DOCUMENT RESUME

ED 439 697 IR 019 971

AUTHOR Ozden, M. Yasar; Cagiltay, Kursat
TITLE Running behind the Best Pedagogy To Develop a Telematised Teaching Environment: A Case Study between Turkey and the USA.
PUB DATE 2000-00-00
NOTE 19p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; Developing Nations; *Distance Education; Foreign Countries; Higher Education; *Instructional Design; Instructional Development; Instructional Effectiveness; Internet; Online Systems
IDENTIFIERS *Turkey

ABSTRACT

This paper focuses on developing, implementing and evaluating an online, graduate-level distance education course--the first distance-based course to be offered over the Internet for students in Turkey. The authors present experiences of setting up such a course when students and faculty are 10,000 miles apart. The limitations and difficulties that distance course designers might face when designing a course for students in a developing country are shown. Experiences and findings that resulted from this course are presented, along with background information on the Turkish educational system, course details, pedagogical approaches, technical and administrative problems, political concerns, user support, assessment, modifications, and future plans. (Contains 18 references.) (AEF)

Running behind the best pedagogy to develop a telematised teaching environment: A case study between Turkey and the USA

Assoc. Prof. Dr. M. Yasar Ozden,
myozden@tutor.fedu.metu.edu.tr
Middle East Technical University, Ankara Turkey

Kursat Cagiltay
kursat@indiana.edu
Indiana University, Bloomington IN, USA

Abstract

This paper is about developing and implementing and evaluating an online, graduate level distance education course. This was the first distance-based course, which was offered over the Internet for the students in Turkey. In this paper the authors will present their experiences of setting up such a course when the students and the faculty were 10.000 miles apart. The limitations and difficulties that distance course designers might face with while designing a course for the students in a developing country will also be shown.

In this paper, our experiences and findings in this course will be presented along with its details, pedagogical approaches, technical and administrative problems, political concerns, user support, assessment, modifications and the future plans.

Introduction

Since the 1970's, Turkey initiated several programs to use distance education methods to help to solve problems in different educational settings. Unfortunately, we cannot say that those attempts became very successful. One reason, the technology was not mature enough, the other reason was pedagogical and administrative problems and the third one maybe the society was not really ready for such a radical change in the educational system.

Today, similar to some other countries, the Turkish educational system is also faced with a serious crisis. The number of students in the Turkish schools is higher than the populations in some countries and there are not enough well-trained teachers. Reports show that the quality of education is decreasing and people are losing their trust in the public educational system of Turkey. Everybody is talking about the necessity of a radical change from teacher centered to student-centered education, but it seems nobody really knows how to do it. There is a huge demand for teachers in order to give satisfactory education to the students. Furthermore, the quality of teachers in public schools decreases everyday. Some people present integrating information technologies to the educational system as a silver bullet to overcome the problems.

Turkish higher education is also in the same situation. Since they have limited capacities, universities cannot satisfy the demand. Anadolu University, the largest Open University of the world, could not solve this problem because of its low quality education. Every year, the government spends million of dollars and sends students to Western countries to solve the lack of faculty in universities. Universities started to see information technologies, especially distance education, as a major problem solver of crisis of the universities.

We believe that the problems of Turkish educational system are so complex, they cannot be solved just by using technology in education, but it is also impossible to stay away from the use of technologies in education. If they help to solve some of the problems, we have to use these technologies as much as possible.

In this paper we will give our experiences in designing and teaching a distance education course (SCE519- Courseware Design for Computer Mediated Learning in Network Environment) in the Middle East Technical University (METU) Ankara, Turkey and our future vision design to teach the basic abilities to the students by distance education in order to use information technologies in Turkish educational system.

Background Information

Turkish Educational System and the Problems

Higher Education

According to the recent reports of the Turkish Council of Higher Education (YOK, 1998), the current system presently comprises 53 state universities, two of which are English-medium and one French-medium, and 16 private universities, all of which are English-medium institutions.

In spite of the increase in the number of universities in the last 10 years, Turkish Higher Education system is far from meeting the demand of students. Every year 1.5 million students apply for the university entrance exam and only 450.000 of them are accepted to the universities, including the Open University. In the last 15 years this trend regularly increased at least by 10% every year (YOK, 1998).

Current Turkish universities have several serious problems. Most of them are new and do not have enough resources (faculty, teaching materials, classrooms, buildings, etc.) and their budgets are limited to solve the problems in the short run. Because of those problems in the universities, the Higher Education Council decided not to open new state universities until the current ones reach to better conditions. On the other hand, private universities are also far from satisfying this demand (only 4.5% of applicants of university entrance exam entered them in 1997).

Distance education activities of Turkish Higher Education system and the Middle East Technical University (METU)

Recently the Turkish Council of Higher Education decided to initiate some distance education activities among state universities. The first initiative is supplying some courses from well-established universities to the new ones by synchronous methods. The proposed system's main target is to overcome the shortage of faculty members in state universities. Therefore, in 1998, a feasibility study for such a synchronous system was completed and a pilot project among six universities proposed for about 25 million dollar. The primary mode of delivery will be satellite based synchronized multi-point video conferencing. This proposal was prepared by the Middle East Technical University (METU) and a group of other institutions (YOK, 1998).

The second initiative is proposing an asynchronous training system for the needs of the people in the field of basic information technologies and computer literacy. This program is also led by METU. In 1998, an asynchronous based certificate program (Idea, 1998) was jointly initiated by METU and IBM. This system works on IBM's Learning Space software.

