

**LEARNERS' PERCEPTIONS OF A WEB BASED COURSE:  
A CASE STUDY**

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Approval of the Graduate School of Natural Applied Sciences.

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I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

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This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

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## **ABSTRACT**

### **LEARNERS' PERCEPTIONS OF A WEB BASED COURSE: A CASE STUDY**

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This study investigated the students' perceptions about a web based course. Their perceptions about course materials, level of communication, online course support, and satisfaction were discussed in this study.

In this case study, Information Technology in Education II (CEIT 112), an undergraduate course at the department of Computer Education and Instructional Technology (CEIT), Middle East Technical University (METU) at 2004/2005 spring semester was taken into investigation. Totally 34 1<sup>st</sup> year CEIT students attended the course in the term and participated to the study. The course was delivered via web based instruction.

The data were collected by using a survey instrument at the end of the term and analyzed using descriptive statistical analyzing methods. Frequency distributions for demographic data about the students and the statements evaluating different aspects of the course were obtained. Results showed that students' feelings about course materials, online course support, level of communication and satisfaction were neutral.

The study results may be used in evaluation of web-based instruction environment for the instructor and the department. They may give clues in order to create an effective learning environment in the future design of the course.

**Keywords:** Web based course, online learning, students' perception,

## ÖZ

### WEB TABANLI BİR DERS HAKKINDA ÖĞRENCİLERİN ALGILARI: BİR DURUM ÇALIŞMASI

Güler, Melek

Yüksek Lisans, Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü

Tez Yöneticisi: Dr. Hasan KARAASLAN

Aralık, 2006 (76 sayfa)

Bu çalışma öğrencilerin web tabanlı bir öğrenme ortamında algılarını incelemektedir. Öğrencilerin ders materyalleri, iletişim düzeyi, çevrimiçi ders destek ve memnuniyet algıları incelenmiştir.

Bu durum çalışması için, 2004-2005 öğretim yılı bahar döneminde Orta Doğu Teknik Üniversitesi(ODTÜ), Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü'nde açılan Eğitimde Bilgi Teknolojileri II dersi araştırmaya alınmıştır. Bu dönemde toplam 34 birinci sınıf BÖTE Bölümü öğrencisi derse devam etmiş ve çalışmada yer almıştır.

Veriler ders sonunda anket yoluyla toplanmış ve tanımlayıcı istatistiksel analiz yöntemleri kullanılarak analiz edilmiştir. Öğrencilerin demografik bilgilerinin ve dersin değişik yönlerini değerlendiren ifadelerin frekans dağılımları elde edilmiştir. Sonuçlar öğrencilerin ders materyalleri, iletişim düzeyi, çevrimiçi ders destek ve memnuniyet algılarının nötr olduğunu göstermektedir.

Bulgular web tabanlı eğitimle ders veren öğretmenler ve bölüm için değerlendirme amaçlı kullanılabilir. Daha sonraki çalışmalarda etkili bir öğretme ortamı yaratmak için ipuçları verebilir.

**Anahtar Kelimeler:** Web tabanlı eğitim, çevrimiçi öğrenme, öğrenci algıları

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background and Rationale for the Study**

Instruction and learning takes an important place in our century. Society always needs them in order to be developed. There are always some changes and innovations in society. In order to adapt these changes and innovations, instruction and learning should also change. Therefore, new ways and solutions should be found.

Advances in educational technology, coupled with changes in society, are creating new paradigms for education (Khan 1997). Brown (2000) stated that education and training via the World Wide Web are growing rapidly.

Advantages like being cost-effective, world-wide access and improved technological capabilities have made online instruction to adult learners an alternative instruction to traditional instruction. The Web can be used to provide opportunities to develop active learning experiences. Students can learn huge amount of knowledge in this digital world. (Eales & Byrd, 1997).

Khan (2001) stated that Web-based instruction offers the learner unparalleled access to instructional resources, far surpassing the reach of the conventional classroom. Web-based instruction also makes possible learning experiences that are open, flexible, and distributed, providing opportunities for engaging, interactive, and efficient instruction.

Olson and Wisner (2002) discussed that Web-based instruction presents multiple dimensions of use in education and training environments. It can provide direct instruction to meet individual learning objectives. It can give some opportunities like taking an online course, posting and submitting assignments and making communications between fellow students and instructors.

“The Web has become a powerful tool for learning and teaching at a distance. Its inherent flexibility allows application in a variety of ways within an educational context, ranging from simple course administration and student management to teaching entire courses online. Each of these “levels of use” works towards a different goal. These goals should be recognized when evaluating the use of the Web. For example, an instructor may hold face-to-face lectures in a classroom but post the class syllabus, assignments, and grades on the Web. In this case, it would not be appropriate to evaluate the use of the Web with respect to learning outcomes, since the Web was not used in a direct instructional role.” (Olson & Wisner, 2002, p.4)

Mwaura (2000) stated that since Web-based Instruction (WBI) is growing faster than any other instructional technology, universities have provided faculty with accessible hardware, training, and discipline-specific media. Consequently, more and more university faculty members are using WBI as an integral part of instructional activities.

According to Mwaura (2000) there is an increase in the number of faculty members using WBI in universities. In order to make an effective WBI, there should be more emphasis on the need analysis before launching any training program.

“That is, need analysis could focus on the faculty members’ learning styles; the faculty members’ goals and views of effective teaching; the most appropriate time in terms of the quarters, days and times of the day for the scheduling of the training sessions as well as the faculty members’ prior knowledge about WBI. Also, the faculty members need more time to learn develop and implement WBI which could be made available to them through release time, course buy ups, and providing monetary incentives in case faculty members decide to develop their course web sites during their vacation.

(Mwaura, 2000, p.7)

Chen (2005) stated that the use of WBI is becoming widespread in higher education. Perhaps the most obvious advantages perceived by the students are dynamic interaction and flexible schedule. In terms of dynamic interaction, the

WBI presents a big amount of information through various connection ways that offer students a rich exploration environment. The development of Web-based instruction provides learners with many opportunities to explore, discover, and learn in theory according to their own individual needs. Students can create individualized learning paths to reach the desired goals, move at their own speed and retrieve additional information as needed (Hui & Cheung, 1999).

Mioduser and Nachmias (2002) mentioned that less than ten years since its release, the World Wide Web has become a prominent new space for people to communicate, work, trade or spend leisure time. And increasingly, too, a place to learn. Aware of the potential of the WWW for education, an increasing number of educational agents (e.g., schools, community centers, special interest groups, organizations, homes), enter on a daily basis the community of producers and users of Web-based learning materials or Web-based learning environments (WBLE)

According to Kid (2005), online and web based courses have become popular with both students and educational institutions as the new media to deliver educational programs. For universities, they are an excellent way to reach students in diverse and distant locations. Some may also be used to supplement school enrollments since students can take the courses anywhere. Given their popularity and increased use, it is imperative that administrators and professors monitor students' perceptions of courses using these media for delivery. This type of feedback can



help in modifying and improving the programs, so that course can function as desired by all parties.

Although e-learning and various blended approaches that integrate online components into traditional classes continue to grow rapidly, it still remains at an early stage of development. Consequently, developers and deliverers of online learning need more understanding of how students perceive and react to elements of e-learning along (Koohang & Durante, 2003). Therefore there is a need to examine students' perception in web based instruction in further research studies.

## **1.2 Purpose of the Study**

The purpose of this study is to investigate the perceptions of students in a web based course towards the online course, online material, and level of communication, satisfaction and effectiveness of the course.

## **1.3 Research Question**

1. What are the learners' perceptions about the web based instruction in terms of
  - a) Course and course materials of online environment?
  - b) Course support in online environment?
  - c) Level of communication in online environment?
  - d) Satisfaction in online environment?

#### **1.4 Significance of the Study**

The results of this study will show the perceptions of students to web based instruction courses. It will also show some weaknesses and strengths of the courses. It will help instructional designers and developers provide some clues for an effective WBI.

When we look at the literature on the web based instruction, there is shortage of research on how to create an effective learning environment. There are a lot of definitions about teaching, learning and learning activities. However, there is a need for research on how to implement them effectively.

Smart and Cappel (2006) stated that although several studies suggest that online education and blended instruction, a “blend” of online and traditional approaches, can be as effective as traditional classroom models, few studies have focused on learner satisfaction with online instruction, particularly in the transition to online learning from traditional approaches.

