PERCEPTIONS OF STUDENTS AND TEACHERS ABOUT THE USE OF E - LEARNING / SHARING PORTAL IN EDUCATIONAL ACTIVITIES

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ABSTRACT

PERCEPTIONS OF STUDENTS AND TEACHERS

ABOUT THE USE OF E - LEARNING / SHARING PORTAL

IN EDUCATIONAL ACTIVITIES

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This study examined the perceptions of the Students and the Teachers of METU Development Foundation Schools about the use of e-learning / sharing portal technology in their educational activities. Their perceptions were investigated in terms of three aspects: effects of the use of this technology on their perceived motivation, the perceived usefulness and the perceived ease of use of this technology. A central server was installed for setting up an e-learning / sharing portal environment. Microsoft SharePoint, which is a Sharing Portal Software, was used to access to the central server.

The study was conducted in the form of action research. The data were collected from 6th and 7th grade students of METU Development Foundation Schools by using a questionnaire. Also, interviews were conducted with the teachers. Descriptive statistics, frequency distributions and descriptive analysis methods were used to analyze the results.

The findings of the study indicated that the students and the teachers perceived that e-learning / sharing portal technology is a useful and also easy to use technology. It was found out that the students and the teachers are satisfied with advantages of the use of this new technology in their learning environment. In the same way, the teachers and the students stated that using the system effected students' perceived motivation towards the educational activities in a positive way.

Keywords: Online education, e-learning / sharing portal, motivation in education, technology acceptance model.

ÖZ

EĞİTİMSEL AKTİVİTELERDE E - ÖĞRENME / PAYLAŞIM PORTALI TEKNOLOJİSİNİN KULLANIMI İLE İLGİLİ ÖĞRENCİ VE ÖĞRETMENLERİN ALGILARI

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Yüksek Lisans, Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü

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Bu çalışma, e-öğrenme / paylaşım portalı teknolojisinin eğitimsel aktivitelerde kullanımı ile ilgili olarak öğrenci ve öğretmenlerin algılarını araştırmıştır. Algılar üç açıdan araştırılmıştır: Bu teknolojinin kullanımının öğrencilerin motivasyonu üzerindeki etkisi, bu teknolojinin faydalılığı ve kullanım kolaylığı üzerine algılar. Bu çalışma kapsamında öğrenci ve öğretmenlerin e-öğrenme paylaşım portalı

uygulamalarına erişebilmeleri için merkezi bir uygulama sunucusu kurulmuştur. Öğrencilerin ve öğretmenlerin merkezi sunucu aracılığıyla, paylaşım portalına ulaşabilmeleri için Microsoft SharePoint isimli bir paylaşım portalı yazılımı kullanılmıştır.

Bu çalışma, eylem araştırması metodu çerçevesinde yürütülmüştür. Veriler, e-öğrenme paylaşım portalını kullanan ODTÜ Geliştirme Vakfı Okulları 6. ve 7. sınıf öğrencileri üzerinde uygulanan bir anket aracılığıyla toplanmıştır. Ayrıca, bu okulun paylaşım portalı uygulamalarına katılan öğretmenlerine de röportaj biçiminde anketler uygulanmıştır. Sonuçların sunum ve analizinde ise betimsel istatistikler, frekans dağılımları ve betimsel analiz yöntemleri kullanılmıştır.

Bu çalışmanın sonucunda, katılımcıların e-öğrenme / paylaşım portalı teknolojisinin faydalı ve kolay kullanılabilir bir teknoloji olduğu kanısına vardıkları anlaşılmıştır. Sonuç olarak, öğrenci ve öğretmenlerin eğitim ortamlarında bu yeni teknolojiyi kullanmanın avantajlı olduğunu düşündükleri görülmüştür. Bununla birlikte, öğrenci ve öğretmenlerin, sistemi kullanmanın eğitimsel aktivitelerdeki öğrenci motivasyonlarını olumlu yönde etkilediğini düşündükleri saptanmıştır.

Anahtar Kelimeler: Çevrim içi eğitim, e - öğrenme / paylaşım portalı, eğitimde motivasyon, teknoloji kabul modeli.

To my parents and sister,
Faize, Mehmet and Peyker IŞIK

and to my wife,
Gamze IŞIK

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CHAPTER 1

INTRODUCTION

"It is better to debate a question without settling it than to settle a question without debating it."

Joseph Joubert

This study aimed to investigate the perceptions of students and the teachers about the use of e-learning / sharing portal technology in educational activities. In this chapter, the background of the study, the purpose of the study, the significance of the study and the definitions of the terms will be presented.

1.1 Background of the Study

Computers are in every piece of our life; it has been integrated in every part of daily routine. They have also been used in educational purposes. The powerful features of this technology forced them to become an important instructional technology tool in education. However, computers could not be effective considerably before the development of the internet, because communication with each other was deficiency of computers. After the development of the internet, their significance was increased in educational environments. In a little while, the internet became the most important guide for distance learning. The use of the internet as an instructional guide forced

educators rethink their ways of instructions offered and administered (Longe, 2005). Therefore, some new approaches were begun researched by many educators to benefit the flexibility and convenience provided by Internet-Based-Learning. By the help of this, time and place free learning environments can be established, while it is impossible to achieve this with traditional methods.

By the invention of World Wide Web (WWW), technology has been drifted to a different platform which included images, sounds, animations, interactions and lots of various multimedia channels. It has also been used in communication technologies such as e-mail, ICQ, IRC and other instant messaging tools; they were the most popular tools. Throughout the extending of this technology, all side of it has also integrated in e-learning paradigm. The worldwide e-learning industry is estimated to be worth over thirty-eight (38) billion euros according to conservative estimates; although in the European Union only about 20% of e-learning products are produced within the common market. By 2006, nearly 3.5 million students were participating in on-line learning at institutions of higher education in the United States (Allen & Seaman, 2008).

While gaining popularization through education society, online learning grounded new terminologies. By citing the term virtual education or virtual learning, a new description was made for online education.

> "Virtual learning refers to instruction in an online learning environment where teachers and students are separated by time or space, or both, and the teacher provides course content through *course management applications (e-learning /*

sharing portals), multimedia resources, the Internet, video conferencing, etc. Students receive the content and communicate with the teacher via the same technologies" (Kurbel, 2001).

Virtual education brought in two important characteristics to the literature. Virtual courses and virtual programs: According to Kurbel (2001), virtual courses – a synonym is online courses – are courses delivered on the Internet by using e-learning / sharing portals. The term "Virtual" is used here to characterize the fact that the course is not taught in a classroom face-to-face but through some substitute mode that can be associated with classroom teaching. A virtual program is a study program in which all educational activities in courses or at least a significant portion of the courses are virtual courses. By increasing use of virtual courses and virtual programs, virtual universities were opened in different locations of the world. The Virtual University in the United Kingdom was the world's first successful distance teaching university. It was founded in the 1960's on the belief that communications technology could bring high quality degree-level learning to people who had not had the opportunity to attend campus universities. Today (2008) more than 180 thousands of students are interacting with the Virtual Universities online from home (University of South Florida, 2007).

Such kinds of technologies are created to be used. Even though, they provide a lot of advantages for their users, computer systems cannot improve users' performance if they are not used (Davis, Bagozzi, & Warshaw, 1989). "The Technology Acceptance Model (TAM) suggests that the perceived usefulness and the perceived

ease of use of an information system are major determinants of its use. Previous researches showed the validity of this model across a wide variety of information system types (Gefen & Keil, 1998). People tend to use or not to use an application to the extent they believe it will help them perform their job better.

Accordingly, several new systems can be integrated to the system of education, still, their usefulness, ease of use and effects on students' perceived motivation should be investigated carefully.

1.2 Purpose of the Study

As a new technology, virtual education would be used for educational purposes. Students and teachers would benefit from the advantages of virtual courses and virtual programs. They do not have to apply for virtual foundations to try out rituality; they can use e-learning sharing portal applications in their educational activities. Microsoft SharePoint Server (Microsoft, 2008) is a special e-learning sharing portal server that helps teachers and students meet in an online learning environment where they are separated by time or space, or both, and the teacher provides course content through course management applications, multimedia resources, the Internet, video conferencing, etc. Students receive the content and communicate with the teacher via the same technologies.

This study aims to investigate the effects of the integration of the e-learning / sharing portal as a new technology in web-based-learning environments. It was concluded that there is no study about the use of this technology according to the results of the

literature review conducted during this study. This study will probably be the one of the first researches on this topic.

Effects on students' perceived motivation, the ease of use and usefulness of the e-learning / sharing portal in terms of students' and the teachers' perceptions was investigated in this study. Also, the effect of the use of this technology was investigated in terms of both students' and teachers' perceptions. Lastly, the advantages, disadvantages and suggestions about the use of this technology obtained from teachers' point of view. This study tries to answer the following research questions:

- How do the students and the teachers perceive the use of e-learning / sharing portal in educational activities in terms of *its effects on students' perceived motivation towards the educational activities*?
- How do the students and the teachers perceive *the usefulness* of the e-learning / sharing portal?
- How do the students and the teachers perceive *the ease of use* of the e-learning / sharing portal?
- What are *the advantages and disadvantages* of using the e-learning / sharing portal in educational activities from the teachers' point of view?
- What are *the suggestions* of teachers' about the use of this technology?

1.3 Significance of the Study

There are many things happening sociologically, technologically, and financially that create a perfect storm for online learning. Everything is pointing to a future where nearly every course will have an online component and it is easy to see why. E-learning / sharing portal applications are the biggest tools for creating online learning advantages:

Broadband Internet

Internet connection speeds continue to rise at a reasonable rate, making multimedia download time drop from being counted in hours or days to minutes and seconds. This has allowed an unprecedented amount of information to be transmitted from teachers to students and back again.

Audio

For a very long time, students have recorded their teachers' lectures in order to have the best school experience possible. Being able to review lectures on demand is a great way to learn quickly, and refresh memory. With e-learning / sharing portal audio has become a staple, something that is more or less expected. With recording audio fairly inexpensive, and the file sizes are quite reasonable, it is easy to see why everyone expects audio in online learning.

Video

One of the biggest sacrifices that students used to have to make when pursuing non-traditional methods of education was the lack of face to face interaction with the teacher, where to receive the content, but missed some of the nuances and hints regarding the importance of the information. Body language, facial expression, much of the expression of language, and emotion comes from these

seemingly minor forms of communication, but it is the words themselves that lack much of the meaning and intent.

With video production becoming less and less expensive, and more and more useful, it is expected to see many professors taking advantage of this to supplement other educational offerings.

Interactive

Bringing various technologies together, it can be created fully interactive aspects of education. Adding in the ability to interact in a central area opens up the possibility of group work, or having teachers lead students through virtual exercises.

Personal Time

While it might not always be the case, the best online schools will employ teachers that focus in on students, giving them more personal time than they could have in a larger classroom setting and extending the availability of the teachers to the students through e-mail, instant messaging and other important communication methods that don't require the student and teacher to be in the same physical or digital space at the same time (College Crunch, 2008).

All of these e-learning / sharing portal advantages can create some of the best educational experiences of our century as long as schools and teachers devote the resources and time to utilize the advances in technology, the significance of such kind of studies are obvious.

In this study, some online educational activities were designed by guidance of the e-learning / sharing portal to see teachers' and students' perceptions of the experience about the advantages mentioned above.

1.4 Definitions of Concepts and Terms

World Wide Web: **"**Often referred to as WWW or the Web, this usually refers to information available on the Internet that can be easily accessed with software usually called a 'browser'. Organizations publish their information on the Web in a format known as HTML; this information is usually referred to as their 'home page' or 'web site' " (Galassi, 1998).

E-Learning: "A new interactive method of learning through a computer network, and other ICT (Information and Communication Technologies)" (Ortiz, 2001).

Online Education: "Credit-granting courses or education training delivered primarily via the Internet to students at remote locations, including their homes. Online courses may be delivered synchronously or asynchronously. An online course may include a requirement that students and teachers meet once or periodically in a physical setting for lecture, exams, so long as the time spent in the physical setting does not exceed 25 percent of the total course time" (United States News & World Report, 2008).

Virtual Learning: "Virtual learning refers to instruction in an online learning environment where teachers and students are separated by time or space, or both, and the teacher provides course content through course management applications (e-learning / sharing portals), multimedia resources, the Internet, video conferencing,

etc. Students receive the content and communicate with the teacher via the same technologies" (Kurbel, 2001).

Server: "A host computer on a network that holds information (such as Web sites) and responds to requests for information from it (links to another Web page). The term server is also used to refer to the software that makes the act of serving information possible" (EBTCO, 2005).

Portal: "The Portal is an online service enabling quickly and easily access and maintain sharing recourses online – reducing the need for paperwork and providing 24 hour access for convenience" (Capita SharePortal, 2008).

Educational Activities: "The activities of educating or instructing; activities that impart knowledge or skill" (WordNet, 2006).

E-Learning / Sharing Portal: It is a special portal application that is used in educational activities, and it helps both teachers and students have a virtual space where they can share knowledge through different kinds of supervised activities, chats and forums.

Microsoft SharePoint Server: "It is a kind of sharing portal software which facilitates collaboration, provides content management features, implements business processes, and supplies access to information that is essential to organizational goals and processes" (Microsoft, 2008).

Perception: In this study, perception is used as process of attaining awareness or understanding of sensory information about the teachers' and the students' e-learning / sharing portal experiences.

Teachers and Students: In this study, teachers and students refers to the teachers and students of Middle East Technical University Development Foundation Schools.

CHAPTER 2

REVIEW OF LITERATURE

In this chapter, review of the literature related online learning, e-learning sharing portal, motivation in education and technology acceptance model and summary of the literature will be presented.

2.1 Online Education

E-learning has grown extremely over the past several years as technology has been integrated into education and training. “E-learning” may be defined as instruction delivered electronically via the Internet, Intranets, or multimedia platforms such as CD-ROM or DVD (Hall, 2003; O’Neill, Singh, & O’Donoghue, 2004). Since many users today have access to direct Internet connections, e-learning is often identified with web-based learning (Hall, 2003). Many writers refer to “e-learning”, “online learning” and “web-based learning” interchangeably. E-learning can be put into practice in a variety of ways, such as through the use of self-paced independent study units, asynchronous interactive sessions (where participants interact at different times) or synchronous interactive settings (where learners meet in real time) (Ryan, 2001).

Although e-learning (and various blended approaches that integrate online components into traditional classes) continues 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 (since student perception and attitude is critical to motivation and learning) along with how to apply these approaches most effectively to enhance learning (Koohang & Durante, 2003).

Many research studies have demonstrated that a student's active involvement in the learning process enhances learning, a process often referred to as active learning (Benek-Rivera & Matthews, 2004; Sarason & Banbury, 2004). Simply stated, active learning involves "instructional activities involving students in doing things and thinking about what they are doing" (Bonwell & Eisen, 1991, p.5). Interactive instruction or "learning by doing" has been found to result in positive learning outcomes (Picciano, 2002; Watkins, 2005). Because many new technologies and web based activities are interactive, online coursework has the potential to create environments where students actively engage with material and learning by doing, refining their understanding as they build new knowledge (Johnston, Killion & Omomen, 2005; Pallof & Pratt, 2003). Driscoll (2002) observes that, "When students become active participants in the knowledge construction process, the focus of learning shifts from covering the curriculum to working with ideas. And using technology tools 'to think with' facilitates working with ideas and learning from that process".

However, there are also potential disadvantages or limitations of online learning. For example, an investigation concluded that asynchronous e-learning was not effective as a standalone method to deliver technical training for information technology professionals. Learners in the study commented that e-learning eliminates classroom interaction time, where a significant amount of "real learning" takes place as users assimilate information, utilize software, apply knowledge to problem solving, and interact with the instructor and other learners (Laine, 2003). Furthermore, other potential problems of e-learning that have been identified in previous researches include a sense of (Brown, 1996); learner frustration, anxiety, and confusion (Hara & Kling, 2000; Piccoli, Ahmad, & Ives, 2001); higher student attrition rates (Frankola, 2001; Laine, 2003; Ryan, 2001); the need for greater discipline, writing skills, and self-motivation; and the need for online users to make a time commitment to learning (Golladay, Prybutok, & Huff, 2000; Serwatka, 2003).

Based on these limitations, some researches have stressed the importance of using a "blended learning" approach (Davis, 2000; Koohang & Durante, 2003). Blended learning is a hybrid instructional approach that combines elements of e-learning with the traditional classroom environment (Rubenstein, 2003; Ward & LaBranche, 2003). It involves starting with learning objectives and then selecting the best combination of delivery methods to meet those objectives (Ward & LaBranche, 2003). In some situations, blended learning may involve students completing online units prior to meeting to ensure they share a common foundation of knowledge. This allows class sessions to go into greater depth with application exercises and problem solving. Alternatively, e-learning elements can be used after class meetings to

maintain an ongoing dialogue among a community of participants about course-related topics through chats or discussion board postings. Other blended learning options may use a combination of pre-class and post-class e-learning components.

2.2 E-Learning Sharing Portal

New technologies provide teachers with many interesting tools that can be used to improve the active learning process. The usefulness of these tools makes important for teachers to have more information about the advantages and possibilities of using technology in the classroom (Kaminski, 2005), as well as about the outcome derived from their application.

Although the internet is a vast source of information, there are some specific web-based applications that are conceived to be used as a teaching resource. These applications (often called e-learning sharing portals which are described as e-learning platforms) allow teachers to provide the students with material of different sorts, as well as to interact with them in real-time. They also allow teachers to follow the evolution of the learning process and to know the performance of each student in specific tasks.

E-learning platforms (also known as a virtual learning environment "VLE") are especially useful when implementing e-learning components. They allow implementing objects of many kinds such as: videos, mp3s, text documents, scanned images, links to other web sites or animations which can be used to show

dynamically many situations and concepts that are often difficult to apprehend by the students.

A virtual learning environment (VLE) (Weller, 2007) is a software system designed to support teaching and learning. A VLE typically provides tools such as those for assessment, communication, uploading of content, return of students' work, administration of student groups, questionnaires, tracking tools, wikis, blogs, chats, forums, etc. over internet.

A VLE is a computer program that facilitates the e-learning. Such e-learning systems are sometimes also called learning management system (LMS), course management system (CMS), learning content management system (LCMS), managed learning environment (MLE), learning support system (LSS), learning platform (LP) or e-learning sharing portal (ELSP); it is education via computer-mediated communication (CMC) or online education (Weller, 2007).

In the United Kingdom and many European countries the terms VLE and MLE are used more frequently; however, these are two very different things. A VLE can be considered a subsystem of an MLE, whereas MLE refers to the wider infrastructure of information systems in an organization that support and enable electronic learning. There are many e-learning platforms http://www.brandon-hall.com/publications/lmskb/lmskb.shtml. Some of them are commercial software, whereas others are open-source software (OSS). Among the first category is Blackboard http://www.blackboard.com/us/index.bbb (that merged in 2005).

Examples of open-source platforms are Moodle http://moodle.org/. Ilias http://www.ilias.de/. Atutor http://www.atutor.ca/ and Claroline http://www.claroline.net/. All these applications have common features, but some of them are more flexible and complete in specific aspects, such as role assignments, chats management, etc (Teresa & Ana, 2008).

In METU Development Foundation School, where the researcher is working as a teacher, there were some problems about implementation of online learning integrations. Especially, there was lack of a virtual learning environment providing assessment, communication, uploading of content, return of students' work, administration of student groups, questionnaires, tracking tools, blogs, chats, forums over internet. In other words, lack of an e-learning platform was the biggest problem of the school. In this action research, a sharing portal environment, Microsoft SharePoint Server (Microsoft, 2008), was used as e-learning platform to solve the problem. It is commercial software. Generally the system is used for non-educational purposes, however, in this research it was used as e-learning sharing portal.

As an e-learning platform experimenter Aiguo He (2008) proposed in his article RIDEE-UIM (Understanding Information Management System for Real-time Interactive Distance Education Environment) for collecting understanding information from each participant to the lecturer during real time online education activities. The usefulness of RIDEE-UIM has been confirmed by his experiments. Ague's article describes the basic idea, implementation and experiments of RIDEE-UIM. The researcher reports his findings according to several online lectures

performed by applications of RIDEE-UIM, it was confirmed by the researchers' questionnaire's result that RIDEE-UIM was effective to distance classes, and distance classes near the face-to-face style class became possible by using RIDEE-UIM (Aiguo, 2008, p.53).

In their article, Teresa & Ana (2008) present an overview of the undergraduate online physics course that they have implemented in the Moodle platform (an on-line sharing portal platform). That course had been developed as an enhancement of the face-to-face courses. The aim of that course was to create an online learning community which helps both teachers and students to have a virtual space where they can share knowledge through different kinds of supervised activities, chats and forums. As the researchers claim to show in their search, the students' response to that initiative has been very good: the online Physics course helped them to reinforce their abilities and knowledge. The researchers reported their findings as, Moodle was a great way for teachers to organize, manage and deliver course materials. From the didactic point of view, the usage of multimedia tools to create attractive activities made the learning process friendlier for students. As a consequence of their study, the activities they made increased the interest of the students in the study of Physics. They declared that teachers can provide students with a great amount of resources that usually they cannot show in the classroom due to the lack of time, so the impact for students of the researchers' web based applications became apparent. Moreover, the students has transmitted the researchers that their general feeling was that Moodle helped them to reinforce their abilities and knowledge. These results

encouraged the researchers to continue with the improvement of their Moodle virtual space.

Consequently, as a result of the investigations, it can be seen that overall perception of students about the e-learning sharing portal was very positive.

2.3 Motivation in Education

Motivation is typically defined as the forces that account for the arousal, selection, direction, and continuation of behavior (Teaching Concepts: Motivation, 1997, p.399), and can be classified into two types: intrinsic and extrinsic. Intrinsic motivation refers to a person's internal thought processes like curiosity, achievement, and truth. Goals focus on improving understanding and increasing knowledge. Extrinsic motivation refers to external rewards like bonuses, promotions, and recognition. Rewards focus on the physical world and material things that can be seen and touched. Motivation relates to personal need as described in Maslow's five-level hierarchy. "The first four needs (physiological, safety, love, and esteem) are often referred to as deficiency needs because they motivate people to act only when they are not met. Self actualization (the fifth need), on the contrary, is often called a growth need because people constantly strive to satisfy it" (Teaching Concepts: Motivation, 1997, p.406).

According to various researches, the Intrinsic Motivation Inventory (IMI) is considered useful in measuring students' subjective experiences in Internet courses because it determines the extent to which students believe that their experiences are

useful or valuable. The IMI has been used and validated through several experiments related to intrinsic motivation and self-regulation (Ryan & Deci, 2004).

Intrinsic motivation theory is a construct of Deci and Ryan's (1985) Self Determination Theory (SDT). The basic assumption of SDT is that "people are active organisms, with innate tendencies toward psychological growth and development, who strive to master ongoing challenges and to integrate their experiences into a coherent sense of self" (p.120). Particularly important is the role that the environment plays in development. Ryan and Deci (2000) explain that the process of development does not occur automatically but is either supported or dissatisfied through social context.

The Intrinsic motivation theory assesses the following characteristics:

- Participants' interest/enjoyment,
- Perceived competence,
- Effort,
- Value/usefulness,
- Felt pressure and tension,
- Perceived choice while performing a given activity, and
- Experiences of relatedness.

In a study conducted by Walker, Wallace, & Juban (2004), the intrinsic motivation theory was used to assess students' experiences in online classes. Researchers of this study found that the level of perceived intrinsic motivation, rather than demographic factors, was significantly correlated to students' level of satisfaction in courses and

final grades. They concluded that "The key component in students' perceived level of intrinsic motivation was directly related to meaningful communication in the course" (Walker, Wallace, & Juban, 2004, p.40).

Bennett & Monds (2008) investigated these two questions to learn the effect of online learning in students' motivation: what are some indicators that support the notion that intrinsic motivation is attributable to student success; and what are some strategies that may be used to increase intrinsic motivation in online courses. The researchers found the answers as a result of their research and declared the explanations as; since online classes were becoming a more prominent choice for all types of students, educators were challenged to find ways to make those courses relevant, effective, and satisfactory. Based on various research findings, the writers believed that intrinsic motivation could be increased by enhancing: 1) perceived competence, 2) interest, 3) value, and 4) relatedness to faculty and other students. According to the researchers, the enhancement of these factors would contribute greatly to online course success (Bennett & Monds, 2008, p.6).

2.4 Technology Acceptance Model

Online learning communities are gradually altering the traditional learning style of people because of the pervasiveness of the Internet. Members of these communities come from various place, and have different educational backgrounds and different proficiency levels; however, they meet for the mutual intention of learning a common subject, such as English learning. As a result, it is possible to create knowledge and share it with a large number of people via the Internet (Jin, 2002).

The technology acceptance model conceptualizes that *perceived usefulness*, *perceived ease of use*, and *attitudes* are important determinants of technology usage intentions and in turn usage behavior. TAM has been widely used to predict user acceptance and use, based on perceived usefulness, perceived ease of use, and attitude (Davis, 1989).

Davis (1989) and Davis, Bagozzi, & Warshaw (1989) developed the TAM by adapting the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), to understand the causal chain linking external factors to IT usage intention and actual use in a workplace. TAM was developed under contract with IBM Canada Ltd. in the mid-1980s where it was used to evaluate the market potential for a variety of then-emerging PC-based applications in the area of multimedia, image processing, and pen-based computing in order to guide investments in new product development (Davis & Venkatesh, 1996). Many IT studies have replicated TAM or used the TAM instrument (which has empirically proved to have high validity) extensively to investigate a range of issues in the area of user acceptance (Mathieson, 1991; Igbaria, Zinatelli, Cragg, & Cavaye, 1997; Venkatesh, 2000; Ndubisi, Gupta, & Massoud, 2003; Ndubisi, Gupta, & Ndubisi, 2005).

