Undergraduate Students Attıtudes towards Educatıonal Uses of Internet

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Abstract

The aim of this study was to determine the attitudes of undergraduate students towards the educational uses of the Internet. A 27-item questionnaire was administered to 207 undergraduate students at the Department of Computer and Instructional Technologies Education (CITE) of the Faculty of Education of Canakkale Onsekiz Mart University during the fall 2002 semester.

The five items that met with the strongest agreement from the sample were the following:

1- The Internet is as important as other research tools (n=141)
2- I find using the Internet easier than using the library (n=107)
3- Using the Internet makes learning fun (n=89)
4- I access the Internet more at school than at home (n=80)
5- Knowledge of the Internet is essential for surviving college (n=79)

One hundred and ninety-six students said that they would access their course materials if they were on the Web; 169 of them stated that they would take a class requiring Internet use if given the choice.

Key Words

Higher Education; Internet; Attitude; Undergraduate Student.

1. Introduction

The Internet is a network of hundreds of thousands of computers all over the world, connected in a way that lets other computers access information from them. So if a computer is connected to the Internet, in principle, it can be connected to any other computer on the network. Today, the Internet comprises more than 45,000 regional, national and international networks, which connect more than 30 million people in over 200 countries. The networks include organizations, schools, universities, companies, governments, groups and individuals (Gray, 1999).

The Internet can be used as a supplement to traditional instructional methods. To complement a lecture, instructors may ask students to find specific Web sites to gain more in-depth knowledge about a particular topic. An instructor may also ask students to search the Internet for information on services offered in a particular location. In preparation for a class topic such as diversity, students may be asked to search the Internet to learn about different ethnic groups or populations at risk.

The Internet may also be used to replace the traditional classroom lecture. A number of courses are being developed in which a part of the course or indeed the entire courseware is offered via the Internet. The instructor can place course notes on Web pages, create a video recording of a live lecture for viewing on the Internet, or use combinations of these ideas. Forsyth (1998) discusses several methods of preparing courses for the Internet including the use of video clips and other graphics on Web pages.

Though colleges and universities have gained a valuable resource with the Internet and World Wide Web (WWW) the Internet itself owes much of its incredible proliferation over the past thirty years to the efforts of these same colleges and universities.

According to Zakon (1999) initial Internet developments were begun by the Department of Defense and required hosts at academic institutions including UCLA and the Universities of Utah, Harvard and Stanford. In 1985, some of the first registered domains were linked to Carnegie-Mellon (cmu.edu), Purdue (purdue.edu), Rice (rice.edu) and UCLA (ucla.edu).

Since the Internet's infancy, higher education institutions have pioneered many innovations (Cookson, 2000). According to Bates (1996), information technologies integral to the Internet have allowed higher education to (1) expand access to education and training, (2) raise quality, (3) lower costs, and (4) increase cost-effectiveness. Internet-related technologies have also enabled higher education institutions to: (5) expand the number of courses and programs, (6) generate higher levels of tuition-based revenues, (7) develop specialized programs of study that would not otherwise be possible, and (8) use the process of technological innovation as a vehicle for revitalisation of other aspects of their operations (Daniel, 1996).

Faculty and students often react with ambivalence to the new technologies. On the one hand, they want to preserve the benefits associated with traditional classroom learning; on the other, they may feel increasing pressure (from themselves or others) to experiment with the Internet (Dede, 1996; Russel, 1996).

In practice, much of the recent focus of technological development in the university sector has been concerned with promoting the use of the Internet as a teaching and learning tool. Internet is appealing to higher education for a number of reasons: it reduces the time lag between the production and utilization of knowledge; it promotes international co-operation and exchange of opinions; it furthers the sharing of information; and it promotes multidisciplinary research.