Finally, METU's School of Education and Informatics Institute have some activities to both offer and organize Asynchronous Learning activities in METU and other universities (II, 1998). They will both offer a distance, computer literacy course for the faculty members of other universities.

In addition to this, the Informatics Institute has started to offer campus-wide computer literacy courses to all new Freshman METU students. It also organizes, offers and supports other asynchronous undergraduate and graduate courses in METU.

According to the president of the METU, in the near future the number of METU students who take asynchronous courses will be more than the number of students who take courses on campus.

Elementary, Middle and High Schools

In Turkey the total number of students between ages 6-17 is about ten million. The total number of schools is about 70.000 and there are more than 500.000 teachers. The educational system is centralized and totally controlled by The Ministry of National Education. Since it is a centralized system, schools do not have much control over several educational issues, except routine bureaucratic activities. Because of the huge size of the system, graduates of Education Faculties do not satisfy the teacher demand. Therefore, graduates of other disciplines (engineering, arts & sciences, social sciences, etc.) are hired as teachers after a short training period.

In 1998, the Turkish education system was faced with a radical change. Compulsory education increased to eight years by combining five-year primary and three-year secondary schools. Parallel to this change, activities started for the use of computers and the Internet in standard curriculum to solve educational problems of Turkey.

Schools and Educational Technology

The efforts for using computers in Turkish schools began in 1984. In 1985-1987 about 2400 computers were purchased and distributed to secondary and vocational schools. During 1988-1989, 2000 computers were put into use. Several firms, with the cooperation of the universities, developed courseware materials and applied them in selected schools.

During 1990-1991, 6500 computers were bought and firms completed their studies on preparing 142 courseware. In addition to this, the universities took 5000 teachers and 195 teacher trainers into in-service training. Up to 1995, approximately 10.000 computers have been purchased and distributed to schools. The schools also purchased microcomputers through other sources. An estimation of 20.000 computers were available in Turkish schools in 1995 (Cagiltay, et.al. 1995). Although this trend is growing exponentially, the percentage of the schools that have computer labs is not at the desired level. At the end of the 1998, roughly the current ratio was one computer for three schools.

In 1998, the Ministry of National Education announced the 200 million-dollar bidding process for buying computers and educational software for about 3000 technology laboratories (at least 15 PCs in each laboratory) in 2451 elementary schools. According to the plan, in the year 2003 most of the elementary schools will have computers and the Internet will be accessible from most of them. In order to coordinate these laboratories, about 1500 teachers were taken into intensive (200 hours) computer training in summer 1998.

Problems Related with Educational Technology Activities

In Turkey teachers do not get enough education and experience for the use of technology in school settings. In-service training was used to attempt to close this gap but in the past the teachers had a lot of complaints about in-service computer training. After training, when they went back to schools they could not access computers for additional practice, therefore after a short time they forgot almost everything that they had learned.

In addition to this, the educational software market is very weak in Turkey. Existing educational technology companies generally modify or translate some software packages that are mainly designed for the USA or European countries. Local production of educational software is very rare. Until recent times there were no Instructional Technology programs in Turkish universities. Therefore, those companies mainly hire people from graduates of computer science or other technology-related departments that directly affects the quality of their products.

In Turkey, instructional use of technology is not very wide. Classical, face-to face, lecture type classes are the most popular way of teaching. Recently the idea of Internet based education started to become popular. But, an important misconception about distance courses is that people thought they are easy to prepare them compare to the conventional classes. Many faculties think that just transferring the course material to the Web and letting the students read those materials could be enough. In 1996, when the authors of this paper first offered this course, a professor stated that *"why do you offer this course? Preparing an educational Web site is not a big deal. There are a lot of HTML editors around, therefore just type the course content and publish it on the Web, that's it! We do not need such a course."* Also many people argue that when we use computers in the education, students learn better and faster. As stated by Sell (1997), such people think that providing information to the students is the same as providing education, and more information results in more learning.

Because of the lack of experience, people are not aware of the several aspects of distance education courses. As stated by Moore in Keast (1997), the barriers impeding the development of distance education are technological, pedagogical, organizational change in faculty roles and change in administrative structures. Without being aware of such issues, it is hard to initiate technology supported educational activities. In addition to this, we believe that social/cultural problems also play a major role. In Turkey and in some other countries, distance education is originally seen as a second-class alternative for the growing numbers of school leavers who could not gain admittance to the existing campus universities. Meeting in the same physical location and communicating face to face is accepted as the real education.

The people of the champions of the technology cause another important problem. They believe that technology is the magical solution for all of the problems. For example, such forces outside of academe enthusiastically support use of the technology and especially the Internet for education. Especially in the last few years, Turkish mass media has put a big pressure on the Ministry of Education to bring the computers into schools. Newspapers regularly publish news about the use of computers in Western countries, but the worst thing is they manipulate such news and never mention about the weaknesses and the problems that are stated in the reports. But, jumping into such a wave blindly could cause serious financial and educational system problems. Investing millions of dollars and having a big disappointment is the last thing that we want to see.

Finally and maybe the most important point, there is very little and poor research about such issues in Turkey. One reason is universities also do not use technologies widely and there are not enough researchers who are knowledgeable in this field. Maybe another one is that the technology is growing so fast there are no good protocols for studying electronic education because it is a moving target (Sherritt and Bason, 1997).

Course Objectives, How and Why did we offer this course?