Davis' list of external factors includes: objective system design characteristics, training, computer self-efficacy, user involvement in design, and the nature of the implementation process. These are theorized to influence behavioral intention to use,

and actual usage, indirectly through their influence on perceived usefulness and perceived ease of use. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her productivity" (Davis, 1989, p.320), and perceived ease of use as "the degree to which a person believes that using a particular system would be free of effort". Davis's model also includes attitude.

Davis et al. (1989) showed that with respect to e-learning, it is expected that perceived usefulness, ease of use, and attitude will have an important influence on students' intention and actual adoption.

In order to get more experience about human behaviors on multimedia learning environment. Saadé. Nebebe, & Tan (2007) conducted a comparative study consisting of 362 students, participating to test Technology Acceptance Model (TAM). Results suggest that TAM is a solid theoretical model where its validity can extend to the multimedia and e-learning context. The researchers' study provides an intensive view of the multimedia learning system users and is an important step towards a better understanding of the user behavior on the system and a multimedia acceptance model (Saadé, Nebebe, & Tan, 2007).

2.5 Summary of Literature Review

By the increase of high-speed computer communication network and audio/ video technology, online education can be easily constructed. Online education allows real-time education activities to be performed between remote sites with high quality

audio/video equipment and shared multimedia materials over broadband communication environment for instance satellite communication systems. Online education is important for educators who want to study under real-time instructions from other person. By the audio-video channel between the teachers and the students, effective virtual learning environment can be constructed to set active learning environments.

Internet technologies provide teachers with many interesting tools that can be used to improve the teaching – learning process. The usefulness of these tools makes important for teachers to have more information about the advantages and possibilities of using technology in the classroom (Kaminski, 2005), as well as about the outcome derived from their application. E-learning sharing portal applications allow teachers to provide the students with material of different sorts, as well as to interact with them in real-time. They also allow teachers to follow the evolution of the learning process and to know the performance of each student in specific tasks. The reliability of using e-learning sharing portal technologies is widely confirmed by various researches. All researches came to a common point that refers e-learning sharing portal as it is a great way for teachers to organize, manage and deliver course materials. From the didactic point of view, the usage of multimedia tools to create attractive activities makes the learning process friendlier for students (Teresa & Ana, 2008). As a consequence, these e-learning sharing portal activities increase the interest of the students. Teachers can provide students with a great amount of resources that usually they cannot show in the classroom due to the lack of time.

According to various researches, the Intrinsic Motivation Inventory (IMI) is considered useful in measuring students' subjective experiences in Internet courses because it determines the extent to which students believe that their experiences are useful or valuable. The IMI has been used and validated through several experiments related to intrinsic motivation and self-regulation (Ryan & Deci, 2004). Researchers of the studies found that the level of perceived intrinsic motivation is significantly correlated to students' level of satisfaction in courses (Walker, Wallace, & Juban, 2004). It is concluded from related literature review about students' motivation in education that, intrinsic motivation can be increased by enhancing perceived competence, interest, value, and relatedness to school and other students. The enhancement of these factors will contribute greatly to online course success (Bennett & Monds, 2008).

Online learning technologies are increasingly changing the traditional learning style of people because of the dominant power of the Internet. It is possible to create knowledge and share it with a large number of people via the Internet. The Technology Acceptance Model (TAM) conceptualizes that perceived usefulness and perceived ease of use are the most important determinants of technology usage intentions and in turn usage behavior. The related researches confirm that TAM has been widely used to predict user acceptance and use, based on perceived usefulness and perceived ease of use.

CHAPTER 3

METHODOLOGY

In this chapter, the methodology used in this study will be presented. Initially, overall research design of the study, participants and the context of the study, then instruments, data collection and data analysis procedures will be described in detail. Finally, assumptions and the limitations of the study will be presented.

3.1 Overall Research Design

This research investigated the perceptions of students and teachers of METU Development Foundation Schools about the use of e-learning / sharing portal technology in educational activities. This study uses components of case study by action research (Erginel, 2006). Therefore, this research focuses on a single case: e-learning / sharing portal application in educational activities that was experienced by students and teachers. The aim of the use of these methodologies is to gain deep understanding of the perceptions of the students and the teachers participated in the study. Additionally, as a teacher of the school and participant of the study, the researcher also added his reflections through his real perceptions of experiences.

A case is a specific, unique, and integrated system which is bounded to contextual factors. Case study is described to be "the process of learning about the case and the product of our learning" (Stake, 1994, p.237). The rich and detailed data that is obtained in case studies enable the researcher to understand the phenomenon in question in great depth (Patton, 1987). Case study is regarded as a complex design strategy, and it investigates the phenomenon in its real life context (Robson, 2002, p.40). It involves multiple methods of in-depth inquiry, such as interviews, observations, and document analysis, in which personal interactions take place between researcher and participants over an extended period of time (Bogdan & Biklen, 1998; Marshall & Rossman, 1999; Patton, 1987).

Method of integrating case study by action research was the most appropriate way of investigation in this study, allowing the researcher, to work directly with the participants in the development of the indicators of engagement. Action research engages researchers, teachers and students "in a collaborative process of critical inquiry into problems of social practice in a learning context" (Argyris, Putnam & Smith, 1985, p.236).

The term 'action research' was first employed by Lewin (1946) referring to it "as a way of learning about organizations through trying to change them" (cited in Robson, 2002, p.216). Action research is implemented by employees who work personally in the implementation such as school directors, teachers, educational specialists, or employees of any kind of institutions such as engineers, managers, planners, human resource specialists. Action research requires systematic data

collection and analysis to understand and solve an existing problem or a problem appeared during the implementation of a research (Yıldırım & Şimşek, 2005). The explained literature supports the reason of using this methodology in this study.

According to Martler (2008), blending qualitative and quantitative research methods, action research is a practical tool for improvement where schools or classrooms are the laboratory. He adds that action research is not a linear process: it is cyclical and iterative and it is comprised of four stages: planning, acting, developing, and reflecting (Martler, 2008). The stages of this research was planned parallel with the stages of action research approach will be explained below.

Problem Statement of the Study

This research study is implemented in METU Development Foundation Schools which attaches considerable importance to online learning. The school has carried out a lot of projects in e-learning. However, the teachers of the school had problems about sharing online resources among themselves. There was also a lack of online communication with each other. Announcements between teachers were sent by an e-mail server, however, the announcements concerning students could not be sent via virtual environment. Another problem was that teachers could not give online assignments to students, thus, they were faced with the ardous task of correcting the assignments using pen-paper technology. At this point, using an e-learning sharing portal was offered by the supervisor of this study to solve all the problems mentioned above. Action research is generally applied to solve a problem (Martler, 2008). Therefore this study is designed to solve the problems mentioned above.

Stages of the Research

Keeping the stated problems in mind, this research took action with *Planning Stage* of action research. The problems were identified and a research plan was developed in this phase. All the problems were identified as they were based on the need for an e-learning / sharing portal. Then, all applications of the e-learning / sharing portal were experienced under an *Acting Stage*: Document sharing properties of the system was utilized, communication tools were utilized, announcement facilities were tested, and assignment and homework features were used by the participants of the study. After implementation of the system, the data were collected and analyzed by quantitative and qualitative methods of action research. Solutions were found to all identified problems. During the data collection process, an action plan was prepared in *Developing Stage*. At the end, the perceptions of the students and the teachers about the use of e-learning / sharing portal technology in educational activities were declared in *Reflecting Stage*. All the stages of action research, listed in Figure 3.1 are followed up in this way by the researcher.

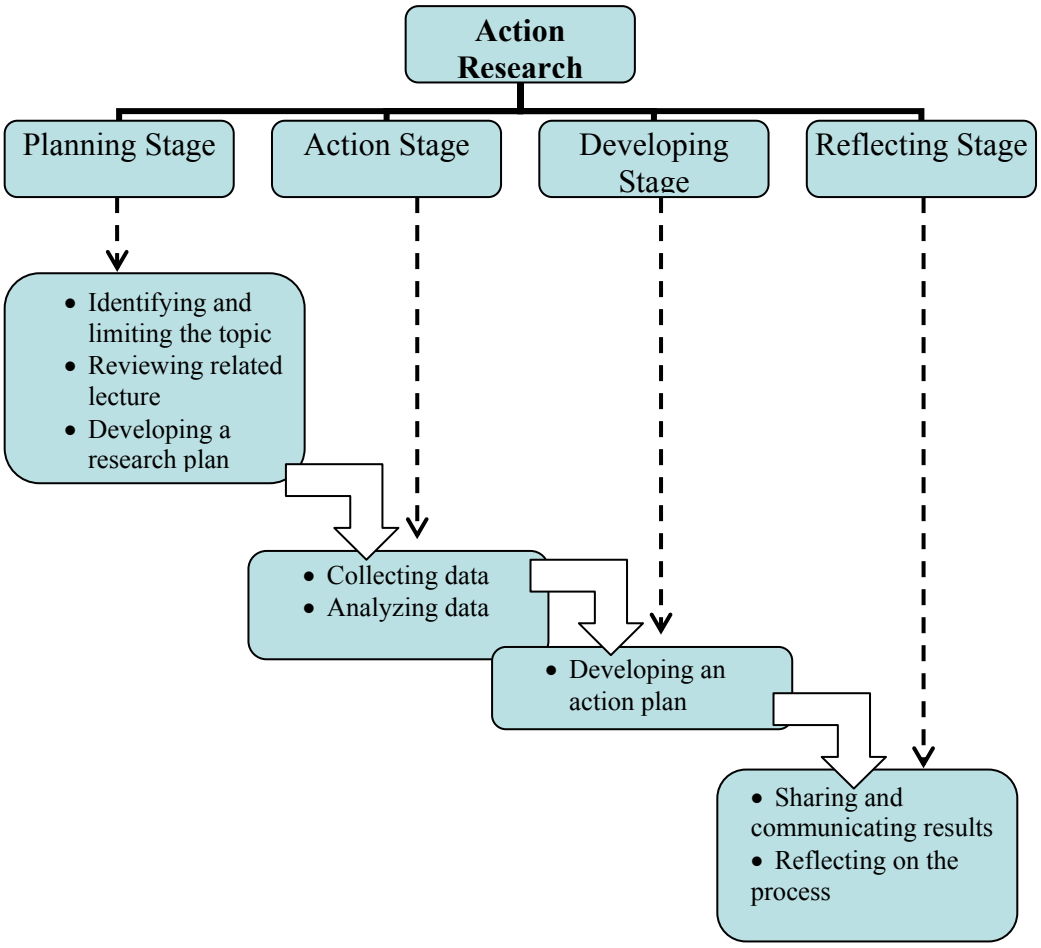

Figure 3.1 – Stages of an Action Research (Martler, 2008, p. 36)

Quantitative methods were used to gather and analyze the students' perceptions about the use of the e-learning / sharing portal in educational activities. The student perception questionnaire was used in this study as one of the main source of data. Responses of the students to this questionnaire were examined at the end of the study to examine the perceptions of students about the use of E-Learning / Sharing Portal in terms of *its effects on their perceived motivation, its usefulness* and *its ease of use.* For the triangulation of data, qualitative methods were used to gather and analyze the teachers' perceptions.

Qualitative methods were used because the main aim of this study is to examine the perceptions of the participants. Informal structured interviews were conducted with the teachers to collect information about their perceptions about the use of E-Learning / Sharing Portal in terms of its effects on students' perceived *motivations* towards educational activities, its *usefulness* and its *ease of use*. Also, its advantages, disadvantages and suggestions of the teachers were investigated by using these interviews.

As a participant of the study and as a teacher of the school, the researcher assumed a dual role. Within this framework, he paid particular attention to helping the teachers and students to consider perceptions at every level of the applications. At the same time, as a qualitative researcher who was engaged in action research, he aimed to collect data from multiple sources utilizing multiple methods of data collection, while taking threats against trustworthiness of the study into consideration. Being among the research participants, which is regarded as one of the defining qualities of qualitative research, enabled the researcher to be a natural part of the research and to act as source of data. This situation provides researchers with direct access to data sources, and this leads to obtaining insight into the phenomenon, and to understand and interpret it effectively (Yıldırım & Şimşek, 2001).

As a teacher, the researcher had an active role in the planning and implementing of the applications. As a researcher who was involved in participatory action research, he had an opportunity to experience the environment with the participants, and this enabled him to obtain an insider's view on the phenomenon (Patton, 1987). He

interacted with the participants for 6 months, which allowed him to carry out systematic data collection and to become aware of the realities of the setting in which the study was conducted. The challenge of being an observer and participant provided him with an opportunity of understanding the experience as an insider while describing the experience for outsiders (Patton, 1987, p.75). Being central to qualitative research, this close and collaborative relationship between the researcher and the research participants bears potential threats to the trustworthiness of the research (Robson, 2002). In this research, the researcher took various actions into considerations, such as triangulation, in order to ensure and enhance trustworthiness.

3.2 Research Questions

The purpose of the study is to investigate the perceptions of students and the teachers of METU Development Foundation Schools about the use of e-learning / sharing portal technology in educational activities.

Two research questions with sub-questions were asked in this study to achieve the purpose of the study.

1. How do the students perceive the use of the e-learning / sharing portal technology in their educational activities?

1.1. How do the students perceive the e-learning / sharing portal technology in their educational activities in terms of *its perceived effects on their motivation towards the educational activities*?

1.2. How do the students perceive the *usefulness* of the e-learning / sharing portal technology?

1.3. How do the students perceive *the ease of use* of the e-learning / sharing portal technology?

2. How do the teachers of METU Foundation Schools perceive the use of the e-learning / sharing portal technology in their educational activities?

2.1. How do the teachers perceive the e-learning / sharing portal technology in educational activities in terms of *its effects on students' perceived motivation towards the educational activities*?

2.2. How do the teachers of METU Foundation Schools perceive *the usefulness* of the e-learning / sharing portal technology?

2.3. How do the teachers of METU Foundation Schools perceive *the ease of use* of the e-learning / sharing portal technology?

2.4. What are *the advantages and disadvantages* of the use of the e-learning / sharing portal technology in educational activities from the teachers' point of view?

2.5. What are *the suggestions* of the teachers about the use of this technology?

3.3 Participants

E-learning / sharing portal applications were carried out in METU Development Foundation Schools with 200 students and 6 teachers for 6 months to meet the purpose of this study. The participants of the study worked in the applications during 2007-2008 semesters. The students were 6^{th} & 7^{th} grade METU Development Foundation School students. There were 345 students involved in the activities but only 200 of them responded to Students' Perceptions about the E-Learning / Sharing

Portal Questionnaire (SPELSP-Q). As seen in Table 3.1, 115 (57.5%) of them were male and 85 (42.5%) of them were female.

Table 3.1 Genders of Students

	GENDER				TOTAL	
	Male		Female			
	N	%	N	%	N	%
Participated in the study	115	57.5	85	42.5	200	100.0

Also, interviews were conducted with the teachers in order to get their perceptions about the portal. Totally 26 teachers worked for the e-learning / sharing portal applications, but only 6 of them were interviewed, because only 6 of them were in the background of the construction team and experienced every feature of the e-learning / sharing portal. While the teachers who were not in the construction team worked for just applying the ready-made materials, the construction team worked for every detail of setting up the system for the other teacher's usage. The construction team members were technology adoptive and innovation developer. Every one of the team belongs to a different department (a mathematics teacher, two science teachers, a social sciences teacher, a Turkish teacher, lastly a computer teacher). One of the science teachers was not in the construction team but she worked for the e-learning applications much more than the non-member teachers, because of that reason the researcher took her response too. As a teacher of the school, the researcher was also in the construction team and experienced personally every part of the action stages. The researcher expressed his view about the perceptions about the system as a teacher too.

As seen in Table 3.2, the teachers have been working at METU Development Foundation Schools for at least 3 years. Two of the teachers are male. 4 of them are female.

Table 3.2 Characteristics of Teachers

Questions	Math Teacher	Science Teacher (member of the team)	Social Sciences Teacher	Science Teacher (worker of the system)	Turkish Teacher	Computer Teacher
How long have you been working as a teacher in METU Development Foundation Schools?	5 years	9 years	4 years	8 years	3 years	14 years
How long have you been working with E-Learning/Sharing Portal Applications?	½ years	½ years	½ years	½ years	½ years	8 years
Have you ever used any E-Learning/Sharing Portal before?	No	No	No	No	No	Yes

3.4 Context

The study was performed in actual field settings. Learning environment will be described in detail in this section.

3.4.1 Information about E-Learning / Sharing Portal Applications and Educational Activities

E-Learning / Sharing Portal Applications done by the researcher, the students and the teachers will be described in details in this section.

During 6 month period of dealing with the study, similar applications were experienced by the researcher, teachers and the students of METU Development Foundation Schools. The applications were mostly comprised of implementing different educational activities in the e-learning / sharing portal environment. The educational activities were composed of several types of interactive web-based teaching exercises which can be delivered to the e-learning / sharing portal (the implementation of the exercises will be described in detail later in this section). There were varieties of exercises, interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises in the interactive web-based exercises (Hot Potatoes, 2008).

At the beginning of the application period of the study, teachers were selected to work on this study. One computer literate teacher was chosen from each branch, six teachers were chosen from Mathematics, Science, Social Sciences, Turkish and Computer Departments, so that the e-learning / sharing portal construction team had been arranged. The researcher and the supervisor of this study were also in the team as coordinators. The team was responsible from the spreading of the system through the school environment. First of all, they have learned to use the system and after that they have explained the system to other teachers. Initially, every Wednesday, two-hour-seminars were given to the teachers for two months. The seminars were composed of two main parts: At the first part, teachers have learned general usage of the portal. At the second part, how to prepare online educational activity was told to the teachers.

In the general usage part, they were explained how to

- get into the system (web addresses were given, log-in information was given),
- manage user account information (change user name or password, add photo etc.),
- open shared documents, upload documents to the system, create a new folder in the accounts,
- use tasks and calendar parts,
- open discussion board, view-edit-delete a discussion, manage permissions,
- reach the other system users or student information,
- handle announcements,
- manage course syllabus,
- deal with assigning homework,
- collect and grade assignments,
- give feedbacks to students.

In the preparing online educational activity part, they were explained how to:

- prepare interactive web-based teaching exercises,
- create interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises (Hot Potatoes, 2008)
- use the software, Hot Potatoes for preparing the exercises,
- integrate Microsoft Office applications to the educational activities,

- use the software, Microsoft Class Server for preparing the exercises, (Microsoft, 2008)
- deliver the prepared activities to the e-learning / sharing portal for students' access.

After taking the seminars about the usage and activity preparation of the system, the construction team member teachers began experiencing the portal in real-life situation. While doing this, they initially explained the system to the other teachers and to the students. They described usage details of the system from beginning to end to them. It took two meeting hours for the teachers and two lecture hours for students.

Only 6th and 7th grade students and Mathematics, Science, Social Sciences, Turkish and Computer Departments' teachers attended to the applications, because only those levels of the students and teachers were chosen by school management for the study. After introducing the system, team members gave passwords and user IDs' to the teachers and the students. The applications get started with distributing the log-in information. The first trial was a two-hour activity. In the activity, a quiz about computer hardware was given to students by the researcher as a computer teacher. That was a multiple-chose-question-quiz designed in Hot Potatoes (Hot Potatoes home page, 2008). After that, true-false, short answer, multi-select question types were delivered to students by the Mathematics and Science teachers. Again each of the activities took two hours for the students to finish the applications. Teachers of different departments prepared similar activities in different times.

The demand for the use of the system increased more and more. Afterwards, teachers used Microsoft Class Server to prepare more complex activities for the students. They integrated their predesigned course materials to the applications by using the software and sent them to students by using Microsoft SharePoint. Turkish Department teachers gave the students essay writing and PowerPoint presentation activities. According to the researcher's view, the students liked teachers' giving immediate feedback in a very short time, because the system was assessing the scores of the activities automatically. Likewise, the researcher thinks that the teachers also had positive perceptions, since they were grading much more quickly, and they were able to see all students in a single sharing portal, in a single list. The perceived advantages of the system are described in the conclusion part of the study.

With growing use of the system, students get used to the applications delivered by Microsoft SharePoint. The teachers and the students used the system actively for 4 months. The construction team members totally dealt with the system for 6 months.

At the end of the action stage of the study, the team members were interviewed by the researcher to see their perceptions about the usefulness, ease of use, advantages and disadvantages of the system. In the same way, at the end of the action stage, students were applied a perception questionnaire to reflect their ideas. The results of the reflection of the interviews and the questionnaire are reported in the results part of the study.

3.4.2 Information about Microsoft SharePoint

Microsoft SharePoint Server (Microsoft, 2008) is used as a special e-learning sharing portal server that helps teachers and students meet in an online learning environment where they are separated by time or space, or both, and the teacher provides course content through course management applications, multimedia resources, the Internet, video conferencing, etc. Students receive the content and communicate with the teacher via the same technologies. Indeed, the software is not designed for educative purposes, however, in this study the tool is used for that reason.

Brief information about utilized properties of Microsoft SharePoint is given in Appendix C.

3.5 Instruments

During this study, two instruments were used to gather data. In order to obtain students' perceptions about the E-Learning / Sharing Portal Technology, *Students' Perceptions about the E-Learning / Sharing Portal Questionnaire (SPELSP-Q)* was used. Finally, to obtain teachers' perceptions about the E-Learning / Sharing Portal, *The Teachers' Perception about E-Learning / Sharing Portal Interview Guide (TPELSP-IG)* were used. In Table 3.3, research questions and corresponding instrument were listed.

Table 3.3 Research Questions and Their Data Collection Tools

RESEARCH PROBLEMS	DATA COLECTION
Question 1: How do the *students* perceive the use of the E-Learning / Sharing Portal technology in their educational activities?	Students' Perceptions about the E-Learning / Sharing Portal Questionnaire (SPELSP-Q)
Question 1.1: How do the students perceive the E-Learning / Sharing Portal in their educational activities "*in terms of its effects on their perceived motivation towards the educational activities*"?	
Question 1.2: How do the students perceive "*the usefulness* of the E-Learning / Sharing Portal"?	
Question 1.3: How do the students perceive "*the ease of use* of the E-Learning / Sharing Portal"?	
Question 2: How do the *teachers* perceive the use of the E-Learning / Sharing Portal in educational activities?	The Teachers' Perception about E-Learning / Sharing Portal Interview Guide (TPELSP-IG)
Question 2.1: How do the teachers perceive the E-Learning / Sharing Portal in educational activities in terms of "*its effects on students' perceived motivation towards the educational activities*"?	
Question 2.2: How do the teachers perceive "*the usefulness* of the E-Learning / Sharing Portal"?	
Question 2.3: How do the teachers perceive "*the ease of use* of the E-Learning / Sharing Portal"?	
Question 2.4: What are "*the advantages and disadvantages* of the E-Learning / Sharing Portal in educational activities" from the teachers' point of view?	
Question 2.5: What are "*the suggestions* of the teachers" about the use of this technology?	

3.5.1 Students' Perceptions about the E-Learning / Sharing Portal Questionnaire (SPELSP-Q)

This questionnaire is the main instrument to obtain the students perceptions about the use of E-Learning / Sharing Portal (Appendix B). It was developed in English, but

because of the low English level of the students, for their understanding clearly, researcher used Turkish version while applying the questionnaire to the students. The questionnaire was developed by the researcher for the study. While developing the questionnaire, first, the researcher examined the questionnaire, which was developed by Turşak (2007) for his master's thesis, and then some purposeful items were selected and adapted to be used in this questionnaire.

3.5.1.1 Questionnaire Development Process

The questionnaire was examined by METU Development Foundation Schools Measurement and Evaluation Center and several test experts and subject area experts to assure the questionnaire's accuracy, clarity and validity. One test expert and 9 subject area experts examined the questionnaire. First feedback was related with the perceived motivation factor questions. It was said that the number of the questions were not enough therefore it should be increased. After a literature review, the number of the perceived motivation related questions increased by using the indicators reported in the literature (Bennett & Monds, 2008). Another feedback was about the computer competency section. It was said that the direction and the questions were not compatible. This incompatibility corrected according to the expert feedbacks. The third comment was about the repeating phrases in perception questions. Suggestion was to group such kind of questions into one section and to write a shared phrase at the top of the section and questions should make a complete sentence by following this phrase. This solution was applied for the problem. Final feedback was that all the perception questions were coded in a positive question

format and there should be some negatively coded questions. According to this feedback, some questions were changed.

After all the required revisions were made according to feedbacks, the questionnaire was re-examined by 1 test expert and 4 subject area experts. First feedback was about "frequency" question in self-reported usage section (section 5). Choices in this question were "never", "sometimes", "average", and "often", and very "often". It was proposed that those kinds of choices were highly subjective and it is better to replace them with specific time periods. They were replaced by "never", "once in a week", "three times in a week", "everyday", "more than one in a day". Second suggestion was to add open ended question to allow students to write their reason for low and high usage. This suggestion was applied for the last two questions starting with "how many times…" and "how much time…" phrases in self-reported usage section. After all revisions, an English grammar check performed at METU Academic Writing Center and the questionnaire was finalized.