The focus in any kind of instruction is on students’ effective learning. Therefore students’ perception on teaching strategies plays a big role in the environment. This study will give some valuable clues to instructional designers in their WBI approach.

## **1.5 Definition of Terms**

**Web Based Instruction:** “a hypermedia-based instructional program which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported” (Khan, 1997, p.6)

**Online Instruction:** Online instruction is a formal, Internet-based or Internet-supported educational process in which instruction occurs between instructor and learner in an online environment.

**Computer Mediated Communication:** “a process of human communication via computers, involving people, situated in particular contexts, engaging in processes to shape media for a variety of purposes” (December, 1997, 3)

**Asynchronous Communication:** “Communication that takes place in different time frames and is accessed at the participant’s convenience, such as electronic mail and voice mail. Interaction between participants is time delayed.” (Lee, 2002, p.80)

**Synchronous communication:** Synchronous communication is computer-mediated communication that takes place in real-time, where participants are all logged in to one network at the same time from a variety of remote locations.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Web Based Instruction**

As the Internet is fast emerging, its World Wide Web is becoming and increasingly powerful, global, interactive, and dynamic medium for delivering instruction. Khan (1997) stated that more institutions are using the Web to provide instruction and training. Being open, flexible, and distributed and providing opportunities for engaging, interactive, and efficient instruction makes Web Based Instruction create meaningful learning environments. (Khan, 2001).

Khan (1997) defines Web-Based Instruction (WBI) as: "...a hypermedia-based instructional program which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported."(p.6). According to Khan (1997), with the Internet's rapid growth, the Web has become a powerful, global, interactive, dynamic, economic and democratic medium of learning and teaching at a distance. The Web provides an opportunity to develop learning-on-demand and learner-centered instruction and training.

Clark (1996) defines WBI as: "Individualized instruction delivered over public or private computer networks and displayed by a Web browser. Web-based training can be updated very rapidly, and access to training controlled by the training provider."

Khan (1997) stated that numerous factors help create a meaningful learning environment, and many of these factors are systemically interrelated and interdependent. A systemic understanding of these factors can help designers create meaningful distributed learning environments.

Khan (1997) stated major components of WBI:

- Content development(Instructional theory, design and development)
- Multimedia component (Text, animation, graphics, sound, etc.)
- Internet tools(Communication tools, remote access tools, navigation tools, search tools, etc)
- Computers and storage devices(Platforms and operating systems, hardware)
- Connections and service providers(Modems, connection services, Internet service providers, etc)
- Authoring programs(Programming languages, authoring tools, HTML coding and converting tools, etc)
- Servers (HTTP servers, server software, server-side and client side scripts)

- Browsers and other applications (Text-based or graphical browsers, hyperlinks, plug-ins, etc.)

McKimm, Jollie and Cantillon (2003) stated that several approaches can be used to develop and deliver WBI. At one end is “pure” distance learning. In this type of learning there is no face to face interview between students and teacher. At the other end is an organizational intranet. In this type of instruction, the students use online materials to support traditional face to face interviews. If online materials are not so effective that they are only having repositories of knowledge without communication skills, it can not be a true WBI.

According to Mathew and Doherty-Poirier (2000) a teacher uses WBI because of including reasons:

- enhancing student learning
- spending more time with students working in small groups or one-on-one;
- reducing repetitive teaching tasks;
- reducing paper flow and management, and;
- providing improved instructional materials.

Mathew and Doherty-Poirier (2000) stated that Internet has some capabilities as presenting instructional materials to students in different ways like pictures, videos and sounds. Therefore, students can learn the content in a self-paced manner.

## 2.2 Theoretical Framework of Web Based Instruction

In order to describe the theoretical framework of the WBI, Moore developed Theory of Transactional Distance. Moore and Kearsley (1996) defined transaction as

Transaction we called in distance education is the interplay between people who are teachers and learners, in environments that have special characteristics of being separated one and another, and a consequent set of special teaching and learning behaviours.(p.200)

They defined transactional distance as

The Physical distance that leads to a communication gap, a psychological space or potential misunderstandings between behaviors of instructors and those of the learners. (p.200)

According to Jung (2001), "Transactional distance theory provides a useful conceptual framework for defining and understanding distance education in general and as a source of research hypotheses more specifically" (p.527).

Moore and Kearsley (1996) defined three key constituent elements that define every distance education program:

- Dialogue: It refers to the extent to which teachers and learners can interact with each other (Moore, 1993).
- Structure: It refers to the “responsiveness” of an educational program to an individual learner’s needs (Moore, 1993).
- Learner autonomy: It is the extent to which learners make decisions regarding their own learning and construct their own knowledge based on their own experience (Moore and Kearsley, 1996, 204–205).

Moore and Kearsley (1996) also defined three types of interaction as:

- Learner-Instructor interaction
- Learner-Content interaction
- Learner-Learner interaction

Chen(2001) added learner interface transactional distance defined by the degree of user friendliness as experienced by the learner. In his study, he measured the impact of individual and instructional variables on learners' perceived transactional distance in a World Wide Web learning environment. Results showed that the degree of occurrence of the four dimension of transactional distance was low. This showed the existence of transactional distance. He concluded that transactional distance theory should help instructional designers and developers to build an effective learning environment by taking into account structure, dialogue and interaction.

### **2.3 Ideal Online Course**

According to Chelman and Duchastel (2000) some online courses lack basic design consideration and it makes original instruction ineffective. There should be some technological elements which support learning such as audio conferencing, internet chat, web pages, etc. They stated that the focus is on the ideal use of the World Wide Web as the main communication tool within the course. Troha (2002)



explained that Web-based learning needs to be learner-centered, instructor-guided, interactive and collaborative, if it is to be truly effective.

Mathew and Dohery-Poirier (2000) stated that in order to make a good instructional design for WBI, same way as any type of teaching should be followed. This way includes designing a learning experience, preparing materials, setting objectives, and using appropriate instructional methods. The learning materials may consist of text, sound, video, and graphics. It is not quick and simple process. However, when this task is made, it can make teaching much easier.

The popularity of e-learning is increasing. Therefore this type of learning should be learned and give emphasis about what conditions limit or enhance its effectiveness. Olson and Wisner (2002) conducted a meta-analysis and compare the effectiveness of WBI to traditional classroom instruction. They found four moderator variables:

- Engagement
- Human Interaction
- Learner Control
- Effectiveness Criteria

The base of online courses is the organization of learning activities that make the students reach the goals of the course. Study guides, associated articles and readings should be included in the web sites of online lessons. Some assignments

and projects should be added in order to make the students deal with. Moreover online lessons should create environments in which students work independently or collaboratively in order to master the objectives of the course. (Chelman & Duchastel, 2000). Chelman and Duchastel (2000) explained that feedback with assignments help students refine their learning and provide overall guidance and structure to their continuing study activities. However “it requires more time intensive and requires more continuous attention in order to provide timely responses to student needs than does traditional presential instruction. This also challenges the economies of scale associated with traditional administrator understandings of online education” (p.235)

Fortune and Keith (1992) and Sweeney (1995) propose an AEIOU approach that has application to web-based courses:

- Accountability - examines if course objectives and activities were completed. It also looks at quantifiable measures such as student enrollment/completers
- Effectiveness - examines quality indicators such as student attitudes, perceptions and knowledge
- Impact - using follow-up measures, attempts are made to determine student progress in subsequent courses and to chart whether or not student enrollment in web-based courses is increasing
- Organizational Context - examines what institutional barriers or issues might be hindering the effectiveness of web-based courses

- Unanticipated Consequences - attempts to determine what changes or consequences of importance happened as a result of offering web-based courses?

Woodley and Kirkwood (1986) proposed evaluative six measures that may have relevance for web-based courses and programs:

- Measures of activity - How many web-based courses were offered? How many students enrolled in web-based courses?
- Measures of efficiency - how many students completed the course? What did the course cost to offer? How much tuition was generated?
- Measures of outcomes - What was student performance in web-based courses compared to traditional courses (using grades and other relevant measures)? How many students enrolled in subsequent courses?
- Measures of program aim - Did web-based courses generate students who not have normally accessed the courses through traditional means?
- Measures of policy - Is the campus "web-friendly?" Can students register for courses easily? Can they access library materials and receive grades without problems?
- Measures of organizations - To what extent are organizational resources being utilized for web-based course delivery? How are courses being developed? Is faculty being given adequate professional development in order to offer courses via web-based delivery?