In Turkey, the Internet is becoming a part of daily life, but there is not enough professional and

academic activity in the educational usage of the Internet. Most of the people are mainly interested in supplying computers and making the physical Internet connectivity to the schools. Unfortunately, creating courseware and integrating it with curriculum is an almost untouched area of educational technology. In addition to this, technical and economical limitations are some major obstacles for the widely use of this technology for educational purposes. As a consequence of this, there are not many courses related to the use of technology in education. Most of the teachers are illiterate in the use of technology.

In order to fill this gap, to initiate/create Internet and information technology usage in curriculum and to train the educators, a new graduate level course (SCE519- Courseware Design for Computer Mediated Learning in Network Environment), which was based on distance education methods, was proposed in Faculty of Education, METU by the authors of this paper in 1996 (Cagiltay & Ozden, 1996).

This course was formed by two main parts. The first part was one-hour/week classroom lecture activity about different learning theories, aspects of instructional technology and their implications. In this activity one of the authors guided the students and at the end of the theoretical part students prepared a report. The second part of the course was four-hours/week laboratory activity. Here, WWW was introduced as a distributed teaching and learning tool. The design and use of hypermedia technology, other electronic courseware materials and tools in instructional settings were examined, effective models of WWW were discussed and two projects prepared by the students. Our strategy was creating "Learning through-doing environments" for our students. Most of them were already teachers in different schools. By using their subject matter expertise they created the class projects. In 1996 the course was offered as a traditional campus course. It was offered almost entirely in a face-to-face classroom and laboratory environment. The only distance communication tool was an electronic class discussion list.

On the other hand, in 1998, half of the course (practical session) was offered by distance methods. The details of the 1998 class will be presented in the next section.

Lessons Learned

Why this course was offered by distance?

We had two main reasons to offer the course by distance education methods. First, one of the instructors of the course was physically away from Turkey for his Ph.D. study. Second, and the most importantly, we wanted to initiate a graduate level distance education activity in an academic environment, having experience and conducting research in this area.

Before offering this course by distance methods, we were faced with a dilemma. Should we offer the whole course (lecture and practical part) or only a part of it by distance? Since the instructors were not very experienced in distance teaching, after discussing pros and cons of both alternatives, we decided to start it partially. As stated in a Turkish proverb, we first wanted to learn walking and later attempt running. Another reason was the low penetration rate of personal computers and use of the Internet from home in Turkey. Every year, this ratio doubles. For example, when we first offered SCE519 in 1996, only a few students had personal computers. In 1998, this number doubled and we are sure that in the near future it will be better.

Analysis of the spring 1998 semester

The course took place during a fifteen week 1998-Spring semester session. This course's

practical part was offered entirely over the Internet with no face-to-face contact between the instructor and students. The theoretical part was given in lecture style as in 1996. In addition to the instructors, one graduate assistant helped to support technical problems of the course and taught how to use some technical tools.

There were 10 students registered to the course from different departments (Foreign Language education, Computer education, and Science education) with different educational backgrounds (Mathematics, Computer Science, and Education).

Since the medium of instruction in METU is English, all the materials were prepared in English. Additionally, the communication between students and the instructors were mostly done in English.

Before the beginning of the semester, the instructors worked on the design of the electronic course materials for about one-month. Those materials consisted of a course Web site, an optional Web based book, an electronic class discussion list, a synchronous chat room, and a whiteboard. In addition to these, during the semester some other Internet based technologies were also used (e.g. ICQ, virtual worlds). The details of all those items are presented below:

- Web Site

The Web site contains information about all aspects of the course including instructor information, course goals and expectations, readings, course assignments and due dates, and grading criteria. The course schedule provided hypertext links to the Web pages of the related pages of the day (http://php.indiana.edu/~kursat/sce519). The course Web site was updated weekly during the semester. New resources, useful URLs and logs of synchronous sessions uploaded to the site.

- Electronic Discussion List

The second course communication tool was the class discussion list. A majordomo list for the class discussions was created. In order to have shared, community discussion, all asynchronous discussions took place over this list. Sometimes discussion questions were given by the instructors, and students discussed those questions over the list. Students were free to ask questions, initiate new discussions and answer each other's questions. Schedule changes, due date remainder messages and class announcements, etc. were also posted to the list. The language of discussions was mainly in English, but in order to increase the communication, the students were allowed to talk in Turkish if they wanted. Table-1 lists number of messages that were sent to the list and the instructor.

Years	Number of messages posted to the list	Number of messages posted personally to the instructor (including assignments, reflections)
1996	6	0
1998	115(*)	190(*)

(*) Actual number is more than this. Some log files of messages were lost.

Table-1 Number of e-mail messages in SCE519

- Private e-mail

Private e-mail communication between students and the instructors was also used. Students sent their reflections about class sessions, assignments, technical questions and even personal

problems individually to the instructors (Table-1). Unfortunately there is no information about how often the students used e-mail to communicate with each other.

- On-line Chat

Another electronic course tool was the class chat room. The chat room, which is based on Microsoft Comic-Chat software, was used for the regular class meetings. In order to provide synchronous class discussion, the instructors and the students regularly logged into a chat room at the same time for a class session. These chat sessions took place for about three hours. The main purpose was to provide a real-time forum where students could ask questions and receive immediate responses. The transcripts were maintained of class on-line chats, so in case of student absence or disputes there were reference materials.

There were a few reasons to choose Microsoft Comic-Chat software. First, most of the students had no experience with chat rooms. The instructors believed that text based chat systems do not attract the users much and they are hard to use for novice users. But, MS-Chat has some features that in that environment make you feel more as if you are in face-to-face human communication rather than just text-based. It uses a set of cartoon characters and you can even create your own character. Some basic emotional behaviors (smiling, shouting, depressed, etc.) of human being can be expressed by those cartoons. In addition to this, it is possible to switch between cartoon and text mode. Therefore, after a while, students could start to use the chat room just by textual interface if they wanted.