3.5.1.2 Validity

To increase the validity, it was developed by the help of experts. During the development period, they directed the structure and the content by their feedbacks.

3.5.1.3 Reliability

The entire instrument development process was executed by the help of expert feedbacks to increase the reliability of the study.

The questionnaire was conducted online by using Microsoft SharePoint Server. After data collection and analysis, the reliability coefficient alpha value was calculated as 0.892. As Garson (2007) indicates, an alpha value of 0.892 is widely accepted in social sciences. Number of questions and Cronbach's Alpha values for each construct are listed in the Table 3.4.

Table 3.4 Students' Perception Questionnaire Reliability Statistics

	Number of Items	**Cronbach's Alpha**
Self-Reported Computer Competency	7	.804
Self-Reported E-learning Experience	4	.753
Perceived Effects on Students Perceived Motivation Towards the Educational Activities	9	.777
Perceived Usefulness	10	.787
Perceived Ease of Use	8	.689
Overall for Perception Constructs	**27**	**.892**

3.5.1.4 *Questionnaire Subscales*

The questionnaire consists of 5 sections and there are 6 subscales namely *self-reported computer competency, self-reported e-learning experience, perceived effects on students' motivation towards educational activities, perceived usefulness, perceived ease of use, self-reported usage*. Subscales, sections and their number of questions are listed in Table 3.5. First 2 subscales contain questions about participants' background information which are *self-reported computer competency, self-reported e-learning experience*. Following 2 subscales are aimed to get students' perceptions about Microsoft SharePoint and the last section contains questions about *self-reported usage*.

Table 3.5 Sections and Number of Questions for Each Constructs of SPELSP-Q

Subscales	**Section**	**Number of Questions**
Self-Reported Computer Competency	Section 1	7
Self-Reported E-learning Experience	Section 2	4
Perceived effects on Students' Motivation towards the educational activities	Section 3	9
Perceived Usefulness	Section 3	10
Perceived Ease of Use	Section 4	8
Self-Reported Usage	Section 5	3
TOTAL		**41**

Self-Reported Computer Competency

This subscale had 7 questions querying the participants' competencies about different technologies including e-learning / sharing portal technologies. It was included to obtain data about participants' current competency level. The aim was again to use its results to explain the possible extreme values which might be obtained as the result of the perception related constructs.

Self-Reported E-Learning Experience

This subscale had 4 questions querying the participants' online or web-based course experiences. It was included to obtain data about participants' background experiences. The aim was to use its results to explain the possible extreme values which might be gathered as the result of the perception related constructs.

Perceived Effects on Students' Motivation towards Their Educational Activities

This construct was added to get students perceptions about how positively or negatively the use of this technology affected their perceived motivation towards educational activities. *Interest / Enjoyment* and *Perceived Competence* factors used in the development of this construct were introduced in Intrinsic Motivation Inventory (IMI) developed by Edward L. Deci and Richard M. Ryan (2006). Also, willingness and participation factors were added to this scale. McAuley, Duncan, and Tammen (1989) did a study to examine the validity of the IMI and found strong support for its validity. Tsigilis and Theodosiou (2003) also found a Greek version of the scale to be reliable. All questions and sub-factors of motivation construct used in questionnaire are listed in Table 3.6.

Table 3.6 Perceived Effects on Students' Motivation towards Educational Activities Related Questions and Factors

Question		**Factors**
S3.04	… increased my interest on our educational activities	Interest / Enjoyment
S3.06	… made our educational activities enjoyable	
S3.19	… made our educational activities boring	
S3.16	… increased my satisfaction about our educational activities	Perceived Competence
S3.07	… decreased my willingness to work on our educational activities	Willingness
S3.11	… increased my motivation towards our educational activities	
S3.18	… increased my willingness to work on our educational activities	
S3.03	… increased my participation to our educational activities	Participation
S3.12	… increased my study time on our educational activities	

Perceived usefulness and *perceived ease of use* constructs were developed according to the Technology Acceptance Model (TAM) introduced by Davis (1989).

> "A key purpose of TAM is to provide a basis for tracing the impact of external factors on internal beliefs, attitudes and intentions. TAM posits that two particular beliefs, *perceived usefulness* and *perceived ease of use* are of primary relevance for computer acceptance behavior" (Davis, 1989).

Perceived Usefulness

Perceived usefulness is defined as "the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context" (Davis, Bagozzi, & Warshaw, 1989). David's measurement scale has 6 factors for perceived usefulness;

- Work more quickly
- Job performance
- Increase productivity
- Effectiveness
- Makes job easier
- Useful

In this questionnaire, items of this subscale were developed based on these factors. There were 10 Likert-type questions for perceived usefulness. All questions and sub-factors are listed in Table 3.7.

Table 3.7 Perceived Usefulness Questions and Corresponding TAM Factors

Question		Factor
S3.01	… enabled me to accomplish our educational activities more quickly	Work more quickly
S3.15	… decreased my speed in our educational activities	
S3.02	… improved my performance in our educational activities	Job performance
S3.14	… has decreased my performance in our educational activities	
S3.05	… increased my productivity in our educational activities	Increase productivity
S3.08	… enhanced my effectiveness in our educational activities	Effectiveness
S3.09	… made it easier to develop our educational activities	Makes job easier
S3.10	… was beneficial to access to our educational activities	Useful
S3.13	… improved our opportunity to work on our educational activities	
S3.17	… was useful in our educational activities.	

Perceived Ease of Use

Perceived ease of use refers to "the degree to which the prospective user expects the target system to be free of effort" (Davis, Bagozzi, & Warshaw, 1989). David's measurement scale has 6 factors for perceived usefulness;

- Easy to learn
- Clear & Understandable
- Easy to become skillful
- Easy to use
- Controllable
- Flexible

There were 8 Likert-type questions for perceived ease of use. All questions are listed in Table 3.8.

Table 3.8 Perceived Ease of Use Questions

Question		Factor
S4.01	Learning to use "E-Learning/Sharing Portal" was easy for me.	Easy to learn
S4.05	It was difficult to learn to use "E-Learning/Sharing Portal".	
S4.02	It was easy to become skillful at using "E-Learning/Sharing Portal".	Easy to become skillful
S4.03	User interfaces and messages of "E-Learning/Sharing Portal" were clear and understandable.	Clear & Understandable
S4.04	User interfaces and messages of "E-Learning/Sharing Portal" were user-friendly.	
S4.06	User interfaces and messages of "E-Learning/Sharing Portal" uses terms familiar to me.	
S4.07	It was hard to understand the user interface of "E-Learning/Sharing Portal".	
S4.08	I found "E-Learning/Sharing Portal" easy to use.	Overall Easy to use

Self-Reported Usage

This construct was included to examine the possible correlation of the perceptions with the use of the technology. To obtain self-reported usage data, 3 questions were developed. First one was in an ordinal choice format which aimed to get periodical usage frequency. Next two questions were in a number input format to get students' total usage data in terms of usage times and total usage hours. Also, these last two questions had open ended answer areas for high and low usage reasons.

3.5.2 The Teachers' Perception about E-Learning / Sharing Portal Interview Guide (TPELSP-IG)

This is the main instrument to obtain the teachers' perceptions about the use of E-Learning / Sharing Portal (Appendix B). It was developed in English, but because of the low English level of the teachers, for their understanding clearly, researcher used Turkish version while applying the interview to the teachers. This is a structured interview and the interview guide developed by the researcher for the study.

During the development of the instrument, expert feedbacks and directions were solicited and interview guide was revised by those feedbacks. The interview guides' subscales and questions were revised or adapted from other interview guides used in previous researches (Turşak, 2007).

The first feedback was that it would be better to have a warming up questions instead of starting with questions directly related the study. According to this feedback, a warming up section was added at the beginning of the interview guide. Second feedback was to include in-depth questions. It was said that existing questions were too general and it was suggested to add in-depth follow-up questions to get more valuable answers. In-depth follow-up questions were added by considering this suggestion. Thirdly, it was suggested to add an introduction page to contain information about the research. It was said that this could increase the independency of the interview guide from the researcher. Then an informative introduction page was added to the interview guide. Finally, it was suggested to add ending questions

at the end of the guide and two ending questions were added according to this suggestion.

Accordingly, the revised version of the interview guide was re-examined by subject area experts. The feedback related with the format was a suggestion to make an addition to the introduction section regarding voice recording. This suggestion was applied by adding information section which also contains a question asking for permission to use voice recording. Other feedbacks were generally about grammatical corrections. At the end of this phase, an English grammar check was performed at METU Academic Writing Center, then the interview guide was finalized.

3.6 Data Collection Procedures

The data was collected by both qualitative and quantitative methods. Questionnaires were used to obtain quantitative data from students and interviews conducted with the teachers to gather qualitative data.

SPELSP-Q was conducted at the end of the action stage period. The questionnaire was conducted online.

TPELSP-IG was conducted with the teachers of METU Development Foundation Schools after completing the portal applications. With permissions of interviewees', all speeches were recorded by using a microphone during the interviews. Then these records were scripted carefully. Since the teachers used Turkish during the interviews, after scripting, the speeches translated into English.

3.7 Data Analysis Procedures

As both quantitative and qualitative data collection tools were used in the research, data analysis methods also include both quantitative and qualitative data analysis. All stages of data analysis procedures are listed in Table 3.9.

Table 3.9 Data Analysis Procedures

Method of Analysis	Stages	Description of the process used
Quantitative	Coding	Data from the SPELSP-Q were coded with the help of Data Coding Guide (see Appendix B).
	Descriptive statistics	Descriptive analysis of mean, frequency, percentage, and standard deviations for each question were calculated by using SPSS 10.0 for Windows software program.
	Display	Charts and tables were created from the data using SPSS and Microsoft Excel-Word tabling features.
	Conclusion Drawing	Interpretations were made on the tables and charts developed and then conclusions were drawn.
Qualitative	Coding	Interview audio records were scripted carefully and transferred in Microsoft Word for subsequent analysis.
	Ordering and Displaying	A conceptual framework was developed according to main research questions and their sub-questions. Then, interview scripts were organized by using this conceptual framework.
	Conclusion Drawing	Decisions about the meaning of data were made, conclusions were drawn and they were included in the dissertation.
	Verifying	Conclusions were verified by reviewing with reference to the original data.

3.7.1 Students' Perceptions about E-Learning / Sharing Portal (SPELSP-Q)

Questionnaire was online and their data were automatically recorded into a database by Microsoft SharePoint. All data were transferred to Microsoft Excel automatically by the system. After that, data were entered to SPSS 10.0 (Statistical Package for

Social Sciences) data file for the analysis. Frequencies, percentages, means and standard deviations were calculated. Histograms and pie charts were also prepared by the help of SPSS to make data visualized for better understanding.

The reliability of all measurement scales was above the recommended minimum level of .70 for social science research (Hatcher, 1994), and the accepted "desirable" level of .80 for social science research.

3.7.2 The Teachers' Perception about E-Learning / Sharing Portal Interview Guide (TPELSP - IG)

For analyzing the interview data, descriptive analysis method was used. According to this approach, the data obtained was summarized and interpreted by using pre-defined theme. Descriptive analysis method consists of four steps (Yıldırım & Şimşek, 2006);

- Preparing a framework for descriptive analysis
- Processing data according to thematic framework
- Defining findings
- Interpreting findings

Perceptions of the teachers of METU Foundation School about the E-Learning / Sharing Portal were interpreted by using these 4 steps of descriptive analysis:

Preparing a framework for descriptive analysis

Before preparing the framework of the interview guide, the research questions were examined deeply by the researcher. The research questions were all related with the

students' and the teachers' perceptions of an e-learning sharing portal technology. The framework was also composed of the related perception structure. Each part of the research questions was integrated to the framework one by one.

Firstly, the framework was prepared to examine the perceptions of the teachers' about effects of students' using e-learning/sharing portal on their perceived motivation towards educational activities. Within the motivation factor, interest and enjoyment sub-factors were added to first part of the framework. Perceived competence, willingness and participation sub-factors were later on integrated to the structure of the framework. Secondly, perceived usefulness factor was integrated to the framework to see the perceptions of the teacher about whether using of the system makes the students work more quickly, increase their job performance, increase productivity, makes students' job easier or not. Thirdly, the framework was prepared to examine perceived ease of use. By the help of this factor, the researcher could see the teachers' perceptions about ease of use of the system. It could be examined by the teachers that whether the students could use the system easily, could become skillful or not. Fourthly, advantages and disadvantages of using of the system were added to the framework structure to gather information about teachers' perception of this subject. Finally, suggestion part was added to the framework to understand the teachers' suggestions about using the system. All of the parts of the framework were given in the Table 3.10.

Processing data according to thematic framework

Keeping the framework structure in mind, the applications carried out by the teachers and students of METU Development Foundation School. As mentioned in the

context part of the methodology of this study, all applications done according to this framework. Data were collected at the end of the application processes. The data were collected by the help of the interview guide. All 6 teachers were interviewed according to the structured framework. The data were collected in the form of audio record format.

Defining findings

The records accordingly were converted to written material. Recorded written materials were defined according to structured framework. Collected data were put into proper sub-factors one by one. The findings were added to the result part of this study.

Interpreting findings

All the interviewees' perceptions' analysis were put together under related sections, after that the sections were interpreted according to findings. General interpretations were made according to the subjects of the subsections of the framework. Common points were evaluated and added to conclusion part of this study.

Table 3.10 Conceptual Framework for Interview Data Analysis

1. Effects of the use of E-Learning/Sharing Portal Technology on Students' Perceived Motivation towards Educational Activities
a. Interest / Enjoyment
b. Perceived Competence
c. Willingness
d. Participation
2. Perceived Usefulness
a. Work more quickly
b. Job performance
c. Increase productivity
d. Effectiveness
e. Make job easier
f. Overall Usefulness
3. Perceived Ease of Use
a. Easy to Learn
b. Easy to become skillful
c. Clear & Understandable Interfaces
d. Overall Easy to Use
4. Advantages and Disadvantages
5. Suggestions

3.8 Assumptions

For this study, the following assumptions were made:

- The participants would respond honestly to questionnaire and interview,

- Technology Acceptance Model would be adapted efficaciously to this study,

3.9 Limitations

The following limitations resided in this study:

1. This study is limited to 200 Students and Six Teachers' of METU Development Foundation Schools who attended the applications,
2. This study is limited to quality of prepared applications by the teachers. The results would have been changed if different quality educational activities were used in e-learning / sharing portal applications,
3. The study was conducted with volunteer participants,
4. Reliability is limited to the honesty of the subjects' responses to the instruments used in this study,

CHAPTER 4

RESULTS

In this chapter, the results of quantitative and qualitative analyses related with students' and teacher' perceptions about the use of E-Learning / Sharing Portal in educational activities are presented. The results are presented with reference to the research questions. This chapter includes the following sections: Characteristics of the participants, results of the questionnaire responses and results of interviews with the teachers.

4.1 Characteristics of Participants

4.1.1 Characteristics of the Students

As seen in the Table 4.1, there were 115 (57.5%) male and 85 (42.5%) female students participated to the study.

Table 4.1 Characteristics of the Students

	GENDER				TOTAL	
	Male		Female			
	N	%	N	%	N	%
Students participated in the study	115	57.5	85	42.5	200	100.0

4.1.1.1 Students' Computer Competency Levels

According to students' self reported data about their computer competencies as shown in Table 4.2, 58.4% of students stated them self as expert in several software included in the questionnaire such as web browsers, e-mails, search engines etc.. The percentage of students reported their competency level for these software as intermediate was 24.7% and that of students reporting their competency level as beginner was 9%, the percentage of students who stated them self as amateur was 7.8%.

For the competency on E-Learning / Sharing Portal, 40% of the students reported their competencies as expert. According to participants' answers, the number of expert students was 80%, the number of intermediate students was 72 (36%) and the number of beginner students was 27 (13.5%). These numbers show that participants are mostly familiar with the E-Learning/Sharing Portal.

Table 4.2 Statistics of Students' Self-Reported Computer Competencies

	Not Used		Beginner		Intermediate		Expert	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Web browsers	10	5	14	7	67	33.5	109	54.5
Search Engines	3	1.5	9	4.5	40	20	148	74
E-mail	5	2.5	14	7	36	18	145	72.5
Online Forums & Blogs	43	21.5	34	17	68	34	55	27.5
Online Chat Applications	8	4	18	9	41	20.5	133	66.5
Microsoft Word Applications	4	2	2	1	33	16.5	161	80.5
Microsoft Excel Applications	46	23	40	20	61	30.5	53	26.5
Microsoft PowerPoint Applications	2	1	4	2	26	13	168	84
E-Learning Applications	21	10.5	27	13.5	72	36	80	40

4.1.1.2 Self-Reported E-Learning Background

According to the results of SPELSP-Q which are shown in Table 4.3, 91.5% of the participants used Internet in their courses, 57% of them have taken at least one online or web-supported course before this study. The percentage of participants taken at least one web-supported course before study was 56.5%. Also, the percentage of the participants who used any E-Learning/Sharing Portal in their courses before this study was 60.5%.

Table 4.3 Statistics of Students' Self-Reported Experiences

	Yes		No	
	N	**%**	**N**	**%**
Have you ever taken any web-supported or online course before this semester?	114	57	86	43
Have you ever taken any distance learning application in your courses before this semester?	113	56.5	87	43.5
Have you ever used Internet for your course studies before this semester?	183	91.5	17	8.5
Have you have ever used any e-learning/sharing portal application in your courses until now? *(Examples: Applications that provide sharing documents, forums, chats, on-line exams etc.)*	121	60.5	79	39.5

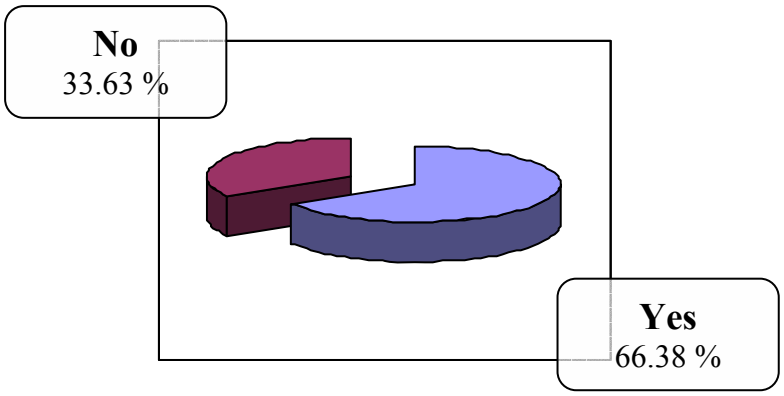

Figure 4.1 - Distribution of E-Learning/Sharing Portal Competencies

4.1.1.3 Students' Self Reported Usage

As it is seen in Table 4.4, 56% of the students reported their usage as once in a week. The percentages of participants reporting their usage as three times in a week was 24%. Also, 8.5% of students used the system three times or more than one in a in a week.

Table 4.4 "How *frequently* did you use E-Learning/Sharing Portal in your educational activities?"

	N	%
Never	23	11.5
once in a week	112	56
three times in a week	48	24
Everyday	12	6
More than one in a day	5	2.5
Total	**200**	**100.0**

According to the results of the question "How many *times* did you use E-Learning/Sharing Portal?" As it is seen in Table 4.5, 52.5% of students reported that they have used the system at least 3 times in their educational activities.

Table 4.5 "How many *times* did you use E-Learning/Sharing Portal in your educational activities?"

Usage Times	N	%	Usage Times	N	%	Usage Times	N	%	Usage Times	N	%
.00	46	23.0	**7.00**	2	1.0	**18.00**	1	.5	**27.00**	2	1.0
1.00	23	11.5	**9.00**	4	2.0	**20.00**	6	3.0	**28.00**	1	.5
2.00	26	13.0	**10.00**	8	4.0	**21.00**	1	.5	**30.00**	6	3.0
3.00	14	7.0	**12.00**	3	1.5	**23.00**	1	.5	**45.00**	1	.5
4.00	14	7.0	**14.00**	3	1.5	**24.00**	1	.5	**50.00**	4	2.0
5.00	16	8.0	**15.00**	4	2.0	**25.00**	3	1.5	**55.00**	1	.5
6.00	5	2.5	**16.00**	1	.5	**26.00**	1	.5	**60.00**	1	.5
69.00	1	.5									
Total	**200**	**100.0**									

As it is seen in Table 4.6, 58.5% of the participants were reported between 5 and 20 hours of use in their educational activities.

Table 4.6 "How many *hours* did you use E-Learning/Sharing Portal in your educational activities?"

Usage Hours	N	%
.00	2	1.0
1.00	10	5.0
2.00	6	3.0
3.00	11	5.5
4.00	28	14.0
5.00	60	30.0
6.00	16	8.0
7.00	10	5.0
8.00	10	5.0
9.00	1	.5
10.00	20	10.0
12.00	11	5.5
14.00	1	.5
15.00	4	2.0
16.00	1	.5
17.00	1	.5
18.00	1	.5
20.00	4	2.0
34.00	1	.5
50.00	1	.5
56.00	1	.5
Total	**200**	**100.0**

4.1.2 Characteristics of the Teachers

As it is seen in Table 4.7, the teachers are working in METU Development Foundation Schools at least 3 years. Except the computer teacher, none of them has

used any e-learning / sharing portal before. The computer teacher had used lots of systems like Share Point. She thinks that the systems she used are all beneficial.

Table 4.7 Characteristics of Teachers of METU Development Foundation Schools

Questions	Math Teacher	Science Teacher	Social Sciences Teacher	Science Teacher	Turkish Teacher	Computer Teacher
How long have you been working as a teacher in METU Development Foundation Schools?	5 years	9 years	4 years	8 years	3 years	14 years
How long have you been working with E-Learning/Sharing Portal Applications?	0.5 years	0.5 years	0.5 years	0.5 years	0.5 years	8 years
Have you ever used any E-Learning/Sharing Portal before?	No	No	No	No	No	Yes
What was your purpose when using E-Learning/Sharing Portal?	-	-	-	-	-	I used an e-learning / sharing portal application in Distance Learning Courses of my Master Program; I used it for forums, on-line/homework and announcements.
Did you find it beneficial?	-	-	-	-	-	I found it very beneficial.

4.2 Students' Perceptions about E-Learning / Sharing Portal (SPELSP-Q)

SPELSP-Q was conducted to obtain students' perceptions about using E-Learning/Sharing Portal. Their perceptions were investigated in terms of three aspects: *Effects of the use of this technology in students' perceived motivation towards their educational activities*, *perceived usefulness* and *perceived ease of use*.

Table 4.8 Abbreviations Used for Student Perception Questions

Abbr.	Description
SD	Strongly Disagree
D	Disagree
N	Neutral
A	Agree
SA	Strongly Agree

The scale of the questionnaire was Likert-type and its scales and abbreviations used in this results section was listed in Table 4.8.

Table 4.9 Descriptive Statistics of Perception Constructs

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
Perceived Effects on Motivation	12.8	6.4	16.9	8.4	46.1	23.1	60.8	30.4	63.4	31.7	3.499	1.155
Perceived Usefulness	13.2	6.6	15.5	7.7	41.4	20.7	62.1	31.0	67.9	34.0	3.511	1.176
Perceived Ease of Use	11.5	5.8	10.0	5.0	36.3	18.1	56.3	28.1	86.0	43.0	3.851	1.148
Overall	**12.5**	**6.3**	**14.1**	**7.0**	**41.3**	**20.6**	**59.7**	**29.8**	**72.4**	**36.2**	**3.620**	**1.160**

As it is seen in the Table 4.9, 62.1% of students stated positive perception and only 14.8% of them stated negative perception for Perceived Effects on Motivation. Similarly, 65.0% of students stated positive perception for Perceived Usefulness and only 14.3% of them stated negative perception. Also, 71.7% of students reported positive perception about Perceived Ease of Use while only 10.8% of them reporting negative perception. As a result, the mean of the questionnaire data is 3.620 with standard deviation equals to 1.160 and 66.0% of students that is more than a half of

them reported positive perception while just 13.3% of them reporting negative perception about the use of E-Learning/Sharing Portal in overall.

4.2.1 Students' Perceptions about the Effects of the Use of E-Learning/Sharing Portal on their Motivation towards the Educational Activities

Students' perceptions about the effects of the use of E-Learning/Sharing Portal on their motivation towards course educational activities were investigated by the use of 9 questions grouped in 4 indicator factors. Indicator factors were *Interest / Enjoyment, Perceived Competence, Willingness* and *Participation.*

Table 4.10 Descriptive Statistics of Sub-factors of Perceived Motivation Factor

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
Interest / Enjoyment	8.5	4.25	15.75	7.88	39.5	19.75	54	27	82.25	41.13	3.496	1.1321
Perceived Competence	11	5.5	14	7	47	23.5	70	35	58	29	3.75	1.1152
Willingness	15.7	7.8	16.7	8.3	48.0	24.0	53.3	26.7	66.3	33.2	3.213	1.231
Participation	16.0	8.0	21.0	10.5	50.0	25.0	66.0	33.0	47.0	23.5	3.535	1.142
Overall	**12.8**	**6.4**	**16.9**	**8.4**	**46.1**	**23.1**	**60.8**	**30.4**	**63.4**	**31.7**	**3.499**	**1.155**

As it is seen is the Table 4.10, for *Interest / Enjoyment* questions 68.13% of students stated positive perception while 12.13% of them were indecisive and 19.75% of them stating negative. Also, 64.0% of students stated their positive perceptions about *Perceived Competence* questions while only 12.5% of them stated their negative perceptions. Similarly, 59.9% of students reported positive perception while just 16.1% of them reporting negative perception for *Willingness* questions. Lastly, while

56.5% of students reported positive perception, 18.5% of them reported negative perception for *Participation* factor.

The total ratio of positive answers in overall is 62.1% and the overall mean score is 3.499 with standard deviation equals to 1.155.

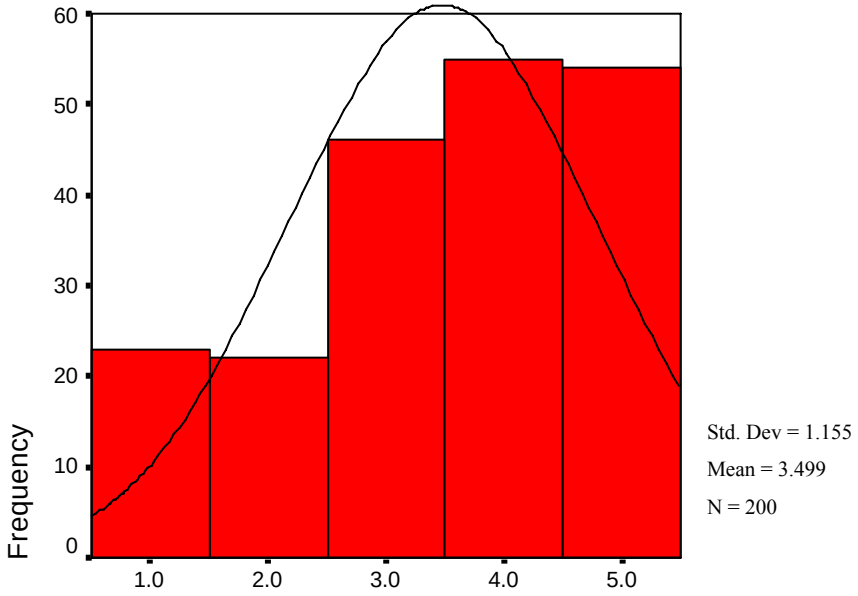

Figure 4.2 - Case Mean Score Distribution of Students' Perceptions about the Effects of the use of E-Learning/Sharing Portal on their Motivation towards Educational Activities

As it is seen in Figure 4.2, most of the scores were located between 4.0 and 5.0. This means that the average perceptions of the students were between "agree" and "strongly agree". The high number of indecisive students also should be noticed.

"Interest / Enjoyment" Factor of Perceived Motivation

Three questions were used to investigate this indicator. Question S3.04 (question 4 in section 1 of the questionnaire) were about to investigate perceptions of the students

about the effects of the use of this technology on their interests towards course educational activities. As can be seen in Table 4.11, 64.0% of them stated positive answer while only 13.0% stating negative one for this question. Questions S3.06 and S3.19 were used to obtain the perceptions of the students about the effects of the use of this technology on their enjoyment in course educational activities. These questions were pair questions. 49.3% of students reported positive perceptions while 11.2% of them reporting negative perception. Also 16.5% of them were indecisive. The overall positive perception ratio for this factor is 68.1% with mean equals to 3.496 and standard deviation equals to 1.132.

Table 4.11 Descriptive Statistics for "Interest / Enjoyment" Factor of Perceived Motivation

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.04… increased my interest on our project	6	3.0	20	10.0	46	23.0	57	28.5	71	35.5	3.835	1.111
S3.06… made our project enjoyable	11	5.5	11.5	5.75	33	16.5	51	25.5	93.5	46.75	3.158	1.153
S3.19… made our project boring	11	5.5	11.5	5.75	33	16.5	51	25.5	93.5	46.75	3.158	1.153
Overall	**8.5**	**4.25**	**15.75**	**7.88**	**39.5**	**19.75**	**54**	**27**	**82.25**	**41.13**	**3.496**	**1.132**

Note: Question S3.19 is a reversely coded question.

"Perceived Competence" Factor of Perceived Motivation

To investigate this indicator, only Question S3.16 was asked to students. Table 4.12 shows that more than half of the participants (64.0% of them) stated positive answer while only 12.5% of them answering negatively to this question. Also 23.5% of them

were indecisive. The mean score for *Perceived Competence* factor was 3.750 with standard deviation 1.115.

Table 4.12 Descriptive Statistics for "Perceived Competence" of Perceived Motivation

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.16… increased my satisfaction about our educational activities	11	5.5	14	7.0	47	23.5	70	35.0	58	29.0	3.750	1.115
Overall	**11**	**5.5**	**14**	**7.0**	**47**	**23.5**	**70**	**35.0**	**58**	**29.0**	**3.750**	**1.115**

"Willingness" Factor of Perceived Motivation

3 questions were asked to investigate this factor. Question S3.07 and Question 3.18 were pair questions and aimed to obtain students' perceptions about the effects of this technology on their willingness. As seen in Table 4.13, for both questions the percentage of positive answers was 61.5% while the one for negative ones was 16.25%. Question S3.11 was directly asking their perceptions about the effects of this tool on their Perceived Motivations towards educational activities. For this question, 56.5% of participants reported positive perceptions for that question while 16.0% of them report a negative perception, 27.5% of them reports neutral. The total ratio of positive answers of *Willingness Factor* in overall is 59.9% and the overall mean score is 3.213 with standard deviation equals to 1.231.

Table 4.13 Descriptive Statistics for "Willingness" Factor of Perceived Motivation

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.07… decreased my willingness to work on our educational	21	10.5	15	7.5	41	20.5	46	23	77	38.5	2.285	1.328
S3.11… increased my Perceived Motivation towards our	15	7.5	17	8.5	55	27.5	53	26.5	60	30	3.63	1.209
S3.18… increased my willingness to work on our educational	11	5.5	18	9.0	48	24.0	61	30.5	62	31.0	3.725	1.156
Overall	**15.7**	**7.8**	**16.7**	**8.3**	**48.0**	**24.0**	**53.3**	**26.7**	**66.3**	**33.2**	**3.213**	**1.231**

Note: Questions S3.07 is reversely coded questions.

"Participation" Factor of Perceived Motivation

Two questions were asked to investigate this factor. Question S3.03 was about the effects of this tool on their participation to their educational activities. As can be seen in Table 4.14, this question was answered by 69.5% of participants positively while negatively only by 10.0% of them. Question 3.12 was about the effects on the use of this tool on their study time in their educational activities. The percentage of positive answers was 43.5% while that of negative answers was 27.0%. In overall, 56.5% of participants answered positively and 18.5% of them answered negatively for the questions of *Participation* factor. The overall mean score for this factor was 3.535 with standard deviation equals to 1.142.

Table 4.14 Descriptive Statistics for "Participation" Factor of Perceived Motivation

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.03… increased my participation to our educational activities	7	3.5	13	6.5	41	20.5	82	41.0	57	28.5	3.845	1.023
S3.12… increased my study time on our educational activities	25	12.5	29	14.5	59	29.5	50	25.0	37	18.5	3.225	1.262
Overall	**16.0**	**8.0**	**21.0**	**10.5**	**50.0**	**25.0**	**66.0**	**33.0**	**47.0**	**23.5**	**3.535**	**1.142**

4.2.2 Students' Perceptions about Usefulness

Students' perceptions about the usefulness of the E-Learning/Sharing Portal used in this study were investigated by 6 factors reported in Perceived Usefulness construct of Technology Acceptance Model developed by Davis. (1989) Descriptive statistics for those factors obtained from the results of SPELSP-Q were reported in the table 4.15.

Table 4.15 Descriptive Statistics for Sub-factors of Perceived Usefulness

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
Work more quickly	14.0	7.0	17.5	8.8	41.5	20.8	67.0	33.5	60.0	30.0	3.208	1.178
Job performance	12	6	14.5	7.25	39	19.5	66.5	33.25	68	34	3.320	1.141
Increase productivity	8	4.0	15	7.5	56	28.0	66	33.0	55	27.5	3.725	1.070
Effectiveness	18	9	18	9	43	21.5	42	21	79	39.5	3.270	1.310
Makes job easier	13	6.5	16	8.0	27	13.5	65	32.5	79	39.5	3.905	1.197
Useful	14.0	7.0	11.7	5.8	42.0	21.0	66.0	33.0	66.3	33.2	3.800	1.161
Overall	**13.2**	**6.6**	**15.5**	**7.7**	**41.4**	**20.7**	**62.1**	**31.0**	**67.9**	**34.0**	**3.511**	**1.176**

As it is seen in the Table 4.15, in average more than half of the participants had positive perceptions about the usefulness of the E-Learning/Sharing Portal. It is seen that *Makes Job Easier* and *Job Performance* were factors that got most positive answers with percentages 72.0% and 67.25%, *t*hen *Useful* follows them with percentage value of positive answers equals to 66.2%. The percentages of following factors ordered with their percentages of positive answers were: *Work More Quickly* with 63.5*, Increase Productivity* with 60.5% and *Effectiveness* with 60.5% positive perceptions. Mean scores of almost all factors were greater than 3.270 and the overall mean score for usefulness was 3.511 with standard deviation value equals to 1.176.

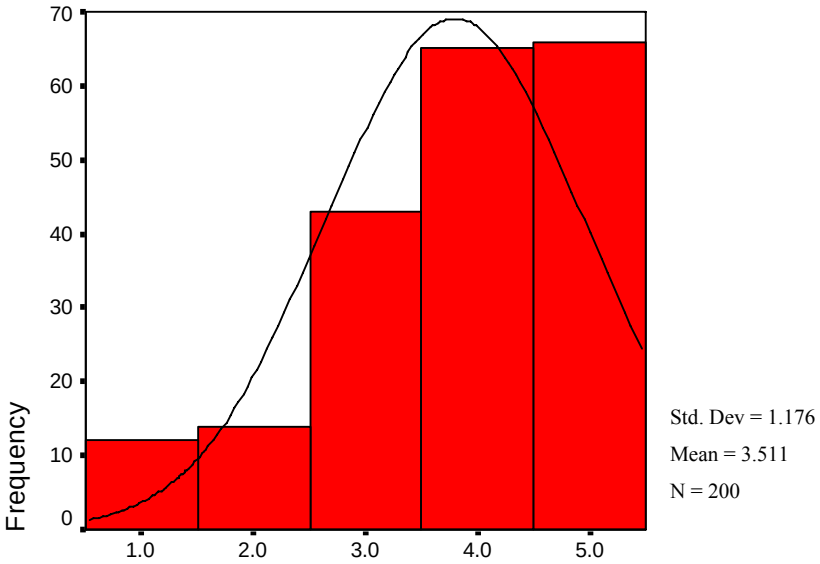

Figure 4.3 - Case Mean Score Distribution for Students' Perceived Usefulness

It is seen in the Figure 4.3 that most of the scores for perceived usefulness were located between 4.0 and 5.0. This means that the average perceptions of the students were between "agree" and "strongly agree".

"Work more quickly" Factor of Perceived Usefulness

Two questions were asked to investigate this factor and they were pair question for each other. As can be seen in Table 4.16, those questions were Question S3.01 and S3.15. Both questions were answered by 63.5% of participants positively while there were 15.8% of participants answering those questions negatively. In overall, as Table 4.16 shows, the mean score for this factor was 3.208 with standard deviation 1.178.

Table 4.16 Descriptive Statistics for "Work More Quickly" Factor of Perceived Usefulness

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.01… enabled me to accomplish our educational activities more quickly	9	4.5	12	6.0	48	24.0	81	40.5	50	25.0	3.755	1.040
S3.15… decreased my speed in our educational activities	19	9.5	23	11.5	35	17.5	53	26.5	70	35.0	2.660	1.316
Overall	**14.0**	**7.0**	**17.5**	**8.8**	**41.5**	**20.8**	**67.0**	**33.5**	**60.0**	**30.0**	**3.208**	**1.178**

Note: Question S03.15 is a reversely coded question.

"Job performance" Factor of Perceived Usefulness

Two questions were asked to investigate this factor and they were pair question for each other. Those questions were Question S3.02 and S3.14. Table 4.17 shows that overall questions were answered by 67.25% of participants positively while they were answered negatively only by 13.25% of them. In overall, the mean score for this Factor was 3.320 with standard deviation 1.141.

Table 4.17 Descriptive Statistics for "Job Performance" Factor of Perceived Usefulness

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.02… improved my performance in our educational activities	0	0.0	2	5.4	20	54.1	11	29.7	4	10.8	3.459	0.767
S3.14… has decreased my performance in our educational activities	8	4	13	6.5	32	16	63	31.5	84	42	3.010	1.098
Overall	**12**	**6**	**14.5**	**7.25**	**39**	**19.5**	**66.5**	**33.25**	**68**	**34**	**3.320**	**1.141**

Note: Question S3.14 is a reversely coded question.

"Increase Productivity" Factor of Perceived Usefulness

The only question used to investigate this factor was S3.05. Table 4.18 shows that 60.5% of participants reported their positive perceptions while only 11.5% reporting negative perceptions. The mean score for this factor was 3.725 with standard deviation value equals to 1.070.

Table 4.18 Descriptive Statistics for "Increase productivity" Factor of Perceived Usefulness

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.05… increased my productivity in our educational activities	8	4.0	15	7.5	56	28.0	66	33.0	55	27.5	3.725	1.070
Overall	**8**	**4.0**	**15**	**7.5**	**56**	**28.0**	**66**	**33.0**	**55**	**27.5**	**3.725**	**1.070**

"Effectiveness" Factor of Perceived Usefulness

S3.08 was the only question used to investigate the factor *Effectiveness*. As seen in Table 4.19, 60.5% of participants answered positively to that question while only 18.0% of them reporting answered negatively. The mean score for this factor was 2.730 with standard deviation value equals to 1.310.

Table 4.19 Descriptive Statistics for "Effectiveness" Factor of Perceived Usefulness

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.08… decreased my effectiveness in our educational activities	18	9	18	9	43	21.5	42	21	79	39.5	2.730	1.310
Overall	**18**	**9**	**18**	**9**	**43**	**21.5**	**42**	**21**	**79**	**39.5**	**2.730**	**1.310**

Note: Question S3.08 is a reversely coded question.

"Makes job easier" Factor of Perceived Usefulness

The only question used to investigate the factor *Effectiveness* was S3.09. As can be seen in Table 4.20, the percentage of positively answered participants for that question was 72.0% while that of negatively answered was only 14.5%. The mean score for this factor was 3.905 with standard deviation value equals to 1.197.

Table 4.20 Descriptive Statistics for "Makes Job Easier" Factor of Perceived Usefulness

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.09… made it easier to develop our educational activities	13	6.5	16	8.0	27	13.5	65	32.5	79	39.5	3.905	1.197
Overall	**13**	**6.5**	**16**	**8.0**	**27**	**13.5**	**65**	**32.5**	**79**	**39.5**	**3.905**	**1.197**

"Useful" Factor of Perceived Usefulness

There were 3 questions were asked to investigate this factor. The first question was S3.10 and it was asked to obtain perceptions of students about its usefulness related with accessing to the server. The percentages of students answered those question positively was the highest percentages among all the perception questions of the questionnaire. As seen in Table 4.21, while the percentage of positive answers was 71.0%, that of negative answers was only 10.0%. The second question was S3.13. The percentage of positive answers for that question was 60.0% while that of negative answers was only 18.0%. The last question was S3.17 and its' percentage of positive answers was also one of the top percentages among all the questions of the questionnaire. It was 67.5% and the percentage of negatively answered questions was

only 10.5%. In overall, the percentage of positive answers for this factor was 66.2% and the mean score was 3.800 with standard deviation equals to 1.161.

Table 4.21 Descriptive Statistics for "Useful" Factor of Perceived Usefulness

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.10… was beneficial to access to the server	13	6.5	7	3.5	38	19.0	76	38.0	66	33.0	3.875	1.112
S3.13… improved our opportunity to work on our educational activities	18	9.0	18	9.0	44	22.0	66	33.0	54	27.0	3.600	1.228
S3.17… was useful in our educational activities	11	5.5	10	5.0	44	22.0	56	28.0	79	39.5	3.910	1.144
Overall	**14.0**	**7.0**	**11.7**	**5.8**	**42.0**	**21.0**	**66.0**	**33.0**	**66.3**	**33.2**	**3.800**	**1.161**

4.2.3 Students' Perceptions about Ease of Use

Students' perceptions about the ease of use of the E-Learning/Sharing Portal were investigated by 6 factors reported in Perceived Usefulness construct of Technology Acceptance Model developed by Davis. Descriptive statistics for those factors obtained from the results of SPELSP-Q were reported in Table 4.22.

Table 4.22 Descriptive Statistics for Sub-Factors of Perceived Ease of Use

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
Easy to Learn	8.5	4.25	14.5	7.25	30	15	47	23.5	100	50	3.578	1.147
Easy to Use	13	6.5	11	5.5	25	12.5	64	32.0	87	43.5	4.005	1.171
Easy to Become Skillful	13	6.5	5	2.5	42	21.0	49	24.5	91	45.5	4.000	1.165
Clear & Understandable	11.5	5.8	9.5	4.8	48.0	24.0	65.0	32.5	66.0	33.0	3.823	1.109
Overall	**11.5**	**5.8**	**10.0**	**5.0**	**36.3**	**18.1**	**56.3**	**28.1**	**86.0**	**43.0**	**3.851**	**1.148**

As it is seen in Table 4.22, most of the participants reported positive perceptions about the ease of use of E-Learning/Sharing Portal. It is seen that "*Easy to learn"* and "*Easy to use"* factors had most positive answers. Then *"Easy to become skillful"* and "*Clear & Understandable"* follows them with percentage values greater than 65.5%. The overall mean score for this construct was 3.851 with standard deviation value equals to 1.148.

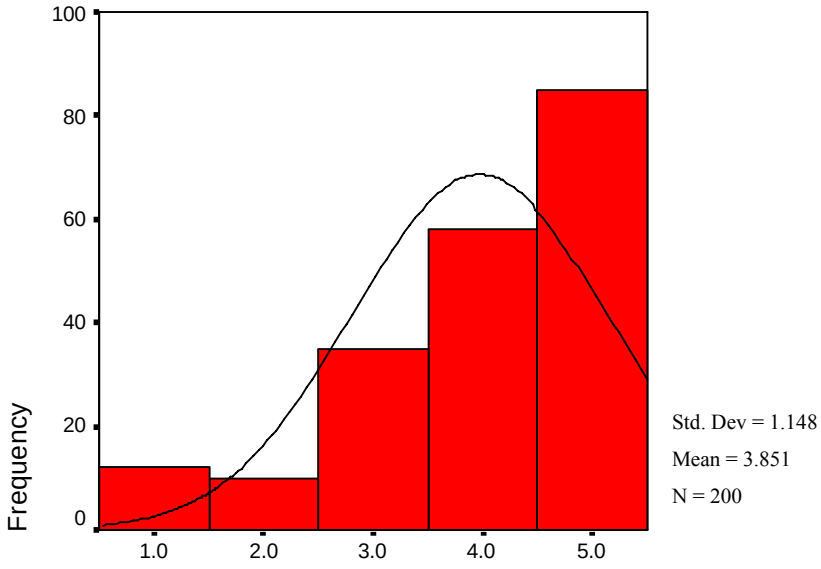

Figure 4.4 - Students' Perceived Ease of Use for Mean Score Distribution

It is seen in Figure 4.4 most of the scores for perceived ease of use were located between 4.0 and 5.0. This means that the average perceptions of the students about the ease of use of this technology were between "agree" and "strongly agree". This shows that students mostly reported their positive perceptions about Ease of Use of this technology.

"Easy to Learn" Factor of Perceived Ease of Use

There were two questions to investigate this factor and they were pair questions. Table 4.23 shows that with the percentage of 73.5% for the positive answers, these questions were one of the top questions having highest percentages for their positive answers. Table 4.23 shows that the percentage of negative answers was only 11.5%. In overall, the mean score for the factor "Easy to learn" was 3.578 with the standard deviation value equals to 1.147.

Table 4.23 Descriptive Statistics for "Easy to Learn" Factor of Perceived Ease of Use

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S4.01. Learning to use "E-Learning/Sharing Portal " was easy for me"	7	3.5	10	5.0	34	17.0	45	22.5	104	52.0	4.145	1.091
S4.05. I was difficult to learn to use "E-Learning/Sharing Portal "	10	5.0	19	9.5	26	13.0	49	24.5	96	48.0	3.010	1.203
Overall	**8.5**	**4.25**	**14.5**	**7.25**	**30**	**15**	**47**	**23.5**	**100**	**50**	**3.578**	**1.147**

Note: Question S4.05 is a reversely coded question.

"Easy to Use" Factor of Perceived Ease of Use

The only question used to investigate this factor was S4.08. As can be seen in Table 4.24, while the percentage of positive answers equals to 75.5%, these questions were in the top questions having highest percentages for their positive answers, there were 12.0% negative answers for this question. The mean score was 4.005 with the standard deviation value equals to 1.171.

Table 4.24 Descriptive Statistics for "Easy to use" Factor of Perceived Ease of Use

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S4.08. I found "E-Learning/Sharing Portal " easy to use	13	6.5	11	5.5	25	12.5	64	32.0	87	43.5	4.005	1.171
Overall	**13**	**6.5**	**11**	**5.5**	**25**	**12.5**	**64**	**32.0**	**87**	**43.5**	**4.005**	**1.171**

"Easy to Become Skillful" Factor of Perceived Ease of Use

Question S4.02 was the only question used to investigate this factor. Table 4.25 shows that while the percentage of positive answers was 70.0%, that of negative answers was just 9.0%. The mean score for this factor was 4.000 with the standard deviation value equals to 1.165.

Table 4.25 Descriptive Statistics for "Easy to Become Skillful" Factor of Perceived Ease of Use

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S4.02. It was easy to become skillful at using "E-Learning/Sharing Portal "	13	6.5	5	2.5	42	21.0	49	24.5	91	45.5	4.000	1.165
Overall	**13**	**6.5**	**5**	**2.5**	**42**	**21.0**	**49**	**24.5**	**91**	**45.5**	**4.000**	**1.165**

"Clear & Understandable" Factor of Perceived Ease of Use

There were 4 questions used to investigate this factor. As can be seen in Table 4.26, first one was S4.03 and its percentage of positive answers was 58.5% and that of negative answers was only 13.0%. S4.04 was second one and its percentage of positive answers was 67.0% while that of negative answers was only 8.5%. The third question was S4.06 with 61.0% positive answers and 8.5% negative answers. The final question was S4.07 and its percentage of positive answers was 75.5% while that of negative answers was only 12.0%. In total, the percentage of positive answers was 65.5% while that of negative ones was only 10.6%. The overall mean for this factor was 3.823 with standard deviation value equals to 1.109.

Table 4.26 Descriptive Statistics for "Clear & Understandable" Factor of Perceived Ease of Use

	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S4.03. User interfaces and messages of "E-Learning/Sharing Portal " were clear and understandable	17	8.5	9	4.5	57	28.5	59	29.5	58	29.0	3.660	1.188
S4.04. User interfaces and messages of "E-Learning/Sharing Portal " were user friendly	9	4.5	8	4.0	49	24.5	65	32.5	69	34.5	3.885	1.071
S4.06. User interfaces and messages of "E-Learning/Sharing Portal " were using terms familiar to me	7	3.5	10	5.0	61	30.5	72	36.0	50	25.0	3.740	1.004
S4.07. It was hard to understand the user interface of "E-Learning/Sharing Portal "	13	6.5	11	5.5	25	12.5	64	32.0	87	43.5	4.005	1.171
Overall	**11.5**	**5.8**	**9.5**	**4.8**	**48.0**	**24.0**	**65.0**	**32.5**	**66.0**	**33.0**	**3.823**	**1.109**

4.3 The Teachers' Perceptions

The Teachers' perceptions about the use of E-Learning / Sharing Portal were investigated by the use of interviews. Six interviews were conducted with the Teachers of METU Foundation Schools who attended the E-Learning / Sharing Portal applications. Interview data were analyzed by using descriptive analysis

approach described by Yıldırım and Şimşek (2006). According to this approach, a conceptual framework was created. Following table shows the conceptual framework used in this study for descriptive analysis of interview data.

Table 4.27 Conceptual Framework for Interview Data Analysis

1. Effects of the use of E-Learning/Sharing Portal Technology on Students' Perceived Motivation towards Educational Activities
a. Interest / Enjoyment
b. Perceived Competence
c. Willingness
d. Participation
2. Perceived Usefulness
a. Work more quickly
b. Job performance
c. Increase productivity
d. Effectiveness
e. Make job easier
f. Overall Usefulness
3. Perceived Ease of Use
a. Easy to Learn
b. Easy to become skillful
c. Clear & Understandable Interfaces
d. Overall Easy to Use
4. Advantages and Disadvantages
5. Suggestions

4.3.1 *The Teachers' Perceptions about the Effects of the Use of E-Learning / Sharing Portal Technology on Students' Perceived Motivation towards Educational Activities*

To investigate the effects of the use of this technology on students' perceived motivation towards educational activities, firstly teachers were asked that "How did the use of this technology effect the motivation of the students towards their educational activities? Positively, negatively or not effected?" Answers of all teachers were positive. To get detailed indicators of their observations, they were asked to explain the indicators which they observed to support their positive opinions. They added following observations as indicators;

Mathematics Teacher:

"First of all**,** for the reason that the students use computer too much, we have to use the tool in our educational activities too. This may create diversity and may increase our learning tools. When we use this technology in education I can say that the students are being motivated more than classical ways.**"**

Science Teacher 1:

"I think that, the system effected students perceived motivations positively, because I observed that the students who couldn't finish the application insisted to finish the projects at their home, in fact It is very difficult to make them do something about the in class activities at their home. Furthermore, I can say that they are concerned to the system as I inferred from their involved questions."

Social Sciences Teacher:

"Students already have the ability of learning by the help of electronic environment; I think that they did the activities pleasantly without facing with any negative challenge."

Turkish Teacher:

"I think the share portal increased the working student's perceived motivations, but had no effect on non-working student's perceived motivations. No effects can motivate to non-working students already."

Computer Teacher:

"It affected positively. The students are very interested in technology and we used their enthusiasm. Because they admire technology, this system increased their participation. Whatever you present on this system the students love it and they want to work."

Science Teacher 2:

"I think it affected in a positive way. First of all the students are highly interested in such activities. They get excited when they hear that they are going to do computer based projects. They are very willing to come to computer laboratories. I observed the same with SharePoint applications. I've seen that some of the students worked more enthusiastically than usual when I gave homework on this system. Moreover, some of them asked to me if I could send them more homework."

Interest / Enjoyment

The first predefined indicator for perceived motivation was “Interest / Enjoyment”. To investigate the teacher’s perceptions about this factor, they were asked two questions: one for student’s interests and one for their enjoyment by using E-Learning / Sharing Portal.

Firstly, it was asked that “Have you observed that the use of the technology has increased students’ *interest* to their educational activities?" The teachers stated that use of his technology absolutely increased the student’s interest to the learning activities. They stated the following observations;

> **Science Teacher 1:**
>
> “The system increased the interest of the students; however using the system continuously in every lesson may decrease it.”
>
> **Social Sciences Teacher:**
>
> “They interested in the applications we made, so I think that it increased the interest of the students.”
>
> **Science Teacher 2:**
>
> “Yes it increased. The students of this age are already very keen on working with computers. I’ve observed the same with SharePoint applications”

Secondly, it was asked that "Have you observed that the use of the technology has increased students’ *enjoyment* in their educational activities?”. The teachers reported

their positive observations about the effects of this technology on students' enjoyment. They stated the following observations;

Science Teacher 1:

"Yes, it increased the enjoyment of the student, especially in the evaluation part of the applications, if we use the system in the weekend homework at our school; it would make the students like the system more."

Social Sciences Teacher:

"It is something related with the benefit, they may not know how beneficial it is for them but as I understand from their talking, we can say that they liked the system."

Turkish Teacher:

"Yes. Especially they find working on computers different and enjoying."

Perceived Competence

The second predefined indicator for perceived motivation was "Perceived Competence". To investigate the teacher's perceptions about this factor, they were asked that ""Have you observed that the use of the technology has increased students' *satisfaction* about their educational activities?" The teachers stated a positive comment during their observations. They stated the following observations;

Science Teacher 1:

"They were pleasant with doing the activities, it provoked their interest, since they are already prone to use computer they seemed to be satisfied with doing the activities."

Turkish Teacher:

"This portal allows us to take more feedbacks from students if we use it more. I mean, the more you use, the more feedback you get. For example when I insert a puzzle and talk to students about it by using class discussion tool they become very happy."

Science Teacher 2:

"Because they want more work, more such activities. There are so many requests."

Willingness

The third predefined indicator for perceived motivation was "Willingness". To investigate the teacher's perceptions about this factor, they were asked that ""Have you observed that the use of the technology has increased students' *willingness* about their educational activities?" The teachers again stated positive observations; however Science Teacher 1 stated that she could not make observation about out of class activities. The teacher stated the following observations;

Turkish Teacher:

"The puzzle-like materials as I talked about earlier increase the students' willingness. The students asked for more to give them more puzzles through the portal."

Although, Science Teacher 1 could not observe the effects on students' willingness, the other teachers observed that the use of this technology effected students' willingness about educational activities positively.

Participation

The final predefined indicator for perceived motivation was "Participation". To investigate the teacher's perceptions about this factor, they were asked two questions: One was about the change on student's participation and the other was about the change on their study time educational activities.

Firstly, it was asked that "Have you observed that the use of the technology has increased students' *participation* to their educational activities?" All the teachers stated positive observation. They stated the following observations;

> **Science Teacher 1:**
>
> "It increased, but continuously doing this kind of activities may cause delay in catching up the curriculum. It can be effective in increasing student's motivation."
>
> **Social Sciences Teacher:**
>
> "The students who think what is happening here interested the activities, the students who generally does not participate activities interested too, so I can say that by the help of the students' curiosity to the new applications, there happened an increase in their participating to the educational activities."

Science Teacher 2:

"Yes I mostly observed this at computer labs. But I think that the participation will increase if I give them opportunities to work by themselves. On the other hand, it was not very easy to reach the students who did not have enough technology at home."

Although, Science Teacher 1 thinks that too much usage of the system can cause students get bored during the educational activities, the rest of the teachers think that the system would increase the overall participation of the students to the educational activities.

Secondly, it was asked that "Have you observed that the use of the technology has increased students' *study time* in their educational activities?" Science Teacher 1 stated that she could not make enough observation to answer this question clearly, but rest of the observers stated positive observation. They stated the following observations;

Social Sciences Teacher:

"The students are used to spend time in front of the computer, we can say that by using the e-learning activities, there happened an increase in their study time too."

Turkish Teacher:

"When a student goes home he/she prefers doing his/her homework on computer to doing on paper, which may mean that it increases the study time of students."

Science Teacher 2:

"Some of the students, especially the ones who are very good at computers wouldn't have got interested if I had given the worksheet in written format. Probably the reason for why they worked so well is their access to computers."

Although, Science Teacher 1 stated that she could not observe their study time, the other teachers observed that the use of e-learning / sharing portal applications effected the student's study time positively.

4.3.2 The Teachers' Perceptions about Usefulness of this Technology

To investigate perceptions of the teachers about the usefulness of E-Learning / Sharing Portal, firstly teachers were asked that "What do you think about the usefulness of this technology in educational activities? Was it useful or not?" Answers of the teachers were positive. To get detailed indicators of their observations, they were asked to explain the indicators which they observed to support their positive opinion. They stated following observations as indicators;

Mathematics Teacher

"I think it was useful because as I mentioned before these applications help to increase the diversity in education. In our classrooms we put this into practice for many times. We gave homework via this system. I think this system has a lot of advantages."

Science Teacher 1:

"I find it helpful for students to do their work by using technology. They like to use computers; it does not matter whether it is for playing games or for studying lessons. They can observe their work better if it is in a visual environment. For many reasons I think that this system is very useful. The students not only take notes, they also do research, be in touch with their teachers on the same learning portal, take feedbacks in a very short amount of time, they can improve their work at home. When a teacher sees an incomplete work or mistakes he/she can want her/his students to complete and save it at home. It is easier for teachers to follow the course of a project."

Social Sciences Teacher:

"The usefulness comes from the practical use of the system. The students of today's world like acting fast and this system allows them to do so. I think this system is just for them."

Turkish Teacher:

"This system does not work for lazy students, but it is very helpful for hardworking students because they have a great opportunity to deal with more questions than usual. The students have limited access to internet because of the parent restrictions. They can use this situation at home in order to have permission for using computers more and they may not use the computer for this purpose. They like surfing on internet and even they

enter this portal they will prefer using class discussion tool for talking about things that are not related to their lessons."

Science Teacher 2:

"I think it is useful. According to my experiences I can say that when teacher gives any material, this can be homework or a worksheet, the students have the chance to review the material at home as much as they need. Besides, it is also advantageous for the students who are absent. I had such a student this year. She had a surgery and could not come to school for two months and I've seen that she followed her lessons and the announcements by this way. For me another advantage of the system is this, it increases the student-student and student-teacher interactions. During lessons although we are trying to take each student in hand most of the time it is not possible because of the limited time. This system helps to reach every student. Moreover, the shy students get the opportunity to express themselves better."

Turkish Teacher stated negative observations about the usefulness of the system for lazy students; she added that the lazy ones are already being unsuccessful not only in such kind of activities but also in traditional learning environments. The overall comments of the teachers about usefulness are positive.

All of the teachers stated the E-Learning / Sharing Portal as useful tool for their courses in terms of different advantages they have observed. Questions asked to get

their perceptions specifically were organized in 5 indicators. Statements of the teachers related with each indicator were reported in following sections.

Work more quickly

The first indicator for perceived usefulness was “Work more quickly”. To investigate the Teachers' perceptions about this factor, they were asked that “Have you observed that the use of the technology has increased students’ work speed in their educational activities?”. They stated following observations as indicators;

Mathematics Teacher

“Since the students’ interest has increased their work speed has also increased. They do activities more enthusiastically. They work fast because they use computers in order to reach the interfaces that they need to use.”

Science Teacher 1:

“They worked in 2 week period in my courses. They had a limited time, so I could not observe that these applications at school affected their work speed in a positive way. But their work speed for the homework has increased, because the evaluation time has been shortened for both students and the teachers.”

Social Sciences Teacher:

“The system is fast and has practical usage I think that it helps educational activities.”

Turkish Teacher:

"This portal is a kind of technology that increases the work speed of students who like working."

Science Teacher 2:

"This is advantageous for both teachers and students. During the past years we were giving computer based performance work and the students were recording their projects directly on computers. We were having problems while collecting the projects, because there were deleted or missaved files. When we started to use this system we did not have any problems because the system recorded the projects. I can say that the speed of work for both students and teachers has increased."

Science Teacher 1 stated that she could not observe students' work speed because of the time restrictions, the rest of the teachers stated its positive effects.

Job performance

The second indicator for perceived usefulness was "Job performance". To investigate the teachers' perceptions about this factor, they were asked that "Have you observed that the use of the technology has increased students' performance in their educational activities?". Although, Mathematics Teacher stated that he could not observe a difference in students' job performance, the rest of the teachers stated its positive effects. The rest of the participants stated following observations as indicators;

Science Teacher 1:

"I think that for the specific subject that they worked on, their performance has increased. In order to be sure that the students learn all the subject materials precisely we shouldn't use only e-learning portal, but also use other teaching methods."

Turkish Teacher:

"Sure. I want to give an example from my lessons. On one occasion, I prepared a puzzle and put it on this portal. I immediately received messages from the students saying that there was a mistake on the puzzle. If I had given it in a written format I would not have got immediate feedbacks. This system absolutely increased the performance of the students."

Increase productivity

The third indicator for perceived usefulness was "Increase productivity". To investigate the teachers' perceptions about this factor, they were asked that "Have you observed that the use of the technology has increased students' productivity in their educational activities?". They stated following observations as indicators;

Mathematics Teacher

"We could not find an opportunity to do activities that focuses on student productivity. In class we generally worked on multiple choice questions so I can't make any suggestion about its effects on students' productivity. But I think that if appropriate materials are used it will increase the students' productivities."

Science Teacher 1:

"They form a product and they know that they are going to be graded with this product, so they use their creativity and be more productive than usual."

Social Sciences Teacher:

"I can say that it added some creativity on their creativity that they already have. This system processes well."

Turkish Teacher:

"I think this system mostly depends on the creativity of the teacher. If the teacher prepares creative materials he/she can help students increase their creativity and productivity.

Computer Teacher:

"When they are on their own in front of a computer they gain self confidence and they don't hesitate to use their creative ideas during their work. Since they are in front of computers they can easily find answers or cues when they face problems. They can design more creative projects. This is all because the appeal of computers."

Science Teacher 2:

"It depends on the way that teacher uses this system. We mostly worked on multiple choice questions and did not focus on the productivity. But of course different activities can be planned in the future."

The teachers mostly stated that they could have a chance to observe that the system forced the students being productive in their educational activities, except for Mathematics Teacher and Science Teacher 2, because they had used multiple choice applications; however, they implied that creative applications would increase the students' productivities.

Make job easier

The forth predefined indicator for perceived usefulness was "Make job easier". To investigate the teachers' perceptions about this factor, they were asked two questions.

Firstly, it was asked that "Have you observed that the use of the technology made it easy for students to access to the educational activities?" The teachers stated that the system is very helpful in students' access to the educational activities.

Mathematics Teacher

"Yes, for example with this system we think about loading the answers of the weekend homework and we will let the students see their mistakes and the correct answers. By this system they will easily be able to reach school resources."

Science Teacher 1:

"In regular classroom environment their resources are the books and their teachers. When we do applications by using e-learning portal they reach other resources on internet. So that I can say that it increases the access to the sources of the educational activities."

Turkish Teacher:

"Yes, because they start the activities which are already designed for them very quickly."

Computer Teacher:

"When I could not use e-learning portal I had difficulties to reach source materials. The students did not have such problems because the system has access to internet. The teachers can easily share the materials with students."

Secondly, it was asked that "Have you observed that the use of the technology made the development of educational activities for students easy?" The teachers stated that this tool made the students' work easier, and they added:

Mathematics Teacher

"The students don't need to deal with papers, they can immediately take feedbacks and can see everything on the monitor. For example one day we recorded one of our lessons that we used this system. The students watched the video record. Some of the classes watched the video before I had lessons with these classes and the students told me that they already knew the subject material that I was about to teach them."

Social Sciences Teacher:

"After a good preparation period, it made the development of the educational activities easy."

Turkish Teacher:

"Since working on computers is very enjoying for students they get the ability to produce more in limited time."

Overall Usefulness

The final predefined indicator for perceived usefulness was "Overall Usefulness". To investigate the teachers' perceptions about this factor, they were asked three questions.

Firstly, it was asked that "Have you observed that the use of the technology increased students' contribution in their educational activities?". Science Teacher 1 stated that the students have access problems during entering to the portal because of log-in problems. She stated that if the problems were solved then their contribution would have been increased. The rest of the teachers stated their positive observations related with students' contributions:

Science Teacher 1:

"We aim student centered education and this system contributes to it."

Computer Teacher:

"It certainly has an affect on the lessons. Because of the appeal of computers the students contribute to the lessons more motivated."

Science Teacher 2:

"If we can reach every student yes I believe that it will increase their contribution, because there are still students who have password problems and who can not use the system efficiently. If we can help them use the system regularly and if we give homework systematically it will increase their contribution."

Secondly, it was asked that “Have you observed that the use of the technology improved students’ opportunity to work on educational activities?". The teachers stated their positive observations related with the students’ contributions;

Science Teacher 1:

“Yes. Before e-learning applications we were giving all the educational activities in a written format but with e-learning portal the teacher can reach to the students on internet. By this way without using papers the activities can reach to the students. I think that this situation increases the perceptions of students about subject materials.”

Computer Teacher:

“Not only at school but also at home it helps students to reach materials. It helps them to reach too many sources.”

Finally, it was asked that “Have you observed that the use of the technology useful in overall?” All the teachers stated their positive observations about that;

Mathematics Teacher

“It can be improved also; we can use this technology in such different good manners. A lot of different materials can be used here.”

Turkish Teacher:

“In order to bring students at a higher level in education I think it is very useful.”

4.3.3 The Teachers' Perceptions about Ease of Use of this Technology

To investigate the teachers' perceptions about the *ease of use* of E-Learning / Sharing Portal, they were asked questions grouped in four indicators according to Perceived Ease of Use construct of Technology Acceptance Modal (TAM). The results and statements of the teachers were reported in following sections.

As it is seen from the statements of the teachers which were reported below, they define E-Learning / Sharing Portal as an easy-to-use tool and their perceptions are quite positive about this tool in terms of its easy-to-use aspect.

Easy to learn

The first indicator for perceived ease of use was "Easy to learn". To investigate the teachers' perceptions about this factor, they were asked that "Was learning to use E-Learning / Sharing Portal easy for your students?". All the teachers stated their positive observations;

Mathematics Teacher

"I think so. It has a very easy process and it is also easy to apply."

Science Teacher 1:

"I think that the students who are successful at using computers are also successful at using this system."

Turkish Teacher:

"Sure. I can even say that they learn better than me, you know they are all students of technology time."

Science Teacher 2:

"Yes. Most of the students comprehended easily but a few students in each class still have problems with their passwords. They change their passwords and after a while they don't remember it, so they can't access to the portal. But I can say that most of the students learned better than teachers."

Easy to become skillful

The second indicator for perceived ease of use was "Easy to become skillful". To investigate the teachers' perceptions about this factor, they were asked that "Was becoming skillful at using E-Learning / Sharing Portal easy for your students?". Science Teacher stated that not for all the students but for the ones who can use computers efficiently it was easy to become skillful. The rest of the teachers reported their positive observations and perceptions.

Mathematics Teacher

"It was very easy. The kids are keen on using computers."

Science Teacher 1:

"They learned what to do after a few trials. They did not face any difficulty in becoming competent about saving projects, sending them to teachers and reaching the feedbacks coming from the teachers."

Computer Teacher:

"They did not put up resistance to the new system, because they were used to working with computers and it was no different for them. They got adapted easily."

Science Teacher 2:

"Not for all the students but for the ones who can use computers efficiently it was easy. It is not difficult to understand the system; it does not have a complicated language, so if a student uses it regularly he/she can easily be an expert."

Clear & Understandable

The third indicator for perceived ease of use was "Clear & Understandable". To investigate the teachers' perceptions about this factor, they were asked four questions.

Firstly, it was asked that "Were user interfaces and messages of E-Learning / Sharing Portal clear for your students?". All of them stated positive perceptions about the clarity and understandability of the interfaces, Mathematics Teacher specifically added that it can be more visual with animations especially for 6th and 7th grade students;

Mathematics Teacher

"I find it clear. I think it can be more visual with animations especially for 6th and 7th grade students."

Turkish Teacher:

"Because they grew up with this technology they are all used to the computer terms."

Computer Teacher:

"I checked this for a few times. The students would certainly get notifications. Sometimes they would not answer these notifications immediately, but when we talked to them we could understand that they had the messages. The students never came up with questions about the interface. They found it very easy."

Secondly, it was asked that "Were user interfaces and messages of E-Learning / Sharing Portal user friendly for your students?". Perceptions of all of the teachers were positive; Computer Teacher added her refection as fallowing:

Computer Teacher:

"It was very relevant to their perceptions. It did not cause any problems. If we were working with 4th ad 5th grades we would have problems with 4th graders about the access to the system, but everything would be understandable for 5th graders. The system is very easy for 6th and 7th graders who we worked with."

Thirdly, it was asked that "Does user interfaces and messages of E-Learning / Sharing Portal uses terms familiar for your students?". Again, perceptions of all of the teachers were positive; some of the teachers added their reflections as fallowing:

Science Teacher 1:

"Especially the terms used while sending the homework were relevant for the perception of students. While they were doing for the first time computer teacher helped a lot, because some students needed help at the

beginning. I think that they can easily perform well with the guidance of a teacher."

Social Sciences Teacher:

"They perceive the system as a whole, so that once they learn the method they don't get stuck with the terms. They can get over the problems."

Science Teacher 2:

"Yes they were. I've seen a few students who had problems with "save and close and submit" buttons, but most of them already knew the terms since they are used to work with computers."

Finally, it was asked that "Was it hard to understand the user interfaces of E-Learning / Sharing Portal for your students?". Perceptions of the teachers were positive about the understandability of the user interface;

Mathematics Teacher

"I have never come across such situation. As I said before, the students are very keen on using computers and this system is no different than that."

Science Teacher 1:

"After a few uses it has become very easy to understand."

Computer Teacher:

"We gave a 10 minute instruction about this subject and after this 10 minute period the students begun using this interface. I think this means that it was not hard for them."

Overall Easy to Use

The final indicator for perceived ease of use was "Overall easy to use". To investigate the teachers' perceptions about this factor, they were asked that "In overall, was the use of "E-Learning / Sharing Portal" easy for your students?". The teachers reported their positive observations and perceptions. Some of them added their reflection as fallowing;

Social Sciences Teacher:

"They use the system efficiently, which shows that they found it easy to use."

Turkish Teacher:

"When we first announced this e-learning portal to students they all got passwords. As far as I observed, at the beginning they had problems with these passwords, but now we don't see these problems anymore."

Computer Teacher:

"They found it very easy. They got easily adapted."

4.3.4 Advantages and Disadvantages of this Technology from the Teachers' Point of View

In the interviews, the teachers were also asked the advantages and disadvantages of this technology. They have reported several advantages and disadvantages which are listed below;

Advantages

Advantages for Students' and Teachers' Dealing with Educational Activities

- It allows students and teachers to **share documents** easily between each other,
- It provides **easy to access** developed materials,
- It provides students **observe their work better** by its visual elements,
- It allows teachers give **immediate feedback** to students,
- It gives the chance to students to **review the materials** they need at home,
- It is also advantageous for the students who are **absent** in the class,
- It increases the student-student and student-teacher **interactions,**
- The shy students get the **opportunity to express** themselves better,
- It allows students **gain self confidence** when they are on their own in front of a computer and they don't hesitate to use their **creative ideas** during their work.

Advantages for Teachers

- It helps teachers **access to school resources** easily.
- It allows teachers **distribute course materials** to students easily,
- It provides teachers **assess students** easily since all projects, quizzes, examinations, etc. are saved on the same computer,
- It allows teachers **send course materials to system** so that students have a second chance to go over the materials at their home, free from time and

place, and by this way teachers do not have to review the subject material in class over and over.

- It **increases the interaction** not only with students but also between teachers and directors,
- It allows teachers to **draw students' attention** more,
- It allows teachers **record and broadcast** a whole lesson for absent students or for the ones who want the review the subject material,
- It provide teachers **share audio-visual materials** also,
- It allows teachers **announce** all kind of events on time by the help of the system.

Technical Advantages

- Students do not need to **deal with papers**, it is also better for ecological purposes (the waste of paper decreases),
- It provides **time and place independent** working environment,
- It allows **server usage** so that teachers or students do not have to setup any software to their computers,
- Students' and teacher' instant **workings are protected** in case of any technical problems occurred on the computers for example electricity cut, system broking downs,
- It provides a convenient environment for regular backup service by centralizing the source codes. This protects students' project files against data lost.

- It allows keeping the students and the teachers documents saved so that it **guarantees safety** of the documents in case of being deleted or missaved.

Disadvantages

- Students' dealing with computer continuously for hours may decrease their concentrating on educational activities,
- In order to put this method into practice, all the teachers and students have to have computers equipped with required technology and access to internet,
- Students' using computer themselves can make them antisocial,
- Server can slow down when high number of online users keep busy the system simultaneously,
- Students may misuse discussion boards (as they do it in their msn accounts), this may cause inconvenient situations for school environment,
- Keeping all the materials on a single server increases the risk of data lose,
- Keeping all the materials on a single server increases the risk of accessing others' materials without permission,

4.3.5 Teachers' Suggestions about the Use of this Technology

Finally, the teachers were asked to share their suggestions about the further usages of this technology. These suggestions were listed below.

Suggestions Related with the Usage of the E-Learning / Sharing Portal

- The system can be used regularly in weekend homework, performance assignments, worksheets, and all in class activities,
- The system can be used in all kind of distance education or online education applications,
- The system can be used in educational activities that need interaction between users who are distant from each others. For example, in European Union projects, teachers and students of such different countries make some collective works together. They can use the system for setting connection, sharing materials, etc. between them.
- The system can be used to make online surveys.
- The portal can be used for adult education also.

Suggestions Related with the Improvement of the E-Learning / Sharing Portal

- Some educational material development tools can be integrated to the system,
- Instant messaging software can be included to the system,
- The system accepts only a few kind of file formats to transmit (like SCORM data), it can be improved to all type of files transmitted without examining file extension,
- Survey construction steps can be clarified,
- For keeping all users savings more safety, a back up unit can be integrated.
- The system can be used for applying teleconferencing technologies, setting up a live broadcast for educational purposes.

The summary of perceptions of the teachers about the use of E-Learning / Sharing Portal is given briefly in Appendix E.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMENDATIONS

In this chapter, the discussions on findings, conclusions, Suggestions for practice and recommendations are presented.

5.1 Discussion

In an era of rapid developing educational technologies, the Internet has become a powerful tool to provide learners with an alternative learning environment worldwide. The Internet and distance education have notably affected the ways in which we communicate and learn (Leh, 1999). Distance education fosters learning and teaching in a variety of ways. One of the many advantages of distance education is that it offers instructors and students a flexible learning setting in terms of time and location. Learning does not require students to being physically present in the same place with the instructor (Walker, 2005) nor at the same time. Distance education might be used for different purposes such as supported learning, blended learning (combination of face-to-face and online learning), and entirely online learning (Pearson & Trinidad, 2005). However, sometimes all those discovered opportunities are being insufficient to solve problems of some circumstances in providing some

facilities in online environments. One of these problem areas is teachers' and students' interacting in a professionally designed sharing platforms. Although, Internet provides highly efficient, effective and widely used communication tool for users' interacting with each other, the number of special technology which provides effective sharing portal environment for educational activities are limited.

The technology used in this study was Microsoft SharePoint Server, a sharing portal server. This software used as an e-learning application that gets students and teachers together in a mutual virtual learning environment. Moreover, it provides time and place independent, synchronous and asynchronous team working environment.

However, according to Technology Acceptance Model (TAM), it is not enough just to integrate this new technology in their learning environment; the acceptance of this new technology should be checked. Information systems are created to be used. If the users do not accept them, they eventually fail (Davis, 1989).

The object of this study is to investigate the effects of the integration of E-Learning / Sharing Portal as a new technology in learning environments of students. To obtain information about effects of the use of SharePoint Server and perceptions of students, the teachers were investigated in terms of its perceived effects on students' perceived motivation towards educational activities, its usefulness and its ease of use. Also, to get list of advantages, disadvantages and suggestions of the teachers were the secondary object of this study.

5.1.1 Perceived Effects on Students' Motivation towards Educational Activities

According to the results of the study, more than half of the students (62.1%) stated positive perceptions about the effects of the use of the E-Learning / Sharing Portal on their perceived motivation towards the course and the mean score was 3.499. The percentage of students stating negative was only 14.8%. However, the rest of the students (23.1%) were indecisive about the effects of the use of this technology on their perceived motivation. The percentages of students stating positive perception about the effect of the use of this technology on their perceived motivation might be higher if the study period would be longer. Nevertheless, 62.2% is high enough to say that the use of this technology has a positive effect on students' perceived motivation.

According to the results of the literature review of the researcher, this study is one of the initial studies about the effects of the e-learning / sharing portal applications on students' perceived motivation. However there are some other studies about the effects of the online learning applications on students' perceived motivation in different disciplines which support the results of this study.

The results of perceived motivation part of this study correspond to the results of the study conducted by Bennett & Monds (2008). Like the results of this study, they reported positive effects of the online learning applications on students' perceived motivation in their findings;

> "Because online classes are becoming a more prominent choice for all types of students, educators are challenged to find ways to make those courses relevant, effective, and satisfactory. Based on various research findings, the writers believe that intrinsic motivation can be increased by enhancing: 1) perceived competence, 2) interest, 3) value, and 4) relatedness to faculty and other students. The enhancement of these factors will contribute greatly to online course success" (p.6).

Moreover, Walker, Wallace, & Juban (2004) used the intrinsic motivation theory in their study to assess students' experiences in online applications. They found that the level of perceived intrinsic motivation, rather than demographic factors, was significantly correlated to students' level of satisfaction in courses and final grades. They concluded that "The key component in students' perceived level of intrinsic motivation was directly related to meaningful communication in the course" (Walker, Wallace, & Juban, 2004, p.40).

5.1.2 Perceived Usefulness and Perceived Ease of Use

According to TAM (Technology Acceptance Model) developed by Davis (1989), perceived usefulness and perceived ease of use of a system are the major indicators of the acceptance of this system.

When the results of the *perceived usefulness* of the system are examined, it is seen that according to the results of this study, more than half of the students (65.0%) reported that e-learning / sharing portal applications were useful for them. The

percentages of students stated negative opinion was 14.3%. The percentage of indecisive students was %20.7. The mean score of *perceived usefulness* construct was 3.511. On the teacher side, some of them focused on the technical opportunities provided by this technology such as file and document sharing and interactional advantages (such as discussion board, forums). Also, they stated that they will use this tool in their future semesters because of all the advantages it provides. Some of the teachers emphasized the advantages providing time and place in depended shared work environment.

When results of the *perceived ease of use* of E-Learning / Sharing Portal applications are examined, it is seen that most of the students (71.7%) stated that the use of this technology was easy. The mean score for perception questions related with *ease of use* of the tool was 3.851. The percentage of indecisive students for this aspect was 10.8%. It can be said that the usage period to perceive and report the ease of use of the tool was enough unlike other aspects. Also, according to the interview results, all of the teachers reflected their positive opinions about the ease to use of this tool.

These results are very similar to the results of the study conducted by Turşak (2007). He investigated effects of the use of Remote Access Technology (an online learning application) on their motivation, perceived usefulness and perceived ease of use of such kind of e-learning technology. He had similar mean scores for these constructs. While the mean score of perceived effects on perceived motivation factor was 3.450 in his study, 3.499 was the result of this study. The mean of the perceived usefulness of this study was 3.511, in his study it was 3.649. Also, while the mean score of

perceived ease of use constructed for this study was 3.851, it was 3.642 in his study. All scores are out of 5. As it can be seen from the results of both studies, the means are very similar. Moreover, Turşak (2007) reported that using Remote Access Technology increased students' perceived motivations, in the same way, he concludes in his study that students found Remote Access Technology useful and easy to use for group projects of programming language courses.

The results of this study are also supported by results of the investigation made by Liu et al. (2008), as mentioned in literature review part. Parallel with this study, the researchers supported in their study that there is a significant positive relationship between perceived usefulness, perceived ease of use and intention to adopt e-learning applications. (Liu, Chen, Sun, Wible, & Kuo, 2008).

According to the results of this study and previous studies reported in literature, it can be said that e-learning / sharing portal is accepted by students and the teachers in online learning environment. Also, the high number of indecisive students can be minimized by providing longer usage period in future researches.

5.1.3 Advantages and Disadvantages

As a result of the interviews conducted with the teachers, several advantages and disadvantages were reported by them. Those advantages were organized in three main categories: advantages for the students' and the teachers' dealing with educational activities, advantages for teachers and technical advantages.

Advantages of E-Learning / Sharing Portal

Advantages for Students' and Teachers' Dealing with Educational Activities

- It allows students and teachers to **share documents** easily between each other,
- It provides **easy to access** developed materials,
- It provides students **observe their work better** by its visual elements,
- It allows teachers give **immediate feedback** to students,
- It gives the chance to students to **review the materials** they need at home,
- It is also advantageous for the students who are **absent** in the class,
- It increases the student-student and student-teacher **interactions,**
- The shy students get the **opportunity to express** themselves better,
- It allows students **gain self confidence** when they are on their own in front of a computer and they don't hesitate to use their **creative ideas** during their work.

Advantages for Teachers

- It helps teachers **access to school resources** easily.
- It allows teachers **distribute course materials** to students easily,
- It provides teachers **assess students** easily since all projects, quizzes, examinations, etc. are saved on the same computer,
- It allows teachers **send course materials to system** so that students have a second chance to go over the materials at their home, free from time and place, and by this way teachers do

not have to review the subject material in class over and over.

- It **increases the interaction** not only with students but also between teachers and directors,
- It allows teachers to **draw students' attention** more,
- It allows teachers **record and broadcast** a whole lesson for absent students or for the ones who want the review the subject material,
- It provide teachers **share audio-visual materials** also,
- It allows teachers **announce** all kind of events on time by the help of the system.

Technical Advantages

- Students do not need to **deal with papers**, it is also better for ecological purposes (the waste of paper decreases),
- It provides **time and place independent** working environment,
- It allows **server usage** so that teachers or students do not have to setup any software to their computers,
- Students' and teachers' instant **workings are protected** in case of any technical problems occurred on the computers for example electricity cut, system collapse,
- It provides a convenient environment for regular backup service by centralizing the source codes. This protects students' project files against data loss.
- It allows keeping the students and the teachers documents saved so that it **guarantees safety** of the documents in case of being deleted or mis-saved.

Disadvantages of E-Learning / Sharing Portal

Disadvantages

- Students' dealing with computer continuously for hours may decrease their concentrating on educational activities,

Solution: It can be dealt with parent assistance. After negotiation of teachers and parents, computer usage limit can be put by considering the time for doing that educational activity.

- In order to put this method into practice, all the teachers and students have to have computers equipped with required technology and access to internet,

Solution: When it is looked at the student and the teacher profile at METU Development foundation Schools, it seems like the most of the students have computers and access to internet. But there still may be exceptions and this may be the disadvantage of the system. Considering the overall benefits, it can be said that these problems can easily be solved.

- Students' using computer themselves can make them antisocial,

*Solution***:** This is the common problem of this era. It can be prevented by the help of a consultant. School guidance service units have some materials about that subject; they would guide the students to solve that problem.

- Server can slow down when high number of online users keep busy the system simultaneously,

*Solution***:** This problem can be solved by improving hardware configuration and Internet connection bandwidth of the server. Moreover, this can be solved by using more than one server and

distributing users to those different servers.

- Students may misuse discussion boards (as they do it in their MSN accounts), this may cause inconvenient situations for school environment,

Solution: Discussion boards can be controlled by the teachers, and inappropriate messages can be deleted daily and the writer of those messages would be warned, so that misuse would be prevented.

- Keeping all the materials on a single server increases the risk of data loss,

*Solution***:** This risk can be reduced by using a backup unit. Even this disadvantage can be turned to an advantage by using this backup unit because saved materials were also under risk when they are distributed to different computers.

- Keeping all the materials on a single server increases the risk of accessing others' materials without permission.

*Solution***:** This risk can be removed by setting up a carefully designed log-in process, each users has got a login ID and passwords, each user has got an account for saving his/her materials to there, no one can access others' materials as well as log-in ID and passwords are not known by someone else.

5.1.4 Suggestions

As a result of this study including the interview, a wide variety of suggestions were acquired from the teachers. The teachers mostly made suggestions about the usage of the system. Some suggestions were about improvement of the system used in this study. All suggestions were grouped in two categories and listed below;

Suggestions Related with the Usage of the E-Learning / Sharing Portal

- The system can be used regularly in weekend homework, performance assignments, worksheets, and all in class activities,
- The system can be used in all kind of distance education or online education applications,
- The system can be used in educational activities that need interaction between users who are distant from each others. For example, in European Union projects, teachers and students of such different countries make some collective works together. They can use the system for setting connection, sharing materials, etc. between them.
- The system can be used to make online surveys.
- The portal can be used for adult education also.

Suggestions Related with the Improvement of the E-Learning / Sharing Portal

- Some educational material development tools can be integrated to the system,
- Instant messaging software can be included to the system,
- The system accepts only a few kind of file formats to transmit (like SCORM data), it can be improved to accept all type of files transmitted without examining file extension,
- Survey construction steps can be clarified,
- For keeping all users savings more safety, a back up unit can be integrated.

- The system can be used for applying teleconferencing technologies, setting up a live broadcast for educational purposes.

5.2 Conclusions

In this study, the sharing portal software, Microsoft SharePoint Server used as an e-learning management tool in students' and teachers' educational activities. The research investigated perceptions of the e-learning / sharing portal in teachers' and students' educational activities in terms of its effects on students' perceived motivation towards the educational activities, the usefulness and the ease of use of the e-learning / sharing portal, the advantages and disadvantages of the technology and the suggestions for the usage of the system.

Two research questions with sub-questions were asked in this study to achieve the purpose of the study.

1. How do the students perceive the use of the e-learning / sharing portal technology in their educational activities?

1.1 How do the students perceive the e-learning / sharing portal technology in their educational activities in terms of *its effects on their perceived motivation towards the educational activities*?

1.2 How do the students perceive the *usefulness* of the e-learning / sharing portal technology?

1.3 How do the students perceive the *ease of use* of the e-learning / sharing portal technology?

2. How do the teachers of METU Foundation Schools perceive the use of the e-learning / sharing portal technology in the educational activities?

2.1 How do the teachers perceive the e-learning / sharing portal technology in educational activities in terms of *its effects on students' perceived motivation towards the educational activities*?

2.2 How do the teachers of METU Foundation Schools perceive *the usefulness* of the e-learning / sharing portal technology?

2.3 How do the teachers of METU Foundation Schools perceive *the ease of use* of the e-learning / sharing portal technology?

2.4 What are *the advantages and disadvantages* of the use of the e-learning / sharing portal technology in educational activities from the teachers' point of view?

2.5 What are *the suggestions* of the teachers about the use of this technology?

The answers of the two research questions with sub-questions are supported by the investigation:

Firstly, as an answer to Question **1.1** and **2.1**, the use of this technology effects the students' *perceived motivation* significantly positive. More than half of the students were reported positive perceptions while most of the rest of them reporting neutral opinion, and minority of the rest reported negative perception. Nevertheless, because of the high percentage of positive perceptions of the students, it can be generalized that the use of this technology has a positive effect on students' perceived motivations. According to the interview results, all of the teachers' perceptions were positive about the perceived motivational factors.

Secondly, as an answer to Question **1.2** and **2.2**, e-learning / sharing portal is *useful* for students in their educational activities. As a result of the investigation, it can be said that the system was perceived easy to use and useful by the teachers and the students of a high percentage. Particularly students found this technology useful in increasing their work speed and making their job easier.

Thirdly, as an answer to Question **1.3** and **2.3**, most of the students and all of the teachers reported positive perceptions about that the e-learning / sharing portal technology is *easy to use* and *easy to learn*. Moreover, its screens and messages are clear and easy to understand for students and teachers.

If we combine the results of the second and the third statements written above, it can be said that according to Technology Acceptance Model (TAM), this new technology is accepted by the students and the teachers of METU Development Foundation Schools in which this study is conducted.

Fourthly, as an answer to Question **2.4,** the use of this technology brings variety of advantages for both students and teachers. Those advantages can be listed into three main categories: advantages for students' and teachers' dealing with educational activities, advantages for teachers and technical advantages. Besides, several disadvantages were reported by teachers. However, the solutions for the problems were described in detail by the researcher. All of the advantages and the disadvantages are listed in the previous part, in section **5.1.3**.

Finally, as an answer to Question **2.5,** different suggestions of the teachers about the use of the system were reported by the researcher. The suggestions are listed into two main categories: Suggestions related with the usage of the e-learning / sharing portal and suggestions related with the improvement of the e-learning / sharing portal. All of the suggestions are listed in the previous part, in section **5.1.4**.

5.3 Suggestions for Practice

From the results of this study, following suggestions are made for implementing such e-learning / sharing portal technologies in educational activities.

- Prepare detailed, carefully designed activities for implementing them in e-learning / sharing portal environments. If an activity does not work properly in the system, users would get de-motivated, and eventually the activity would reduce students' learning performance.
- Find useful and easy to use educational material development software for using it in the e-learning / sharing portal. Microsoft Class Server or Hot Potatoes can be used for this purpose.
- Take the backups of the passwords of the users in incase of their forgetting or losing the passwords. Give warnings about keeping passwords.
- Check the messages written in the class discussion part frequently. Delete the inconvenient content and give warnings to writer of that kind of messages.
- Use the announcement part regularly to encourage students use the system efficiently.

- Guide the students use the calendar and agenda parts for their improving time management capabilities.
- Design creative educational activities for students' increasing their creativeness.
- Do the assessments as soon as possible for giving the students immediate feedbacks. If the students do not see their results of activity performance on time, they would grow away from the system.
- Do not prepare very long-time activities, it may grounds students get used to sit in front of the computer in hours, and eventually it may result in antisocial individuals.
- Be sure that all the users of the system have computers with required equipment and internet connection fast enough for using the system properly.
- Take precautions in case of the servers' slowing down. For example, take the backups of the account savings.
- Be sure that all the users have an active working ID and password. For example, even if a few students can not enter to the system, it would result in confusion and loosing control of the classroom management, consequently ineffective working of the system.
- Plan at least one hour lecture to introduce the aim and the usage of the system at the beginning of the study. Also, give brief information about the advantages about the system.

5.4 Recommendations for Future Researches

There is always a constant need for further research to be sure about the effectiveness of using an e-learning application. Some recommendations are listed below for those who want to conduct a similar research:

- First of all, this study was conducted with 200 students of 6th and 7th grade METU Development Foundation Schools Student, and with 6 teachers of the school. This study can be repeated in different grade levels and different schools to investigate the similar factors.
- Secondly, E-Learning / Sharing Portal which was investigated in this study can be used and investigated in different educational activities. Also, the study can be repeated after making improvements reported in the teachers' suggestions about the use of this technology section. To illustrate, since the system accepts only a few kind of file formats to transmit (like SCORM data), it was suggested that it can be improved to all type of files transmitted without examining file extension. After being accomplished of the suggestion, the research can be repeated with using much more different educational activities prepared in all kind of file formats. So that efficiency of the system can be seen much more precisely, probably in higher percentages of students' and teachers' perceived usefulness.
- Thirdly, while working on the study, the researcher and the teachers prepared the educational activities by using relatively inoperative software to integrate the activities to e-learning / sharing portal for investigating the efficiency of its use. By the growing up of technology, new operative software can be launched

in the future. A new study can be conducted at that time to see if it increases the effectiveness of the system or not.

- Fourthly, this study is conducted to see the perceptions of teachers' and students', a completely parallel investigation can be done to see school managers' perceptions. So that it can bee seen that how much the system is useful or easy to use in school management. Additionally, by doing that kind of research, cost effectiveness of the system for schools' budget can also be investigated.
- Finally, new studies can be conducted to see the effects of using e-learning / sharing portal in distance learning system to students' academic success.

REFERENCES

Aiguo, He. (2008). An Understanding Information Management System for a Real-Time Interactive Distance Education Environment. *International Journal of Distance Education Technologies* (Vol. 7, Issue)

Araki, M., Yagi, K., Sugitani, K., & Minoh, M. (1999). Development of an integrated management system of distance learning. JDLA Journal, 1 , 28-32.

Argyris, C., Putnam, R., and Smith, D.M. (1985). *Action science: Concepts, methods, and skills for research and intervention*. San Francisco: Jossey - Bass.

Benek-Rivera, J., & Matthews, V.E. (2004). Active learning with jeopardy: Students ask the questions. *Journal of Management Education*, *28*, 104-118.

Bennett, C., F., & Monds, K., E. (2008). Online Courses The Real Challenge Is "Motivation". *College Teaching Methods & Styles Journal, 6* (4), 1-6.

Bogdan, R.C., & Biklen, S.K. (1998). Qualitative research for education: An introduction to theory and methods. Needham Heights, MA: Ally & Bacon.

Bonwell, C.C., & Eisen, J.A. (1991). *Active learning: Creating excitement in the classroom* (ASHE-ERIC Higher Education Report No. 1). Washington, DC: George Washington University.

Brown, I. T. (2002). Individual and Technological Factors Affecting Perceived Ease of Use of Web-based Learning Technologies in a Developing Country. *EJISDC , 9* (5), 1-15.

Brown, K. M. (1996). The role of internal and external factors in the discontinuation of off-campus students. *Distance Education, 17*(1), 44-71.

Capita SharePortal. (2008). Retrieved on 2008-18-12, from Capita Registrars Limited Web Site: https://www.capitashareportal.com/forms/default.aspx

College Crunch. (2008). *Advantages of Online Learning.* Retrieved on 2008-18-12, from College Crunch Resource Online Web Site: http://www.collegecrunch.org/online/advantages-of-online-learning/Commonwealth

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13* (3), 319-339.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science , 35*, 982-1003.

Davis, F.D., & Vankatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: Three experiments. *International Journal of Human- Computer Studies, 45*, 19-45.

Deci, E. L. and R. M. Ryan. (1985). Intrinsic Motivation and Self-Determination in Human Behavior, New York: Plenum.

Deshpande, S. G., & Hwang, J.-N. (2001). A real-time interactive virtual classroom multimedia distance learning system. IEEE Trans. on multimedia, 3 , 432 -444.

Driscoll, M. (2002). How people learn (and what technology might have to do with it). ERIC Clearinghouse on Information and Technology Syracuse, NY. Retrieved 5 January 2006 from http://www.ericdigests.org/2003-3/learn.htm

EBTCO. (2005). Electronic Business Transactions Cooperation. Retrieved on 2005, from Glossary of EBTCO Web Site: http://www.ebtco.com/english/support/glossary/index.php?char=s

Edward, L. D., & Richard, M. R. (2006). *Questionnaires : Intrinsic Motivation Inventory.* Retrieved 2005, from Self Determination Theory : An Approach to Human Motivation and Personality: http://www.psych.rochester.edu/SDT/measures/intrins.html

Education Media Centre for Asia. (2007.). *Manual for Education Media Researchers: Knowing Your Audience.* Retrieved 2007-09-17, from The Commonwealth of Learning: http://www.cemca.org/books/

Elaine Allen & Jef Seaman (2008). *Staying the Course: Online Education in the United States, 2008.* Printed in the United States of America: Sloan-C™.

Erginel-Şanal, S. (2006). *Developing reflective teachers: a study on perception and improvement of reflection in pre-service teacher education*. Unpublished doctoral dissertation, Orta Doğu Teknik Üniversitesi Üniversitesi, Ankara.

Erol, B., & Li, Y. (2005). *An overview of technologies for e-meeting and e-lecture.* In Proceedings of ieee international conference on multimedia and expo (icme). Los Alamitos, CA, USA: IEEE ComputerSociety.

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Addison-Wesley.

Frankola, K. (2001). Why online learners drop out. *Workforce, 10*, 52-60.

Freire, P. (1970). *Pedagogy of the oppressed*. New York, NY: Continuum.

Gandel, P., Katz, R. N., & Metros, S. (2004). The weariness of the flesh : Reflections of the life of the mind in an era of abundance. *Educase Review,* 39(2), 40-51.

Garson, G. David. (2007). *Scales and Standard Measures*. Retrieved on August 8, 2007, from http://www2.chass.ncsu.edu/garson/pa765/standard.htm.

Gefen, D., & Keil, M. (1998). The impact of developer responsiveness on perceptions of usefulness and ease of use: An extension of the technology acceptance model. *The DATA BASE for Advances in Information Systems , 29* (2), 35-49.

Golladay, R., Prybutok, V. & Huff, R. (2000). Critical success factors for the online learner. *Journal of Computer Information Systems, 40*(4), 69-71.

Hague, A. C and Benest, I. D. (1996). Towards Over the Shoulder Guidance Following A Traditional Learning Metaphor, *Computers Educ*. 26 (1–3), 61-70.

Hall, B. (2003). FAQs about e-learning. Retrieved August 15, 2003, from www.brandonhall.com/public/faqs2/faqs2.htm

Hara, N. & Kling, R. (2000). Students' distress with a web-based distance education course: An ethnographic study of participants' experiences. *Information, Communication and Society, 3*(4), 557-579.

Hatcher, L. (1994). *A Step by Step Approach to Using the SAS® System for Factor Analysis and Structureal Equation Modeling.* NC: SAS® Institute, Cary.

Hot Potatoes. (2008). Retrieved on 2008-23-12, from Hot Potatoes Home Page: http://hotpot.uvic.ca/

Igbaria, M., Parasuraman, S., & Baroudi, J. J. (1996). Microcomputer Usage. *Journal of Management Information Systems , 13* (1), 127-143.

Igbaria, M., Zinatelli, N., Cragg, P., & Cavaye, A. L. (1996). Personal Computing Acceptance Factors in Small Fitms: A Structural Equation Model. *MIS Quarterly , 21* (3), 279-305.

Jardim, C. H., Neto, R. B., & Ribas, H. B. (2005). Web services enabling contextaware applications:Lessons learned by integrating e-learning applications. nwesp, 400-405.

Jin, Q. (2002). Design of a virtual community based interactive learning environment. *Information Science, 40* (1-2), 171-191.

Johnston, J., Killion, J., & Oomen, J. (2005). Student satisfaction in the virtual classroom. *The Internet Journal of Allied Health Sciences and Practice*. *3*. Available

January 26, 2006, at http://ijahsp.nova.edu/articles/vol3num2/Johnston%20-%20Printer%20Version.pdf

Kaminski, J. (2005). Editorial: Moodle – A user-friendly, open source course management system. Online Journal of Nursing Informatics (OJNI), 9(1). Online.

Kohsaka, Y., Nomura, T., & Shibata, Y. (1997). Design and evaluation of flexible multimedia remote lecturing support system. IPSJ SIGNotes, DPS-82-15 , 81-86.

Koohang, A. & Durante, A. (2003). Learners' perceptions toward the web-based distance learning activities/ assignments portion of an undergraduate hybrid instructional model. *Journal of Informational Technology Education* 2, 105-113. Available at http://jite.org/documents/Vol2/v2p105-113-78.pdf

Kurbel, Karl (2001): Virtuality on the Students' and on the Teachers' sides: A Multimedia and Internet based International Master Program; ICEF Berlin GmbH (Eds.), Proceedings on the 7th International Conference on Technology Supported Learning and Training – Online Educa; Berlin, Germany; pp. 133–136.

Laine, L. (2003). Is e-learning effective for IT training? *T +D, 57*(6), 55-60.

Leh, A. (1999). Computer-mediated communication and foreign language learning via telecommunication technology. In B. Collis, R. Oliver, (Eds.), *Ed-Media: Proceedings of World Conference on Educational Multimedia, Hypermedia, and Telecommunications* (pp. 68-73). Charlottesville, VA: Association for the Advancement of Computing in Education.

Lewin, K. (1946). Action research and minority problems. In G. Lewin (Ed.), *Resolving social conflicts* (pp. 201-216). NY: Harper & Row Publishers.

Longe, F. C. (2005). Students' Perceptions of Web-Based Learning Tools: A Case Study of the Web Course Tool (WebCT). *An On Line Journal Of African Educational Research Network* , 21.

Liu, I., F., Chen, M., C., Sun, Y., Wible, D., & Kuo, C., H. (2008). Assessment of an online learning community from Technology Acceptance Model in Education. *Eighth IEEE International Conference on Advanced Learning Technologies, 8,* 222-224.

Martler, C. (2008). *Action Research: Teachers as Researchers in the Classroom*. (2nd ed.). Thousand Oaks: Sega Publications.

Mathieson, K. (1991). Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior. *Information Systems Research , 2* (3), 173-191.

Mark Galassi. (1998). *Cygnus Solutions.* Retrieved on 2008-18-12, from Glossary of Mark Galassi Web Site: http://www.galassi.org/mark//mydocs/docbook-intro/g645.html

McAuley, E., Duncan, T., & Tammen, V. V. (1989). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: A confirmatory factor analysis. *Research Quarterly for Exercise and Sport* (60), 48-58.

Merriam, S. (1998). *Qualitative Research and Case Study Applications in Education.* San Francisco: Jossey-Bass Publishers.

Microsoft. (2008). Microsoft Sharepoint Server. Retrieved on 2008-18-12, from Microsoft Product Information Web Site: http://www.microsoft.com/sharepoint/prodinfo/

Moodle home page. (2008). Available from http://moodle.org/

Ndubisi, N.O., Gupta, O.K., & Massoud, S. (2003). Organizational learning and vendor support quality by the usage of application software packages: A study of Asian entrepreneurs. *Journal of Systems Science and Systems Engineering, 12* (3), 314-331.

Ndubisi, N.O., Gupta, O.K., & Ndubisi, G.C. (2005). The moguls' model of computing: Integrating the moderating impact of users' persona into the technology acceptance model. *Journal of Global Information Technology Management, 8* (1), 27-47.

Nelson-Knupfer, N., & McLellan, H. (1996). Descriptive Reseach Methodologies. In D. H. Jonassen, *Handbook of research for Educational Communications and Technology.* New York: Simon & Schuster Macmillan.

Nordmann, M., & Neumann, J. (2008).Learning application suite creating and playing scorm compatible web and computer based training. In Icalt'08. eighth ieee international conference on advanced learning technologies (p. 572-573). Los Alamitos, CA, USA: IEEE Computer Society.

O'Neill, K., Singh, G. & O'Donoghue, J. (2004). Implementing elearning programmes for higher education: A review of the literature. *Journal of Informational Technology Education, 3*, 313-323. Available at http://jite.org/documents/Vol3/v3p313-323-131.pdf

Ortiz, J. M. (2001*). E-Learning: effects and demands on students and teachers.* International BEST Symposium, IBS 2001, Helsinki.

Patton, M. Q. (1987). *How to use qualitative methods in evaluation*. Newbury Park, CA: Sage.

Pearson, J., & Trinidad, S. (2005). OLES: An instrument for refining the design of e-learning environments. *Journal of Computer Assisted Learning, 21*, 396-404.

Picciano, A.G. (2002). Beyond student perceptions: Issues interaction, presence, and performance in an online course. *Journal of Asynchronous Learning Networks, 6*, 20-41.

Putnam, R., & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning? *Educational Researcher, 29*(1), 4-15.

Ritchie, J., Lewis, J. (2003). *Qualitative Research Practice: A Guide For Social Science Students and Researchers.*(4th ed.). London ; Thousand Oaks, Calif. : Sage Publications.

Robson, C. (2002). *Real World Research*. 2nd ed. Malden, Oxford, Carlton: Blackwell Publishing.

Rubenstein, H. (2003). Recognizing e-learning's potential & pitfalls. *Learning & Training Innovation, s4*(4), 38.

Ryan, S. (2001). Is online learning right for you? *American Agent & Broker, 73*(6), 54-58.

Ryan, R. M. and E. L. Deci. (2004). "Autonomy Is No Illusion: Self-Determination Theory and the Empirical Study of Authenticity, Awareness and Will," in J. Greenberg, S.L. Koole, and T. Pyszcynski (eds). Handbook of Experimental Existential Psychology, New York: Guilford Press, pp. 449-479.

Saadé, R., G., Nebebe, F., & Tan,W., J., M. (2007). Viability of the "Technology Acceptance Model" in Multimedia Learning Environments: A Comparative Study. *Interdisciplinary Journal of Knowledge and Learning Objects*, *3*, 75-84.

Segawa, N., Sugino, E., & Miyazaki, M. (2000). The consideration of the distance learning between iwate prefectural university and miyaki junior college division, iwate prefectural university. IEICE technical report. Education technology, ET2000-49 , 23-28.

Serwatka, J. (2003). Assessment in on-line CIS courses. *Journal of Computer Information Systems, 43*(3), 16-20.

Smart, K. L., & Cappel, C. J. (2006). Students' Perceptions of Online Learning: A Comparative Study. *Journal of Information Technology Education, 5*, 201-219.

Stake, R. E. (1994). Case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 236-247). Thousand Oaks, CA: Sage.

Suzuki, H., Wakabayashi, R., Eguchi, K., Muto, K., Shimada, K., & Takahata, F. (2000). sat network distance learning system by each station functioning control in turn. JDLA Journal, 2 , 16-20.

Tanaka, K., & Kondo, K. (1999). Configuration of inter-university satellite network (space collaboration system). IEICE Transactions on Information and Systems, 82-D-I , 581-588.

Taylor, S., & Todd, P.A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research, 6*, 144-176.

Teaching Concepts: Motivation. (1997). Retrieved 10-06-2006, from http://college.hmco.com/education/pbl/tc/motivate.html

Teresa, M., & Ana, S. (2008). The role of new technologies in the learning process: Moodle as a teaching tool in Physics. *Computers & Education* 52 (1), 35-44.

Tsigilis, N., & Theodosiou, A. (2003). Temporal stability of the Intrinsic Motivation Inventory. *Perceptual and Motor Skills* (97), 271-280.

Turşak, M. (2007). *Perceptions of students and instructors about using remote access technology in programming language courses: a case study*. Unpublished master's thesis, Orta Doğu Teknik Üniversitesi Üniversitesi, Ankara.

United States News & World Report. (2008). *E-Learning and Technology*. Retrieved on 2008-18-12, from Explanation of Words Used in the E-Learning Guide Web Site: http://www.usnews.com/articles/education/e-learning/2008/01/10/elearn-glossary.html

University of Kentucky, T. A. S. C. (2006). Theories of Teaching and Learning. Retrieved 10-02-06, 2006, from http://www.uky.edu/TASC/ED/motivation.php

University of South Florida. (2007). Retrieved on 2008-09-19, from College of Education Web Site: http://www.coedu.usf.edu/main/

Vaughn, S., Schumm, J. S., & Singagub, J. (1996). *Focus Group Interviews in Education and Psychology.* Thousand Oaks, CA: Sage Publications.

VcAlberta (2008). *Video Conference.* Retrieved on 2008-18-12, from VcAlberta Glossary Web Site: http://www.vcalberta.ca/tools/glossary/index.cfm?Letter=E

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research, 11*, 342-365.

Venkatesh, V., & Davis, F. (1994). Modeling the Determinants of Perceived Ease of Use. *the Fourteenth International Conference on Information Systems* (pp. 213-225). Orlando, FL: The DATA BASE for Advances in Information Systems.

Walker, S. L. (2005). Development of the Distance Education Learning Environments Survey (DELES) for higher education. *The Texas Journal of Distance Learning, 2* (1), 1-16.

Walker, J., Wallace, D., and Juban, R. (2004). Business students online: Profiles of success. Manuscript submitted for publication.

Ward, J. & LaBranche, G. (2003). Blended learning: The convergence of e-learning and meetings. *Franchising World, 35*(4), 22-23.

Watanabe, K., Otani, M., Tanaka, H., Isagai, Y., Okawa, K., Kokuryo, J., et al. (2000). Distance classroom using high quality video stream on the japan gigabit network. IEICE technical report. Education technology, ET2000-86 , 71-77.

Weller, M. (2007). Virtual learning environments: Using, choosing and developing your VLE. London: Routledge.
WordNet. (2006). *A lexical database for the English language.* Retrieved on 2008-19-12, from WordNet Search Web Site: http://wordnetweb.princeton.edu/perl/webwn?s=educational%20activity

Yıldırım, A., & Şimşek, H. (2006). *Nitel Araştırma Yöntemleri.* İstanbul: Seçkin Yayıncılık.

Yin, R. K. (2003). *Case Study Research: Design and Methods* (Third Edition ed.). Thousand Oaks: Sage Publications.

Yoshino, T., & Munemori, J. (2002). Application and evaluation of distributed remote seminar support system remote wadaman ii over tow years. Transactions of ISPJ, 43 , 555-565.

Zhang, G., Cheng, Z., Huang, T., He, A., & Koyama, A. (2003). A distance learning support system based on effective learning method sq3r. IPSJ Journal, 44, 709 -721.

APPENDIX A

STUDENTS' PERCEPTIONS ABOUT E-LEARNING / SHARING PORTAL QUESTIONNAIRE (SPELSP-Q)

This questionnaire is prepared to explore the METU Foundation School 6th and 7th level students' perceptions about the use of E-Learning/Sharing Portal that is used in educational activities.

The questionnaire is prepared to be used for the master thesis study performed in Computer Education and Instructional Technologies Department in the Middle East Technical University.

Your responses will be kept confidential and will only be used for this study.

Contact:
Azad IŞIK
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Academic Supervisor:
Prof. Dr. M. Yaşar ÖZDEN

Please enter following information about yourself.

Gender ○ Male ○ Female

SECTION 1:
In this section, 7 technologies are listed. For each of the technology, please select one of the competency level that best describes your competency. Use your mouse pointer for selecting your choice and please select only one for each technology.

			Not Used	Beginner	Intermediate	Expert
1.1	**Web browsers** *(Examples: Internet Explorer, Firefox, Netscape, Opera)*		○	○	○	○
1.2	**Search Engines** *(Examples: Google, Alta vista, Yahoo, MSN, Lycos)*		○	○	○	○
1.3	**E-mail** *(Examples: Hotmail, Yahoo! Mail, Gmail, Outlook, etc.)*		○	○	○	○
1.4	**Online Forums & Blogs**		○	○	○	○
1.5	**Online Chat Applications** *(Examples: IRC, MSN Messenger, Yahoo! Messenger etc.)*		○	○	○	○
1.6	**Microsoft Office Applications**					
	1.6.1	Microsoft Word	○	○	○	○
	1.6.1	Microsoft Excel	○	○	○	○
	1.6.1	Microsoft Powerpoint	○	○	○	○
1.7	**E-Learning Applications** (*Examples: Microsoft SharePoint, Microsoft Class Server, LiteSpeed E-learning Platform, etc.*)		○	○	○	○

SECTION 2:

This section contains questions about your previous experiences about online and web supported learning environments. Use your mouse pointer for selecting your answer and please select only one answer for each question.

#	Question	Yes	No
2.1	Have you ever taken any web-supported or online course until now?	○	○
2.2	Have you ever taken any distance learning application in your courses before this semester?	○	○
2.3	Have you ever used the internet for your course studies until now? (Examples: Researches, homeworks, projects, etc.)	○	○
2.4	Have you have ever used any e-learning/sharing portal application in your courses until now? *(Examples: Applications that provide sharing documents, forums, chats, on-line exams ect..)*	○	○

SECTION 3:

Please indicate how much you agree or disagree with following statements listed below.
Use your mouse to select your choice and please select only one for each statement.

Using "E-Learning/Sharing Portal Applications";		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.1	... enabled us to accomplish educational activities more quickly.	○	○	○	○	○
3.2	... improved my performance in our educational activities.	○	○	○	○	○
3.3	... increased my participation to our educational activities.	○	○	○	○	○
3.4	... increased my interest on our educational activities.	○	○	○	○	○
3.5	... increased my productivity in our educational activities.	○	○	○	○	○
3.6	... made our educational activities enjoyable.	○	○	○	○	○
3.7	... decreased my willingness to work on our educational activities.	○	○	○	○	○
3.8	... enhanced my effectiveness in our educational activities.	○	○	○	○	○
3.9	... made it easier to study on our educational activities.	○	○	○	○	○
3.10	... was beneficial to access the educational activities.	○	○	○	○	○
3.11	... increased my motivation towards our educational activities.	○	○	○	○	○

Using "E-Learning/Sharing Portal Applications";		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.12	... increased my study time on our educational activities.	○	○	○	○	○
3.13	... improved our opportunity to work on our educational activities.	○	○	○	○	○
3.14	... has decreased my performance in our educational activities.	○	○	○	○	○
3.15	... decreased my work speed in our educational activities.	○	○	○	○	○
3.16	... increased my satisfaction about our educational activities.	○	○	○	○	○
3.17	... was useful in our educational activities.	○	○	○	○	○
3.18	... increased willingness to work on our educational activities.	○	○	○	○	○
3.19	... made our educational activities boring.	○	○	○	○	○

SECTION 4:

Please indicate how much you agree or disagree with each of the following statements listed below.
Use your mouse pointer for selecting your choice and please select only one for each statement.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4.1	Learning to use "E-Learning/Sharing Portal" was easy for me.	○	○	○	○	○
4.2	It was easy to become skillful at using "E-Learning/Sharing Portal".	○	○	○	○	○
4.3	User interfaces and messages of "E-Learning/Sharing Portal" were clear and understandable.	○	○	○	○	○
4.4	User interfaces and messages of "E-Learning/Sharing Portal" were user-friendly.	○	○	○	○	○
4.5	It was difficult to learn to use "E-Learning/Sharing Portal".	○	○	○	○	○
4.6	User interfaces and messages of "E-Learning/Sharing Portal" uses terms familiar to me.	○	○	○	○	○
4.7	It was hard to understand the user interface of "E-Learning/Sharing Portal".	○	○	○	○	○
4.8	I found "E-Learning/Sharing Portal" easy to use.	○	○	○	○	○

SECTION 5:

#	Question
5.1	Approximately, how frequently did you use "E-Learning/Sharing Portal" in your educational activities? Please select one of the choices which best describes your usage. ○ never ○ once in a week ○ three times in a week ○ everyday ○ more than one in a day Please indicate your reason: [ ]
5.2	Approximately, how many times did you use "E-Learning/Sharing Portal" in your out-of-class educational activities? Please enter your answer in the following box. [ ] times Please indicate your reason: [ ]
5.3	Approximately, for how many class hours did you use "E-Learning/Sharing Portal" in your in-class educational activities? Please enter your answer in the following box. [ ] Class hours Please indicate your reason: [ ]

Pairs Questions

Positive Pair	Negative Pair
S3.02	S3.14
S3.01	S3.15
S3.18	S3.07
S3.06	S3.19
S4.01	S4.05
S4.03	S4.07

Subscale Items

Descriptive Subscales

1 Self-Reported Computer Competency

S1.01 Web browsers
S1.02 Search Engines
S1.03 E-mail
S1.04 Online Forums & Blogs
S1.05 Online Chat Applications
S1.06 Microsoft Office Applications
S1.07 E-Learning Applications

2 Self-Reported E-learning Experience

S1.01 Have you ever taken any web-supported or online course until now?

S1.02 Have you ever taken any distance learning application in your courses before this semester?

S1.03 Have you ever used the internet for your course studies until now?

S1.04 Have you have ever used any e-learning/sharing portal application in your courses until now?

Perception Subscales

1 Effects of the system on students' perceived motivation towards their educational activities;

Using "E-Learning/Sharing Portal Applications";

S3.03 … increased my participation to our educational activities
S3.04 … increased my interest on educational activities
S3.06 … made our educational activities enjoyable
S3.07 … decreased my willingness to work on our educational activities
S3.11 … increased my motivation towards our educational activities
S3.12 … increased my study time on our educational activities
S3.16 … increased my satisfaction about our educational activities
S3.18 … increased my willingness to work on our educational activities
S3.19 … made our educational activities boring

2 Perceived Usefulness

Using "E-Learning/Sharing Portal Applications";

S3.01 … enabled me to accomplish our educational activities more quickly
S3.02 … improved my performance in our educational activities
S3.05 … increased my productivity in our educational activities
S3.08 … enhanced my effectiveness in our educational activities
S3.09 … made it easier to develop our educational activities
S3.10 … was beneficial to access to the educational activities
S3.13 … improved our opportunity to work on our educational activities
S3.14 … has decreased my performance in our educational activities
S3.15 … decreased my speed in our educational activities
S3.17 … was useful in our educational activities.

3 Perceived Ease of Use

S4.01 Learning to use "E-Learning/Sharing Portal" was easy for me
S4.02 It was easy to become skillful at using "E-Learning/Sharing Portal"
S4.03 User interfaces and messages of "E-Learning/Sharing Portal" were clear and understandable
S4.04 User interfaces and messages of "E-Learning/Sharing Portal" were user friendly
S4.05 I was difficult to learn to use "E-Learning/Sharing Portal"
S4.06 User interfaces and messages of "E-Learning/Sharing Portal" were using terms familiar to me
S4.07 It was hard to understand the user interface of "E-Learning/Sharing Portal"
S4.08 I found "E-Learning/Sharing Portal" easy to use

4 Self-reported Usage

S5.01 Approximately, how frequently did you use “E-Learning/Sharing Portal” in your educational activities?
S5.02 Approximately, how many times did you use “E-Learning/Sharing Portal” in your educational activities?
S5.03 Approximately, for how much time did you use “E-Learning/Sharing Portal” in your educational activities?

Reverse Coded Items

Using “E-Learning/Sharing Portal”;

S3.07 … decreased my willingness to work on our educational activities
S3.19 … made our educational activities boring
S3.14 … has decreased my performance in our educational activities
S3.15 … decreased my speed in our educational activities

S4.05 I was difficult to learn to use “E-Learning/Sharing Portal”
S4.07 It was hard to understand the user interface of “E-Learning/Sharing Portal”

Data Coding Guide

Factor Name	Section	Description / Code
Gender	Introduction Page	2-points nominal 1 = Male 2 = Female
Self-Reported Computer Competency	Section 1	Competency indicator items, 5-points ordinal, 0-4 (0=Not Applicable, 1=Beginner, 2=Novice, 3=Intermediate,4=Expert)
Self-Reported E-learning Experience	Section 2	Experience indicator items, 2-points nominal, 1 = Yes 2 = No
Perceived Usefulness, Perceived Effects on motivation towards the educational activities	Section 3	Perception indicator items, Likert-Type Scale, 1-5 (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)
Perceived Ease of Use	Section 4	Perception indicator items, Likert-Type Scale, 1-5 (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)

APPENDIX B

THE TEACHER'S PERCEPTION ABOUT E-LEARNING / SHARING PORTAL INTERVIEW GUIDE (TPELSP - IG)

The aim of this interview is to explore the perceptions of the Teachers of METU Foundation Schools about the use of E-Learning / Sharing Portal that is used in educational activities by the students.

The interview is prepared to be used for a master thesis study performed in Computer Education and Instructional Technologies Department in Middle East Technical University.

If is it all right for you, I would like to record our conversation to make sure that will not miss any point of the interview.

Your responses will be kept confidential and will be used only for this study.

Contact:
Azad IŞIK
aisik@odtugvo.k12.tr

Academic Supervisor:
Prof. Dr. M. Yaşar ÖZDEN

Interview Date : ___ / ___ / _____

Interviewer : _____

Interviewee : _____

SECTION – 1

1. How long have you been working as a teacher in METU Foundation Schools?

2. How long have you been working with E-Learning/Sharing Portal Applications?

3. Have you ever used any E-Learning/Sharing Portal before?

   If the answer is yes, continue with following questions;

   3.1. What was your purpose when using E-Learning/Sharing Portal?

   3.2. What kind of application did you use in your experience?

   3.3. Did you find it beneficial?

   If the answer is yes, continue with following questions;

   3.3.1. What were the beneficial features?

   If the answer is no, continue with following questions;

   3.3.2. What can be the possible improvements?

SECTION - 2

4. How did the use of this technology effect the motivation of the students towards their concentrating on educational activities? Positively, negatively or not effected?

If the answer is "not effected", continue with the following questions;

4.1 Why do you think that the use of the system not effected student's motivation? What can be the possible factors in your opinion?

Continue with question 4.2.1 to drill down to get detailed information and to ensure negative answer.

If the answer is "negatively", continue with the following questions;

4.1 Why do you think that the use of the system effected student's motivation negatively? What can be the possible factors in your opinion?

Continue with question 4.2.1 to drill down to get detailed information and to ensure negative answer.

If the answer is "positively", continue with the following questions;

4.2 What are the indicators of the increase of the students' motivation by the use of this technology?

If the following indicators are not covered, ask following questions.

Have you observed that the use of the technology has increased?
4.2.1 … student's participation to the educational activities?
4.2.2 … student's interest to the educational activities?
4.2.3 … student's enjoyment in the educational activities?
4.2.4 … student's study time in the educational activities?
4.2.5 … student's satisfaction about the educational activities?
4.2.6 … student's willingness to work on the educational activities?

SECTION - 3

5. What do you think about the usefulness of this technology in student's educational activities? Was it useful or not?

If the answer is negative, continue with the following questions;

5.1 Why do you think that the use of the system was not useful?

5.1.1 What were the insufficient features?
5.1.2 What can be the possible improvements?

Continue with question 5.2.1 to drill down to get detailed information and ensure negative answer.

If the answer is positive, continue with the following questions;

5.2 In what ways, was this technology useful in student's educational activities?

If the following indicators are not covered, ask the following questions.

Have you observed that the use of the technology has;
5.2.1 … increased students' work speed in the educational activities?

5.2.2 … increased students' performance in the educational activities?
5.2.3 … increased students' productivity in the educational activities?
5.2.4 … increased students' contribution to the educational activities?
5.2.5 … made the development of the educational activities easy?
5.2.6 … made it easy for students to access to the sources of the educational activities?
5.2.7 … improved students' opportunity to work on the educational activities?

5.3 Was the use of this technology useful overall?

SECTION - 4

Please answer the following questions based on your observations.

6. Was learning to use *"E-Learning/Sharing Portal"* easy for your students?

7. Was becoming skillful at using *"E-Learning/Sharing Portal"* easy for your students?

8. Were user interfaces and messages of *"E-Learning/Sharing Portal"* clear for your students?

9. Were user interfaces and messages of *"E-Learning/Sharing Portal"* user friendly for your students?

10. Does user interfaces and messages of *"E-Learning/Sharing Portal"* uses terms familiar for your students?

11. Was it hard to understand the user interfaces of *"E-Learning/Sharing Portal"* for your students?

12. In overall, was the use of *"E-Learning/Sharing Portal"* easy for your students?

SECTION - 5

13. What can be your suggestions about the future and other possible uses of this technology in the educational activities?

14. What can be other advantages of the use of this technology?

15. What can be other disadvantages of the use of this technology?

My questions end here. Thank you very much for your contribution.
Do you have any other comments on the issue or the questions?

APPENDIX C

SYSTEM PROPERTIES OF MICROSOFT SHAREPOINT

Access to the System

In order to use the system, firstly a general server must be configured. During configuration, all details must be carried out carefully by administrator such as configuring systems' internet addressing; stating rights of the users, and etc. After dealing with the configuration issues, users of the system must be defined. All users must be given a password and identification to their accessing the system distantly. After that, the users can be guided to access the system by the help of the portal addresses (http://egitim.odtugvo.k12.tr) is used as the system web address in this study). General user interface of the system is demonstrated In Figure 1.

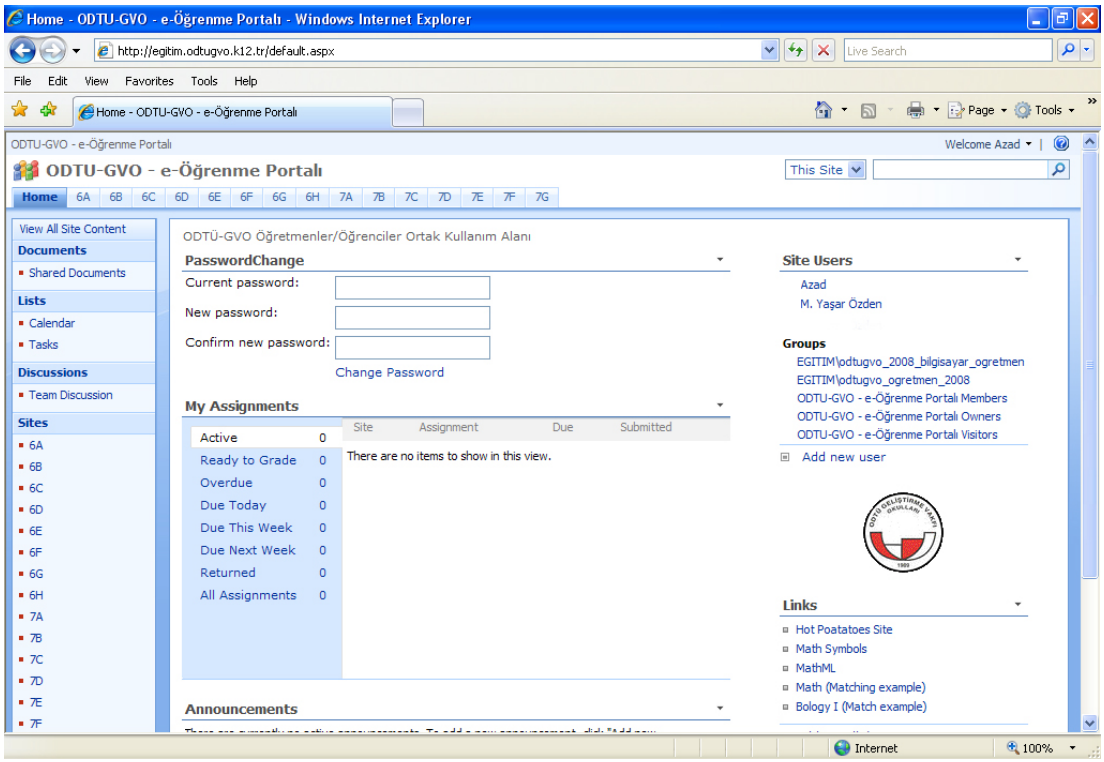

Figure 1 – General User Interface

Password Change

Password convertibility function can be added to the system. In this study, the users were not able to change their passwords initially. We had trouble during the log-in process with the students; some of them lost their passwords and could not enter to the system properly. Afterwards, as demonstrated in Figure 2, we added password convertibility function to the system and users could change their passwords whenever they want. The log-in problems were solved in this way.

Figure 2 - Password Change

Manage user account information

Users of Microsoft SharePoint are able to change user information. In order to do that My Settings Part demonstrated in Figure 3 must be opened. Users can change their names, place their e-mail address, write personal information in *about me* part, and add picture, and remark department, job title or their addresses.

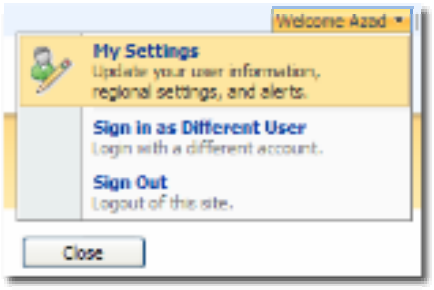

Figure 3 - Personal Information Change

Document Sharing

One of the most important properties of Microsoft SharePoint is document sharing feature. Every user has got an account for uploading any kind of documents to there. Users can access to their documents wherever they want. Beside from accessing the documents, they can also share the document among other users. The system uses a

folder mechanism for users' saving their documents. As seen in the Figure 4, users create folders and subfolders for archiving their documents.

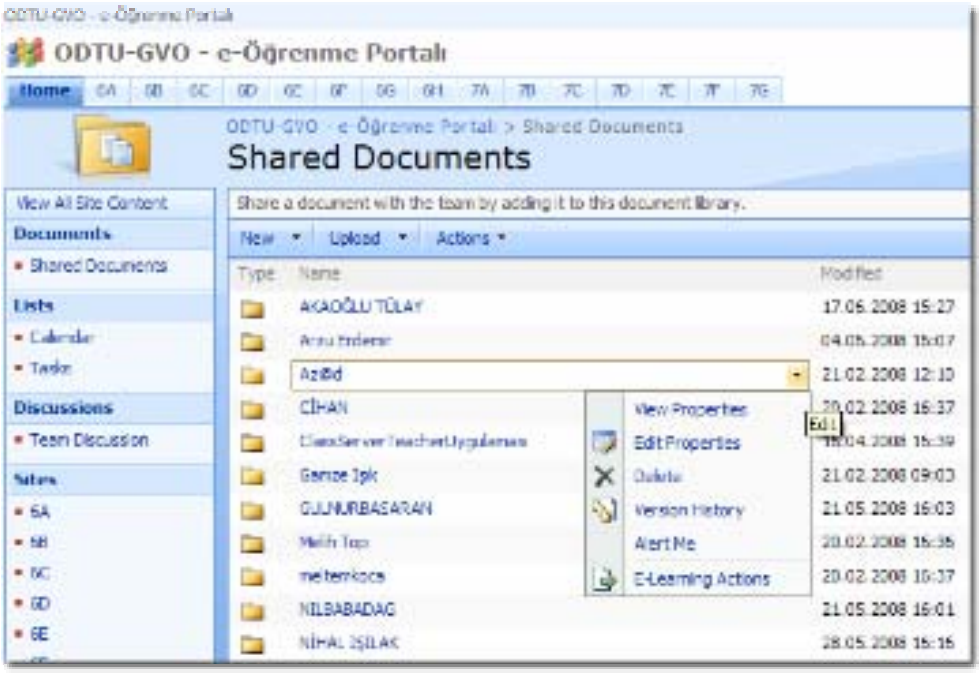

Figure 4 - Open shared documents, upload documents to the system, create a new folder in the accounts

Setting Communication

Another helpful feature of Microsoft SharePoint is its communication tools. The system allows the users get into touch with each other. Users communicate with each other by the help of Class Discussion Parts as seen in the Figure 5. Users are able to add a new subject to discuss or add a new topic of a discussion. Additionally, users can answer an existent topic as a reply. All users have the right for viewing the discussions, however not for editing or deleting them. Only system administrators can edit or delete the discussions by using Edit or Delete Item as seen in the Figure 6.

Teachers should be careful about students misusing this property. They should check discussions frequently.

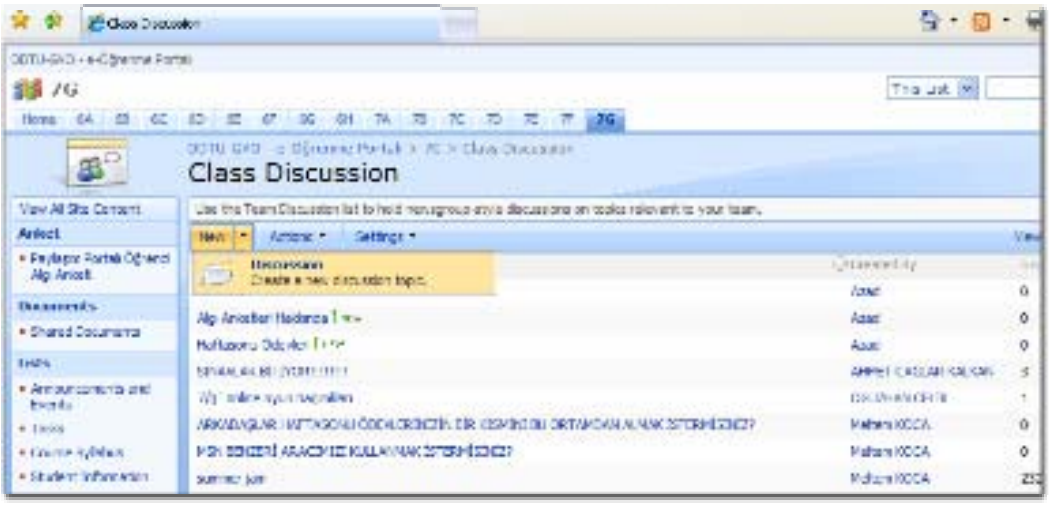

Figure 5 - Discussion Board

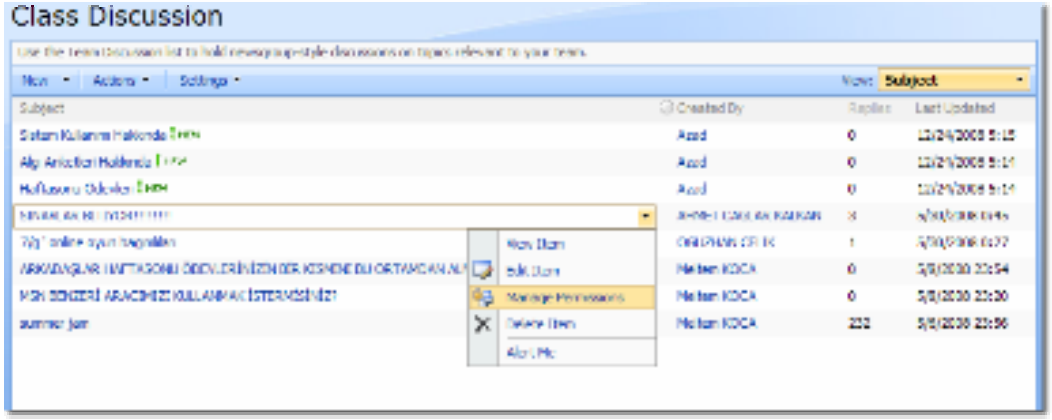

Figure 6 – View - Edit - Delete Discussions, Manage Permissions

Access User Information

Users can access to others' information by using People and Groups Part demonstrated in Figure 7. Teachers can reach students' information by using this feature.

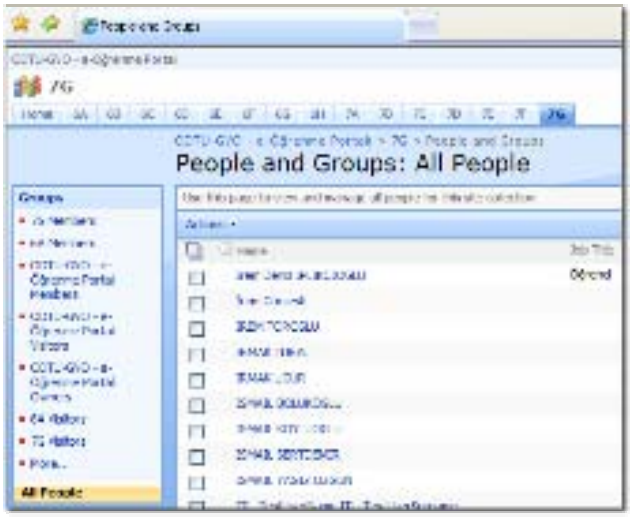

Figure 7 - Reach the other system users or student information

Announcements

Microsoft SharePoint allows teachers give announcement to students easily by using Announcement and Events Part. As seen in Figure 8, teachers assign the date and enter the announcement, and then send it to students. For example, in this study Science Teachers used this function in announcing Project Due Dates to the students.

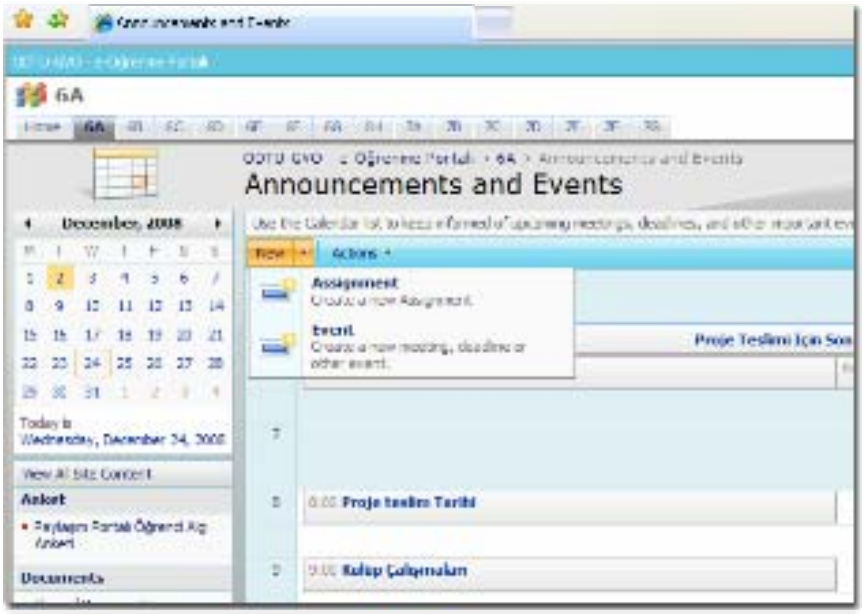

Figure 8 - Give Announcements

Course syllabus

Microsoft SharePoint allows teachers add, view, edit or delete course syllabuses by using the Course Syllabus Part as seen in the Figure 9. As a Computer Teacher and the system facilitator, the researcher used the property in his Photoshop Courses.

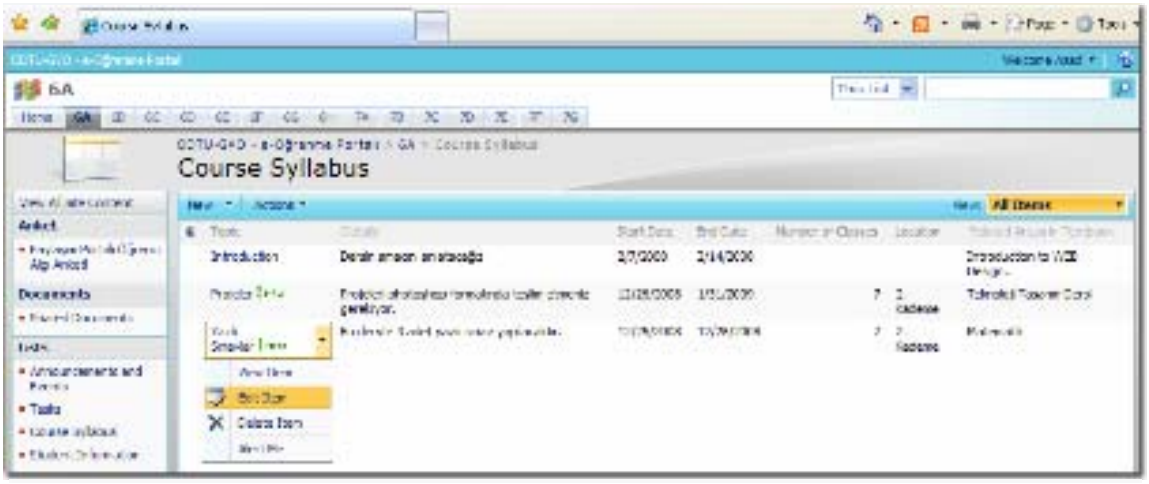

Figure 9 - Manage Course Syllabus

Homework and Assignment

The last and the most important property of Microsoft SharePoint is that, the system makes it easy for teachers to give and collect assignment or homework, grade assignments and give feedbacks to students. Firstly, teachers prepare an activity by using proper software such as Hot Potatoes or Microsoft Class Server. The activity can be composed of interactive web-based exercises such as interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises or Microsoft office Applications. Secondly, teachers assign the activity to students by using Homework Part of Microsoft SharePoint as seen in Figure 10.

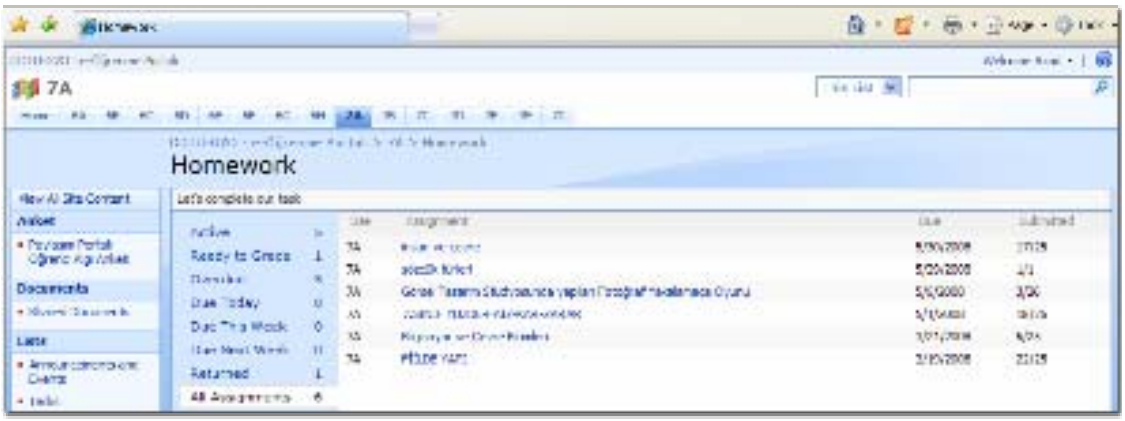

Figure 10 - Assign Homework

Lastly, teachers grade students and give feedbacks to them immediately just after students finish their homework. The system is automatically grading predefined assignments like multiple-choice questions just after completing the assignment. Teachers are able to change the grades, reactivate the assignment for students' re-

doing the activity or write comments about students' assignments as demonstrated in Figure 11.

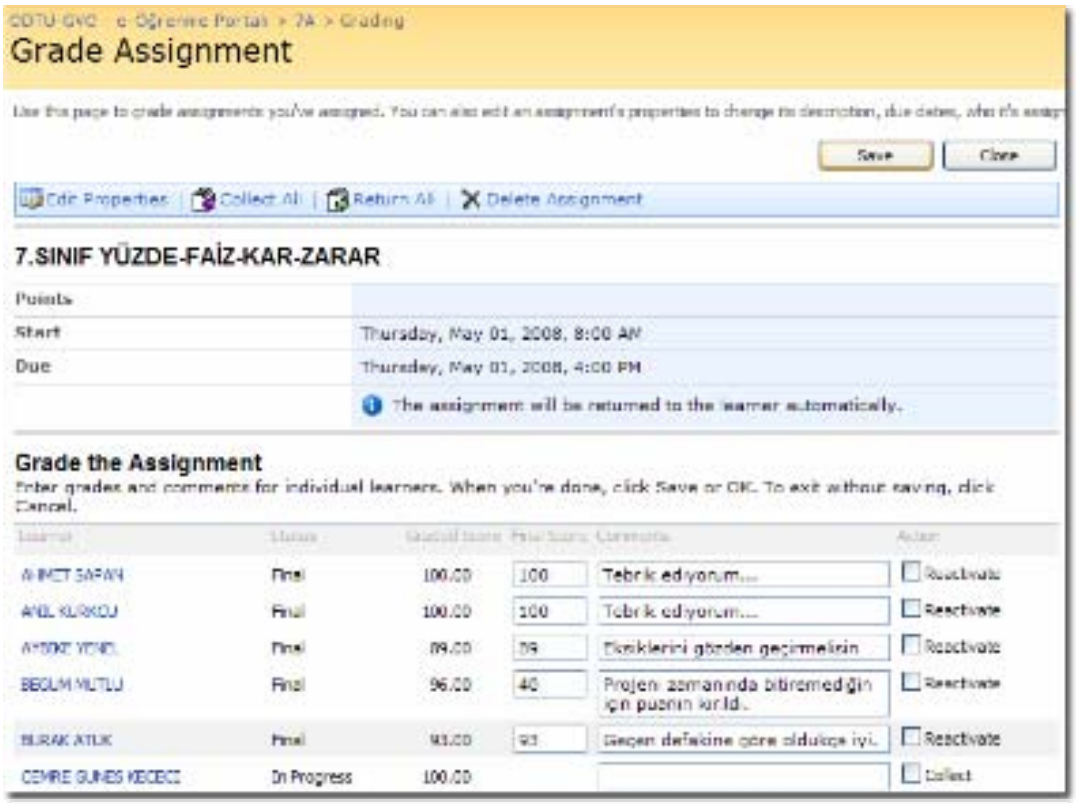

Figure 11 - Collect and grade assignments and give feedbacks to students

Survey

Administrators of the system can make survey applications by using Survey Part of Microsoft SharePoint Portal as seen in Figure 12. The system is able to give responses in Microsoft Excel format. Student Perception Questionnaire of this study is applied by the help of this facility. The survey was prepared in Microsoft Word format, and transferred to Microsoft SharePoint one by one. Students replied to the survey and the responses were collected by the help of survey mechanism of the system. The data entry was a little problematic, because the mechanism could not

work efficient enough to transfer all details. The survey construction steps will be added as improvement in Suggestions Related with the Improvement of the E-Learning / Sharing Portal part of conclusion of this study.

Figure 12 – Students Perception Questionnaire

APPENDIX D

DESCRIPTIVE STATISTICS OF QUESTIONS FOR STUDENTS' PERCEPTIONS QUESTIONNAIRE

Table D.1 Descriptive Statistics of Questions for Students' Perceptions Questionnaire

Question	SD		D		N		A		SA		Mean	Std. Dev.
	N	%	N	%	N	%	N	%	N	%		
S3.1	9	4.5	12	6.0	48	24.0	81	40.5	50	25.0	3.755	1.040
S3.2	16	8.0	16	8.0	46	23.0	70	35.0	52	26.0	3.630	1.183
S3.3	7	3.5	13	6.5	41	20.5	82	41.0	57	28.5	3.845	1.023
S3.4	6	3.0	20	10.0	46	23.0	57	28.5	71	35.5	3.835	1.111
S3.5	8	4.0	15	7.5	56	28.0	66	33.0	55	27.5	3.725	1.070
S3.6	8	4.0	5	2.5	34	17.0	49	24.5	104	52.0	4.180	1.060
S3.7	77	38.5	46	23.0	41	20.5	15	7.5	21	10.5	2.285	1.328
S3.8	79	39.5	42	21.0	43	21.5	18	9.0	18	9.0	2.270	1.310
S3.9	13	6.5	16	8.0	27	13.5	65	32.5	79	39.5	3.905	1.197
S3.10	13	6.5	7	3.5	38	19.0	76	38.0	66	33.0	3.875	1.112
S3.11	15	7.5	17	8.5	55	27.5	53	26.5	60	30.0	3.630	1.209
S3.12	25	12.5	29	14.5	59	29.5	50	25.0	37	18.5	3.225	1.262
S3.13	18	9.0	18	9.0	44	22.0	66	33.0	54	27.0	3.600	1.228
S3.14	84	42.0	63	31.5	32	16.0	13	6.5	8	4.0	1.990	1.098
S3.15	19	9.5	23	11.5	35	17.5	53	26.5	70	35.0	2.660	1.316
S3.16	11	5.5	14	7.0	47	23.5	70	35.0	58	29.0	3.750	1.115
S3.17	11	5.5	10	5.0	44	22.0	56	28.0	79	39.5	3.910	1.144
S3.18	11	5.5	18	9.0	48	24.0	61	30.5	62	31.0	3.725	1.156
S3.19	83	41.5	53	26.5	32	16.0	18	9.0	14	7.0	2.135	1.247
S4.1	7	3.5	10	5.0	34	17.0	45	22.5	104	52.0	4.145	1.091
S4.2	13	6.5	5	2.5	42	21.0	49	24.5	91	45.5	4.000	1.165
S4.3	17	8.5	9	4.5	57	28.5	59	29.5	58	29.0	3.660	1.188
S4.4	9	4.5	8	4.0	49	24.5	65	32.5	69	34.5	3.885	1.071
S4.5	10	5.0	19	9.5	26	13.0	49	24.5	96	48.0	3.010	1.203
S4.6	7	3.5	10	5.0	61	30.5	72	36.0	50	25.0	3.740	1.004
S4.7	72	36.0	51	25.5	43	21.5	23	11.5	11	5.5	2.250	1.214
S4.8	13	6.5	11	5.5	25	12.5	64	32.0	87	43.5	4.005	1.171

APPENDIX E

THE SUMMARY OF RESULTS OF THE TEACHER'S PERCEPTION ABOUT E-LEARNING / SHARING PORTAL INTERVIEW

Table E.1 The Teachers' perceptions about the use of E-Learning / Sharing Portal

1. Effects of the use of E-Learning/Sharing Portal Technology on Students' Perceived Motivation towards Educational Activities	
a. Interest / Enjoyment	• Appealing exercises • Interesting applications • Attractive practice • Enjoyable activities
b. Perceived Competence	• Pleasant with doing the activities • Provoked students' interest • Satisfied with doing the activities • Easy to give feedbacks to students • The more you use, the more feedback you get • Increase in demand of educational activities • Interaction of class discussion specialties • Request for work more by students
c. Willingness	• Materials increased students' willingness • Increase in demand of puzzle-like materials via the portal

Table E.1 (continued)

d. Participation	• Effective in increasing student's perceived motivation • Increase in participation to the educational activities by curiosity to the new applications • Overusing of the portal may cause delay in catching up the curriculum • Increase in participation of unwilling students too • Increase in the desire to know what is happening • Too much usage of the system can cause students get bored during the educational activities • Increase in students' study time by using the e-learning activities • Increase in study time owing to access to computers rather than doing homework on written paper based format
2. Perceived Usefulness	
a. Work more quickly	• Increase in work speed • Students worked in the activities more enthusiastically • Students worked fast since they used computers in order to reach the interfaces they need to use • Evaluation time has been shortened • Fast and practical usage • Easy to collect student projects • Increase in the speed of work owing to systems' recording the works smoothly
b. Job performance	• Increase in student performance owing to immediate feedbacks • Applications help to increase the diversity in education • Helpful for students to do their work by using this technology

Table E.1 (continued)

c. Increase productivity	• Increase in creativity and productivity • Students gained self confidence and they did not hesitate to use their creative ideas during their work
d. Make job easier	• Helpful in students' access to the educational activities • Easy to load the answers of homework and let the students see their mistakes and the correct answers • Easily reach other resources on internet • Everything is on the monitor, no loose time in dealing with papers
e. Overall Usefulness	• Advantages of visual environment • Easy to do research • Easy to get in touch with teachers on the same learning portal • Valuable feedbacks given in a very short amount of time • Students could improve their work at home • Useful for teachers in following the course of a project easier • Practical use of the system • Not useful for lazy students • Great opportunity to deal with more questions than usual • Limited access to internet because of the parent restrictions • Useful for the students who are not present at that class hour • Opportunity to review the material at home • Increase in student-student and student-teacher interactions • Useful in reaching every student online at the same time

Table E.1 (continued)

3. Perceived Ease of Use	
a. Easy to Learn	• Easy to process • Easy to apply • Better comprehension of the students • Better to learn by using the system
b. Easy to become skillful	• No difficulty in becoming competent about saving projects • No difficulty in sending finished works to teachers • No difficulty in reaching the feedbacks coming from teachers • No resistance to the new system • Easy to get adapted • No complicated language • Easily became an expert
c. Clear & Understandable Interfaces	• Understandable for students • Easy to use • Never came up with questions about the interface • Relevant terms for the perception of students • Easy to perform a task • Easy to get over the problems • Need to more visuality
d. Overall Easy to Use	• Students found it very easy • Easy to use since the students used the system efficiently • Easy to get adapted

Table E.1 (continued)

4. **a.** Advantages	• Easy to share documents • Easy to access materials • Observe students better • Give immediate feedback • Easy to review the course materials • Increase interactions • Easy to collect student project • Guide creative ideas • Uncomplicated access to school resources • Easy to assess students • Easy to send course materials to system • Draw students' attention more • Trouble-free activity record and broadcasting • Easy to share audio-visual materials • Unproblematic announcing events • No need to deal with papers • Time and place independent working environment • Advantages of server usage • Protected virtual working area against data loss
b. Disadvantages	• Overusing decreases concentration • Require computer and internet connection • Create antisocial individuals • Loss of time when high number of online users occupies the system at the same time • Risk of collapsing of server • Risk of accessing others' materials without permission
5. Suggestions	• Educational material development tools can be integrated • Instant messaging software can be included • All type of files can be accepted without examining file extension, • Survey construction steps can be clarified, • A back up unit can be integrated. • Teleconferencing technologies can be included • Live broadcast can be implemented