Regarding assessment in online learning, McKimm, Jollie and Cantillon (2003) stated that giving immediate, constructive and relevant feedback is beneficial for students' progress in online lessons. However, it is more difficult to assessing the students' success in WBI. Therefore it is necessary to determine what is to be assessed. Assessing knowledge of the students is easier than assessing higher cognitive functions like analysis and synthesis in online environment. Because higher cognitive functions require more complex tests. Teachers should be careful about evaluating the students in this form of learning.

McKimm, Jollie and Cantillon (2003) stated the advantages and disadvantages of online assessment:

#### Advantages

- Students can receive quick feedback on their performance
- Useful for self assessments—for example, multiple choice questions
- A convenient way for students to submit assessment from remote sites
- Computer marking is an efficient use of staff time

#### Disadvantages

- Most online assessment is limited to objective questions
- Security can be an issue
- Difficult to authenticate students' work
- Computer marked assessments tend to be knowledge based and measure surface learning

## **2.4 The Role of Teacher**

Buchanan (1999) explained that the role of the instructors in distance education is a guide with a facilitator of knowledge. They should create an environment in which students are more self-directed. Students should see the instructor as a human who knows their course content and capable of replying their questions and help them progress in their courses.

Research on learner control indicates that most people need training or assistance to plan, monitor, and focus their learning efforts and make related decisions. Online course instructors should encourage students to access relevant reading materials. One strategy is to embed questions within the lesson text to focus students' attention on critical information and persuade them to review notes and readings. Another tactic is to organize Web pages in a linear format, forcing students to view all relevant information. (Wijekumar, 2005)

Jacobson, Maouri, Mishra, and Kolar (1995) stated that in WBI environments, instructors might create interactions or prompts within their lessons that focus students' efforts on objectives and important skills. When students are unable to reach the goals of learning tasks, expert advice and practical models should be available on demand. Instructors should note, however, that many students invariably will choose not to request help.

Mathew and Dohery-Poirier (2000) stated that one of the most important tasks in a Web-based classroom is that of teaching the students how to work in a self-paced

environment. In this respect, some teacher direction is still required, in terms of letting students know about any deadlines and where they are expected to be with respect to the course requirements. One method of helping students with this is to provide a daily agenda on the bulletin board, whiteboard, or on a projection screen. Grabowski, McCarthy and Koszalka (2000) stated that teachers' technical skills are important. Teachers need to know how to best use the Internet to produce efficient, motivational, effective instruction. They should know what the correct time is for using the computer in the classroom. Teachers' attitude and motivation to integrate technology in the classroom are also important. A positive attitude and high motivation are also critical for implementing Web-based instruction in the classroom. Even if a teacher had the necessary skills to implement computer-supported or Web-supported instruction, the teacher would still need to possess the motivation to make the effort. A positive attitude may encourage a less technologically capable teacher to acquire the skills needed to implement Web-based activities in the classroom.

## **2.5 Advantages and Disadvantages of Web Based Instruction**

McKimm, Jollie and Cantillon (2003) stated the advantages and disadvantages of web based instruction (p.872):

### **Advantages**

- Ability to link resources in many different formats

- Can be an efficient way of delivering course materials
- Resources can be made available from any location and at any time
- Potential for widening access—for example, to part time, mature, or work based students
- Can encourage more independent and active learning
- Can provide a useful source of supplementary materials to conventional programmes

### **Disadvantages**

- Access to appropriate computer equipment can be a problem for students
- Learners find it frustrating if they cannot access graphics, images, and video clips because of poor equipment
- The necessary infrastructure must be available and affordable
- Information can vary in quality and accuracy, so guidance and signposting is needed
- Students can feel isolated

Zirkle (2001) stated that advantages of the WBI from some perspectives. From a student perspective, WBI can be self-paced. Students can learn at any time or any place, rather than attending a class on campus at a scheduled time. From the organizational/institutional perspective, access to courses is safer. Security

measures such as enrollment codes and student passwords are used in WBI. Web-based courses are more cost-effective. They can save travel, facility and labor costs. All the groups in a school environment can take the course in the same time. Instructors have realized the many advantages of web-based learning as well. Course material can be updated quickly and posted for student access. They can use all the technologies including video, audio and various printed material in the WBI classrooms.

Zirkle (2001) discussed the concerns about WBI. According to him, costs before implementing the course can be expensive. Because encompassing servers, cabling and other hardware, as well as software and technical support are needed. Moreover technology, despite all its advances, can have troublesome. WBI systems require consistent upgrading, as new software and hardware is developed. Bandwidth and browser availability may limit of the success of the instruction.

## **2.6 Computer Mediated Communication**

A definition of Computer Mediated Communication (CMC) is “a process of human communication via computers, involving people, situated in particular contexts, engaging in processes to shape media for a variety of purposes” (December, 1997, p.3).

Magee and Wheeler (1997) stated that CMC can provide a number of facilities like electronic mail and chat capabilities which can be used to deliver instruction, or to conduct online seminars and collaborative working on documents and projects.



CMC can also be used to facilitate group discussions and to enable interactions between tutors and learners who have problems in studying in the same place and at the same time.

Kassop (2003) included that CMC has made a change how educators and students think about teaching and learning. It gives a chance to students to learn in more convenient locations at more convenient times. Distance education makes educational opportunities to unreached populations. It is beneficial for lifelong learning process.

A number of studies have looked at how students use specific computer-mediated communication (CMC) tools or types of tools. Benson and Hewitt (1998) showed that students found the collaborative experience provided by CMC tools beneficial. Students in a study conducted by Wilson and Whitelock (1998) rated their CMC environment highly and considered it more useful than the telephone for interacting with tutors.

## **2.7 Synchronous Communication**

Romiszowski and Mason (1996) defines real-time communications, as between two people in a face-to-face discussion, or talking on the telephone, or as in a one-to-many form, such as a lecture, has its equivalent within CMC in chat rooms and similar environments.

Synchronous learning allows instructor and students to discuss or solve some tasks in the class environment. Students in a synchronous environment tend to be more engaged in the learning and develop interaction skills. Students can interact and learn from peers. (Klemm, 1996).

Daniels and Pethel (2005) stated that synchronous interaction requires the learner and instructor being online at the same time and communicating in real-time. Efficient synchronous communication tools are a more recent development and include: shared whiteboards and live presentation tools, learner control tools including hand raising, approval feedback and audio/video control, live assessment testing and voting, breakout rooms for smaller groups, real-time chat, instant messaging technology, voice streaming, video conferencing and webcasting.

Chelman and Duchastel (2000) explained that in synchronous communication, students participate in real time conversations through audio conferencing, internet chats, and, potentially, via video conferencing. This kind of communication can help students develop interaction skills, take immediate answers and feedback and develop a strong team building.

Slabbert and Fresen (2002) stated the advantages and disadvantages of synchronous learning. According to them, log of the messages in chat rooms can be kept by the instructors and can be used in the evaluation of students' progress. Moreover, there are some students who have problems in entering the online lesson in different time zones. However, there are some limitations for synchronous communication tools. Because they require additional bandwidth and

place more demands on the server. Students who log onto the chat room late can not reach first part of the communication and can not follow the direction in which the communication may be moving.

According to Hiltz (2002), synchronous classroom interaction allows students to have opportunity to get real time feedback on their ideas and make collaboration with their peers in order to discuss their subjects. Moreover, synchronous technologies also have a higher motivation and completion rate than asynchronous ones.

The disadvantages of synchronous learning are logistics and the limitation of time. All of the students must be online at the same time which can bring problems like bandwidth. The instructor may have problems in this kind of communication. Because it is difficult to make students get attention to lesson in this environment. Control and management of students may be a problem in synchronous learning. (Easton, 2003)

## **2.8 Asynchronous Communication**

According to Driscoll (1998), Web-based asynchronous learning is learning that takes place anytime and anywhere over the Internet. This kind of communication is limited by location or time. The main benefit from asynchronous communication is its ability to make interchange between learners and the instructor or other learners. This communication does not require being in the same place or at the same time.

Daniels and Pethel (2005) stated that asynchronous communication tools usually include email, newsgroups, BBS (electronic bulletin board systems), surveys and assessments. In asynchronous communication, learners have the opportunity to post messages whenever they want to. The primary advantage of asynchronous communication is its flexibility and ability to fit into everyone's schedule.

Chelman and Duchastel (2000) explained that “The principal way of encouraging student-student dialogue in the pursuit of learning is the availability of online forums, where the entire learning community can participate in an intellectual exchange profitable to all. These forums are known by many different names such as online conference boards, web discussion boards, bulletin boards, online conferences and so on. In essence, they provide a communication medium to pursue discussion of individual topics relevant to the objectives of the course.”  
(p.236)

Mason (2000) stated four advantages of asynchronous learning

- Flexibility - access to the teaching material (e.g. on the Web, or computer conference discussions) can take place at any time (24 hours of the day, 7 days a week) and from many
- Time to reflect - rather than having to react 'on one's feet', asynchronous systems allow the learner time to mull over ideas, check references, refer back to previous messages and take any amount of time to prepare a comment

- Situated learning - because the technology allows access from home and work, the learner can easily integrate the ideas being discussed on the course with the working environment, or Access resources on the Internet as required on the job
- Cost-effective technology - text based asynchronous systems require little bandwidth and low end computers to operate, thus access, particularly global access is more equitable.

According to Daniels and Pethel (2005) one of the disadvantages of an asynchronous communication is that group activities take more time. Feedback is not given timely in this kind of communication. Moreover, students who are new for asynchronous communication may find traditional face to face communications is more convenient to use.

The choice of CMC technique according to Moore (1996) depends on

- availability of appropriate hardware and software for students and instructors;
- availability of training and support in the use of the various technologies;
- availability and level of Internet connectivity and access for all participants;
- copyright and ownership issues for text, graphic, audio and video material, and
- cost of acquisition, support and use of appropriate technology.

## **2.9 Specific research studies**

There are various research studies about WBI. Research findings about WBI are presented and discussed below.

### **2.9.1 Online course materials**

In order to enlighten the online materials in a web based course, Moore, Downing, and York (2002) investigated the organization of instructional content for Web-based courses. They found that where instructor course materials are placed is an important element of effective and efficient online course navigation and student satisfaction.

Caplow (2006) made a research about perceptions of students about the online course materials. The findings suggest that students' navigation in a Web based course site is important. Therefore the instructors place the materials in an effective way.

Alghazo (2006) made a research investigating students' attitudes toward Web-enhanced instruction in an educational technology course. She found that students liked the access to the electronic version of instructor's presentations, access to their grades through the Web, and submitting their assignments through the Web without having to print them out and handing them to the instructor. Also students' understanding of the course increased with the availability of links to websites related to course materials.

Atan, Rahman and Idrus (2004) found that despite the advantageous features of on-line learning, the students perceived that the printed modules should remain the

main medium of the course delivery in distance education, leading to a more suitable and comprehensive hybrid learning environment.

Heffner and Cohen (2005) conducted a research to examine relationships between student characteristics, course performance, and access of Web-CT course material. They found that students who have higher course grades and performance on class assignments access the Web-based course material more frequently.

Kid (2005) found that students gave importance to the navigation, design of instruction, time needed to download materials, web design aesthetics, and accessibility of the course information. They were all important factors that affected the instructional quality of online and Web-based course. The student also revealed that the Web-based learning environment would allowed them to be more active participants in their learning process, increasing their critical and creative thinking skills as well as improving their problem-solving skills.

### **2.9.2 Support**

Zhang, Perris and Yeung (2005) made a research about online tutorial support in open and distance learning. According to them, "...students were not entirely satisfied with the requisite time to receive a response from tutors and also sheds light on what general expectations students might have to working online and how their expectations are met" (p.798). The students' perceptions about this issue like this: When using email, students had an average level of satisfaction with the

learning strategies used by the instructor. Students declared they used e-mail to receive updates from the tutor on topics covered or simply for clarification with subject matter. They thought that online support should be well structured and organized.

Vonderwell (2002) found that online environment requires the reconstruction of student and instructor roles, relationships and practices. The instructor experiences in the online environment can change the outlook of the practice of teaching. Preparing students for engaging in active learning should be emphasized in both face-to-face and online environments. A clear understanding of active learning and student behavior in online learning and the instructor's capabilities and limitations need to be recognized.

### **2.9.3 Level of Communication**

There are various research studies about students' perception about level of communication in a web based course.

Driver (2002) made a research study on the students' perceptions about overall interaction in a web based environment. He used chat and forum in the web site for the course. He found that the students most liked the peer-to-peer interactions in their groups; however they did not much liked interactions with other students in the class or with the instructor. He also reported that chat tool had not been used because they had preferred face-to-face interactions if they had found a chance.



İnan (2003) found similar results with Driver's study. He investigated the utilization of an online learning support system for pre-service teachers. He stated that students preferred to use telephone and GMS for communicating. The reason for this might be chance of face-to-face interaction and lack of privacy of the forum.

Altun (2005) also made a research about this issue and stated that students were cautious about the need of using such tools where face to face communication is more convenient.

Zhang, Perris and Yeung (2005) found that

Students were most comfortable, and found the most purpose for using computers and the Internet, for independent work such as submitting assignments, conducting searches, and retrieving course content. Students' comfort levels decreased when use involved communicating via email and a further decrease was noted when use involved communicating via discussion boards and chat rooms. (p.801)

Hoşver (2002) stated that the students did not preferred synchronous tools to communicate because of their status, full time worker in her study. In Ersoy's study (2003), he explained the reasons of students' low participation scores and their neutral perceptions of computer mediated communication tools because they had a chance to communicate face-to face environment.

Oytun (2003) also made a research about students' perceptions of a web based learning environment. He found that although using Computer Mediated communication tools directly affected the grade of the course, they were neutral about the level of communication in the course. He explained that students were

not physically dispersed. They could make face-to-face interviews in classroom or on campus.

Yıldırım (2002) also made a research about students' perceptions of a web based learning environment. She stated that the students preferred connecting course web site on campus because of economical difficulties.

#### **2.9.4 Satisfaction**

Kanuka and Nocente (2003) made a research in order to investigate students' satisfaction in a web based course. They found that the use of the Web for self-regulated and distance delivered professional development was perceived by the course participants as a satisfactory platform for learning

Summers, Waigandt and Whittaker (2005) made a research in order to compare of student achievement and satisfaction in an online versus a traditional face-to-face statistics class. They found that the online students were generally less satisfied with the course than those in the traditional classroom. The online students did not feel as satisfied as the face- to-face students, most likely because instructor's interest is typically conveyed by personal contact in the classroom and in office hours. They did not have the opportunity for this type of instructor contact.

Dibiase and Rademacher (2005) found that there are four key variables which have most influence on the satisfaction with distance learning course.

- student maturity

- instructor experience
- pedagogical approach
- institutional support

Gould and Padavano(2006) made a research about satisfaction in online courses.

They decided seven ways to improve student satisfaction in online courses:

- Post the course syllabus on the Web
- Administer a learning-styles inventory.
- Explain the importance of group work.
- Use team contracts.
- Use a variety of assessments.
- Be flexible.
- Provide frequent interaction.

Hong (2002) conducted a research about the effect of students' and instructional variables on satisfaction and achievement in a Web-based course. Results indicated that gender, age, learning styles, time spent on the course, and perceptions of student–student interactions, course activities, and asynchronous Web-based conferences were not related to satisfaction and learning outcomes. He also found that

Gender, age, and learning styles were not related to satisfaction with and learning from the Web-based course. Students' scholastic

abilities did not affect students' satisfaction with the course. However, students who had better scholastic abilities generally attained better grades in the course. Students' initial computer skills were not related to students' achievement in the course. Students also had difficulties to collaboratively learn in the Web-based course. The findings suggest that the tasks ahead would be to improve the Web learning environment to provide more structure and guidance to students in learning from asynchronous Web-based interactions and group activities. (p.279)

In Oytun' s study (2003), students' perceptions about satisfaction in online course were neutral. He explained that perceptions of students about satisfaction may be affected in other issues like feeling about computers and the web, online support and level of communication.

Ham (2002) found that there is a correlation between students' satisfaction with web-based instruction and the level of communications with their instructor. Picciano 2002) also stated that there is strong evidence in the literature that increased satisfaction in online courses depending on interaction.

## **2.10 Summary**

The use of online programs or courses in universities and institutions increases with the developments in web technologies. Therefore, the features of WBI and CMC should be learned in order to apply them effectively.

Most of the studies focused on investigation about effects of the online learning environments. The findings of these studies should help instructors and instructional designers create more effective learning environments in order to reach certain outcomes. Communication tools also should be taken into account in order to develop interaction between instructor and students.

## **CHAPTER 3**

### **METHOD**

In this chapter the research question, research design, population, general information about Web-based course, data collection instruments, data analysis and assumptions of the researcher with limitations are presented.

#### **3.1 Research Question**

The main purpose of the study is to understand the perceptions of students in a Web based course in terms of feelings about online course and materials, level of communication, satisfaction and effectiveness of the course.

The research question with the sub questions was asked in this study to achieve the purpose of study:

1. What are the learners' perceptions about the Web-based instruction in terms of
  - a) Course and course materials of online environment?
  - b) Course support in online environment?
  - c) Level of communication in online environment?
  - d) Satisfaction in online environment?

### 3.2 Design of the Study

The design of the study is a descriptive study in order to identify perceptions of the learners about online course. The “Information Technology in Education II” course (CEIT 112) at the department of Computer Education and Instructional Technology (CEIT), Middle East Technical University (METU) at 2004/2005 spring semester was taken into investigation. Data related with students’ perceptions in an online course are collected with survey

### 3.3 Subjects of the Study

The sampling method used in this study was non-probability convenient sampling. The subjects of this study were 1<sup>st</sup> year students who take the CEIT 112 course at the 2004-2005 spring semester at Middle East Technical University, Ankara, Turkey. Totally 34 students, 24 male and 10 female, were involved in the course. The students were taking the course as a must course within their curriculum. All students filled the questionnaire.

**Table 3.1: Distribution of the subjects of the study**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
Males	24	70,6
Females	10	29,4
Total	34	100,0

### **3.4 Description of the CEIT 112 Web Based Course**

The context of this research study is the CEIT 112 course offered by Computer Education and Instructional Technology Department during 2004-2005 spring semester at Middle East Technical University, Ankara, Turkey. The purpose of this course is to familiarize the student with the terminology and concepts of databases, basic computer networks and devices, and problem solving while promoting "fearlessness" when it comes to the use of computers, a sense of "learning to learn", and ethical considerations of these in educational settings. The objectives of the course are:

- Describe and explain database concept, basics of relational databases, the use of database management software in an educational setting
- Identify the concepts related to databases and the features of MS Access 2000; to create and maintain tables and table data; to locate and manipulate data
- Use MS Access 2000 to maintain tables and table data; to manage MS Access 2000 data; to create and modify forms and report formats
- Create and refine queries; to create, modify and enhance the forms in the design view and reports; to secure and enhance the performance of an MS Access 2000 database
- Describe and explain the role of computers and computer networks in education, basic network devices



- Use the Internet and its applications in educational settings
- Solve problems and create flowcharts and algorithms

The course was a Web-based course. The students took the lesson online each week. Online lessons were composed of forum and course web site. Each week a new topic related with the lesson was given in online environment. Also two-hour lab lessons were made each week. In the lab sessions there were many hands-on activities, quizzes, and home works about the content. In online environment, students used forums in order to discuss the topics. Students were expected to post messages to forum topics. A guideline, course syllabus, resources for each week's topic and assignments were included in online environment. Students were also expected to make a term project and discuss group works through forum.

The assessment of the students' achievement in this course had done based on five criteria: Mid-term exam, Final exam, Lab, Project and Participation to online environment (reading the online content pages, reading or posting to forum pages).

The Table 3.2 shows the measurements of five criteria.

**Table 3.2: Evaluation and grading formula of the course**

	<b>Percentage</b>
Midterm	20 %
Final	25 %
Lab	15 %
Project	20 %
Online Participation	20 %
Total	100

### **3.5 Data Collection Instruments**

To obtain relevant data for this study, Students' Perceptions of Web Based Course Survey (see Appendix A) was used. The instrument was in English because all of the subjects were students of METU where the lessons are in English. Therefore it is assumed that they can understand the questions without having any problems.

The items were taken from Marsha Kennedy Ham (2002) who used them in many web based courses. This survey was developed in the late 1980s by Hiltz. Ham revised this survey in 2002 and used with 62 items with the Cronbach's alpha values ranges 0.79-0.89. Shockley (2005) used this survey in his dissertation with the permission of Ham. He also stated the validity of the survey in his study.

Not all of the items were taken. The items which were related the course were included in the survey. The instructor and researcher agreed on a survey schedule for this study.

The survey is a 5-scale Likert type questionnaire. There are 30 items. Each item has 5-Likert scale where 5 corresponds to strongly agree, 4 to agree, 3 to neutral, 2 to disagree and 1 to strongly disagree. The themes and the related questions in the survey are:

- a) Course and course materials of online environment (Items: 1, 4, 5, 6, 20, 27)
- b) Course support in online environment (Items: 2, 9, 10, 11, 22)
- c) Level of communication in online environment (Items: 7, 8, 12, 13, 14, 15)

- d) Satisfaction in online environment (Items: 3, 16, 17, 18, 19, 21, 23, 24, 25, 26, 28, 29, 30)

### **3.6 Procedure of the Study**

This study investigates perceptions of a Web-based course given at METU in Ankara, Turkey during 2004/2005 spring semester. After the last week of the lesson, the survey was given before the final exam. The students answered the questions in 10 minutes. All of the students filled the questionnaire.

### **3.7 Data Analysis**

The data gathered through the survey was analyzed using the SPSS for Windows software. The survey was divided into four subscales in terms of research questions. Negative items were coded and reversed by using SPSS. Descriptive statistics such as frequency, mean, standard deviation, percentages was used in order to analyze subscales. The mean scores were calculated for overall and subscales. The students' comments about things they like and dislike about the course were analyzed.

### **3.8 Assumptions of the Study**

In this study, the following assumptions were made:

- The participants would respond the questionnaires accurately,

- The subjects' reading ability in English was sufficient for responding in questionnaires.

### **3.9 Limitations of the Study**

The following limitations were recognized in this study:

- Validity of the study is limited to the honesty of the subjects' responses to the instruments.
- Validity of the study is limited to the reliability of the instruments used in the study
- All of the students participated in this study were from Middle East Technical University. Therefore, generalization of the findings to other populations lacked certainty.
- Participations in this study were limited to 34 students who enrolled in the CEIT 112 course offered by METU during spring 2004/2005.

## **CHAPTER 4**

### **RESULTS**

In this chapter, participants' characteristics and results of the study are presented. The findings are summarized in the conclusion part. The statistical measures were calculated by SPSS v10.

#### **4.1 Demographic Data**

Participants' demographic data describing gender, high school type, Previous online course experiences, computer knowledge level, total time spend for studying for the course, student living arrangements, computer ownership, primary access place to the course are presented in Table 4.1 and Table 4.2. Thirty-four participants responded to the survey. The sample consists of 71 % male students (N=24) and 29 % female students (N=10). Nearly all of the students (91 %) have not taken an online course before (N=31). The percentage (53 %) of the participants' computer knowledge level is intermediate level (N=18). More than half of the students were graduated from vocational high school or technical high school. Table 4.1 shows the data regarding gender, previous online course experiences, computer knowledge level and high school type.

**Table 4.1: Gender, Previous Online Course Experience, Computer Knowledge Level and High School Type**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<i><u>Gender</u></i>		
Male	24	70,6
Female	10	29,4
<i><u>Previous Online Course Experience</u></i>		
None	31	91,2
Have an online course	3	8,8
<i><u>Computer Knowledge Level</u></i>		
Novice	2	5,9
Elementary	12	41,2
Intermediate	18	52,9
Expert	2	5,9
<i><u>High School Type</u></i>		
General	-	-
Anatolian	5	14,7
Private	2	5,9
Vocational	14	41,2
Technical	8	23,5
Other	5	14,7

Total time spend for studying for the course, student living arrangements, computer ownership, place primarily to access the course are also presented in Table 4.2. The total time spent on the course in a week is usually between 3 and 5 hours with a percentage 44 %. Participants who were living off campus with

roommates have a percentage of 38 % (N=13). Most of the participants (91 %) have a computer. Students access the lesson in computer lab in dormitory (32 %) and their home or apartment (32 %).

**Table 4.2: Total Time Spent for Studying the Course in a Week, Students' Living Arrangements, Computer Ownership and Access Place**

Other	2	5,9
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<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<u>Total Time Spent for Studying the Course</u>		
Less than one hour	3	8,8
1-2 hour	9	26,5
3-5 hour	15	44,1
6-9 hour	5	14,7
10-12 hour	-	-
13 or more hours	2	5,9
<u>Students Living Arrangements</u>		
Live with parents	9	26,5
Live in Campus Dormitory	10	29,4
Live off campus with roommates	13	38,2
Other	2	5,9
<u>Computer Ownership</u>		
Having a computer	31	91,2
Not having a computer	3	8,8
<u>Access Place</u>		
Computer lab in the department	8	23,5
Computer lab in dormitories	11	32,4
In my room in dormitory	2	5,9
In my home/apartment	11	32,4

## 4.2 Students' Perceptions of Web Based Course

### 4.2.1 Students' Feelings about Course and Course Materials

To get information about students' feelings about the course and course material, they were asked 6 questions in the sub-scale. Table 4.3 shows this sub-scale. The mean score was found to be 2,96 which indicated that students felt neutral about the effectiveness of the course and course materials.

**Table 4.3: Students' feelings about the course and course materials**

Item	SD %	D %	N%	A%	SA%	Mean
Std. D						
Q01 0,965	8,8	20,6	44,1	23,5	2,9	2,91
Q04 0,919	2,9	29,4	44,1	17,6	5,9	2,94
Q05 1,211	8,8	11,8	23,5	35,3	20,6	3,47
Q06 1,250	14,7	32,4	23,5	17,6	11,8	2,79
Q20 1,194	14,7	38,2	14,7	26,5	5,9	2,71
Q27 1,083	14,7	11,8	47,1	20,6	5,9	2,91
Sub Scale Mean Score						2,96

In the 1<sup>st</sup> item, students were asked whether the course objectives were clear and achievable. Forty-four percentage of the students were neutral and 29 % of the students strongly disagreed or disagreed with the statement with a mean of M=2,91. It can be said that the students were not aware of what was the expected them at the end of the course.



In the 4<sup>th</sup> item, students were asked whether the course was appropriate to method of distribution. Students were neutral with a percentage 44 % and 32 % of the students strongly disagreed or disagreed with the statement with a mean of  $M=2,94$ . It can be said that the students did not believe it was a good choice for this course.

In the 5<sup>th</sup> item, students were asked if the online material was easy for students to access. More than half of the students of the students were strongly agreed or agreed with the statement with a mean of  $M=3,47$ . Twenty-four percentages of them were neutral. It can be stated that the students believed that accessing the material in online lessons could be easy.

In the 6<sup>th</sup> item, students were asked if there was an advantage to use this method than traditional methods. Forty-seven percentages of the students were strongly disagreed or disagreed with the statement and 24 % of the students were neutral. The mean was  $M=2,79$ . It can be said that the students did not think it was an advantage to use this method.

In the 20<sup>th</sup> item, students were asked whether online course was a better learning experience. The students were strongly disagreed or disagreed with the statement with a percentage of 53 and with a mean of  $M=2,71$ . It can be stated that the students were not sure about that it was a better learning experience.

In the 27<sup>th</sup> item, students were asked whether the pace of the course was just about right for them. Forty-seven percentage of the students were neutral and 27 % of the students were strongly disagreed or disagreed with the statement with a mean

of  $M=2,91$ . It can be stated that the students were not sure about the pace of the course.

#### 4.2.2 Students' Perceptions about Online Course Support

Five items in the questionnaire inquired the students' perceptions about the online course support. The mean score for this sub-scale was 3.03. The findings lead to the conclusion that the students thought they took a little help or support. Table 4.4 shows this subscale.

In the 2<sup>nd</sup> item, students were asked whether the online course provided access to instructor or other students. Thirty-eight percentage of the students were strongly disagreed or disagreed and 27 % of the students were neutral with the statement with a mean of  $M=2,97$ . It can be stated that the students did not think this course provided access properly.

**Table 4.4 : Online course support**

Item	SD %	D %	N%	A%	SA%	Mean	
Q02	5,9	32,4	26,5	29,4	5,9	2,97	1,059
Q09	11,8	23,5	41,2	17,6	5,9	2,82	1,058
Q10	11,8	32,4	23,5	26,5	5,9	2,82	1,141
Q11	8,8	17,6	35,3	14,7	23,5	3,26	1,263
Q22*	5,9	17,6	32,4	29,4	14,7	3,29	1,115
Sub Scale Mean Score						3,03	

\*: Reverse item

In the 9<sup>th</sup> item, students were asked if they were able to receive immediate feedback through forums. Thirty-five percentage of the students were strongly disagreed or disagreed and 41 % of the students were neutral with the statement with a mean of  $M=2,82$ . It can be said that the students could not take immediate feedback during the course.

In the 10<sup>th</sup> item, students were asked about if forums improved their understanding of the topic. Forty-four percentages of the students were strongly disagreed or disagreed and 24 % of the students were neutral with the statement. The mean was  $M=2,82$ . This shows that the students did not find the forums effective.

In the 11<sup>th</sup> item, students were asked whether they took the answer immediately after asking the instructor a question by e-mail. Thirty-eight percentage of the students were strongly agreed or agreed and 35 % of the students were neutral with the statement with a mean of  $M=3,26$ . It is possible to say that the majority of students generally took the answer immediately.

In the 22<sup>nd</sup> item, students were asked if they spent too much time trying to log onto the course web site. Forty-four percentage of the students were strongly disagreed or disagreed and 32 % of the students were neutral with the statement with a mean of  $M=3,29$ . It can be stated that the students may have some problems while logging onto the course web site.

### 4.2.3 Students' Perceptions about Level of Communication

The level of communication subscale asked about their perceptions about online communication through the web site. This subscale had 6 items. The mean score was 2.98. As seen in Table 4.5, the mean score shows that the students' perceptions about level of communication were neutral.

**Table 4.5 : Level of Communication**

Item	SD %	D %	N%	A%	SA%	Mean
Q07 1,128	8,8	29,4	20,6	35,3	5,9	3,00
Q08 1,129	14,7	26,5	32,4	20,6	5,9	2,76
Q12 1,067	11,8	29,4	29,4	26,5	2,9	2,79
Q13 1,058	8,8	32,4	32,4	20,6	5,9	2,82
Q14 1,163	5,9	17,6	41,2	14,7	20,6	3,26
Q15 1,046	2,9	23,5	32,4	29,4	11,8	3,24
Sub Scale Mean Score						2,98

7<sup>th</sup> item asked if the forum was very beneficial to understand each other's ideas. Forty-one percentage of the students were strongly agreed or agreed and 21 % of the students were neutral with the statement with a mean of M=3,00. It can be stated that the students were neutral about using forums effectively.

In the 8<sup>th</sup> item, they were asked if they used the forum very frequently to communicate with other friends. Forty-one percentage of the students were strongly disagreed or disagreed and 32 % of the students were neutral with the statement with a mean of  $M=2,76$ . It can be claimed that students did not used the forum very much.

In the 12<sup>th</sup> item, students were asked whether using online discussion made them communicate more with their fellow students. Forty-one percentage of the students were strongly disagreed or disagreed and 29 % of the students were neutral with the statement with a mean of  $M=2,79$ . It can be stated that the students did not used forums sufficiently in order to communicate.

In the 13<sup>th</sup> item, the item asked whether there were sufficient opportunities to interact online with classmates. Forty-one percentage of the students were strongly disagreed or disagreed and 32 % of the students were neutral with the statement with a mean of  $M=2,82$ . It can be stated that the majority of the students did not think they had sufficient opportunities to interact online.

In the 14<sup>th</sup> item, students were asked if they liked having e-mail connection with their instructor. Thirty-five percentage of the students were strongly agreed or agreed and 41 % of the students were neutral with the statement with a mean of  $M=3,26$ . It can be said that some students used e-mail however a big portion felt neutral about this issue.

In the 15<sup>th</sup> item, they were asked whether having e-mail provided timely access to their instructor. Forty-one percentage of the students were strongly agreed or

agreed and 32 % of the students were neutral with the statement with a mean of  $M=3,24$ . It can be said that a considerable number thought it was an advantage to use e-mail. However a big number felt neutral and were not sure about it was an advantage.

#### **4.2.4 Students' Perceptions of Satisfaction in the Web Based Course**

Students' were asked 13 questions to understand their perceptions of satisfaction in the web based course. As shown in the Table 4.6, overall mean for this subscale is 2,82, which can be said neutral.

In the 3<sup>rd</sup> item, students were asked whether the course was interesting or not. Forty-seven percentage of the students were strongly disagreed or disagreed and 35 % of the students strongly agreed or disagreed with the statement with a mean of  $M=2,77$ . This result shows that almost half of students thought it was not interesting, on the other hand a considerable amount thought it was interesting.

In the 16<sup>th</sup> item, the item asked whether taking an online course is more convenient. Forty-seven percentage of the students were strongly disagreed or disagreed and 23,5 % of the students were neutral with the statement with a mean of  $M=2,76$ . It shows that some students did not think it was more convenient.

**Table 4.6 : Students' Perceptions of Satisfaction**

Item	SD %	D %	N%	A%	SA%	Mean
Q03 1,304	20,6	26,5	17,6	26,5	8,8	2,77
Q16 1,281	17,6	29,4	23,5	17,6	11,8	2,76
Q17* 1,518	35,3	17,6	11,8	20,6	14,7	2,62
Q18* 1,082	14,7	23,5	41,2	14,7	5,9	2,74
Q19* 1,338	26,5	11,8	41,2	5,9	14,7	2,71
Q21 0,965	2,9	35,3	35,3	20,6	5,9	2,91
Q23 1,415	29,4	20,6	23,5	11,8	14,7	2,62
Q24* 1,268	8,8	17,6	32,4	17,6	23,5	3,29
Q25 1,038	8,8	26,5	38,2	20,6	5,9	2,88
Q26 1,206	29,4	26,5	26,5	11,8	5,9	2,38
Q28 1,071	5,9	29,4	41,2	11,8	11,8	2,94
Q29 1,149	8,8	26,5	14,7	44,1	5,9	3,12
Q30 1,288	17,6	17,6	35,3	14,7	14,7	2,91
Sub Scale Mean Score						2,82

\*: Reverse items

In the 17<sup>th</sup> item, students were asked if taking an online course is boring. More than half of the students were strongly agreed or agreed and 35 % of the students were strongly disagreed or disagreed with the statement. The mean was  $M=2,62$ . This shows that more than half of the students find the course boring.

In the 18<sup>th</sup> item, the subjects when they became very busy with other things, they were more likely to stop. The mean was 2,74. Thirty-eight percentages of the students were strongly agreed or agreed and 41,2 % of the students were neutral with the statement. It shows that a big deal of the students were likely to stop when they became very busy with other students.

19<sup>th</sup> item asked if they would take another online course. Nearly half of the students would not like to take another online course and 41,2 % of the students were neutral with the statement. It shows that they are not sure the effectiveness of the web based courses.

In the 21<sup>st</sup> item, the students were asked whether they gained skills that are useful in their actual or chosen profession. Thirty-eight percentage of the students were strongly disagreed or disagreed and 35 % of the students were neutral with the statement with a mean of  $M=2,91$ . It supports that students are not sure about gaining skills that are useful in their actual or chosen profession.

In the 23<sup>rd</sup> item, the students were asked whether they would recommend taking online course to friends or associates. Half of the students were strongly disagreed or disagreed and 26 % of the students were strongly agreed and agreed with the



statement with a mean of  $M=2,62$ . It is possible to say that half of the students would not recommend taking online course.

In the 24<sup>th</sup> item, the item asked if they found learning online to be frustrating. Forty-one percentage of the students were strongly disagreed or disagreed and 32 % of the students were neutral with the statement with a mean of  $M=3,29$ . It shows that a considerable amount agreed with this statement.

In the 25<sup>th</sup> item, the students were asked whether the online course contributed to their educational or personal development. Thirty-five percentages of the students were strongly disagreed or disagreed and 27 % of the students were neutral with the statement. The mean was 2,88. Most of the students did not find any contribution to their educational and personal development.

In the 26<sup>th</sup> item, the question asked if this was one of the best courses they had taken. More than half of the students were strongly disagreed or disagreed and 27 % of the students were neutral with the statement with a mean of  $M=2,38$ . Thus, it can be claimed that more than half of the students did not think it was the best course.

In the 28<sup>th</sup> item, the students were asked whether they could say they were successful. Thirty-five percentage of the students were strongly disagreed or disagreed and 41 % of the students were neutral with the statement with a mean of  $M=2,94$ . Therefore, it can be said that students are not sure about their success in online course.

In the 29<sup>th</sup> item, the students were asked whether they had learned the advantages of online learning. Half of the students were strongly agreed or agreed and 35 % of the students were strongly disagreed or disagreed with the statement. Mean was  $M=3,12$ . Half of the students were aware of the advantages of the online learning however a considerable amount did not think in this way.

In the 30<sup>th</sup> item, the students were asked whether overall they were very satisfied with this online learning experience. The students' mean score of this item was 2,91. The results showed that 35 % of the students were strongly disagreed or disagreed and 29 % of the students were strongly agreed or agreed with the statement. Thirty-five percentages of the students felt neutral about this statement. Therefore, it can be claimed that students were not sure about being satisfied with this online course.

## **CHAPTER 5**

### **CONCLUSIONS**

This chapter presents a summary of results, discussions, implications for practice and future research recommendations.

#### **5.1 Discussion**

The purpose of this study was to understand the experiences of university students in online courses and identify learners' perceptions about course and course materials, online course support, level of communication and satisfaction in web based course. 34 students who have been taking CEIT 112 course at 2004/2005 spring semester were the participants of this study. A 5-scale Likert type survey was distributed to the students at the end of the term.

##### **5.1.1 Feelings about Course and Course Materials**

Student's feelings about course and course materials were questioned by subscale. The results claimed that students' feeling about course and course materials were

neutral. One of the students in this course, in the open-ended item in the questionnaire, said that this course needed more practice in face to face. Maybe it was not a good choice for this lesson in an online environment. Majority of the students thought it was not appropriate to method of distribution.

However there can be some problems for the design of the website of the course. This may cause some difficulties for the learners. Moore, Downing, and York (2002) stated the importance of placement of materials in web-based learning environment. They marked it as an important element of effective and efficient online course navigation and student satisfaction. In this study, the materials may not be placed properly in order to meet students' needs in an online environment.

Feeling neutral about the online course materials by students can be explained in that students believe the printed materials are the main medium in a course. This finding is consistent with the study of Atan, Rahman and Idrus (2004). They found that students perceived that the printed modules should remain the main medium of the course delivery in distance education.

All of the students were CEIT Department of METU students. However they were 1<sup>st</sup> year students. Only three of them took an online lesson before. Thirty-one subjects did not take any online lesson before. Although 64,7 % of the students graduated from vocational or technical high school, they did not use the computers and Web in this way. Therefore this result may be due to their little experience with online lesson materials.

Only one item mean score was higher than 3 for feeling about course and course materials. This is the item 5 which is “The online material was easy for students to access”. This is because accessing the Web material is easier than traditional materials.

### **5.1.2 Online Course Support**

The results of this subscale pointed that, online course support was perceived neutral in this course ( $M=3,03$ ). The instructor was the source of the online course support. After looking at items in this subscale, it can be understood that not all of students took help from the instructor or other friends via e-mail or forum. Maybe this result is due to little experience with online lesson explained before. Moreover a considerable amount of the students declared that they had problems in spending too much time trying to log onto the course web site.

When introducing a new method in instruction, support from the instructor is very important. Moreover, Vonderwell (2000) made a research about it and found online course support from the instructor is an important factor that influences effectiveness of instruction. She also stated the importance of the support and feedback. In Hara & Kling (1999) research study, lack of technical support and because of the instructor delayed feedback of students influences students in a bad way.

Maybe before designing an online course, bandwidth problems should be stressed very much and taken into account their access place. Because Of course METU

gives a lot of support to their students but not all of them live in METU. Thirty-eight percentages of students did not access the web site in METU.

The students always need support in an online course. However in this study, the students had opportunity to access their instructor in his office when needed. They probably asked their questions related to online lesson face to face interaction. Maybe they thought it is more effective to connect instructor face to face.

This findings are consistent with İnan(2003), Ersoy(2003) and Oytun(2003) . They also stated that when students have the opportunity to communicate face to face, they do not prefer using computer mediated communication tools.

### **5.1.3 Level of Communication**

The findings indicated that although students used forum in this course, they were neutral about level of communication in this online course. In this course, participation to forum directly affected the grade of the course. This fact may make them use Computer Mediated Communication Tools; however they declared that they did not use these tools effectively.

In this subscale, they responded more positively in terms of forum. Maybe this is in order to finish their project as a part of their course. It can be due to interact or communicate with their peers which are away from campus. However this is a fact that students do not prefer CMC tools instead of face to face interviews.

In comment section, students stated “It was silly to communicate with my friends in online environment although s/he is near me. However I sometimes behaved like this in order to get a good mark in this participation part.”

There are studies in the literature consistent with these findings. According to İnan (2003), due to the opportunity to interact with each other face to face, students did not use web site for communication purposes. Moreover Ersoy (2003) found that students did not prefer using online communication tools because they had a chance to communicate face-to face environment. Altun (2005) also found similar results about this issue and stated that students were cautious about the need of using such tools where face to face communication is more convenient.

In Oytun’s (2003) study, he stated that students liked using e-mail to communicate with the instructor and level of communication with e-mail was appropriate for the course. In consistent with this study, students also used e-mail more than forums.

Moreover Driver (2002) stated that “the chat function seemed cumbersome to use and that they preferred face to face meetings if they had to meet at the same time at all” (p.39)

Altun (2005) also made a research about this issue and stated that students were cautious about the need of using such tools where face to face communication is more convenient.

#### **5.1.4 Satisfaction**

The result shows that the students did not have a consensus a satisfaction in the online course and the perceptions about satisfaction are neutral. When looked at the items about whether course was interesting, convenient or a better learning experience, the answers were negative or neutral. They were not sure about taking another online course. Maybe they did not find the online course effective and think all online lessons have the same characteristics.

Neutral feelings about satisfaction in this study may be because of the fact that the instructor was physically dispersed. The instructor could not use eye-contact or body language which may affect students' satisfaction. Similar results were found by Summers, Waigandt and Whittaker(2005). They found that online students did not feel as satisfied as the face- to-face students, most likely because instructor's interest is typically conveyed by personal contact in the classroom and in office hours. They did not have the opportunity for this type of instructor contact.

According to Oytun (2003), students' perceptions about satisfaction in online course may be affected in other issues like feeling about computers and the web, online support and level of communication. In this study, the perceptions about these issues are also neutral. This may affect the perceptions of satisfaction in this environment.

When we look at the success in this lesson, they did not think they gained skills. However nearly half of the students think there are advantages to use online lessons. For the last item which is "Overall I was very satisfied with this online



learning experience” half of the students’ perceptions are negative and half of the students are positive.

This result can be because of students’ little experience with online lessons. Although 94,1 % of the students had elementary or intermediate computer knowledge level and 64,7% of the students were graduated from vocational and technical high school, students did not have any online lesson and know their features. This fact can affect the students in a negative way. However students who were graduated from vocational or technical high school felt more positively to the web based instruction.

The result of neutral feelings about satisfaction can be because of lack of interaction in this course. Picciano (2002) found similar results. According to him there is strong evidence in the literature that increased satisfaction in online courses depending on interaction. It is consistent with Ham’s (2002) study. He found that there is a correlation between students’ satisfaction with web-based instruction and the level of communications with their instructor.

## **5.2 Implications for Practice**

After the data analysis, on the basis of the results of the study general recommendations were made. The following recommendations are provided:

- Interaction should be taken into account in online lessons. Participation in online learning activities is very important in online learning.

- Instructors and course designers should define strategies for effective usage of CMC tools. Different types of CMC tools should be developed in order to reach different types of learners.
- The instructors and course designers should take necessary importance about feedback and support to learners. In this study- students were 1<sup>st</sup> year students. They did not know about this kind of instruction. So they needed more feedback and support in this course.
- Students should be encouraged to share experiences and beliefs in online discussion. They should make their participation in discussion an important part of grading of the course.

### **5.3 Recommendations for Further Studies**

Beside the contribution of the study, there seems to be further research in online learning environments. The findings of this study identified that students' perceptions about course and course materials, online course support, level of communication and satisfaction were neutral. Further studies are needed to identify the possible factors that influence students' perceptions.

This is a case study. It can not be said that all of the students' perceptions are neutral in the online lessons. In order to generalize this fact, several studies should be conducted in different context, background and environment. Maybe some clue

factors can be found in order to discuss the perceptions of students in online learning.

Also new strategies and ways can be investigated in order to manage and develop online courses.

Another recommendation is to make research in studying with students who have taken at least one online course before. Therefore, students can take online courses more consciously and use online course materials more effectively.

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## **.APPENDIX A**

### **STUDENTS' PERCEPTIONS OF WEB BASED COURSE SURVEY**

Dear,

The purpose of this survey is to gather information about students' perceptions of their online course experience. It is particularly important to obtain your responses because your experience will contribute significantly to develop a better online teaching and learning environment. Your responses will be kept confidential.

Thank you very much for your cooperation and for being such an important part of this study.

Sincerely,

Melek GÜLER

Master student of METU CEIT

General Information

1) m                      Fema                      MMale

2) What is your high school type?

- General
- Anatolian
- Private
- Vocational
- Technical
- Other

3) How many online courses have you taken before this course?

4) What is your Cumulative GPA (Genel Ortalamanız) :

5) How can you define your computer knowledge level?

- Novice
- Elementary
- Intermediate
- Expert

6) About how much total time did you spent EACH WEEK on this course?

- Less than one hour
- 1-2 hour
- 3-5 hour
- 6-9 hour
- 10-12 hour
- 13 or more hour

7) Student Living Arrangements

- Live with parents
- Live in Campus Dormitory
- Live off campus with roommates
- Other \_\_\_\_\_.

8) Do you own a computer?

- Yes
- No

9) Where is the computer that you primarily use to access the course?

- Computer lab in the department
- Computer lab in dormitory
- In my room in dormitory
- In my home/apartment
- Other \_\_\_\_\_.

Using the scale below, please indicate how strongly you agree or disagree.

(SD=Strongly Disagree; A=Agree; N=Neutral; D=Disagree; SA=Strongly Agree)

		SD	D	N	A	SA
1	The course objective(s) were clear and achievable					
2	The online course provided access to instructor or other students.					
3	The course was interesting					
4	The course was appropriate to method of distribution.					
5	The online material was easy for students to access.					
6	There was an advantage to use this method than traditional methods.					
7	The forum was very beneficial to understand each other's ideas					
8	I used the forum very frequently to communicate with other friends.					
9	I was able to receive immediate feedback through forums.					
10	Forums improved my understanding of the topic.					
11	When I asked my instructor a question by email I typically received answer.					
12	Using online discussion made me communicate more with my fellow students.					
13	There were sufficient opportunities to interact online with classmates.					
14	I like having email connection with my instructor.					
15	Having e-mail provided timely access to my instructor.					
16	Taking an online course is more convenient.					
17	Taking an online course is boring.					

18	When I became very busy with other things, I was more likely to stop.					
19	I would not take another online course.					
20	Online course is a better learning experience.					
21	I gained skills that are useful in my actual or chosen profession.					
22	I spent too much time trying to log onto the course web site.					
23	I would recommend taking online course to friends or associates.					
24	I found learning online to be frustrating					
25	The online course contributed to my educational or personal development.					
26	This was one of the best courses I have taken					
27	The pace of the course was just about right for me					
28	I can say that I was successful.					
29	I have learned the advantages of online learning					
30	Overall I was very satisfied with this web based learning experience.					

Any Other Comments