- Private Messaging (ICQ)

At the beginning of the semester, the chat room was used for synchronous communication. Especially during the second half of the semester, the students wanted to have some more personal synchronous communication with the instructors. They were asking questions by e-mail, but sometimes they wanted to have immediate answers or comments for their questions/projects. In order to satisfy this request, we started to use ICQ software. ICQ is server-based software and we call it an "Immediate feedback tool". In the ICQ, users keep an authorized partners list (like a personal phonebook); when the user turns-on his/her computer and connects to the Internet, all other authorized partners can see that he/she is on-line. It is also possible to leave messages for people who are offline, in such a case the message is kept in the server and pops-up on the screen when the recipient becomes on-line. By giving the necessary permissions, a person can automatically download files from his/her machine to another person's machine. On-line chat feature is also available in ICQ.

The students and the instructors, who have personal computers at home or office, installed ICQ to their systems. They authorized each other to communicate with each other. Many questions of students were answered immediately by this way. Students also automatically uploaded their projects to one of the instructor's computer for his feedback.

- Other Software

In addition to the above tools, some other communications software were also used to communicate during the semester. A WhiteBoard was used to see the functionality of electronic shared board over the Internet. A 3-D chat software was introduced to the students about the possible use of virtual 3-D environments. And finally, we attempted to use two different voice communication packages to speak over the Internet.

- Technical Support

One assistant helped students to solve all kind of technical problems. He installed and tested all necessary software before the laboratory meetings, and solved the hardware problems. In

addition to this, he gave basic training to the students at the beginning of each session about the new software and tools (e.g. scanning, basics of Photosop etc.). Hiltz (1994) also states the importance of such an assistant in her experiences with distance education. While mentioning the implementation problems of their courses, she states that the lack of or unreliable support of such assistants negatively affects the course.

Design

In SCE519, students had two Web design projects for the whole semester. The first project was preparing a personal home page and the second was an educational Web site. For every project, they first prepared a Functional Analysis Paper. They developed their projects according to this FAP. Later, students evaluated each other's projects. Then, the instructors gave their comments about them and students made necessary changes. In addition to those projects, they were also evaluated according to their participation to the class discussions in the discussion list. And finally, their reflection papers were used as an evaluation item.

For synchronous laboratory meetings, students initially started to meet in the same computer laboratory in the campus. The sessions were held about three hours. After the first two synchronous meetings, the instructors let the students join classes from their homes or offices, but the students who had such opportunity generally preferred to come to the laboratory. The reason for this will be explained in detail in the problems section.

The first synchronous meeting was a really interesting experience for both students and the instructors. In order to become familiarized with the virtual environment, the class first started with a warm-up session. After 10- 15 minutes, the session turned into chaos. Later, one student said she is suspicious about the quality of our future classes (At the end of the semester, in her evaluation message, she said she never had such a great interactive course experience). Following weeks, such problems never happened again. In our first meeting, students played with all the bells and whistles of the tools, like a new toy. After the satisfaction of having tried out all the features, they easily came back to the real use of them. Therefore, we concluded that such a warm-up session is very critical for the success of a distance course's synchronous communication part.

Our initial strategy was online lecturing during the synchronous sessions, but in the first attempt the instructors realized that it does not work. There were a few important reasons for this. First, by nature lecturing is boring and on the Internet it becomes more boring. Typing is not similar to verbal communication (for speed and effect). Contrary to the face-to-face communication, everybody starts to talk in a synchronous environment and this makes the communication impossible. Therefore, later, the instructors changed the strategy to "do not lecture in virtual environment!"

Other strategy was continuously keeping asynchronous class discussions up and running. The instructors and sometimes students posted discussion topics or questions to the class listserv. This worked very well for about half of the semester, but later, the amount of discussions decreased. The main reason was the students focused mostly on their projects and could not find enough time for the discussions. In addition to this, the instructors did not prepare a set of interesting discussion topics before the semester. We generally tended to create discussions spontaneously, but later we realized that preparing a set of interesting discussion topics could be a better strategy.

The course was predominantly project oriented and a high degree of contact was made, though

electronically, between the students and the instructors. Hence, we developed a good feel for the quality and production of work that each student produced.

Most of the course material, instructions and assignments, previous week discussions, list of weekly activities were kept for the students in the course Web site. Instructors continually deposited new materials and information to this site during the semester. Those updates were announced regularly by the class discussion list. Therefore, students accessed all the resources without depending on the time and location.

After every synchronous session, we requested a reflection paper from the students about the previous week's activities. According to their feedback, the instructors made necessary changes in the course strategy and content.

Problems and Comments

- **Administrative**

The instructors let the students join laboratory sessions from a distance, but they continued to come to the laboratory. One day, we asked about this to a student that has access to the Internet both at home and at work. She said, "*I like to be in class, I ask my questions easily and share the ideas better in f2f environment with my classmates.*"

As stated before, this was the first distance course experience for the students. It seems that the effect of traditional face-to-face education cause such attitude of the students. They grow up in a lecture based educational system from elementary to higher education and it is hard to overcome the problems caused by this cultural background. When we talked with them generally they told that face-to-face education is more real and distance courses can only be used as supplementary purposes.

In addition to this, we believe that culture is also an important issue that needs to be taken into consideration. Contrary to Western countries, the Turkish culture is less individualistic (Hofstede, 1980). Being a part of a community (family, classroom, or region) is very important for Turkish people. Therefore, the students tend to be in the same physical location with other students.

