

Educational Uses Of Internet In The World and Turkey (A Comparative Review)

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INTRODUCTION

The Internet is simply a network of hundreds of thousands of computers all over the World, connected in a way that lets other computers access information on 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 45000 regional, national and international networks, which connect more than 30 million people in over 200 countries. This includes organizations, schools, universities, companies, governments, groups and individuals (Gray, 1999).

Most literature is directed at the Internet as a tool for educators. The instructor's interest and convenience appear to be the key factors for the use of the Internet as a teaching tool. The instructor seems to use the Internet for courses if she or he has a strong interest in using the Internet or if the Internet facilitates ease of course presentation. Halasz (1997, 93) provides an example of the instructor-focused nature of the Internet as a teaching tool. Online education offers "flexibility, accuracy and convenience" as well as "cost and time savings" for the instructor. The question remains: Is this new educational method effective for students in the primary, secondary and higher education?

The aim of this study is to examine the educational uses and major technologies of the Internet in the World and Turkey, discuss the applications, studies and problems on the educational uses of the Internet in Turkey and present a number of suggestions on the effective using of the Internet in Turkish (primary, secondary and higher) education system.

EDUCATIONAL USES of the INTERNET in the WORLD

The Internet can be used as a supplement to traditional instructional methods. To complement a lecture, instructors may ask students to find specified 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 portions of the course or the entire courseware offered via the Internet. The instructor may place course notes on Web pages, may create a video recording of a live lecture for viewing on the Internet, or use combinations of these ideas. Forsyth (1998) discussed several methods of preparing courses for the Internet including facilitating the use of video clips on Web pages as well as the use of

forms and other graphics on Web pages.

A final area for instructor awareness is student fear and/or lack of knowledge about computers and the Internet. Primary and secondary students have increasing access to computers in elementary schools and high schools, but this does not mean that all college students are entering postsecondary education with a competence or comfort level with computers that supports their use of the Internet as a learning tool. Returning students may have had very little access to computer technology during their life experiences. Traditional-age students may have had poor computer instruction or may have slipped through the primary and secondary educational system without learning about computers and the Internet. Instructors need to take into account the varying skill levels and comfort levels of students when designing Internet material for courses (Forsyth, 1998).

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) emphasises time on task, (6) communicates high expectations, (7) respects diverse talent 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 and Hord (2000, 35) determined that the new millennium would 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.

Although the origins of the Internet stretch back several decades, it is only in the last few years that it has really come to fore. The net is essentially just a massive communications system that can link any computer, any where in the World, to any other. Recently, electronic communication, particularly email, has served to speed up interaction and this, together with the other facilities offered by the Internet, seen set to revolutionize distance education. The major Internet technologies available today are the following: webpages, streaming audio and video, forms, java and activex, virtual reality, chatrooms, whiteboards and collaborative surfing, audio/video conferencing, computer mediated communication (CMC) (Davenport & Erarslan, 1998; 410-427).

The tendency in the World about distance education is to pass from single-mode that doesn't allow student- instructor interaction to the multi-mode that has important interaction elements. One way video conference and television programs are generally supported by telephone or fax in order to establish two way communication between student and the instructor.

The point that is reached in the subject of distance education is the interactive education that is served through WWW or videoconference through Internet. Distance, or 'virtual', education which uses the possibilities of hyper media and hyper text gives the opportunity of reaching more students worldwide. The video conferencing through Internet may be much cheaper than the educational television programs.

The use of audio to distribute content over the Internet is another viable alternative audioconferencing is pedagogically learner centered because it provides all learners with

the opportunity to be active participants is an older technology that involves the broadcasting of video in real time simultaneously to many recipients (Wilson & Hord, 2000, 39-41).

The challenges of CMC have also been well documented and include: (a) technical frustration due to the total reliance on technology and outside support systems; (b) increased time-on-task due to the slowness of the medium and the higher volume of messages, which also contributes to feelings of information overload; (c) frequency of miscommunication due to the loss of visual cues; and (d) disjointed flow of communication because of the asynchronous time frame (Berge, 1995; Hiltz, 1994; Wiesenberg & Hutton, 1996)

From the extensive analysis of the literature on designing CMC instruction, Berge (1995) concluded that students and teachers need to dramatically change the roles each plays in the learning-teaching process when moving from a face-to-face to a virtual classroom. Berge offered an instructional framework that categorizes teaching in a virtual classroom as a moderating function that had four essential components. They were the following;(a) pedagogical (didactic and guidance oriented, this role shapes on-line discussions to focus on critical concepts); (b) social (supportive and consultative, this role creates a friendly, inclusive and collaborative learning environment); (c) managerial (administrative and organizational, this role sets the agenda, learning objectives, procedural rules and norms); and (d) technical (technically skilled troubleshooter, this role makes the technology invisible to the users).