To what extent are universities now producing 'Internet-literate' students and, more importantly, what factors are influencing students' use of the Internet in higher education? These fundamental questions have often been overlooked by institutions and policy-makers alike, who have taken it for granted that all university students are willing and able to use the Internet given the appropriate institutional conditions. However, this viewpoint is itself indicative of one of educational computing's traditional weaknesses; namely, a failure to adequately consider the needs of those who are actually expected to use the innovation. There is a strong case for arguing that achieving regular use of the Internet in universities is a formidable task (Selwyn, Marriott & Marriott, 2000).

In 1990 the first computer network connection in Turkey was established. During the first six years it was used mainly by universities. Although currently there is no formal computer network infrastructure for education, in Turkey the universities are ideal places for pilot Internet applications because of the familiarity of the students with the subjects and the computer network facilities available. In 1992, Computer-Mediated Distance Education was introduced via an agreement between Turkish Open (Anadolu) University and a group of US Universities. The Internet has been present in the higher education sector in Turkey since 1996.

The first aim of this study is to outline the applications of Internet currently in use in Turkish higher education. The second is to assess the attitudes of undergraduate students toward the educational uses of the Internet.

2. Review of the literature

Bell (2000) designed the Knowledge Integration Environment (KIE) debate projects to take advantage of Internet resources and to promote student understanding of science. Design decisions were guided by the instructional framework known as Scaffolded Knowledge Integration. Bell reported design studies that tested and expanded on this instructional framework, examined how students used evidence, assessed when they added further ideas and claims, and measured their progress in understanding light propagation.

Tsai, Lin, and Yuan (2000) described an attempt to use a www-based concept map testing system, which was developed to assess high school students' understanding of concepts in physics. Ninety Taiwanese eleventh graders were tested through the on-line system and then completed a questionnaire. The responses revealed that the speed of information transfer supported by the system was considered too slow. However, students did not think on-line testing would cause problems of cheating. More than half of the subjects stated that they were willing to use the system in the future.

In a recent study entitled "The digital divide: Hispanic College students' views on educational uses of the Internet" (Slate, Manuel, & Brinson, 2002) the authors expressed their concern regarding the presence of a digital divide between majority and minority

groups. They surveyed 226 Hispanic college freshmen enrolled on an intensive doctoral course in the Southwest, asking questions regarding their attitudes toward educational uses of the Internet and their uses of technology. Statistically significant differences were found between the attitudes of males and females. Differences in attitude were also observed in terms of primary language: that is, between those who spoke English at home and those who spoke Spanish at home. Interestingly, no differences were found between first-generation and non-first-generation college students. The authors discussed the implications of their findings in the light of the existing literature.

Simon (2001) described a series of classes in which technology usage was taken to its ultimate degree: as a replacement for, rather than a supplement to, a traditional textbook. He discussed the development and implementation of the technologies and then assessed the students' opinions of their effectiveness: What advantages and disadvantages did the technology offer compared to more traditional media? He addressed the shortcomings of the technology and made practical suggestions for overcoming these obstacles.

The US public school system has long been perceived as a major avenue to increase equality among diverse groups of students. However, to quote Postman (1999) the introduction of technology into schools has created an ever-expanding chasm of inequity. Gladieux and Swail (1999) contended that the introduction of technology into schools, unfortunately, has created a group of technologically disadvantaged students – students who do not have access to computers at home and only encounter computers in their schools. Selwyn (1999) reported that 983 college freshmen and sophomores who had computers at home expressed more favorable attitudes towards the use of computers in their schoolwork than students who did not.

There is consensus among researchers that educators have been reluctant to implement technology into their curricula (Molebash, 1999; Wright & Marsh, 2000). Teachers have not learned to integrate technology into their classroom lessons (Selwyn, 1998); they continue to teach using traditional methods and resist change, thus contributing to the digital divide (Egnatoff, 1999).

According to Chickering and Gamson (1991), good practice in undergraduate education (1) encourages student-faculty contact, (2) encourages cooperation among students, (3) encourages active learning, (4) gives prompt feedback, (5) emphasizes time on task, (6) communicates high expectations and (7) respects diverse talents and ways of learning.

Although these principles may be addressed without technology, the Internet offers a rich and efficient scaffolding for educators to address them (Rither & Lemke, 2000, 101).

Wilson & Hord (2000, 35) say that the new millennium will see a dramatic increase in the numbers of Internet-assisted and Internet-based courses offered by colleges, universities, and corporations in a wide variety of disciplines. For Lewis and Smith (1997), technology has vastly changed many aspects of higher education. Distance education (Wright & Marsh, 2000), tutoring (Carr, 2000), remedial courses (Olsen, 2000a), scholarships (McCollum, 1999), and college applications (Carlson, 2000) are increasingly offered and accessed on-line. Many colleges are requiring students to own computers and to conduct academic research using the Internet (Olsen, 2000).

Sherman et al. (2000) investigated the Internet gender gap among college students by comparing the usage patterns and attitudes of three cohorts of students in 1997, 1998 and 1999. Attitudes towards technology also differed between men and women, and these differences did not change over time, since the longitudinal data showed similar patterns. In general their research suggests that differences continue to exist between male and female college students in how they experience Internet technology, and that the predictions that the Internet will soon be gender-neutral are perhaps premature.

Lemke and Ritter (2000) state that students must learn how to use the Internet effectively to promote learning. Instructors need to learn how to use the Internet effectively to promote good practices in higher education.

Chickering and Ehrmann (1996) point out that Internet technologies like the World Wide Web (WWW), Electronic Mail, Chat Rooms and List Servers are useful in facilitating communication between undergraduate students and instructors.

Selwyn, Marriott and Marriott's (2000) study entitled "Net Gains or Net Pains? Business Students' Use of the Internet" took an empirical view of students' use of the Internet, via focus group interviews with 77 students at two UK universities, and explored the factors underlying their use (and non-use) of the Internet in their university studies. Four crucial themes were identified: (1) the ways in which students were introduced to using the Internet, (2) operational problems encountered when using the Internet as an information resource, (3) treatment of information retrieved from the Internet, (4) the social element of learning in on-line environments. These factors were examined in detail and discussed in relation to the future presentation and organization of students' Internet use in university settings.

The data suggest that many of the students did not feel altogether at ease with using the Internet as an educational tool. Searching for information on the Internet was seen by many as something that they have little, or no, control over. Many undergraduates saw the Internet as relevant and of real utility to their degree work, but others saw it as simply too unwieldy, unreliable and untrustworthy to be extensively used as an information resource.

Selwyn, Marriott and Marriott suggested that universities must be clear as to "why" they are encouraging students to use the Internet and most importantly, ensure that these rationales are conveyed to both students and staff. They suggested that students should have a clear and valid motivation for using the Internet, not simply because they feel obliged to do so. They concluded that for the Internet to be successfully used in higher education its significance as an effective learning tool must be highly "visible", whilst simultaneously its role as a mediating technology supporting the visibility of the subject matter must be highly "invisible".

3. Internet Use In Higher Education In Turkey

In 1990 the first computer network connection in Turkey was established. During the first six years the Internet was principally the domain of a group of universities. However, since 1996, it has been introduced in almost all sectors in Turkey, including banking, education, and health.

There have been many attempts to integrate the Internet into Turkish primary and secondary school curricula since the mid-1990s, but few have prospered, due to the slow-working, highly bureaucratic, and centralized organization of the Ministry of National Education. A few private schools and institutions are allowing their students to use the Internet to communicate with foreign peers or to conduct searches for information related to their homework, though most of them focus only on preparing students for the university entrance exam. Egitim.com, okulum.com and Mef-Digital are some examples of Websites developed for helping K-12 students in this way (Aydın, 2001).

Cagıltay (2001) declares that educational uses of the Internet in Turkey are still in their infancy. There have been a few attempts to integrate the Internet into K-12 schools and higher education institutions. The main problem is that most people see it as the key to solving the problems of education, forgetting the potential of television and other new technologies.