- **Cost**

Since the penetration rate of personal computers is not high in Turkey, it is very hard to design a complete distance course. Not all of the students had their own computers at home. Even if they have a computer, dial-up Internet access is not easily affordable for most of them. Therefore, this was another reason for students' preference to come to the campus for the course. Since the university is planning to offer many courses on-line, there are efforts to overcome the cost factor of accessing campus resources from home. Free phone lines (like 1-800 lines) and other services will be available in the near future.

- **Technical**

The relatively poor technological skill of some of the students was another problem. Some students were not much familiar with the tools and programs (using scanner, making FTP, etc.), so such skills should be taught them. The laboratory assistant helped the instructor a lot to overcome this problem. Keyboard typing skill is one of the other problems of the students. Actually this becomes very important for the synchronous sessions.

We also tried to use voice-over-Internet applications to make real time discussion. Unfortunately they did not work because of the insufficient bandwidth problems between Turkey and the USA.

There were some Web server related problems, but they were solved in a short time without much affecting the course.

- **Time, Effort and Cost**

It is clear that the overall time commitment to this kind of teaching far exceeds that of teaching students in classrooms. It simply takes more time to respond to a student inquiry via e-mail or forum than via speech. Especially if the class size is higher than a critical limit (about 15), we believe that the instructor really could be in trouble. The major pedagogical decision is in deciding how to replace the traditional "talk" of the classroom.

We realized that compared to conventional courses, designing and giving a distance course needs extremely high effort and dedication. If we make a feasibility study, the cost of this course would be at least 3-4 times higher than the classical one.

- **Discussions**

During this course a class listserv was used for discussions and to make announcements. We observed that a listserv is not a very good tool to conduct class discussions. The major problem of listserv is the lack of treaded message structure. The second problem is hard to access discussion archives and the third one is e-mail problems (sometimes they can not get messages or they lost). Since the students could not see the whole structure of discussions this caused extinction of discussions.

In addition to this, it is observed that if the critical mass cannot be caught for the discussions, after a while, students who joined the discussion contributed less to the discussions. The result was extinction of the discussion.

- **Novelty Effect**

Some researchers state that the attractive interactive digital technology fascinates learners. Therefore, the motivation of students increases. This might be true for the first 2-3 weeks of the courses, but later students become familiar with it and effect of the bells and whistles diminishes. For example, in SCE519, students liked the cartoon-based chat interface in the first week, but later it became distracting and almost all switched it to the text-based interface. Even later a three-dimensional chat environment did not take their attention much. In the reflection paper, one student said,

> *"Once I got the hang of it, though, and once the messages from and to you gained importance, I didn't use the 3-D, but concentrated only on the text. I even felt bored at times... Not with the text but when there was nothing to read or write or do. As for its educational value of it: I really don't know. As a soft intro, to chatting it is nice. Actually for a lesson, I don't know. Personally I liked the other cartoon chat because it was fun and could be turned to text mode once the time came. "*

Course Evaluation

At the end of the semester we collected students' anonymous feedback about the course overall. We asked them the following questions.

To the question, "What you liked most in this class?" they answered:

- The discussions in the class listserv list.
- Accessing the course material through the class Web site
- A friendly class environment (both in physical class and virtual class meetings)

- Intensive use of technology
- The continuous support from the instructors

To the question, "What you did not like in this class?" they answered:

- Some technical problems that occurred during virtual meetings
- Not much focusing on developing of an educational Web site as a class project

In other question students were asked whether it could be possible to conduct this course 100% distance or not. The answers were different. Most of the students answered this with strict "No", some with "Yes". Even if the answer was "yes" they stressed the importance of face-to-face meetings and the social interactions in the traditional classroom.

The final question was about their comments on the virtual instructor. Since this was their first experience with a distance educator, the instructors wanted to know how they felt about it. All of the answers were positive, but they stressed that the main reason for their positive feelings was the amount of interaction with the instructor. It was understood that quick e-mail responses, high availability for personal chat sessions and always feeling easy access to the instructor made their responses positive.

Overall our evaluation for this course is it was very successful. From the students' perspective, they are very confident about their learning and they all commented that they recommend this course to their friends. From the instructors' point of view, this was a great experience for the instructors. It was a very hard and time demanding semester, but we all enjoyed it. And, of course we also learned a lot with our students.

Our Vision

In this section we will introduce our global vision of distance education and our specific vision of this course.

Broad- Global

For us see distance education is not simply the addition of technology to instruction, but it is also a tool for change. Distance education uses technology where appropriate to make possible new approaches to the teaching/learning process.

Distance education as a University-wide function will enhance Turkish universities' and Middle East Technical University's (METU) ability to serve students in all over the country (and in the neighboring countries), both by increasing student flexibility regarding the time, place, and pace of study and by creating a highly interactive, learner-centered environment.

Distance education will be integral to the research and service elements of the METU's mission; it will enable the University to reach out to a broader community, bring worldwide expertise and reinforce the University's leadership in key disciplines, facilitate the transformation of the on-campus teaching/learning environment at METU, and help the University in its continued progress toward a learner-centered curriculum.

Our efforts will help METU to become a leader in the development of the pedagogy of distance education and a technology-transfer resource for government, business, and other educational institutions in the development of distance education capabilities in Turkey.