Grant and France (2000, 21) proposed a model for virtual classrooms, which is specifically geared toward developing (Caribbean) countries. They declared that advances in the development of the Internet infrastructure could be used within developing countries to enhance the delivery of high quality education to their citizens.

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

Tsai ,Lin., and Yuan (2000) described an attempt of using a www-based concept map testing system, which was developed to assess high school students' concepts in physics. A total of ninety Taiwanese eleventh graders were tested through the on-line system and they, then, completed a questionnaire. The responses of the questionnaire revealed that the speed of information transferring, supported by the system was not quick enough. However, students did not think on-line test would cause some problems of cheating. More than a half of the subjects showed willingness of using the system in the future.

In a study entitled "The digital divide: Hispanic College students' views on educational uses of the Internet" (Slate, Manuel, & Brinson, 2002) concern has been expressed recently regarding the presence of a digital divide between majority and minority groups. Surveyed were 226 Hispanic college freshmen enrolled at a doctoral intensive institution in the Southwest regarding their attitudes toward educational uses of the Internet and their uses of technology. Statistically significant differences were found between males and females in their attitudes toward and uses of the Internet and computer technology.

Differences were also revealed between students whose primary language spoken at home was English and students whose primary language spoken at home was Spanish in their attitudes toward and uses of the Internet and computer technology. Interestingly, no differences were present between first-generation and non-first-generation college students. Implications of their findings and relationships to existing literature are provided.

Simon (2001) described a series of classes wherein technology usage was taken to its ultimate degree: as a replacement for, rather than a supplement to, a traditional textbook. First, he discussed the development and implementation of the technologies and data were presented by student opinions of their effectiveness: What advantages and disadvantages the technology offered compared to more traditional media? He addressed the shortcomings of the technology along with practical suggestions for reducing these obstacles.

The US public school system has long been perceived as a major avenue to increase equality among diverse groups of students; however, the introduction of technology into schools has created an ever-expanding chasm of inequity (Postman, 1999). 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 asserted more favourable attitudes toward using computers in their schoolwork than college students who did not have computers at home.

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

Selwyn, Marriott and Marriott's (2000) study entitled "Net Gains or Net Pains? Business Students' Use of the Internet" took an empirical perspective in students' use of the Internet, via focus group interviews with 77 students in two UK universities, and explored the factors underlying their use (and non-use) of the Internet in university. Four crucial themes were identified, namely; (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.

Throughout the interview data it was noticeable 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 students as something that they have little, or no, control over. In the case of many undergraduates the Internet was seen as relevant and of real utility to their degree work. In the case of using the Internet as an information resource it was seen by many as simply too unwidely, unreliable and untrustworthy to be extensively used.

Selwyn, Marriott and Marriott(2000) 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 rationale for using the Internet, not simply because they feel obliged to do so. They determined 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 visibility of the subject matter must be highly "invisible".

INTERNET USING in TURKISH EDUCATIONAL SYSTEM

Before we explain the using of Internet in the primary,secondary and higher education in Turkey,we want to introduce the related literature;

Review of the Literature

The Directorate General of Press and Information on the Turkish Republic pamphlet <<Education in Turkey>> cites the following Turkish educational goal (Meriwether, 1998; 122):

Education in democracy: Efforts will be directed towards instilling in students the required knowledge for democracy; to create a society that is strong, suitable, free and democratic, with citizens possessing the necessary knowledge relevant to administering the country, with developed feelings of responsibility and respect for moral values.

Meriwether (1998) pointed that there was no greater tool available than Internet at this time for Turkish students of primary-secondary schools to learn both this required knowledge and the personal responsibility necessary for democracy. Meriwether suggested a way to facilitate and set guidelines for exploring and using the Internet for learning in an environment that supported collaboration and cooperation. The process focuses on students and Internet use in school settings. Policies could be developed also which focus on school staff and the Internet provider (province/nation). It was suggested that this approach was considered for use the Turkish educational system.

Halici and Others (1998) proposed that in Turkey, although there was no infrastructure of computer network for education yet, the Universities were most convenient places for the pilot applications because of the infrastructure of their computer network facilities and the familiarity of the students to the subjects. They created an interactive environment for a graduate level course. For this aim, the students of Middle East Technical University would access the HTML pages in which Java scripts and applet were used through a WWW service.

Çagiltay (2001) declared that educational uses of the Internet in Turkey, were in the infancy period. There were a few attempts to integrate the Internet into K-12 schools and higher education institutions. The main problem was that most people saw it as the key to solving the problems of education, forgetting with educational television and other new technologies of the past.