Yuruker and Uzer (2002) proposed a model named "Internet in the Schools of Turkey". The model had two main components: 1 - The Main Education Center (MEC) and 2 - The Mobile Electronic Classroom. They claimed that the Internet would provide a resource for the teacher inside this model. The teacher would be able to use it as tutorial, support material and virtual environment. Successful implementation of the model required innovative curriculum developers, technicians to help teachers in Electronic Classroom, and experienced teachers in computers, networking, and tools-management. Özgen, Maraslı, and Yalcın (1996) proposed a model for Internet-Mediated Distance Education in Turkey, which aimed above all to overcome the difficulties such as place and time.

In a study entitled "Virtual Classrooms on the WEB: Problems and Solutions in Turkey" (Bayram & Uzuncarsılı, 1998) a field survey on the Internet was administered to 356 Internet users. In this survey one of the three main questions was: "What is your main problem with the use of Turkish virtual classrooms?" The survey showed that the main problems are related to current hardware and software and cost constraints. The other problems were more basic, relating to skills helpful in virtual classrooms but not common in the general population. Some users pointed out more than one problem, and some of them mentioned that these problems have negative effects on the use of Turkish virtual classrooms.

At that time, Turkey had no computer infrastructure for education. The Universities were most convenient places for the pilot applications of Internet because they already had computer network facilities and because many students were familiar with them. The Middle East Technical University created an interactive environment for a graduate level course, in which students could access the HTML pages using Java scripts and applet through a WWW service (Halıcı & Others, 1998).

In 1992, a computer-mediated distance education project was implemented involving the Turkish Open University and US universities such as the University of New Mexico, the University of Oklahoma, Florida State University, Arizona State University, and the University of Wyoming. In Turkey, US and Turkish students took courses run by this system.

Students at Anadolu University reported that a project using the Internet connection between four universities was very successful. They mentioned the following advantages of the global classroom:

- Practice for their English skills;
- New friends from around the world who have common interests;
- Equal access to information;
- A cost-effective way of receiving information;
- Delivery of information outside traditional classroom lectures;
- The opportunity for individual interaction with information (Mclsaac, 1992).

Although computer-aided education is not widely used in Turkey, it is in fact available to schools nationwide (Murphy, 1996). Eskisehir Anadolu University constructed a computer laboratory equipped with between 20 and 30 computers that are connected with a local network in 14 cities. With the computer-aided studies run by the Ministry of National Education (MONE) and the connection of the computers in the laboratory in Anatolia to a national network, the students in Anatolia and big cities will have access to a great amount of information and will be able to contact students at their level.

There is a clear move towards the implementation of Web-based instruction programs in most open universities and other educational institutions. Some have already started to offer on-line degree or certificate programs. For example, Anadolu University has provided on-line self-test opportunities for its distance learners since 1998. This university also offers some on-line alternative courses for its on-campus students in order to demonstrate the advantages of on-line programs, and set up a foundation for a "virtual" university in 1998. In fall 2001, the University began a two-year on-line degree and certificate program.

Like Anadolu University, some other Turkish Universities are setting up on-line certificate and degree programs. Middle East Technical University (METU), for example, has several on-line certificate programs on information technology, English, and computer skills. METU and Bilgi University, which are private institutions, have been providing an on-line degree program called e- MBA for almost two years. Bilkent University constructed a videoconferencing system in 1996, and Istanbul University introduced videoconferencing in September 2000. .

Distance education is provided by Fırat TV programs in Firat University, and one of the desired aims is to offer courses using e-mail and the Internet. There are many other serious efforts at other universities to open on-line programs: Sakarya University is one. However, most of these projects are still at the planning stage or are limited to a few on-line courses. Internet home pages have become a part of daily life in most Turkish universities, but there are few studies of the use of Internet for education.

The Higher Education Council (YOK), a governmental agency, has established a committee called the National Informatics Committee (EMK). Its objectives are a) to facilitate academic cooperation by promoting the sharing of educational resources among universities, b) to increase the effectiveness of education by making use of the interactive medium provided by information technologies and c) to increase the efficiency of higher education and its accessibility to new student audiences. The overall goal was to establish a virtual university in Turkey.

4. Aim

The aim of this study was to determine the attitudes of undergraduate students towards the educational uses of the Internet.

5. Methodology

5.1 Sample and Gathering of Data

We administered a survey to undergraduates at the Department of Computer and Instructional Technologies Education (CITE) of the Faculty of Education at Canakkale Onsekiz Mart University, during the fall semester of 2002. This survey was similar to the one used in a previous study (Slate, Manuel & Brinson, 2002) entitled "The Digital Divide: Hispanic College Students' Views of Educational Uses of the Internet". The survey in that study contained 49 items, but ours included only 27.

Our sample comprised 280 undergraduates at CITE. Eighty-five were first year students, 74 second year, 60 third year and 61 were fourth year. Seventy-six were female and 204 were male, and the average age was 20.1 years. After randomization the total sample numbered 207: 57 were first year students, 60 were second year, 53 third year and 37 fourth year.

The survey contained 20 items which asked students about their attitudes towards the educational uses of the Internet. All these items were in Likert-format, with responses ranging from Strongly Disagree to Strongly Agree. The seven other items in the survey asked students whether they owned a computer, whether they used the Internet, and if so how they accessed materials. We first reviewed the international and national literature and then, in the survey proper, we used statistical techniques such as frequency, percentage and arithmetic mean.

6. Findings

Table 1 shows attitudes towards educational uses of the Internet for the entire sample. Frequencies of students' responses to the questionnaire items were calculated. The following five items were the most frequent:

1- The Internet is as important as other research tools (n=141)
2- I find using the Internet easier than using the library (n=107)
3- Using the Internet makes learning fun (n=89)
4- I access the Internet more at school than at home (n=80)
5- Knowledge of the Internet is essential for surviving university (n=79)

One hundred and nine out of 207 students indicated that they find using the Internet at home to be slow. Four students said that they were indifferent to the use of Internet for education; similarly, four students indicated that accessing Internet for educational purposes was not important for them. These findings are consistent with the responses given by all populations to the top five items.

A comparison of Slate, Manuel and Brinson's (2002) results with ours show some remarkable consistencies. For example, in their study the five items that gained strongest agreement from the entire sample were:

1- The Internet is as important as other research tools (47.1%)
2- I use the Internet to do research (40.9%)
3- Knowledge of the Internet is essential for surviving college (40.4%)

4- I find using the Internet to be easier than using the library (30.5%)
5- I feel comfortable in my ability to use the Internet (28.3%)"

So three of our top five items (nos. 1, 3 and 4) were also ranked in the top five by Slate, Manuel, and Brinson (2002). In both studies, students agreed strongly that the Internet was as important as other research tools. In our study 68% of 207 students (n=141) ranked this item first, compared with 47.1% of 268 students in their study. This consistency is interesting. The results of our study showed that only 62 students (29%) indicated (i.e. expressed strong agreement) that they used the Internet to do research.

Although 141 of 207 students (68%) indicated that the Internet was as important as other research tools and 107 of 207 students indicated that they find using the Internet to be easier than using the library, only 62 students indicated (i.e. expressed strong agreement) that they used the Internet to do research. This result raises several interesting questions: first, why do they not use Internet for this perhaps? Do they not know how to? If they find using the Internet easier than using the library (n=107), why do only 62 of them strongly agree that they used the Internet to do research? One hundred and sixty-nine of 207 students indicated that if given the choice, they would take a class that required Internet use (see Table 2). Does it follow that if they would take a class that required Internet use, they can also use the Internet to do research?