As stated at the beginning of this document, Turkey will make a great leap in bringing the technology to the schools in the following years. The number of schools with the technology will be more than 50% of all schools. In higher education, METU will work to shift courses from classrooms to the asynchronous Web environments. By offering such courses, we see our mission to prepare the pioneers for those environments by teaching the teachers and facilitating new relationships between the University and teachers in schools for countrywide continuing education of the educational system workforce. Students will understand the notion of distance education, related technologies, problems and the pedagogy behind it.

Specific to the Course

It is clear that we cannot simply take a traditional course and place it on an educational network. Therefore, in this new environment the first question that we ask ourselves is "what pedagogy will we use and what will we do to make it work?"

As stated by Palloff and Pratt (1999), unfortunately many academic institutions and faculty are affected by the bells and whistles embedded in fancy hardware/software packages and do not consider much of what the learner can receive and handle as part of the learning process. Although such applications can be useful and greatly broaden the approach to a course, they are only good insofar as they can be used by the participants. Since generally most of the people use older technology, we always need to take into account the person at the other end of the wire. Therefore, the technology should not drive the course. Instead, the desired outcomes and needs of the participants should be the deciding factors. We should always remember Harasim's (1996), comments on this issue "the real question is not whether a course can be done online, but what is the best media mix to achieve the goals of the course within the constraints of the available resources or geographic dispersion of the students. More fundamentally, how should the media be used? What approaches to teaching and learning are most effective in a computer networking environment?"

We think that Chickering and Garrison's (1987) Seven Principles for good teaching practice helps us for our pedagogical search and they could also be used as the basis for the success of all distance courses. The seven principles are:

- encourage contacts between students and faculty,
- develop reciprocity and cooperation among students,
- use active learning techniques,
- give prompt feedback,
- emphasize time on task,
- communicate high expectations, and
- respect diverse talents and ways of learning.

In addition, we will always ask ourselves how we can keep our students interested and involved in a distance education class. We look forward to running behind the best methods to satisfy this.

Therefore major features of the course will be:

- In this course, collaboration will always be the most important key point. There will be a social and friendly environment. The instructional interactivity between students and active participation will be encouraged. Continuous feedback will be provided. For their projects, students will work in pairs, share their ideas and information with the other students and discuss their ideas and decisions with the class. In addition to this, they will not restrict themselves by class hours; they will also continue the discussions anytime/anywhere.

- Discovery learning is another important method, which we will follow. Since the goal of the course is not learning a well-defined content, students will not discover the answers that the instructors already know. They will work on their discussions/projects by using their previous knowledge in their field and discover their own solutions.

- For the projects, we will follow the constructivist medical school approach (Duffy and Cunnigham, 1996). Every student's prototype project will be like a patient's body. At certain periods of time they will form groups and analyze each other's design together. This will also increase social-dialogical relation. They will give comments and criticize each other. Instructors will just follow their discussions. After completing the discussions (synchronous or asynchronous) with every group, instructors will state the problems and discuss those with the class. During those discussions the solutions for the problems will be expected from the students. At the end of the semester, to finalize their final product, each student or group will have to defend the quality of the product to the other students.

- The main role of the instructors will not be teaching. They will coach the students to reach the goals of the course. We will give the basic instructions about what is our goal, what are the expectations, and what are the possible ways to reach the necessary information. Then, students will continue their work by themselves in the general frame of the course. Students will regularly explain their decisions and paths that they followed about their projects. Instructors, by asking questions or giving comments, will help the students to understand and show different points of view. Instructors will also show them different alternatives that could be helpful for their projects.

- The course is based on technology and it will make the learning environment richer and entertaining. We will try to make the technology transparent and we will give technical support and training.

- Since online delivery of instruction is constantly growing and evolving, our evaluation effort will always be in its formative stage. We will also try to follow the Transactionist model (Kennedy and Kettle, 1995). By using this model the concerns and issues are gathered from interviews with a broad cross-section of people associated with the program.

- This course makes the learning process more authentic. Hypertext/hypermedia learning environment and projects related to hypertext/hypermedia best fit to a constructivistic environment. This approach puts students in direct contact with professional experts and primary sources. In addition, publishing the work on the WWW will broaden their audience from single instructor to the whole world. Students will produce Web based prototype courseware material, which will be related with their interests. They will design to give the learners control of their learning activities. In this way, students will produce constructivistic courseware material in a constructivist-learning environment.

- Since the course is based on student centered learning, motivation becomes an important point. We will try to keep their interest as high as possible. For example, in last year's course, we organized some discussion contests related to the topic of the week and a prize was given to the students. Similar activities will be organized to keep the motivation high.

In the next section the detailed re-design strategies of the SCE519 for the future will be given under the light of this vision section.

Redesign of SCE519

As stated in the previous sections, many instructors mistakenly assume that teaching online involves what is termed curriculum conversion. Parallel to Palloff & Pratt's (1999) ideas, we also argue that it is not the curriculum we are converting, but our pedagogy. The creation of an effective online course involves a paradigm shift regarding the mode of delivery of the course material.

The integration of theory and practice is always a challenge, particularly in project-oriented courses. In this course, all aspects of SCE519, theoretical and practical, will be integrated within one hyperlinked environment. This integrated environment will permit links to be added to make the intended relation between theory and practice visible to the students. This is expected to be particularly useful when students become immersed in group activities. By using heavy class interaction, we will monitor the process of learning and therefore the construction of knowledge.

The assignments and projects that involve critical thinking, creativity, problem-solving and group discussion/interaction will be used for the assessment.

In the following sections, we will talk about those issues in detail. we will first explain our position on some general issues related to the course, then theoretical and practical parts of the course, and finally the details of our pedagogical approach.