In a study entitled "Virtual Classrooms on the WEB: Problems and Solutions in Turkey" (Bayram & Uzunçarsili, 1998) a field survey on the Internet was applied to 356 Internet

users. In this survey the one of the three main questions was that: "What is your main problem during 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 problem are more basic, relating to skills helpful in virtual classroom but not common in the general population. Some users pointed out more than one problem, and some of them explained that these problems have negative effects on the use of Turkish virtual classrooms.

In 1992, a computer-mediated distance education was implemented between Turkish Open University and American universities the University of New Mexico, the University of Oklahoma, Florida State University, Arizona State University, and the University of Wyoming in Turkey American and Turkish students took some courses from this system.

Students in Anadolu University, evaluated the project which was using the Internet connection among four universities as very successful because, they said, the named, the global classroom provided them with:

- 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 (McIsaac, 1992).

Yuruker and Uzer (2002) proposed a model named "Internet In The Schools of Turkey". The model had two main components to it; 1-The Main Education Center (MEC) and, 2-Mobil Electronic Classroom. They pointed out that Internet would provide a resource for the teacher as a part of the model. Teacher would be able to use it as tutorial, support material and virtual environment. For successful implementation of the Model, innovative curriculum developers, technicians to help teachers in Electronic Classroom, experienced teachers in computers, networking, and tools-management were necessary.

Özgen., Marasli., and Yalçın (1996) proposed a model for distance education through Internet in Turkey. The main aim of this model was to provide Internet-Mediated Distance Education to the persons to overcome the difficulties such as place and time.

Usun(2003)maked a survey study on the undergraduate students' attitudes towards educational uses of Internet.The aim of this study was to determine the attitudes of undergraduate students toward the educational uses of the Internet. A questionnaire of 27 items was applied to 207 undergraduate students at the Department of Computer and Instructional Technologies Education (CITE) of Faculty of Education of Canakkale Onsekiz Mart University(Turkey) during the fall 2002 semester.

According to the responses of entire sample the top five ranked items were the following:

- 1- The Internet is as important as other research tools (n=141)
- 2- I find using the Internet to be 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)

Students most frequently (n=196) said that they would access their course materials if they were on the Web and 169 of them determined that would take a class required Internet use, if given a choice.

Internet Use in Primary and Secondary Education in Turkey

In 1990 the first computer network connection in Turkey was established. During the first six years several universities were the dominant users of this tool. However, since 1996, the Internet in Turkey has touched almost all sectors, including banking, education, and health.

Although there have been many attempts to integrate the Internet into Turkish primary and secondary school curricula since the mid-1990s, almost all of them were lost in the slow working, highly bureaucratic, and centralized organization of the Ministry of National Education. However, a few private schools and institutions are allowing their students to use the Internet to communicate with foreign peers or conduct searches for information related to their homework. Further, 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 (Aydin, 2001).

In 1993 project named Computer Experimental Schools (CES) was initiated by the MOE with the financial support of the World Bank. In the CES project, 53 schools located in different regions of Turkey are to use specially equipped facilities for teaching and learning. It is also expected that a computer-mediated communication network linking these schools will provide a technological and pedagogical edge (Yedekcioglu, 1996).

The World Bank supported project, called the "Project for Globalization in Education 2000" began a very important step for the Turkish Educational System. The aim of this project was to follow the developments of the information age and to use instructional technology in each level of the education system to be able to create a society with adapted information and technology standards. Through this project, new computer labs were established in 2,451 primary and secondary schools in 80 cities and 921 towns in Turkey. In each of these schools the technology class rooms were equipped with: computers, printers, scanners, office program, courseware for computer literacy, courseware for different subjects, educataiment (education + entertainment) courseware, electronic references, video, overhead projectors, TV, educational videocassettes, and transparencies (Akkoyunlu & Orhan,2001).

The computer companies sponsoring this project provided one year of free Internet access to project schools. The people living near the schools had a chance to use the Internet during the weekends. The second phase of this project will continue with 3000 schools. In this project some basic principles were accepted for Turkey to move into the 21.st century. One of the basic principles was to support formal education through distance education.

Internet Use in Higher Education in Turkey

Although the computer aided education is not widely used in Turkey, it is served to the schools nationwide (Murphy, 1996). Eskisehir Anadolu University constructed a computer laboratory that is composed of 20-30 computers that are connected with a local network in 14 cities by synchronized work. With the computer aided studies of National Education Ministry and connection of the computers in the laboratory that is constructed in Anatolia to a national network, the students in Anatolia and big cities will be served great amount

of information and they will be able to contact to the students at their level.

There is a great tendency toward Web-based instruction programs in most open universities and other educational institutions. Some already have 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. Anadolu University has also been trying to offer some on-line alternative courses for its on-campus students in order to be able to understand how feasible, effective, efficient, and appealing it is to offer on-line programs, and established a foundation for a "virtual" university in 1998. Starting Fall 2001, the University will offer an on-line two-year on-line degree or certificate program.