A comparison of Selwyn, Marriott and Marriott's (2000) results with our second most popular item at top of our study shows some inconsistencies. In focus group interviews with 77 students in two UK universities, those authors found that many students did not feel altogether at ease with using the Internet as an educational tool. In contrast, in our study we observed that many students (n=107) find using the Internet to be easier than using the library.

Selwyn, Marriott and Marriott (2000) suggested that for the Internet to be successfully used in higher education its significance as an effective learning tool must be highly visible. This suggestion is consistent with the findings of our study.

The results show that the students are well aware that the Internet is as important as other research tools and they find using the Internet to be easier than using the library. They access the Internet more at school. If we take into consideration that most of them (n=152) stated that they were not connected to Internet at home (see Table 2) this result is normal and consistent with the second item in Table 2.

All responses by the entire sample to general survey items about Internet are listed in Table 2. One hundred and ninety-six (94.2%) indicated (said "yes") that they would access their course materials if they were on the Web. This finding is remarkably consistent with the results of Slate, Manuel and Brinson (2002) who found that 92.0% of the entire sample indicated yes for this item.

The results show that 139 of 207 students have a personal computer and 169 of 207 students indicated that if given a choice, they would take a class that required Internet use. One hundred and sixty-one indicated that they or their friends discussed/shared class-related information found on the Internet. One hundred and thirty-nine had a personal computer. One hundred and fifty-two out of 207 students were not connected at home to the Internet. That is, 139 students owned a personal computer, but only 55 of them (32.3%) had Internet at home.

This ratio – 55/139 – is very low. Did they prefer to connect to the Internet at school? Was it expensive for them to connect at home? Did they find using the Internet home to be slow? The answer to this last question seems to be a firm no: 109 strongly disagreed that they find using the Internet at home to be slow.

Table 1, we present the attitudes towards educational uses of the Internet for 1, 2, 3 and 4th year students. Whereas 24 second year students, 28 third year students, and 19 fourth year students strongly agreed that they felt comfortable with their ability to use the Internet, this was the case in only seven first year students. Bearing in mind that use of the Internet requires a certain amount of training, this result appears to be normal.

In Table 2, we present all responses by first, second, third and fourth year students to general survey items about Internet. Only 18 of 57 first year students indicated that they owned a personal computer. This frequency was very low, and was higher in the second, third and fourth classes. So there is a correlation between academic year and owning a personal computer (PC).

Eighty of 207 students indicated (strong agreement and 55 students agreed that they accessed the Internet more at school than at home. This result is consistent with the result in Table 2, since only 55 out of 207 students said that they were connected at home to the Internet. A comparison of Gladieux and Swail's (1999) and Selwyn's (1999) opinions and results show remarkable consistency. Gladieux and Swail (1999) noted that many students only had access to computers in their school. Selwyn (1999) reported that 983 college freshmen and sophomores who had computers at home expressed more favorable attitudes toward using computers in their schoolwork than college students who did not have computers at home. But Slaute, Manuel and Brinson's (2002) results contrast with those of our study. Only 15.6% of 226 students strongly agreed and 27.2% of 226 agreed with this item, 84 of 207 students disagreed and 64 of 207 students strongly disagreed that they had security concerns about using the Internet. This result raises several interesting questions; firstly, what are these concerns? Why do they exist? In 1998, Bayram and Uzuncarsılı administered a field survey to 356 Turkish Internet users. The result showed that the main problems were related to current hardware, software and cost constraints. Forty-two first year students and 32 second year students reported that they did not keep track of interesting educational sites, but 34 third year and 24 fourth year students answered "yes". These findings are remarkably consistent with the first item in the survey, and the frequency increases in the third and fourth years.

The first year (n=50) students reported that if given the choice, they would take a class that required Internet use. So, as the level of class increases, the willingness to take a class that required Internet use decreases.

One hundred and sixty-one out of the 207 students indicated that they or their friends discussed/shared class-related information found on the Internet. This result is consistent with the opinions of Chickering and Gamson (1991) who found that good Internet practices in undergraduate education encouraged active learning and cooperation among students.

7. Conclusion

A review of educational uses of the Internet worldwide shows that this new educational and instructional technology is used effectively in the universities in developed countries.

The Internet is an educational tool of enormous potential and can be used to replace the traditional classroom lecture and to revolutionize distance education. Itt can also be used a supplement to traditional instructional methods.

The first Internet developments were begun by the Department of Defense and since the Internet's infancy higher education institutions have pioneered the many innovations that have emerged. The Internet is educationally appealing to higher education for a number of reasons: the free-share of information; the reduction of the time lag between the production and utilization of knowledge; the promotion of international co-operation; and the weakening of the concept of specialization.

There is a great deal of literature on the educational uses of Internet and the factors influencing its use by students in higher education. Achieving regular educational use of the Internet at universities is a formidable task and to determine the opinions and attitudes of undergraduate students is a key step.

In Turkey, more attempts have been made to integrate the Internet in higher education than in primary and secondary education. Some Turkish universities such as Anadolu University and Middle East Technical University have started to offer web-based online degree or certificate programs such as English language or computer skills. Anadolu University established a foundation for a "virtual" university in 1998.

The universities are the best sites for the pilot distance education applications in Turkey because of the infrastructure of their network facilities and the familiarity of the students with the subjects. The governmental agency, the Higher Education Council (YÖK), aimed to establish a virtual university in Turkey during the 2000-2001 academic year. Several courses were offered on-line but sufficient data was not forthcoming regarding the effectiveness and appeal of these courses. In comparison with other developed countries, the educational uses of the Internet in Turkish higher education are still in their infancy.

The results of our survey suggest that undergraduate students are aware of the importance of Internet. They agreed strongly that the Internet was a practical and enjoyable research tool, and as important as any other (n=141). But only a part of students strongly agreed that they used the Internet to do research. They accessed the Internet more at university than at home and were aware of the importance of Internet knowledge for getting through university. One hundred and thirty-nine out of 207 undergraduate students owned a personal computer but only some of them (n=55) had an Internet connection at home. We found a correlation between academic year and owning a personal computer.

One hundred and fifty-two out of 207 students stated that they were not connected to the Internet at home. Most students (n=196) indicated that they would access their course materials if they were on the Web. One hundred and sixty-nine of them indicated that they would take a class required Internet use, if given the choice.

8. Suggestions

In the light of the results of our study we would make the following suggestions:

1 The universities should be clear as to "why" they are encouraging students to use the Internet. To achieve success in educational applications of Internet, they should take students' attitudes and views into consideration.

2 All universities should seek to use the Internet for education and should offer feasible, efficient, effective and interactive on-line degree and certificate programs.

3 Universities should organize courses that require use of the Internet.

4 The courses organized by University should highlight the use of Internet research techniques

5 Course materials should be situated on the Web to facilitate access by students.

6 Academic cooperation should be promoted through the sharing of educational resources among Turkish universities.

7 To enhance academic cooperation between all Turkish universities communication between various points of the network should be computer-mediated.

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   http://www.isoc.org/guest/zakon /Internet/History/HIT.html .

Table 1.Attitudes toward educational uses of the Internet for entire sample

SURVEY ITEMS	STRONGLY AGREE CLASSES 1	2	3	4	TOTAL	AGREE CLASSES 1	2	3	4	TOTAL	NEUTRAL CLASSES 1	2	3	4	TOTAL	DISAGREE CLASSES 1	2	3	4	TOTAL	STRONGLY DISAGREE CLASSES 1	2	3	4	TOTAL
1. Knowledge of the Internet is essential for surviving college	15	20	24	20	79	25	28	22	17	87	6	2	3	1	12	8	7	4	2	21	2	2	-	2	6
2. The Internet is as important as other research tools	26	46	44	25	141	21	14	9	11	55	3	-	-	-	3	6	-	-	-	6	1	-	-	1	2
3. The Internet contains mostly useless information	4	2	1	-	7	4	4	-	-	8	2	1	1	-	4	29	33	36	34	132	18	20	15	3	56
4. I use the Internet to do research	19	14	15	14	62	24	37	32	17	110	4	4	3	3	14	1	4	3	3	11	9	1	-	-	10
5. The Internet is too difficult to use for school	6	1	-	2	9	3	6	4	5	18	2	6	4	2	14	39	30	31	18	108	7	15	14	9	45
6. I find using the Internet to be easier than using the library	25	35	32	15	107	13	20	17	12	62	6	2	4	7	19	7	3	-	2	12	6	-	-	1	7
7. I find the Internet to be as informative as the teacher	8	11	3	6	28	19	20	27	14	80	15	12	11	6	42	11	14	11	10	46	3	3	2	1	9
8. I do not like using the Internet for important educational projects	5	1	-	-	6	7	4	3	-	14	5	9	4	6	24	30	25	29	19	103	10	21	17	11	59
9. I enjoy getting information more from written materials than from the Internet	5	2	1	2	10	13	6	2	6	27	11	11	5	13	40	21	30	32	10	93	7	11	13	6	37
10. I feel overwhelmed when I try to use the Internet for my classes	6	1	-	4	11	4	8	5	1	18	20	6	2	9	17	20	29	28	18	95	7	16	18	5	46
11. The Internet does not particularly interest me	3	4	1	1	9	11	2	4	1	18	7	4	2	3	16	15	19	14	5	63	21	29	31	17	98
12. Using the Internet makes leaming fun	23	31	22	13	89	25	26	29	20	100	1	3	-	2	6	6	-	-	2	8	2	-	2	-	4
13. I find using the Internet to be an integral part of the educational process	21	12	23	12	68	17	31	23	14	85	5	9	7	6	27	4	4	-	3	11	10	4	-	2	16
14. I am indifferent about using the Internet for education	3	-	-	1	4	9	-	1	3	13	5	6	4	3	18	24	32	26	17	99	16	20	21	13	70
15. I access the Internet more at school than at home	24	23	16	17	80	14	10	26	15	55	5	11	9	2	27	8	10	1	2	21	6	4	1	-	11
16. I feel comfortable in my ability to use the Internet	7	24	28	19	78	21	19	17	13	70	14	13	5	3	35	12	3	3	-	18	2	1	-	2	5
17. Access to the Internet for educational purposes is not important to me	1	1	-	2	4	11	5	2	-	18	9	6	3	5	23	27	32	24	19	102	9	16	23	11	59
18. I have security concerns about using the Internet	9	1	-	-	10	12	6	3	2	23	9	10	3	4	26	16	28	25	15	84	11	15	22	16	64
19..I find using the Internet at home to be slow	7	9	5	8	29	12	8	10	6	36	18	14	9	7	48	13	12	18	7	50	7	5	11	9	42
20. Accessing / surfing/ browsing the Internet confuses me	3	-	-	-	3	4	-	1	2	7	3	5	1	2	11	23	21	16	17	77	24	34	35	16	109

Table 2. All respondents and responses by classes to general survey items about Internet

ITEMS	YES CLASSES					NO CLASSES				
	1	2	3	4	TOTAL	1	2	3	4	TOTAL
1.Do you own a personal computer?	18	45	44	32	139	39	15	9	5	68
2. Are you connected at home to the Internet?	8	19	14	14	55	49	41	39	23	152
3. Given the choice, would you take a class that required Internet use?	50	48	45	26	169	7	12	8	11	38
4. Would you access your course materials if they were on the Web?	55	48	49	34	196	2	2	4	3	11
5. If you could get your course materials off the Internet,would you go to class?	38	43	34	21	136	19	17	19	16	71
6. Do you or your friends discuss / share class-related information found on the Internet?	39	46	47	29	161	18	14	6	8	46
7. Do you keep track of (i.e.bookmark) valuable educational sites?	15	28	34	24	101	42	32	19	13	106