General Issues

Combating with the old habit

Generally in our classes, students sit silently, receive information, and take lecture notes. It is less likely that students interrupt a lecture, or sit through class without taking notes. In such a classroom the student may be physically present, but psychologically absent. In the virtual classroom, however, if a student does not participate much, that absence is noticeable and may have a profound impact on the group. Therefore, this is the most important obstacle that we should overcome in distance courses. Contribution to the class activities will be made mandatory and we will begin the class with clear guidelines for acceptable participation.

In addition to this, since the students will live in a virtual environment; therefore getting to know each other will be an important addition to the process of the sharing of expectations for the course and keeping the discussions up and running. For this purpose they will share their biographies with other classmates at the beginning of the semester.

Orientation to the course

As stated before, distance education is a completely new environment for almost all of the Turkish students. If they become involved in an online class without an orientation, learners immediately encounter disorientation. This is a completely new medium in which participants interact differently and in which students are expected to engage with material, each other, and the instructor in a completely different way. Therefore, initially an orientation session will be held to help the students to adapt this new environment.

In virtual environments, some unexpected problems could also occur. For example, the lack of face to-face contact means that the sense of group in an online learning community can be fragile, especially as it is forming. The group can disintegrate quickly when problems occur. This orientation session will help them to know each other better.

In addition to this orientation, participants will be asked to comment on their expectations from

the course. This will help to determine whether or not we are all beginning this course from approximately the same starting point. If the expectations are different, this does not represent a problem. Instead, it will allow the instructors an additional opportunity for modifications to develop suitable strategies.

Technical support

Students should feel comfortable at the start of the course and if early attempts are frustrating, a student may be affected negatively. Most of the students do not have enough technical background; therefore, at the beginning of the semester one or two face to face technical support sessions may need to be set up to ensure that students can use the technology.

The technical function also depends on the instructor. The instructors will first become comfortable and proficient with the technology being used and then should able to transfer that level of comfort to the learners to make technology as transparent as possible.

In order to maintain the flow of the class and to instruct the students around technical issues, a technical support person will provide technical help, also the instructors may act as intermediaries.

Redesign of the Syllabus

The syllabus in the online classroom should be more open, allowing students more leeway for exploration. In our course, the syllabus will be left more open to allow students to develop research skills. Objectives will be more broadly defined so that participants can take courses in unanticipated directions, based on their own interests and needs.

Content

Broadly, students will be more involved in issues related to information technologies and their relation with teaching/learning. They will support their points of view with additional sources of information. As a final product of the course, they will create an educational Web site for a particular audience.

Approach to the course

We are planning to offer this course completely by distance methods. There will be no regular classroom lectures, but some face-to-face sessions will be conducted at the specific periods of the semester. The class size will be kept about 10 to 15 students.

Theoretical part of the course

In previous years this part of the course was offered in traditional class format. From now on it will be given by distance education methods. This part will be mainly conducted by asynchronous communication tools (Web based discussion environment).

In this part of the course the students will construct their theoretical ground about the design of computer mediated learning environment. They will make readings related to this content and discuss issues on the Web based conferencing environment.

In addition to the readings, some experts from outside the university environment will be invited to bring their ideas and different points of view to the electronic discussion environment. They will serve as visiting lecturer of traditional classes.

Readings and Discussions

We believe that the key to the learning process is the amount of interaction between the

instructors and the students themselves and the interaction between students. The best way to create such an interactive environment is organize content related discussions. Before starting the discussions, a set of readings will be assigned to the students and after reading them everybody will be requested to participate in these sessions.

Examples of some readings and related discussion topics:

- A report from Turkish Informatics Society – "New Learning Methods"
- Current problems in Turkish education system and the role of IT
- A debate about the pros and cons of distance education
- Is distance education necessary for Turkey? Which models/approaches work?
- Clark-Kozma debate
- Hot news from Turkish Ministry of Education and a debate about it
- Distance education and its social/cultural effects in Turkey.

In these discussions the roles that students might take:

- Facilitator of the discussion
- Process observer, commenting on group dynamics
- Content commentator, summarizing the group's learning over the previous week
- Team leader, with or without the additional responsibility of evaluating the work of the other members
- Presenter on a particular topic, book, or area of interest

Assessment

As stated in 6.1.1, at the beginning of the semester the instructors will give the guidelines to the students about acceptable participation in the class. By using those guidelines, quality of participation will be evaluated. In addition to this, after every discussion session the instructors will collect students' reflections about the previous week's activities. The depth and the quality of thoughts will be the major evaluation criteria for those reflections. These reflections will have two evaluation missions. The first one is the evaluation of the students and the second one is the evaluation of the course itself.

Practical (Laboratory) part

Similar to the previous semesters, this section of the course will be project oriented. Those projects will be related to the theoretical part of the course.

For this part of the course, asynchronous (Web based discussion environments) and synchronous methods will be used for class communication.

Our previous experiences have shown that synchronous class discussion rarely allows for either productive discussion or participation, and frequently disintegrates into simple one-line contributions of minimal depth, but the students like to be involved in such an environment to get the feeling of f2f meetings, so without making it mandatory, this option will be given to them. It will be mainly used for short questions/answers type of sessions.

In this part of the course the students will develop an educational Web site. There will be three main stages in this section:

First: Students will analyze some existing educational Web sites, list problems of those sites and give advice to solve those problems. They will discuss the design of effective and efficient educational Web sites.

Second: There will be discussions about the topics that are directly related to the possible projects and students will conduct a brief needs analysis about the projects.