As with Anadolu University, some other Turkish Universities are opening on-line certificate and degree programs. Middle East Technical University (METU), for example, has several on-line certificate programs on information technology, English language, or computer skills. Like METU and Bilgi University, which are kinds of a private institutions, have been providing an on-line degree program called e-- MBA for almost two years. In 1996, Bilkent University and in 2000, September 18, Istanbul University constructed the system of videoconferencing.

For example distance education is performed by Fırat TV programs in Fırat University, some studies are performed using e-mail and education with WWW through Internet is one of the desired aims. Besides these, there are many serious efforts at other universities such as Sakarya University to open on-line programs; however, most of these efforts are still at the idea stage of development or are limited to several on-line courses. Internet home pages become a part of daily life in most of the universities of Turkey, but there are few studies for the usage 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 to facilitate academic cooperation by enabling the sharing of educational resources among universities; to increase the effectiveness of education by making use of the interactive medium provided by information technologies; and thus increase the efficiency of higher education and its accessibility to new student audiences. Beyond these, the main goal was to establish a virtual university in Turkey.

DISCUSSION

When we review the educational uses of the Internet in the World we see that this new educational and instructional technology is used effectively in the primary, secondary schools and universities by the 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. In addition, it can be used a supplement to traditional instructional methods.

The delivery of educational materials over the Internet is now almost commonplace in some of affluent developed countries and the developing countries need to enhance the delivery of high quality and effective primary, secondary and higher education to their citizens. Here, the main question is that: How can they benefit from the Internet for this purpose?

Turkey is a developing country and there have been many tendencies and attempts to

integrate the Internet into Turkish primary, secondary and higher education system since 1990. The World Bank supported two projects; named "Computer Experimental School" and "Project for Globalization in Education 2000" aims were to support the Turkish formal (primary and secondary) education through distance education with the computer-mediated communication network linking. The computer companies sponsoring second project provided one year of free Internet access to project schools. But, inspite of these attempts and tendencies because of the slow working, highly bureaucratic and centralized organization of Turkish Ministry of National Education in Turkey there is no infrastructure of computer network for primary and secondary education yet, and the educational uses of the Internet are still in the start period.

When we compare with the primary and secondary education, there are more attempts and tendencies to integrate the Internet into Turkish higher education than 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.

According to the findings of some studies, the main problems during the use of Turkish virtual classrooms are related to current the hardware and the software and the cost constrains. The other problem are more basic, relating to skills helpful in virtual classroom.

The Turkish universities are most convenient places for the pilot distance education applications because of the infrastructure of their network facilities and the familiarity of the students to the subjects. Although the governmental agency, The Higher Education Council's aim was to establish a virtual university in Turkey during the 2000-2001 academic year, several courses were offered on-line but sufficient data was not available regarding the effectiveness and appeal of these courses.

When we compare with the other developed countries, the educational uses of the Internet in Turkey are still in the infancy period. The mandatory primary education in Turkey has been extended from five years to eight years. The some problems encountered in the process are expansion, school, hardware and manpower. Distance education and the Internet as a supporting tool and technology are very important alternatives to solve these problems.

With the computer aided studies of the Ministry of National Education and connection of the computers in the laboratory that is constructed in Anatolia to a national network, the students in Anatolia and big cities will be served great amount of information and they will be able to contact to the students at their level. Although, Internet home pages become a part of daily life in most of the universities of Turkey, there are few studies for the usage of Internet for education.

SUGGESTIONS

Our some suggestions on the educational uses of Internet in Turkey are the following:

- 1. Advances in the development of the Internet infrastructure should be used within developing countries to enhance the delivery of high quality primary, secondary and**

higher education to their citizens.

2. The Ministry of National Education, with speed working, should realize The World Bank supported projects at once.

3. The budgets of the Ministry of National Education and universities should be increased.

4. The difficulties that appeared because of the highly bureaucratic and centralized organization of the Ministry of National Education should be overcome.

5. The Ministry of National Education should use the distance education in primary education as a supporting tool and support the formal education through distance education with constructed network linking.

6. The all universities should seek for using the Internet for education and start to offer the feasible, efficient, effective and interactive on-line degree and certificate programs.

7. It must be facilitated the academic cooperation by enabling the sharing of educational resources among Turkish universities.

8. To enhance academic cooperation between the all Turkish universities should be constructed the network linking with the computer-mediated communication.

9. We must not see the Internet as the key to solve the problems of Turkish education. The Internet is not a key or unique source, but it is only supportive, effective and interactive communication technology in distance education to move Turkey into the 21.st century named "information age".

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