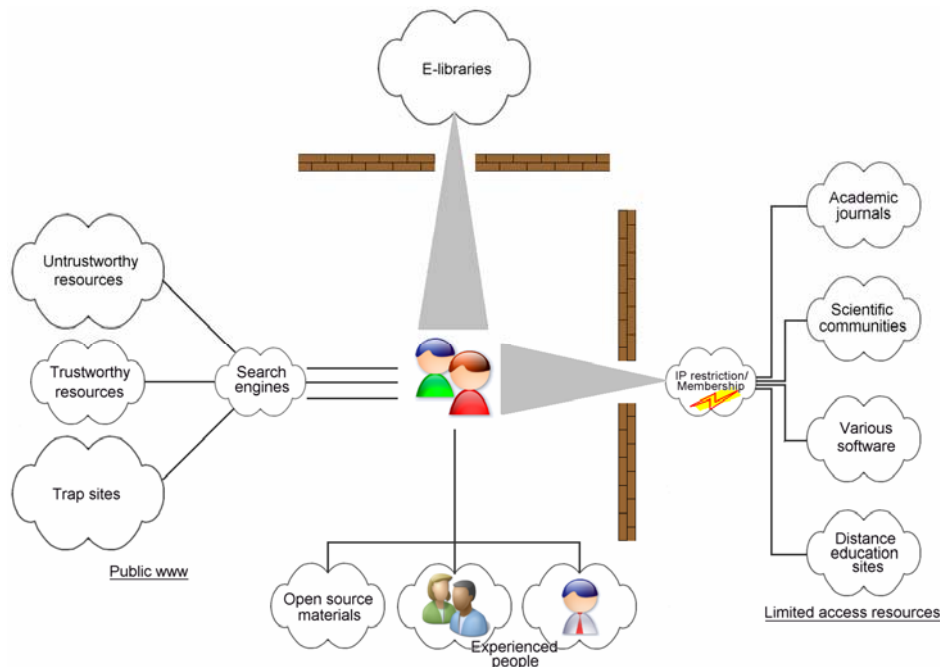


Figure 1. Resource accessibilities for student project

Many of the Internet resources qualified as trustworthy have limited accessibility as shown in the figure. Because of these constraints, information resources used by students are generally untrustworthy or students have been inaccurately forwarded.

Available Resources for the Term Projects

Methods of using academic resources, especially the ability to scan the articles for information is very important for academic research. The similarities and differences between articles on the same subject can be used to classify them for literature review. Grouping of the articles in detail helps keep the expected originality of the text in order to complete the project successfully.

Academic Journals Database

The efficiency of Academic Journals Database is related to the number of periodicals covered and the evaluation techniques of them in order to form a universal academic index. They provide a rich source of specialized information, and are widely used by many academics and students. They are an essential reference tools for these people for detailed research into different subject areas, and are grouped into subjects according to the different disciplines.

Search Engines

Search engines are open access sites and are the most widely used resources for students' projects. Many of them have open access on Internet Explorer programs, but some are customizable tools supplying multiple search engines like "Copernic". Resources which are accessed through these engines are mostly used by students for gathering the required information for their projects. Information obtained from these sites changes according to the student's level and the importance of the project content. By using different filters in the advanced search tabs, directly accessible resources provide more effective query results for specific types of documents such as documents with pdf, ppt, doc extensions. This makes it possible to access the information required or to extract unwanted resources.

However, interesting trap/pop-up sites attract the student's attention and divert them into spending time on different subjects in different sites while working on the project. A future study on the frequency of repetition and prevention of the trap sites would provide an evaluation of the factors affecting the efficiency of open access search engine sites and, indirectly, the performance of the students.

Electronic Libraries

Electronic Libraries which offer an important advantage in accessing information required from related sites are classified into two different groups: open or closed access web sites of universities, and other web sites which are completely open through the Internet. The closed sources in Electronic Libraries in universities are based on academic books and contractual journals and are completely trustworthy. These collections are ideal for the undergraduate/graduate students, researchers, and academicians. However, the reliability of open access libraries is not at a suitable level, and is approximately at the same level of reliability as the external sources that write them. The articles in libraries such as Wikipedia, which has become an official research tool can be compared with the information in other resources and this makes it more detailed and reliable. For this reason, the majority of subjects in Wikipedia are written by accessing official and private libraries, although the reliability of the article can only be judged, if the references have been well documented.

Blogs/Forums

Many students are able to access the required information by using search engines for project assignments. The majority of subjects that are listed in search engines are written blogs and forums. The information given in these links is often all that can be found and so is judged acceptable by the readers. Consequently, a comparison should be made after applying different sources and information should be confirmed. These open-access resources are often personal studies of people who are interested the subject, no matter whether they are academicians or not, and therefore, should be confirmed with other sources on the same subject written by people who are well qualified.

Distance Learning

Through the use of current advanced technologies, students can learn any time, any where by means of distance education, where the student-teacher relationship is carried out at simultaneous or different times without the need for physical proximity. The infrastructure of distance education is based on web-based training. That the current information is reliable and valuable depends on how reliable and well organized the information management of the corporation is. Information management systems should be flexible, easy to understand, dynamic, manageable, valued by people, and with a culture that supports learning.

Related Software

There are many different software programs used by different departments of university students. They are used as part of the current educational programme or related to a specific branch of science after graduation. This software includes the required information for both business life and projects. Many computer programs are for commercial purposes but must be used under license and their usage is very limited for educational purposes.

Trustworthy of the Internet resources

Internet network has eliminated the physical limits and the number of existing educational resources has increased so that it is possible to prepare assignments and projects in anyplace where the internet is accessible.

If we take into account that the steady increase and upgrade in system resources, the large quantities of control mechanisms related with the reliability of the information available is almost impossible to simultaneously implement. In order to get fresh and reliable information from the Internet, it is necessary to consider the evaluation criteria of high quality internet information. However, there is no definite standard related to this (Cebeci & Bek, 1999). In addition, the access to resources is restricted in terms of information security.

Competence of information resources, authors' experience and their academic qualifications should be considered carefully. The differences between information presented by authors who are qualified and those who are not, and issues like writing style and unity of subject matter attracts attention immediately and can be easily understood. While information from authors who are less qualified shows that it should not taken seriously.

Whether Internet resources include updated information related to the subject or not can be evaluated by looking at references of the source used from other. Current academic applications will provide a better understanding and increase the trustworthiness of the resource.

Providing an interactive web site which considers the demands and critiques of the users proves that the information on the site is reliable and can be assayed by looking at the visitors log, customer support and forums.

An evaluation can be made on 5 basic issues related with the trustworthiness and accessibility of the Internet sites:

1. Accessibility: Whether the site is available and the required information is reachable
2. Trustworthiness: Whether the contents in the site are current and correct
3. Authorship: Whether the articles and text are well written by a suitably qualified authors
4. External Links: Whether links to/from the site are reachable
5. Legitimacy: Whether everything is in accordance with the law.

Figure 2 offers a graphic showing the correlation between trustworthiness and accessibility of Internet resources.

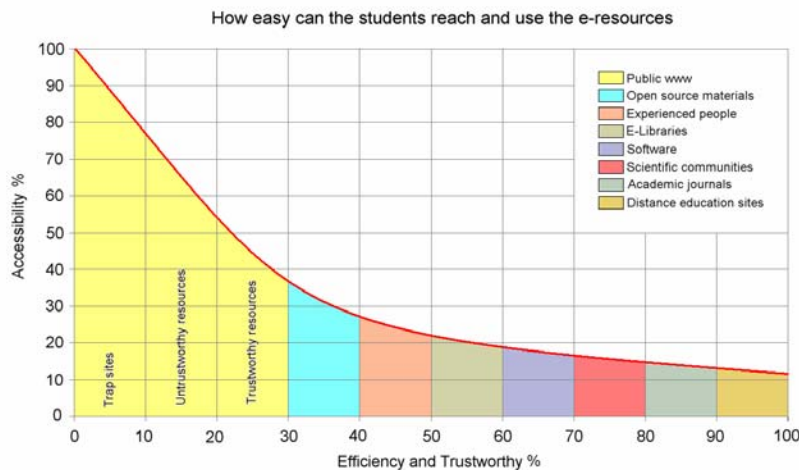


Figure 2. Correlation between accessibility and trustworthiness of resources for student project

By looking at these criteria, a classification, such as that shown in Figure 2, can be made for the trustworthiness and accessibility of available sources that students can use for their project studies. The result obtained here demonstrates that resources which are easily accessible are not those which provide reliable information. Accessibility into highly reliable and credible resources is only possible with some constraints, so that it is very difficult to use these resources efficiently.

METHOD

In this study, a questionnaire was used and the effects of internet usage on students’ grades were investigated. For the questionnaire, the Tourism and Hotel Management students of Yasar University (Izmir-TR) were selected, since many studies have been conducted on computer related departments’ students, but there are a few studies on inexperienced university students such as Tourism and Hotel Management students.

Population and Sample

The research was conducted in Yasar University with the participation of tourism and hotel management students who took part in 2009 spring semester courses. In terms of the semester, the total number of registered students was 143, while participants of the study numbered 102. Table 1 shows the demographic information of the participants.

Table 1. Demographic Characteristics of the Participants

Individual Variables	Frequency
<i>Students Gender Distribution</i>	
Male	53%
Female	47%
<i>Students Age Distribution</i>	
20-23 years	75%
Rest	25%
<i>Students Class</i>	
Freshman	50%
Sophomore	28%
Juniors	16%
Seniors	6%
<i>Internet Access Point</i>	
From Home	70%
From Dormitory	5%
Other points (School, Internet Cafe etc.)	25%
<i>Internet Access Style</i>	
ADSL	55%
Wireless	40%
Cable	5%
<i>University E-Library permission</i>	
No	56%
Yes	44%
<i>Academic Resource Access Permission</i>	
	2% (over 3000 studs)

Data Collection Method & Analysis

Data was collected through a questionnaire presented by Ersoy and Aktay, 2007, with some modifications. The questionnaire includes 27 nominal, dichotomy questions (Yes or No) and 16 socio-demographic questions to assess student’s attitudes towards the use of the Internet during homework and term projects elicitation phase. The questionnaire forms were completed by tourism management students during lecture hours. The frequencies were computed and evaluated, and they were presented in the regarding tables.

Data Analysis & Findings

Table 2 demonstrates the frequency of the students’ trends in the use of internet resources during their term’s projects studies. From these data, the internet resources used in order of priority, in term project studies are:

- Highest (1st Priority) : Search engines (Especially, Google and Yahoo)
- High (2nd Priority) : Online databases and e-magazines
- Moderate (3rd Priority) : Online-libraries, e-encyclopedias, e-books
- Low (4th Priority) : e-journals

Lowest (5th Priority) : e-mails, forums

One finding of interest obtained from the questionnaire showed that while university students frequently use email and forum/chat-line in their daily-life, they don't use them in their studies. Furthermore, many students claimed that they don't like to collaborate with their friends and interact with experienced persons for information eliciting and sharing during their study.

Table 2. Demographic Characteristics of the Participants

Using the internet sources	N	Yes(%)	No(%)
I make use of search engines for my term projects.	102	98	2
I make use of on-line databases for my term projects.	101	64	36
I make use of e-books for my term projects.	100	51	49
I make use of web-sites assignments for my term projects.	101	99	1
I make use of e-journals for my term projects.	100	37	63
I make use of on-line libraries for my term projects.	101	55	45
I make use of on-line encyclopedias for my term projects.	100	56	44
I make use of e-newspapers for my term projects.	102	68	32
I make use of e-mails received the others for my projects.	100	46	54
I collaborate with other internet users through the discussion forums on the internet for my term projects.	102	38	62

Table 3 provides the rates of the students to use their resources by blending or without questioning.

Table 3. The interpretation using sources of the students

Using the internet sources	N	Yes(%)	No(%)
I use the internet sources without making any change.	101	25	75
I blend the information which I have accessed through internet sources with other information sources.	102	88	12
I combine the information that I have accessed through internet and use it my own words.	102	82	18

In light of the information derived from the survey questions, it would seem that the majority of students try to use their own-ideas combined with internet resources, instead of using only resources from the Internet. Furthermore, some students copy-paste information from resources for writing projects and then edit the results. Attention to rules for using other sources and expectations of the student should be explained clearly by faculty members. The contents of the sources obtained by the students are given in Table 4.

Table 4. The contents of the sources obtained by students

The content of the internet sources	N	Yes(%)	No(%)
I use the text documents on the web pages for my term projects.	102	84	16
I use the images on the web pages for my term projects.	102	92	8
I use the audio files on the web pages for my term projects.	102	23	77

Together with the information obtained from this part of the survey, it would appear that the majority of students preferred visual and textual information and was used more effectively in the projects. Table 5 shows the students' views about the reliability of the sources obtained from the Internet.

Table 5. The students' view about reliability of internet sources

Reliability of the internet sources	N	Yes(%)	No(%)
I crosscheck the accuracy of information that I have accessed through internet sources with other information sources.	101	70	30
I believe the confidence of information on the internet.	99	77	23
I pay attention to the internet addresses which I have used for my term project as to having "gov" or "edu" domain suffixes.	102	41	59
I check the up to date of the sources that I have access through internet.	102	77	23
I make sure weather the documents that I have accessed through internet have an author or not.			

According to the information gathered from the survey, 70% of students compared information obtained thorough the Internet with other information resources. Besides, the preferred rate of reliable sites is about 41%. Many of students take care that these resources are up-to-date, for educational purposes, and free from bias. However these ratios are very limited in order to reflect to the projects as they are. In addition to this, most students prefer sites written in scientific language. Table 6 provides information on students preferred style of language and whether they easily accessed the information.

Table 6. Information on students preferred style of language

Access to internet sources	N	Yes(%)	No(%)
I make use of internet sources in Turkish language for my term projects.	101	72	28
I make use of internet sources in foreign languages for my term projects.	101	95	5
I have difficulty in finding proper internet sources for my term projects.	100	27	73

The majority of students preferred sites in the language of study (for participating students, this was English) rather than their mother language. The reason for this choice was because of the difficulty in finding the exact meanings of the words in their mother language.

The students' response to the different software programs used in the tourism sector (tourism automated systems) were: 1. ODEON, 2. ELECTRA, 3. NETSIS, 4. FIDELIO, 5. GALILEO. None of these computer programs are open-source. This may be because students do not like open-source software or because there is no open-source program in their field.

Result from the information obtained during the assessment process of the students indicates that they show more interest in internet resources than other sources. However, although they have limited access to reliable resources, the majority of the students try to access these resources in order to be more successful in their term projects.

DISCUSSION AND CONCLUSION

In this section, the data gathered from the questionnaire and the results of the literature reviews made by university students during their courses and projects is evaluated, and some suggestions are made. Table 7 shows some of the course scores (including the project scores, home-work scores, and final grades), and the evaluation percentages of projects and home-work on final grades.

Lecture grades obtained from the lecturers reveal some significant findings about students' home-work and project studies and their attitudes on these studies during the semester. One important finding is in 1st, 2nd, 3rd and 6th courses which have low effect (10%) on passing grades. Students took low project and home-work scores, this is because students give little importance to these courses in which project and homework marks have little impact on their final course mark. Here, an important fact can be brought out that the students use more accessible and less secure internet sites in such kind of courses because of their careless, and therefore get low marks for term projects and home-works. In most other courses where term projects required detailed investigation, and had a major effect on passing grades, we detected that the students get high marks for project and home-work and passing grades. For the purposes of our study, this was most evident in Research Methods (BUS362), because a detailed academic investigation was required of students for the term project of the course, worth 40% of the passing grade (this situation, therefore, makes the term project very important for passing from the course). This forced students to collect the term project requirements using academic and trustworthy

resources. The term project scores show an average of 74%, demonstrating that the students obtained the necessary information (elicited) from less accessible and more reliable resources.

Table 7. Project scores the effects of them on final grade

No	Class	Course Name	Code	#of Student	Project-Homework		Passing Grade
					Average	%	
1	1	Introduction to Programming	CS 115	79	31	10	47
2	1	Introduction to Programming	CS 115	42	23	10	43
3	1	Introduction to Programming	CS 115	37	40	10	52
4	1	Travel Agency and Tour Operators	VTHM 110	73	72	20	55
5	1	Travel Agency and Tour Operators	VTHM 110	34	85	20	67
6	2	Consumer Behavior	THM 208	31	31	10	77
7	3	Housekeeping Management	THM-302	19	86	25	94
8	3	Research Methods	BUS 362	41	74	40	72
9	3	Tourism Economics	THM 304	21	75	30	70
10	4	International Hotel Management	THM 408	7	94	25	92
11	4	Travel and Tour Operations	THM 402	5	74	20	77

The achievement distribution of the students according to classes shows that seniors and juniors are much more successful than freshmen and sophomores, because they are aware of term projects importance, as a result of their experiences obtained from previous classes in research methodologies.

As we previously mentioned, our study was mostly based on the questionnaire presented by Ersoy and Aktay, 2007, with some modifications. They stated that the levels of crosschecking the accuracy of the information, using scientific sites, and paying attention to internet addresses with “edu”, “gov” domains suffixes were high, hence the teachers investigate the internet resources carefully from the point of reliability for homework and project preparations. When we consider that teachers are more experienced than senior students who will become teachers soon, and the seniors are more experienced than their juniors, and so on, there would be a high correlation between experience and searching reliable internet resources to obtain more achievement from homework and projects. At this point, we found that senior students were more successful than younger class students because of their experiences acquired in previous courses about research methodologies. Furthermore, as stated in the study of D'Esposito and Gardner (1999), many of the students prefer using internet rather than classical library resources. However, the students' trends are in the direction of using both, when the satisfaction of the information source in research subjects is considered. Our results are similarly in the same direction, and show that the students accept the library resources as reliable, and many of the successful students have used reliable internet and library resources together on their homework and projects elicitation phases.

The main concern of this study is to investigate the diversity, accessibility and reliability of the internet resources used by the inexperienced university students during literature review. Initial results show that the more useful reliable information can be gathered using less accessible and more secure internet resources. Using highly accessible internet sites may give fast results but the reliability of those results can not be ensured. This does not mean that all of these sites give unreliable information, but that these should be carefully reviewed. Less accessible sites have the major disadvantage of difficult access. The negative effects of accessibility can be decreased by using university library databases for academic resources, or by allowing access privileges to students connecting to these sites from their homes.

The use of trustworthy internet resources is of vital importance for academic study, especially in higher class courses which require an academic review of the literature, accessibility problems should, therefore, be solved. University students should be encouraged to use academic and reliable resources in their term project and

homework for successful investigations. In addition to this, easy access opportunities for reliable resources should be supplied by university administrators. One solution to access problems is to give permission for connection to academic resources from the students' homes, using specific software and proxy arrangements, thus equipping students with ability to use e-journals, e-libraries, e-books, online-databases as academic resources for related courses.

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