Third: Implementation of the project, usability tests, formative and summative evaluations.

Assessment

The projects will either be individual or team based. In general class members will evaluate each other's work, participation, and contribution to the collaborative product that ensues from their work together. Team self evaluation may promote the desire to become part of an actively working team.

Similar to previous years, we will follow constructivist medical school approach (Duffy, Jonassen 1992). Every student's prototype project will be like a patient's body. At certain periods of time they will form groups and analyze each other's design together. This will also increase social-dialogical relationship. They will give comments and criticize each other. Instructors will just follow their discussions. After completing the discussions (synchronous or asynchronous) with every group, instructors will state the problems and discuss those with the class. During those discussions the solutions for the problems will be expected from the students. At the end of the semester, to finalize their final product, each student or group will have to defend the quality of the product to the other students.

Final Comments

Different than many other educational institutions of Turkey, which are jumping on the technology bandwagon to become a part of the information superhighway, we know that old pedagogy cannot be transformed to this new environment just by carrying on the high-speed computer networks. Our first priority should be having effective teachers and their effective pedagogies rather than state of the art technology.

In coming semesters the authors of this paper will try to do their best to find out and follow the best pedagogy in this course and other on-line courses. By the lessons that we learned in the past, we will create an active, collaborative learning environment by keeping the interactivity high among all members of the course (students and instructors). We will arrange the balance of our role as facilitator and coach rather than pure subject matter expert and curriculum source. In addition to this, in order to accommodate successfully the needs of a diverse body of online learners, we will concentrate our efforts on what learners need and demanding, as well as what our society demands of our graduates.

An finally, we believe that in order to reach a critical mass in online courses, a community should be created among on-line course developers and researchers across technologies of Turkey.

References

Cagiltay, K. & Ozden, M.Y. (1996). Designing courseware in WWW Environment. FRTEB- I st. International Distance Education Symposium, Ankara, Turkey.

Cagiltay K., Askar P., Ozgit A. (1995). Setting up a Computer Mediated Communication Network for Secondary Schools. INET-95 Hawaii http://ww.isoc.org/HMP/PAPER/103/abstract.html

Carlson, R. (1997). ED 412934 Educating Online: Creating the Virtual Classroom Community.

Chickering, A. W. and Gamson, Z. (1987) Seven principles for good practice in undergraduate education. AAHE Bulletin 39 (7) pp. 3-7.

Duffy, T.M. & Cunnigham, D.J. (1996). Constructivism: Implications for the Design and Delivery of Instruction. In D. Jonassen (ed.). The Handbook of Research on Educational Communications and Technology. NY: Macmillan.

Jaffee, D (1996). Pedagogical principles and practices for asynchronous on-line sociology courses, http://pegasus.cc.ucfedq/~jmorris/asatrg/jaffee.htm

Harasim, L., Hiltz, S.R., Teles, L., Turoff, M. (1995). Learning Networks. London, England. The MIT Press.

Hofstede, G. (1980). Culture's Consequences. London: Sage.

Hartman, J. and Truman, B. (1997). http://www.cause.org/information-resources/ir-library/html/cnc9723/cnc9723.html

Hiltz, Starr Roxanne (1994). The Virtual Classroom: Learning without limits via Computer Networks. Norwood, NJ. Ablex Publishing.

IDEA,(1998). Asynchronous Certificate Program http://idea.metu.edu.tr/

II, (1998). METU, Informatics Institute. http://www.ii.metu.edu.tr/asynch/index.html

Keast, D. (1997). Toward an effective model for implementing distance education programs. The American journal of distance education, Vol. 11, No.2.

Kennedy, M. and Kettle, B. (1995). Using a transactionist model in evaluating distance education programs. Canadian journal of educational communication, vol. 24, no. 2, pp, 159-170.

Palloff, R. and Pratt, K. (1999). Building Learning Communities in Cyberspace. Sall Fransisco, CA. Jossey-Bass Publishers.

Sell, G.R. (1997). Challenges in using technology for the improvement of undergraduate education. Teaching excellence, 8, 2. Laramie, WY; Center for Teaching Excellence.

Sherritt, C. and Basom, M. (1997). Using the Internet for higher education. ED407546,

YOK, (1998). Higher Education Council, Yearly Activity Report. http://www.yok.gov.tr/tybdurumu/bolum7.htm

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: Running Behind the Best Pedagogy to develop a Telematised Teaching Environment: A Case Study Between Turkey and The USA

Author(s): Prof. H. Yaşar Özden & Kursat Cagiltay

Corporate Source:

Publication Date:

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Level 1

☒

Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) *and* paper copy.

The sample sticker shown below will be affixed to all Level 2A documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2A

Level 2A

☐

Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only

The sample sticker shown below will be affixed to all Level 2B documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2B

Level 2B

☐

Check here for Level 2B release, permitting reproduction and dissemination in microfiche only

Documents will be processed as indicated provided reproduction quality permits.
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Sign here, → please

Signature: Kursat Cagiltay	Printed Name/Position/Title: Kursat Cagiltay
Organization/Address: Indiana University 121 Bicknell Bloomington IN 47408	Telephone: 812-857-0343 FAX:
	E-Mail Address: kursat@indiana.edu Date: 2/18/00

(over)

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, *or*, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:
Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:	ERIC Clearinghouse on Information & Technology Syracuse University 621 Skytop Road, Suite 160 Syracuse, NY 13244-5290 E-Mail eric@ericir.syr.edu 315-443-3640 1-800-464-9107 Fax: 315-443-5448

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to: