Satisfaction Level of Teacher Candidates in Online Learning: Case Study of Eastern Mediterranean University

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ABSTRACT

In recent years, online learning environment has become popular since it provides flexibility in terms of time and place. The aim of the current study is to assess the level of satisfaction of teacher candidates. This study is formed as a "case study" by employing both qualitative and quantitative data collection methods to collect data from the respondents. Teacher candidates who are studying 2013-2014 Summer Semester Pedagogical formation certificate programs were chosen as a sample for the current study and sample size was determined as 291 respondents at EMU. The quantitative data were collected by appointing the "E-Learning Student Satisfaction Questionnaire" which proposed by Kantoglu et al., (2013). Furthermore, qualitative data was gathered by employing a semi-structured interview form.

Current study has revealed that level of of satisfaction of teacher candidates were high for online learning environment. Moreover, results indicated that level of satisfaction of female teacher candidates were higher than the level of satisfaction of male teacher candidates in terms of quality of support services. Results also expressed that students in 29-36 age interval were having higher satisfaction level on online learning when compared with teacher candidates in 23-28 age interval in terms of the material usefulness and actuality of materials.

Keywords: Student Satisfaction, Online Learning Environment, Online Learning Environment Student Satisfaction

ÖZ

Son yıllarda çevrimiçi öğrenme ortamları, özellikle yer ve zaman konusunda sağladığı esneklik nedeni ile popülaritesini artırmıştır. Bu çalışmanın amacı, öğretmen adaylarının çevrimiçi öğrenme ortamları memnuniyet düzeylerini değerlendirmektir. Çalışma, karma yöntem kullanılarak yapılan bir durum çalışmasıdır. Çalışma grubu, Doğu Akdeniz Üniversitesi, 2013-2014 Yaz Dönemi pedagojik formasyon sertifika programına kayıtlı 291 öğretmen adaylarının katılımı ile gerçekleşmiştir. Çalışmadaki nicel veriler, Kantoğlu ve diğerleri (2013) tarafından geliştirilen "E-Öğrenme Öğrenci Memnuniyet Anketi" ile toplanmıştır. Nitel veriler, yarı yapılandırılmış görüşme formu kullanılarak elde edilmiştir.

Çalışma sonucunda, öğretmen adaylarının çevrimiçi öğrenme ortamları memnuniyet seviyelerinin yüksek olduğu tespit edilmiştir. Ayrıca bayan öğretmen adaylarının memnuniyet seviyesi destek hizmetleri kalitesine göre erkek öğretmen adaylarının memnuniyet seviyelerinden daha yüksek olduğu tespit edilmiştir. 29-36 yaş grubu öğretmen adaylarının memnuniyet seviyesi material kullanışlılığı ve güncelliğine göre 23-28 yaş grubu öğretmen adaylarından memnuniyet seviyesinden daha yüksek olduğu tespit edilmiştir. Öğretim faaliyetleri için 4-5 saat internet kullanıcılarının memnuniyet seviyesi 0-1 saat ve 2-3 saat internet kullanıcılarına göre daha yüksek olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Öğrenci Memnuniyeti, Çevrimiçi Öğrenme Ortamı, Çevrimiçi Öğrenme Ortamı Öğrenci Memnuniyeti

To my family

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I love so much dear my sister Ayşegül Sakız.

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LIST OF ABBREVIATIONS

KPSS	Kamu Personeli Seçme Sınavı (State Personnel Selection Examination)
SPSS	Statistical Package for the Social Science
EMU	Eastern Mediterranean University
TRNC	Turkish Republic of Northern Cyprus

Chapter 1

INTRODUCTION

The minority of the information needed to maintain life normally and people who need the information be delivered used to make learning-teaching activities to be performed easily. But since information and population increased, learning-teaching activities started to get complicated, which forced people to seek new quests. As a result of seeking, developments in education have occurred and continued to modern days. Distance education has been developed since formal education couldn't respond the needs. Distance education is necessary in order to reach the unreached masses, provide the equality of opportunity and possibility, take away the distance to carry out the process, decrease costs and gain benefits from different specialists (Yalın, 2012).

Nowadays, distance education is suggested as a good approach to teach more people, more topics, more effectively, with more efficient learning strategies, with the help of subject matter experts, for a lesser cost, with equal opportunities and without any time and space constraints. Distance education is a system that let teachers and students in different physical locations reach a wide audience in order to ensure equality of opportunity in education by employing different communication technologies (Yalın, 2012).

United States Distance Learning Association (USDLA 2004) has defined distance education as a system in which education is transmitted to remote students through technological tools such as satellite, video, audio, graphics, multimedia, technologies and computer.

With a broader sense, it is a teaching methodology in which teachers and students are independent in terms of time and space and the interaction between them is through technological means. Distance education is a teaching method, interaction and communication between students and planners applied using various occasions and specially prepared teaching units in the condition that interclass events can't be carried out because of the limits of traditional learning-teaching methods (Kaya, 2002). Smaldino et al., (2005) mentioned that distance education consisting of the following characteristics;

- Physical separation of learners from the instruction
- Arranged instructional program
- Telecommunications media
- Two-way communication

Distance learning could be described as a corporate training activity that teachers, students, and teaching materials are brought together in different venues, by means of communication technologies (Gülbahar, 2009). Synchronous distance learning, the instructor and students meet in different places at the same time for the course. In asynchronous distance learning, the instructor and students meet in different places at the different time (Midkiff & DaSilva, 2000). Synchronous distance learning occurs pre-scheduled times is performed using interactive technology that allows simultaneous communication training. Asynchronous distance learning occurs when

teachers and students are the name was given to education to interact in different locations and times. (Tavukcu et al., 2011)

According to Moore and Kearsley (2005), distance education consists of five main stages. The first generation was correspondence study, the second generation was radio and TV, the third generation was Open Universities fourth generation was broadcast or teleconferencing and the fifth generation is the Internet and World Wide Web (WWW).

Nowadays, the World Wide Web appears in different names. Khan (2001) indicated that distance education comprised Web-based Learning (WBL) (Chen & Paul, 2003; Cook, 2007; Lee & Kim, 2015), Internet-based Learning (IBL) (Lee et al., 2005; Limayem & Cheung, 2008), Advanced Distributing Learning (ADL) (Fletcher et al., 2007), and Online Learning (OE) (Benson, 2002; Carliner, 2004; Moore et al., 2011), or E-learning.

The online learning environment has been increased with the spread of internet and web-based applications. But there are obstacles in front of the online learning environment and various difficulties may occur. Kaya (2002) indicated the difficulties and obstacles are as follows;

- The minimum rate of computer usage and skills in order to receive online training,
- Students should motivate themselves and study regularly,
- Student-teacher interaction to get a longer period of time.

According to the report of Turkey Informatics Council (2002) could be argued that these three fundamental problems. These problems are;

- Lack of quality and standardization,
- Inability to institutionalize and Inability to brand,
- Inability to spread.

The cause of inability to spread derived from inadequate of internet infrastructure, lack of technical manpower, lack of R&D investment, lack of legislation, lack of incentives specific to the field in the same report (Turkey Informatics Council, 2002).

Tuncer and Taşpınar (2008) in their study have stated the problems faced regarding the distant learning as follows;

- Problems arising from differences in students,
- Institutional problems,
- Financial size,
- Qualifications of Teachers/ Instructors.

To create better understanding the terminologies of quality and satisfaction should be mentioned. By doing so, terminologies could be applied in forms of quality framework to the concept of distant learning.

Deming (1986) defined quality as a judgment about the company's products or services produced by consumers. According to Crosby the term of "quality" could be explained as a conformance to requirements (Crosby, 1979). When it comes to the concept of service quality, it was providing excellent service (Okumuş & Duygun,

2008). The quality of education refers to that the degree of the realization of the objectives, evaluation of success and determines deserving of this success (Engin, 2013). The concept of quality in Distance Education is the most important concept in the evaluation of distance education. Moore (2005) has examined to determine the quality framework at Distance Education. The quality framework consisted of effective learning, access, cost effectiveness, student satisfaction and faculty satisfaction (Moore, 2005). Okumuş and Duygun (2008) stated that quality of education is directly related with students' satisfaction.

Satisfaction is a key factor in the spread of online courses (Aşkar et al., 2005). Students' satisfaction is important to determine the success of an online training program and provide the students attendance (Rivera & Rice 2002; Levy, 2006). In this context, the success of student satisfaction and online learning effectiveness will increase with the solution of the problems observed in online environments (Çelen, Çelik & Seferoğlu, 2011; Kocadere, 2011).

Shee and Wang (2008) explained the satisfaction that the satisfaction is felt pleased and glad, when getting a goods or services. There are several variables in student satisfaction such as steadfastness (Allen & Seaman, 2008), retention (Debourgh, 1999; Koseke, & Koseke, 1991), class characteristic (Moore & Kearsley, 2005) and learner's achievement (Keller, 1983; Pike, 1993; Noel-Levitz, 2011). Because of the low level of satisfaction, the inadequacy of meeting the needs and expectations, the dropout rate at distance learning is higher than the traditional education, after entering the system (Rovai, 2001). Research which related with information systems indicated that user satisfaction is one of the most important mechanisms of success for a system (Özkanan & Erdoğan, 2013). Ramayah and Lee (2012) mentioned that

there are several factors which affect student satisfaction in distance education. These factors are could be expressed as system quality, information quality, service quality, user satisfaction and system usage.

The lexical meaning of the word satisfaction is expressed as being glad, happy and to rejoice (Cambridge Dictionaries Online, 2015). On condition that satisfaction is acknowledged as what's obtained meets and/or goes beyond the expectations (Robbins & Coulter, 2009; Robbins, Decenzo & Coulter, 2011), it can be figured out that it is very similar to the definition of quality. There are two reasons behind the difficulties suffered by service enterprises, hence, education enterprises about quality; which factors customers care about while considering a product are unknown and having no reliable and valid method to measure these factors (Parasuraman et al., 1985). Grönross (1984) stated that service quality is constituted by two components, technical and functional. Technical quality is what customer obtains from the service. Functional quality is about how the customer is being served (Grönross, 1990). Along with the existence of various appliances related to the measurement of service quality, hence, student satisfaction (Parasuraman et al., 1985; Cronin & Taylor, 1994), it is questionable that these appliances are completely able to measure the satisfaction gotten from education. Therefore, online student satisfaction model proposed by Kantoğlu et al. (2013) is appointed for the current study. This model has been employed by the researcher since it is the most detailed model in the academic literature and it has been renamed in order to prevent the situations which can expose concept confusion. Moreover, it has been the most preferred one in Turkey.

The main aim of employed model is to examine the technology and user aspects of student satisfaction at e-learning. It has ten variables on five dimensions. According

to the results of the exploratory factor analysis done on the factors that create the model, it has been identified that some of these factors have merged (Kantoğlu, et al. 2013). Due to this situation, the model consists of five dimensions but ten sub-dimensions. Online learning satisfaction ratings and the dimensions and factors are described in detail shown in Figure 1 below:

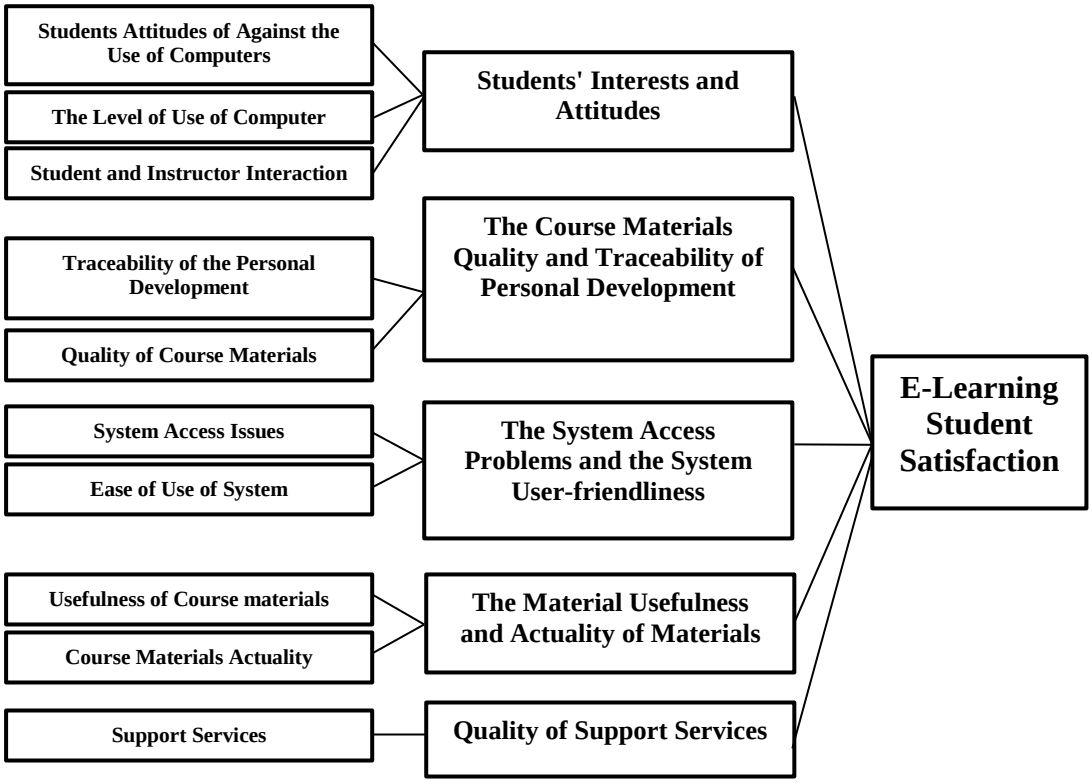

Figure 1: Online Learning Students Satisfaction Model (Kantoğlu et al., 2013)

As it exhibited by Figure 1, the model consisted of five sub-factors. A first dimension of the model is students' interest and attitudes have been examined three different categories. These could be stated as an attitude of students against the use of the computer, the level of the use of computer and student and lastly instructor interaction. The second dimension of the model could be indicated as a quality of course materials and traceability of personal development has been examined two different categories. These are traceability of the personal development and quality

of the course materials. The third dimension of the model could be mentioned as a system access problems and the system user-friendliness have been examined two different categories which could be expressed as topics related with system access and ease of use of the system. The fourth dimension of the model could be stressed as material usefulness and actuality of materials has been analyzed two different categories. These are the usefulness of the course materials and course materials actuality. Finally, the fifth dimensions of the model could be suggested as a quality of the support services has been examined a category. This could be named as support services.

The service sector invests the e-learning sector in recent years. It is important to take measures against certain risks to the success of the investment. There are studies in the literature for e-learning success. However, it is addressing the technological aspects of e-learning system. E-learning satisfaction should be evaluated which includes all dimensions with process-oriented approaches satisfaction (Kantoğlu et al., 2013).

As a result, such a study was significant because of the lack of resources in using multidimensional model studies.

Also, there are limited studies in this field. Also, a study in this scope has not been made in TRNC before. Therefore, the necessity of conducting such a study has been felt.

1.1 Purpose of the Study

The primary goal of the current study is to evaluate the level of teacher candidates' satisfaction by considering online learning students' satisfaction model.

1.2 Research Questions

1. What is the online learning satisfaction level of the teacher candidate according to e-learning students' satisfaction model?
   - 1.1. Is there any relationship between online learning satisfaction level of teacher candidates and gender?
   - 1.2. Is there any relationship between online learning satisfaction level of teacher candidates and age?
   - 1.3. What is the online learning satisfaction level of the teacher candidates according to teacher candidate' interests and attitudes, the course materials quality and traceability of personal development, the system access problems and the system user-friendliness, the material usefulness and actuality of materials, the quality of support services?
     - 1.3.1. Is there any relationship between online learning satisfaction of teacher candidates' interests, attitudes and gender?
     - 1.3.2. Is there any relationship between online learning satisfaction of teacher candidates' interests, attitudes and age?
     - 1.3.3. Is there any relationship between online learning satisfaction of the course materials quality, traceability of personal development and gender?
     - 1.3.4. Is there any relationship between online learning satisfaction of the course materials quality, traceability of personal development and age?
     - 1.3.5. Is there any relationship between online learning satisfaction of the system access problems, the system user-friendliness and gender?

1.3.6. Is there any relationship between online learning satisfaction of the system access problems, the system user-friendliness and age?

1.3.7. Is there any relationship between online learning satisfaction of the material usefulness, actuality of materials and gender?

1.3.8. Is there any relationship between online learning satisfaction of the material usefulness, actuality of materials and age?

1.3.9. Is there any relationship between online learning satisfaction of the quality of support services and gender?

1.3.10. Is there any relationship between online learning satisfaction of the quality of support services and age?

1.4. Is there any relationship between teacher candidates' satisfaction and allocated time on the internet for teaching activities?

1.3 The significance of the Study

The anticipation of seeing higher education in our country is increasing with each passing day. New alternative ways are being sought in the education. Online learning application is one of the most important of these alternatives. However, provision of online learning application in terms of quality and efficiency is important. The learner satisfaction is an important factor determining the success and quality of online learning programs (Kaba et al., 2012). It is also important because it is the first study in the field of teacher training with the online learning system in TRNC.

1.4 Limitations

The limitations of this study are as follows: could be stated as;

- Registered teacher candidates in the Pedagogical Formation Certificate Program at Faculty of Education
- 2013-2014 Summer Semester

1.5 Definitions of Key Terms

- **Students Satisfaction:** Student satisfaction is a short-term attitude, derived from the evaluation of the received education service (Elliot & Healy, 2001).
- **E-learning:** E-learning is the system that reaches the remote people as web-based with supporting wide area networks or local area network (Gökdaş & Kayri, 2005).
- **E-learning Students Satisfaction:** Satisfaction of students from e-learning is based on the students' attitudes towards information and technology (Arbaugh, 2002).

Chapter 2

LITERATURE REVIEW

2.1 Distance Education

There are numerous definitions in academic literature field related with Distance Education. Distance education; found that students and teachers in different venues that requires the use of various technologies, planned, institutional and administrative arrangements (Moore & Kearsley, 2005). Distance education could be described as a form of education system that teacher, student, and instructional materials are located in different environments and which can be combined with the communication tools (Gülbahar, 2009). Gunawardena and McIsaac (2004) defined the distance education as, structured learning in which the student and instructor are in different place or time is the fastest growing form of national and global education. Newby et al., (2000) has suggested distance learning as "an organized instructional program in which teacher and learners are physically separated" (p. 210).

2.2 Satisfaction

Cambridge Dictionaries Online (2015) defined the satisfaction as a pleasant feeling. Satisfaction perception is described in the literature in various ways. Robins and Coulter (2009) when a person's expectations and perceptions are overlapping with each other.A person is felt to have pleasure and satisfaction when getting goods or services (Shee & Wang, 2008).

2.2.1 Students' Satisfaction

Astin (1993) defined the learner satisfaction; student's education and living learning output is defined as the perception of experience and is depicted as an important. Elliott and Healy (2001) defined the learner satisfaction as the assessment of learning realized by comparing their experience with students' expectations.

2.3 Online Learning

Online learning is learning process which differs from the traditional learning environment by reaching out to many learning resources (Çalışkan, 2002). Researchers argue that the result of the impact on the learning environment equipped with information communication technology (Chang, 2003; Jegede, Fraser, & Fisher, 1998; Taylor & Maor, 2000). Walker and Fraser (2005) defined that as a combination of distance learning and web-based learning environment that including learning activities carried out in the online environment completely. Online learning environments, education, and training are realized with the use of information and communication technologies based on the internet (Pearson & Trinidad, 2005).

2.4 The Model

The model which employed for the current study has fifteen variables on five dimensions. According to the results of the exploratory factor analysis done on the factors that create the model, it has been identified that some of these factors have merged (Kantoğlu et al., 2013). Due to this situation, the model consists of five dimensions but ten sub-factors.

2.4.1 Students Interest and Attitudes

Interests and attitudes of students were examined in the framework of three sub-factors at the employed model which could be declared as a student-instructor interaction, level of computer usage of the student and the students' attitude towards

computer use (Rivera & Rice, 2002). Student-instructor interaction is the factor that investigates the satisfaction level of the students on the line of communication between students and instructors or with other students in an electronic learning environment. The students' level of computer use is the factor that investigates the level of satisfaction effected by the students' knowledge of necessary skills to use computerized programs in an online learning environment. Students' attitude towards computer use is the factor that observes the student's perspective on information technology in an online learning environment (Piccoli et al., 2001; Selim, 2007; Levy 2007; Lee, 2010).

2.4.2 Course Material Quality and Traceability of Personal Development

The model which assigned for the current study includes the quality of course materials and traceability of personal development which was examined by sub-two factors. These factors are; course material quality and traceability of personal development. The factor that investigates the effect of the quality of materials used in an online environment on the level of students' satisfaction is Course Material Quality. Traceability of personal development is the factor that observes how the students' level of satisfaction is affected by the evaluation future of personal development through various exams provided by the online learning environment (Volery & Lord, 2000; Lee & Lee, 2008; Piccoli et al., 2008).

2.4.3 The System Access Problems and the System User-friendliness

Problems in accessing the system and user-friendliness had been explored by the help of two sub-factors; which could be mentioned as a system user-friendliness and access to the system, respectively. System user-friendliness refers to degree of the usefulness (usability) of the system tools provided, aims to investigate the satisfactory level of the students in easily using the online learning system. Access to

the system could be identified as an important factor which provides insights to observe the students level of satisfaction in accessing the system fast and easy from various internet browsers (Arbaugh, 2000; Lee et al., 2009; Özkan & Köseler 2009).

2.4.4 The Material Usefulness and Actuality of Materials

There were two sub-factors which aimed to analyze usefulness of the material and actuality of materials. First one could be indicated as degree of material up-to-datedness and second one is could be pointed out as a degree of material usefulness. Material up-to-datedness is a key factor which explores the effect of the satisfactory level of the students in the up-to-datedness of the given materials. Material usefulness is the factor which investigates the effect of usefulness of materials on the level of satisfaction of the students (Volery & Lord, 2000; Holsapple & Lee-Post, 2006; Lee et al., 2009).

2.4.5 The Quality of the Support Services

The quality of support services was examined by one sub-factor; support services. A support service was the factor which explored the degree of student satisfaction after the university supported the students on a problem which may occur in the system (Rivera & Rice, 2002; Roach & Lemasters, 2006; Selim, 2007; Lee & Lee, 2008).

2.5 Student Satisfaction in Online Learning

In most of the conducted studies that examined the e-learning student satisfaction models, technological dimensions derived from the information systems success model (Islas et al, 2007), the user behavior (Chang, 2003), the content quality (Lee and Lee, 2005) and interaction (Arbaugh and Fichte, 2007). It is observed that the dimensions examined together.

2.6 Relatives Research

1406 people participated in The Suny Learning Network (SLN) Satisfaction Survey after Fredericksen, Pickett, Shea, Pelz and Swan (2000) online education so as to measure the satisfaction of learning and learners. According to the results obtained from the students who participated in the survey, it is concluded that interaction with the teacher is the most effective factor. Besides, this variable other effective factors were found as follows; online participating degree of the students, interaction with the virtual classmates, their claims to take online lessons, satisfaction status from supporting services and decreasing potential problems. Differences in variables such as gender and age were determined by the researcher. Learning satisfaction of women in age range of 35-46 is higher than the rest according to the results.

Lim (2001) prepared a questionnaire as research paradigm which was consisting of four parts to 235 participants from Florida Atlantic University, John Hopkins University, Florida International University, the University of Houston and Rio Salado College in order to measure age, gender, Computer Self-efficacy, academic self-concept, education level, number of years of computer usage, frequency of use of computers, computer training, Internet experience in the classroom, participation in web-based distance learning seminars, the effect of the variable satisfaction and students' intention to participate in web-based courses in the future. According to the results of the study, it was inferred that computer self-efficacy has an effect on satisfaction. Furthermore, students were found to be pleased with web based lessons and intended to take more lessons in future.

Arbaugh (2001) has conducted a study by concerning the importance of teacher's in-class behavior, in other words behaving sympathetically to students to learning and satisfaction of the students. He carried out a study in lessons conducted via Lotus Learning Space or Blackboard software with 14 different teachers and conducted a survey developed by Alavi (1994) with 390 students attending to 25 different webs based MBA program including 1999 Summer Term and 2001 Spring Term in University of Wisconsin-Oshkosh. Study revealed that both verbalized and non-verbalized sympathetic behavior towards decreasing the social distance between teachers and students and students' attitude to the device/software that provides lessons have the effect on student satisfaction.

Swan (2001) conducted a research on examining factors which have the effect on student satisfaction and learning perceived from non-synchronous learning. The survey has been presented online to 3800 individual registered to and completed 264 different online lessons via SUNY Learning Network (SLN) in 1999 Spring Term. According to the survey performed, 1406 students responded and it is determined that clarity of design, interaction with the teaching assistants and deliberation platform with the attendants are the factors that have effect on student satisfaction.

Thurmond et al., (2002) have examined the effects of environmental variables on student satisfaction while controlling the students characteristics in web-based lessons with 120 participants using Input-Environment-Outcome Model (I-E-O) developed by Astin (1993). According to the results obtained, online platform have an effect on student satisfaction. It was also found that the most important variable on this an effect is giving feedback on time.

Leong et al., (2002) have conducted a study to examine the aspects underlying student satisfaction and found out how to use those aspects to forecast the levels of student satisfaction. Relationships between some variables have also been examined. Attendants of this study consisted of the students who registered to 29 web-based courses in University of Hawaii, Hawaii Pacific University, Baker College, Michigan and Nova Southeastern University in 2000 Fall Semester. The survey was created on the basis of 8 different aspects and scale composed of 47 Likert Scale was used in order to collect the data. The survey has been delivered to 508 students registered to 29 web-based courses and the feedback was taken from 128 individuals. It is mentioned that interaction, teacher, workload/hardship and technology are the aspects underlying student satisfaction. Scholar have also made suggestions such as providing a feedback on time to increase satisfaction, and making teachers more available on the basis of the data obtained.

Rivera and Rice (2002) have made comparisons of three different class platforms, which are face to face, web-based and coeducation platforms. At the end of this study, they have compared student performance, student satisfaction, and teacher experiences. The data was collected from different class platforms with multiple choice questions and attendants consisting of youth. It was found that the platform with the lowest satisfaction level was the web-based education platform; Rivera and Rice have specified the reasons of this situation as insufficient support, access problems and students' lack of Internet usage. They have also itemized what should be done to increase satisfaction on web-based education: (a) Teaching format and method of the lesson should be expressed clearly before hardware, software and other necessary registrations. (b) Flexible and fault tolerant platforms should be

preferred in order to transmit the lesson content. (c)More support should be provided for both students and teachers. (d) Provision of fast and solid internet

Arbaugh and Duray (2002) found out that having crowded classes have negative impact on satisfaction affects satisfaction whereas, the flexibility of devices have positive impact in the particularly of web-based MBA programs. Another result obtained was that who were students experienced in online education were more pleased with the learning device. Learning and satisfaction perception of the students have been discussed with Arbaugh and Duray's (2002) study and two different web based MBA programs. Two samples have been picked by the scholars and codified them as A and B respectively. Sample A is picked out of 6 class platforms using Lotus Learning Space in US University in 1999 Academic Year; B is selected out of online classes given by Western University in 1999 Spring Term. As a result of the data obtained, scholar found out that having crowded classes has negative effects on satisfaction whereas flexibility of devices being used has positive effects. Another result obtained was that experienced students in online education were more pleased with the learning device.

Bloom and Hough (2003) have analyzed that level of satisfaction of the students who are studying on nursing, health sciences students and technology-supported education. Survey which employed was consisting with 36 articles and 3 open-ended questions practiced by scholars. The data was collected from 375 individuals within 2 months. Study revealed there is a relationship among employed technology and main factors of satisfaction. According to the analysis results created by specialists, it was determined that selection and using of this technology are the main factors of satisfaction.

Debourgh (2003) stated that satisfaction of the students who were studying a bachelor degree of nursing via interactive video conference and the Internet (www) with his study. He obtained the data by using a 59 point satisfaction survey from 43 nurses. In this satisfaction survey, learners and teaching were the two main aspects that were focused on. Moreover, sub-dimensions related to learners have been determined. Those were experiences related to technology classes, technology sufficiency, in-class usage of technology, age and group magnitude. Educational sub-dimensions are teacher/teaching, technology and lesson management. According to the data results obtained from data analysis, it is concluded that student satisfaction and the teachers have a very strong relation.

Richardson and Swan (2003) have examined the role of social preparedness in online education platforms in their study. The data has been collected with a survey after online education classes had been completed in 2000's Spring Term in Empire State College. Data has not been obtained from those who didn't complete the course even though they had been registered to classes. The data has been obtained using the survey developed and renovated with several methods by Gunawardena and Zittle. The survey consists of Likert type questions, information of attendants, class activities and open-ended questions. It has been obtained that students' perception of social preparedness were high, as was the satisfaction and learning value perceived from the teachers'.

Benke et al., (2004) have indicated that accessibility, quality of education, educational, technical and administrative support is some of the factors that have an effect on satisfaction. Scholars assumed the cost, the efficiency of learning, satisfaction of access and instructor as four major topics in their own research.

Bolliger and Martindale (2004) have conducted a research to examine the factors which have effect on student satisfaction in online classes and specify the satisfaction level differences between two groups. They has gathered the factors that have effect on learner satisfaction in online classes using 42 point survey performed on 105 online learners in their study. The factors were teacher variables, technical subjects and interaction.

Drennan et al., (2005) have specified the factors that have an effect on student satisfaction and flexible online learning. A study, which assumes two different student qualifications, has been carried out using a model developed. The first one of these hypotheses was positive technology perception and, the second one is autonomous and innovating learning style. In order to obtain data, they performed a study using the first survey in two different online lessons on 248 individuals who take Introduction to Management online within the first two weeks, and using the second survey on 256 individuals within 12 weeks. Scholars have stressed that positive perception towards to technology and autonomous learning styles have an impact on student satisfaction.

It was discussed that education management system (EMS), which is used in online education platforms, especially friendliness of EMS, is a critical factor on learner satisfaction in the study performed by Lee and Lee (2005) within the scope of three online lessons at university level with 230 individuals. They have also found out that content and quality of interaction are critical factors on learner satisfaction .Moreover; quality of learning content is influenced by both of the characteristics and skills of the teacher.

Aşkar et al., (2005) have examined learner satisfaction in online platforms under three main aspects of user-friendliness, instructional design and implementation in their study. Factors such as user-friendliness of the device that education is given from in aspect of user-friendliness; individual discrepancies, content organization, materials, interaction and assessment in aspect of instructional design, guidance to learner, both educational and technical support in aspect of implementation have been discussed.

Roach and Lemasters (2006) have aimed to determine student satisfaction level in their study. For their study, the data have been obtained from the participants who are students of University of USA, Educational Administration and Leadership Master Program and completed several numbers of lectures in 7 different online lessons. The technical support given to online learners has been determined as the most important factor in having high satisfaction level.

Artino (2007) has obtained data from 646 online learners by using a 46 point survey in his study. He has found a meaningful relation between appreciations of the learner to educational tasks, self-sufficiency related to learning and learner perception, the quality of given education and learner satisfaction. In consequence of the regression analysis, scholar observed that aforementioned three variables are able to explain 54% of the variance in satisfaction.

Şahin (2007) has analyzed the characteristics of online learning platforms for his study. In order to gather the data, 42 point Distance Education Learning Environments Survey (DELES) has been used. Participants are 917 undergraduates from Anatolian University. According to the results obtained, active learning,

authentic learning, individual attention and instructor support have a meaningful effect on learner satisfaction.

Ilgaz (2008) has studied the contribution of technology acceptance and community sense to distance learner satisfaction. Consequently, the data gathered from 464 students, determined that positive and high level of relation between technology acceptance and learner satisfaction and indicated that technology acceptance is more effective than community sense in satisfaction regression.

Sun et at., (2008) have examined learner satisfaction perceived in their studies in six aspects: (a) Learner Aspect (Attitude of learner to computer, Computer anxiety of learner, Computer self-sufficiency of learner); (b) Teacher Aspect (Responding timeliness of teacher, Attitude of teacher to e-learning); (c) Lecture Aspect (Flexibility of lecture, Quality of lecture); (d) Technology Aspect (Quality of technology, Quality of internet); (e) Design Aspect (Benefit perceived, User-friendliness perception); (f) Environmental Aspect (Assessment variety, Interaction perception of learner with the others). In this study performed on 295 individuals, factors that have meaningful effect on learner satisfaction are specified as computer anxiety of learners, attitude of teacher to e-learning, flexibility of lecture, quality of lecture, user-friendliness perceived, benefit perceived and assessment variety. They are able to explain 66.1% of the variance in satisfaction. The most effective factor was stated as a quality of lectures.

Akyol and Garrison (2008) have examined online education experiences from the viewpoint of community disquisition. In order to obtain the data, the study has been carried out with 16 undergraduates from Calgary University in 2007 Fall Term.

Study revealed that social and educational awareness has a meaningful effect on learning perception and satisfaction related to lecture.

Lee (2010) has examined potential differences of quality of online education supporting services in terms of perception levels with respect to online learning acceptance and satisfaction between Korean and American students. The data has been gathered via two different surveys from 827 students from two different countries. Primarily, 582 students who are in the age range of 23 to 39 have been reached with a web-based survey in 2009 Spring Term. After that, the data has been obtained from a web-based survey in 2009 Summer Term from 290 participants who are in the USA. In consequence of the data obtained, it is found out that there is a meaningful difference between perceptions of the Korean and the American students in terms of online supporting services. Moreover it is discussed that, perception of online supporting services is an important factor with regards to online learning and satisfaction for the Korean and the American students.

Teo and Wong (2013) have analyzed important key drivers of student satisfaction with this study. They have suggested 12 different hypotheses and 4 different learning models. They have gathered the data from 387 individuals who are full-time students in Singapore Teacher Education Institute. The results of the data obtained, concluded that teacher quality, benefits perceived, user-friendliness and presentation of the lecture to students are important factors with regards to satisfaction. Smoothing the conditions has been found out as an important intercessor with regards to perceived user-friendliness and satisfaction.

Özkanan and Erdoğan (2013) have performed a study in order to research the effects of education platform acceptance and synergy feeling components in consequence of individual's feeling isolated, diminishing satisfaction and having difficulty in learning. In order to gather data, Togetherness Sense Scale developed by Ilgaz (2008) and 7 point Likert satisfaction scale which introduced developed by Ilgaz (2008) have been conducted to 88 students who are studying at Suleyman Demirel University. Study revealed that students who have used the computer for a long time have no difficulties in solving problems; hence, education platform acceptance has an impact on satisfaction. Moreover it is also stated that scholar have observed that user-friendliness of education platform has also impact on satisfaction.

Shen et al., (2013) have extended technology-oriented self-sufficiency perception to self-sufficiency related to online learning by adding educational and social aspects. Scholars have described five aspects of self-sufficiency related to completing an online lesson, self-sufficiency related to communicating with classmates socially, self-sufficiency related to being able to use educational management system within the scope of the lecture, self-sufficiency related to communicating the teacher and self-sufficiency related to communicating classmates for academic purposes. Moreover, scholars found that demographic profiles of the respondents such as gender, level of familiarity with online lessons and academic backgrounds are the important precursors of online self-sufficiency.

Kuo et al., (2014) have tested a regression model which is related to student properties (interaction, internet self-sufficiency and self-regulatory learning) and class level determinant (lecture category and academic program) in their study performed. The data have been gathered from 221 post-graduate individuals using

online survey. Study revealed that, interaction among Student-teacher and interaction of teacher-content are the important drivers which have impact on student satisfaction, however it also stated that interaction among but teacher-teacher interaction has no influence on student satisfaction.

Chapter 3

METHODOLOGY

The primary objective of this chapter is to present detailed information regarding research design, sample, data tools and techniques, data collection and data analysis which employed for the current study.

3.1 Research Method

Current study is designed as a case study. In this research, a mixed method was used as data collection technique that contains both quantitative and qualitative data.

Nowadays, qualitative or mixed methods began to be used more in involving social science issues (Böke, 2009). The both of qualitative and quantitative methods were chosen to minimize weaknesses of the study and take advantage of the study by the strong. “While quantitative and qualitative research approaches have several strengths and weaknesses, they can be extremely influential in combination with one another” (Madrigal and McClain, 2012). Sieber, (1973) defined the “mixed method” as a combination of both questionnaire and interview. On the other hand, Brewer and Hunter (1989) explained that the use of multiple methods in a research process.

Case study is relied on 'why' and 'how' questions. It is allowed in-depth analysis against an uncontrollable event or fact. (Yıldırım & Şimşek, 2008). Yin (1984) simple defines the case study research method as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the

boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (p.23). On the other hand, Cresswell (2002, as cited in VanWynsberghe & Khan, 2007) states that "A case study is a problem to be studied, which will reveal an in-depth understanding of a "case" or bounded system, which involves understanding an event, activity, process, or one or more individuals" (p. 2).

Case studies may include a close examination of the program as of people, issues, and problems. The research has been designed as an explanatory mixed methods design developed by Creswell (2008). Explanatory mixed methods design has two stages. Primarily, collected quantitative data is analyzed; in the next stage, qualitative data is collected to better understand the quantitative data (Creswell, 2008). Firstly, the quantitatively field study was conducted. Then with the interview technique qualitative data was collected. This quantitative and qualitative research method must be in order. After analyzing the collected quantitative data, the second step is performed. Two steps are associated with each other. With this occasion, collected data through the qualitative method is provided in-depth research for causes of results of quantitative data.

3.2 Case

The sample of this study was teacher candidates who attend the pedagogical formation certificate program at the 2013-2014 Summer Semester at Eastern Mediterranean University, TRNC. Online learning satisfaction of teacher candidates has been studied in this study to evaluate the success of the online learning program. The teacher candidates' demographic information is shown in Table 1 below:

Table 1: Demographic Information of the Teacher Candidates

Variable		**Frequency (N)**	**Percentage (%)**
Gender	Male	140	48.1
	Female	151	51.9
	Total	291	100
Age	17-28	138	47.4
	29-36	135	46.4
	37-48	18	6.2
	Total	291	100

As it figured by Table 1, 291 teacher candidates from Faculty of Education of EMU were selected as participants. Just about 48.1% (140) of the teacher candidates were male, 51.9% (151) of them were female. The age range of teacher candidates were examined and results obtained, 47.4% (138) of them were in age range of 17-28, 46.4% (135) of them were in age range of 29-36, and 6.2% (18) of them were in age range of 37-48.

Goyal et al., (2011) argued that there is a positive relationship between satisfaction and the Internet usage. Moreover, the Internet experiences the higher the participants' were found to show perform better in online learning activities (Hargittai & Shafer, 2006). So, daily internet usage of teacher candidates has been investigated. The teacher candidates' internet usage information is shown in Table 2 below:

Table 2: The Number of Teacher Candidates by allocated time on the internet for teaching activities

	Time	Frequency (N)	Percentage (%)
Internet Usage Daily	0-1 Hour	23	7.9
	2-3 Hour	122	41.9
	4-5 Hour	104	35.7
	6-7 Hour	42	14.5
	Total	291	100
Internet Usage for Learning Activities	0-1 Hour	78	26.8
	2-3 Hour	121	41.6
	4-5 Hour	77	26.5
	6 Hour and Above	15	5.2
	Total	291	100

As it seen from Table 2, Internet usage period of the teacher candidates were in Table 2. According to internet usage daily, 7.9% of them were in 0-1 hours range, 41.9% of the 2-3 hours range, 35.7% of them were in 4-5 hours range and 14.5% of them were in 6 hours and above. Accordingly, the maximum duration of internet usage was in the range of 2-3 hours. According to internet usage for teaching activities, 26.8% (78) of the 0-1 hours range, 41.6% (121) of the 2-3 hours range, 26.5% (77) of the 4-5 hours range, 5.2% (15) of the 6 hours and above range.

The status of the teacher candidates in this study, 48.1% male and 51.9 % female participated in this study. There are 47.4% teacher candidates within the age 17-28, 46.4% teacher candidates within the age 29-36 and 6.2% teacher candidates within the age 37-48. According to internet usage daily, the maximum duration of internet usage was in the range of 2-3 hours. According to internet usage for teaching activities, the maximum duration of internet usage for teaching activities was in the range of 2-3 hours.

3.3 Data Collection Tools

For the current, two different forms of data collection methods were practiced to collect data. These are the questionnaire, and interview form. Rossi and Freeman (1993) advise that qualitative data are beneficial for determining the nature of the need, while quantitative data are necessary for determining the extent of the need.

3.3.1 Questionnaire

A closed-ended Questionnaire (Appendix B) was used to collect quantitative data from students. The questionnaire' participants were the teacher candidates who were registered in the pedagogical formation certificate programs at EMU. There were 45 questions in the questionnaire. Applied questionnaire was developed on the model by Kantoğlu et al., (2013). It has identified the factors which determine the learning satisfaction. Factors affecting student satisfaction have been examined in five dimensions. The questionnaire was divided into two sections; the first one consisted of demographic information (gender, age) and daily internet usage hours. The second one contained forty-five items using a five point Likert scale. The Likert scale items included strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4), and strongly agree (5). The questionnaire measures satisfaction level of teacher candidates, teacher candidates' interests and attitudes, the course materials quality and traceability of personal development, the system access problems and the system user-friendliness, the material usefulness and actuality of materials and, the quality of support services.

Table 3: The Structure of the Model

Dimensions	**α**	**Sub-Factors**	**Items Number**
Teacher candidates' interests and attitudes	0.814	Student's attitude towards the use of computers	B1.1, B1.3, B1.4, B1.5
		The level of student computer usage	B2.1, B2.2, B2.3, B2.4
		Student-faculty interaction	B3.1, B3.2, B3.3, B3.4 B3.5
The course materials quality and traceability of personal development	0.901	Traceability of student's development	B4.1, B4.2 (reverse), B5.1, B9.1, B11.2 B12.1, B12.2
		Quality of course materials	B7.1, B7.2
The system access problems and the system user-friendliness	0.685	Ease of use of the e-learning system	B8.1, B8.2, B10.1
		Problems of accessibility to system	B8.3, B10.2, B10.3 B11.1
The material usefulness and actuality of materials	0.812	Currency of the materials	B13.2, B13.4
		Useful of materials	B6.1, B13.1, B13.3 B14.1, B14.2, B18.3
The quality of support services.	0.892	Support services	B15.1, B15.2, B16.3 B17.A1, B17.A2 B17.A3, B17.B1 B17.B2, B17.B3

Table 3 shows the items that measures which sub-factors and dimensions, the B4.2 of the item in reverse order means scoring of that question is in reverse order. This study is used a model that measures the teacher candidates' satisfaction at online learning. Teacher candidates' interests and attitudes have included three sub-factors and thirteen items. The course materials quality and traceability of personal development has included two sub-factors and nine items. The system access problems and the system user-friendliness have included two sub-factors and seven items. The material usefulness and actuality of materials have included two sub-factors and eight items. Lastly, the quality of support services has included a sub-

factor and nine items. The teacher candidates' satisfaction level included forty-six items.

As seen it from Table 3, the dimensions consisted of sub-factors. The sub-factors contained a certain number of items a five-point Likert scale. The score of items has been taken the value between 1 and 5. According to a number of items, the values of the factors summing the values of the dimensions have been reached. The score of student satisfaction with the mean of all the items has been reached.

3.3.2 Interview

As a data collection tool in this research semi-structured interview form (Appendix C) was used. Questions are designed for teacher candidates in accordance with the information in a relevant field. In the preparation of interview questions has been paying attention to some principles. These are understandable questions, the lack of a multi-dimensional question, the multidimensional lack and the router lack (Yılmaz & Altınkurt, 2011). Expert opinion has been taken to check the intelligibility and enforceability. The form has been regulated in accordance with the opinions of experts. The research process and this process are depicted in detail in the operations to increase research the external validity. In this context, the research model, study group, data collection tools, data collection process, data analysis and interpretation, and is arranged in a format of findings detailed how were transferred. All of the findings are given directly without comment to improve the internal validity of the research (Merriam, 1998). It involved 6 questions. The interview contained questions related with: views about online pedagogical formation certificate program for students' satisfaction, ease of system accessibility, quality of support services, adequacy of courses quality, impact on system success of the computer usage and faculty interaction and currency and usefulness of materials.

3.4 Data Analysis

Quantitative data collected the closed-items part of the questionnaire was analyzed by using SPSS program, version 18.0. Independent sample t-test was used to calculate the significance of the differences between genders. One way ANOVA test was employed to test if there are significant differences between students' satisfaction and the variables. The level of quantitative data significance was taken as $p < 0.05$.

The interview is conducted with a working group of people selected randomly. The interview has been interviewed individually by the number of teacher candidates. An interview has been done over the Internet. Because of they have been lived in Turkey. The other teacher candidates have been interviewed face to face. Before starting the interview, the permission was obtained from the teacher candidates to the record interview. Some of the teacher candidates were rejected. During the interview has not been forwarding. Two weeks were spent for the interview. After collecting the data, the records were turned into written documents by using MS Office.

Descriptive analysis technique was used for statistical analysis. Descriptive analysis was used in this study consists of four phases:

I. Creating a framework for descriptive analysis: A framework for data analysis in this stage of the research was created.
II. Data processing: At this stage, the data obtained by reading the general framework created in the previous step are arranged.
III. Identification of findings: Defining the data in this phase is done and if necessary, a direct quote reviewed.

IV. Interpretation of the findings: In this stage, the Obtained results have been explained and the associated. (Yıldırım & Şimşek, 2008)

3.5 Validity and Reliability

The scale used in the survey were analyzed the validity and internal consistency with the data obtained. It should be known that the reliability of the scale in the direction of the given answers. The reliability was calculated using Cronbach's Alpha. Cronbach's Alpha internal consistency coefficient was $\alpha = 0.829$, which means that the questionnaire is acceptable in terms of reliability since it is greater than 0.70. With this value it could be stated that the scale have acceptable internal consistency (Gliem & Gliem, 2003).

In this study, to ensure the reliability of data collected through interviews. Data were collected with great care in accordance with ethical research. Data collection and analysis of data collected in order to ensure the validity of the process in itself has been noted to be consistent and meaningful. In this direction, coherence duration has been taken into consideration during the study, data collection and analysis.

Saturation points begin to repeat the concepts and processes that might be the answer to the research question (Charmaz, 2003). The number of participant is sufficient when emerging concepts and processes starts to repeat each other (Yıldırım & Şimşek, 2008).

Chapter 4

FINDINGS AND DISCUSSIONS

The aim of the current study is to examine the level of student satisfaction according to online learning students' satisfaction model list the variables. Qualitative data and quantitative data were examined to get the understanding of online learning teacher candidates' satisfaction.

4.1 Online learning satisfaction level of the teacher candidate according to e-learning students' satisfaction model

In this section, teacher candidates' satisfaction level was examined. Table 4 shows the level of teacher candidates' satisfaction. 45 items was combined to determine the teacher candidates' satisfaction level. The minimum score is 45, the maximum score is 220.

Table 4: Teacher candidates' satisfaction levels

	N	X	%	Std. Deviation
Teacher Candidates Satisfaction	291	167.02	75.91	23.73

As it seen from Table 4, the satisfaction level of the teacher candidates is 167.02. And it is 75%. According to these results, it was determined that teacher candidates were satisfied with the system. Roach and Lemaster (2006)'s study supports the status of satisfaction obtained in this study. Moreover, this finding is supported by other research findings in the field type (Kelsey, 2000; Belcheir & Cucek, 2002;

Hermans, Haytko, & Mott-Stenerson, 2009). Data obtained in the interviews have been supported the quantitative data. The teacher candidates evaluated the opinions about satisfaction; many teacher candidates have expressed their satisfaction. Teacher candidates' views regarding satisfaction examples are as follows:

> I studied with online education for the first time. There was confusing at first, because the education system is different from conventional education system. However, I have completed my studies without interrupting my job because it is independent of time and space. It has taken my evening hours to get certified. So, I have been satisfied with the system (TC8).

> There was no a technical glitch. It was an effective program. Course notes, homework and announcements have been provided with easy access. So I have been satisfied with the online learning program (TC15).

> Online training is a great convenience in education for working people. I think online education system is a great advantage to both study and earn money for us. I have been satisfied despite experiencing technical problems sometimes (TC11).

However, there had been some changes to the exam date. This situation has been perceived as negative by a teacher candidate and affected the satisfaction.

> Firstly, it was a huge time savings for me, but sometimes the school administration was contradicted with students about exam date. So, I am not satisfied (TC3).

4.1.1 Relationship between online learning satisfaction level of teacher candidates and gender

T-test results have shown online learning satisfaction level of teacher candidates by gender as shown on Table 5.

Table 5: Teacher candidates' satisfaction level depending on gender

Gender	N	X	SS	Sd	t	p
Female	151	168.49	23.09	284.20	1.09	0.277
Male	140	165.45	24.38			

As it seen from Table 5, there was no significant difference between the online learning satisfaction level for male and female, t(284.20)=1.09, p=0.277>0.05. This finding can be interpreted that there was no a significant relationship between gender and teacher candidates' satisfaction. Furthermore, these findings are supported by other research findings in the literature (Corts, Lounsbury, Saudargas, & Tatum, 2000; Carey, Cambiano, & De Vore, 2002; Yalman, 2013).

4.1.2 Relationship between online learning satisfaction level of teacher candidates and age

A one-way ANOVA test has conducted to test statistical meaningfulness between subjects and the teacher candidates' satisfaction in online learning within different age groups. Descriptive statistics of satisfaction level depending on age is shown in Table 6 below:

Table 6: Descriptive statistics of satisfaction level depending on age

Age	N	X	Std. Deviation
23-28	138	165.13	23.96
29-36	135	168.94	22.78
37-42	18	167.11	28.73
Total	291	167.02	23.73

Teacher candidates' satisfaction level depending on age is shown in Table 7 below:

Table 7: Teacher candidates' satisfaction level depending on age

Variance Source	Sum of Squares	sd	Mean Square	F	p
Between Groups	990.981	2	495.491		
Within Groups	162322.799	288	563.621	0.879	0.416
Total	163313.780	290			

As it seen from Table 6 and 7, a one-way ANOVA between subjects was conducted to examine the effect of age on teacher candidates' satisfaction. According to the results of the analysis, there was no a significant effect of age on teacher candidates' satisfaction at the $p>0.05$ level [$F(2.288)=0.88$, $p=0.416$]. This finding can be interpreted that there was no significant relationship between age and teacher candidates' satisfaction. Furthermore, these findings are supported by other research findings in the literature (Carey, Cambiano, & De Vore, 2002; Ilias, Hasan, Rahman, & Yasoa, 2008). However, Fredericksen et al.,(2000) mention that, the satisfaction of the 36-45 age group have been identified a higher. The reason of this, 36-45 age group participant learned the most with online learning.

4.1.3 The online learning satisfaction level of the teacher candidates according to teacher candidate' interests and attitudes, the course materials quality and traceability of personal development, the system access problems and the system user-friendliness, the material usefulness and actuality of materials, the quality of support services

In this section, online learning satisfaction dimensions were examined as shown on table 8. The teacher candidates' interests and attitudes had 13 items (min=13, max=65). The course materials quality and traceability of personal development had 9 items (min=9, max=45). The system access problems and system user-friendliness had 7 items (min=7 max=35). The material usefulness and actuality of materials had

8 items (min=8, max=40). The quality of support services had 9 items (min=9, max=45).

Table 8: Satisfaction dimensions' scores

Dimensions	N	X	%	Std. Deviation
Teacher candidates' interests and attitudes	291	47.05	72.38	7.74
The course materials quality and traceability of personal development	291	36.16	80.35	6.85
The system access problems and the system user-friendliness	291	25.58	73.08	4.52
The material usefulness and actuality of materials	291	30.32	75.8	5.35
The quality of support services	291	31.46	69.91	6.13

As it seen from Table 8, according to the results of the analysis, generally the most of the teacher candidates have been satisfied with the dimensions of the online learning satisfaction.

The teacher candidates' satisfaction level is 47.05 at online learning system according to teacher candidates' interest and attitude. And it is 72%. According to these results, it was determined that teacher candidates were satisfied from the system. Similar results can be seen in the study by Sırakaya et al., (2014) which makes the results of this study more valid. In a study done by Erdoğan at al. (2006) it was stated that in order to find sufficient and effective results on the distance education system, perceptions and attitudes towards distance education should be accurately determined. Data obtained in the interviews have been supported the

quantitative data. According to results of semi-structure form conducted face to face with the teacher candidates, the teacher candidates said:

> The online learning program has been implemented over the computer with internet connection. The computer knowledge is essential for such situations: uploading the document, accessing to the system, and participation in the online courses. For example, the homework has created a problem with Turkish characters used in file names. It has affected the success of interaction with teachers. I made contact with teachers at any time. I was able to ask questions during the live lectures. This has increased my success. I don't like to use a computer so much, but I won't let this affect performance (TC14).

> The level of computer use was a major advantage in the use of the program and the communication with staff. I helped them solve my problems by explaining the problem. The course-related feedback was quicker through interaction with the instructor. Just shortens or lengthens the process (TC11).

As it seen (understood) from above statements, many teacher candidates have expressed their satisfaction. The teacher candidates said in interviews that it is important computer usage (Rivera & Rice, 2002) and faculty interaction (Swan, 2001; Roblyer & Wiencke, 2003; Bolliger & Martindale, 2004).

The teacher candidates' satisfaction level is 36.16 at online learning system according to the course materials quality and traceability of personal development. And it is 80.35. According to these results, it was determined that teacher candidates were satisfied with the system. Similar results can be seen in the study by Eygü and Karaman (2013). Online learning system has influenced their personal development to detect their strengths and weaknesses (Thurmond et al., 2002). Data obtained in the interviews have been supported the quantitative data. According to results of semi-structure form conducted face to face with the teacher candidates; the teacher candidates said:

> The adequacy of the quality of the course was good. The courses in the online learning environment have been efficient due to the rich materials offered by experienced instructors. It provided interaction with teachers and friends during online lessons. So, the lessons have been quite tasteful, clear and active. I have the student perspective with the given educational psychology courses (TC16).

> I hadn't a problem with the quality of the courses of course, it was an efficient process and I have accessed to information when I wanted to. This situation has increased persistence in learning. Active learning level is low in online learning comparing to formal education. It's normal. Instructor and technical staff was equipped and thus the course was efficient. I can use what I learned in my teaching life. It shows that this program is effective (TC9).

As it understood from above statements, many teacher candidates have expressed their satisfaction. As can be seen from the views of teacher candidates, content-rich course materials can be accessed at any time is important (Piccoli et al., 2001; Sun et al., 2008; Özkan & Köseler, 2009).

The teacher candidates' satisfaction level is 25.58 at online learning system according to the system access problems and the system user-friendliness. And it is 73%. According to these results, it was determined that teacher candidates were satisfied with the system. The similar to this study as Lwoga (2014) concluded that user-friendly system has a positive effect on user satisfaction. Lee and Lee (2005) have found that ease of use had a significant effect on the satisfaction of the system. Data obtained in the interviews have been supported the quantitative data. According to results of semi-structure form conducted face to face with the teacher candidates, teacher candidates said:

> I don't have any problem except minor defects in accessing. Sometimes there were internet connection and sound-induced problems during access. It needs to find a solution to the power outage. There was no problem other than these problems (TC19).

> Yes, access was easy, but sometimes we had problems because of the internet connection. This has caused some trouble. These problems created a problem between topics with us. But then we were able to resolve these problems with the videos (TC5).

As it seen (understood) from above statements, many teacher candidates have expressed their satisfaction. Teacher candidates have provided access to the system easily and there hasn't been a problem except for sometimes the internet connection. Therefore teacher candidates' satisfactions have been positively affected (Selim, 2007).

The teacher candidates' satisfaction level is 30.32 at online learning system according to the material usefulness and actuality of materials. And it is 75%. According to these results, it was determined that teacher candidates were satisfied with the system. Ali and Ahmed (2011) have been found that the course materials were the useful, relevant and satisfactory. Also, this study is similar to Volery and Lord (2000). Data obtained in the interviews have been supported the quantitative data. According to results of semi-structure form conducted face to face with the teacher candidates, the teacher candidates said:

> Materials were useful and actual. Our teacher tried to give the essence of the subject without creating unnecessary confusion. This situation is exhausting for them, for us, it seemed to put the ready. I'm saving it for later use. Information is available for the KPSS exam (TC17).

> There was no issue about the actuality and usefulness of the materials prepared by the teacher. However, the diversity of the course material should be increased, and this diversity should be used in Courses (TC11).

As it understood from above statements, many teacher candidates have expressed their satisfaction. Teacher candidates' thoughts about online learning materials have

been understandable, useful and actual. TC11 coded teacher candidates "However, the diversity of the course material should be increased, and this diversity should be used in Courses" with the expression, He took attention to diversity.

The teacher candidates' satisfaction level is 31.46 at online learning system according to the quality of support services. And it is 69%. According to these results, it was determined that teacher candidates were satisfied with the system. The online support services quality had a positive effect on teacher candidates' satisfaction (Rivera & Rice, 2002; Lee & Lee, 2008; Lee, 2010). In addition, the study of Ramayah and Lee, (2012) supported that there was the positive relationship between system quality and user satisfaction. Data obtained in the interviews have been supported the quantitative data. According to results of semi-structure form conducted face to face with the teacher candidates, the teacher candidates said:

> I think it is an essential service for this system. There was a very coordinated service during the program. We encountered some problems during the course. These problems were resolved immediately without interfering with the stream of the course. There were a number of problems experienced by users. I have used Turkish characters in the name of assignment file. So it has not been opened. This problem was reported to us by the support service to resolve this problem (TC15).

> The support service offered by the university has been sufficient to make the system functional. Support services consisted of from specialist individuals (TC8).

Regarding to statements above, many teacher candidates have expressed their satisfaction. But, one of the teacher candidates has the idea that there is an insufficient support service. TC20 said that "Support services unit is not proportional to the number of students registered."

4.1.3.1 Relationship between online learning satisfaction of teacher candidates' interests, attitudes and gender

T-test results have shown dimensions of online learning satisfaction level of teacher candidates by gender as shown on Table 9.

Table 9: Teacher candidates' interests and attitudes level depending on gender

Gender	N	X	SS	Sd	t	p
Female	151	47.24	7.42	281.64	0.42	0.671
Male	140	46.85	8.09			

As it seen from Table 9, the results of the analysis showed that there was no significant difference in teacher candidates' interests and attitudes by gender $t(281.64)= 0.42$, $p= 0.671>0.05$. This finding can be interpreted that there was no a significant relationship between gender and teacher candidates' interests and attitudes (Saracaloğlu et al., 2010; Yılmaz & Timur, 2012; Horvat et al., 2012). However, it does not support some of the studies. Reinen and Plomp (1993) found that Males were dominated the computer usage (Rovai & Baker, 2005). In addition, Liaw and Huang found that there were significant difference attitudes toward e-learning between male and female students. Male students had more positive than female students (Liaw & Huang, 2011).

4.1.1.2 Relationship between online learning satisfaction of teacher candidates' interests, attitudes and age

A one-way ANOVA test has conducted to test statistical meaningfulness to compare the teacher candidates' satisfaction for dimensions of the online learning in different age groups. Descriptive statistics of teacher candidates' interests and attitudes level depending on age is shown in Table 10 below:

Table 10: Descriptive statistics of teacher candidates' interests and attitudes level depending on age

Age	N	X	Std. Deviation
23-28	138	46.50	7.93
29-36	135	47.68	7.51
37-42	18	46.55	7.92
Total	291	47.05	7.74

Teacher candidates' interests and attitudes level depending on age is shown in Table 11 below:

Table 11: Teacher candidates' interests and attitudes level depending on age

Variance Source	Sum of Squares	sd	Mean Square	F	p
Between Groups	100.136	2	50.068		
Within Groups	17277.871	288	59.993	0.835	0.435
Total	17378.007	290			

As it seen from Table 10 and 11, a one-way ANOVA between subjects was conducted to examine the effect of age on teacher candidates' interests and attitudes. The results of the analysis showed that there was no a significant effect of age [F(2.288)=0.83, p=0.435] on teacher candidates' interests and attitudes at the p>0.05 level. Study findings indicate that age was no differing in teacher candidates' interests and attitudes (Suri & Sharma, 2014). This finding is in contrast with Cavas et al., (2009) and Seyal et al., (2010)

4.1.3.3 Relationship between online learning satisfaction of the course materials quality, traceability of personal development and gender

T-test results are shown dimensions of online learning satisfaction level of teacher candidates by gender as shown on Table 12.

Table 12: The course materials quality and traceability of personal development level depending on gender

Gender	N	X	SS	Sd	t	p
Female	151	36.43	6.97	288.5	0.69	0.488
Male	140	35.87	6.73			

As it seen from Table 12, the results of the analysis showed that there was no significant difference in the course materials quality and traceability of personal development by gender t(288.5)=0.69, p=0.488>0.05. Study findings indicate that gender was no significant according to the course materials quality and traceability of personal development (Rowell, 2015). It is in contrast with Price (2006). Young and Norgard (2006) found that females were more positive.

4.1.3.4 Relationship between online learning satisfaction of the course materials quality, traceability of personal development and age

A one-way ANOVA test has conducted to test statistical meaningfulness to compare the teacher candidates' satisfaction for dimensions of the online learning in different age groups. Descriptive statistics of the course materials quality and traceability of personal development level depending on age is shown in Table 13 below:

Table 13: Descriptive statistics of the course materials quality and traceability of personal development level depending on age

Age	N	X	Std. Deviation
23-28	138	35.58	6.91
29-36	135	36.78	6.68
37-42	18	36.00	7.60
Total	291	36.16	6.85

The course materials quality and traceability of personal development level depending on age is shown in Table 14 below:

Table 14: The course materials quality and traceability of personal development level depending on age

Variance Source	Sum of Squares	sd	Mean Square	F	p
Between Groups	98.522	2	49.261		
Within Groups	13530.227	288	46.980	1.049	0.352
Total	13628.749	290			

As it seen from Table 13 and 14, a one-way ANOVA between subjects was conducted to examine the effect of age on the course materials quality and traceability of personal development. The results of the analysis showed that there was no a significant effect of age [F(2.288)=1.05, p=0.352] on the course materials quality and traceability of personal development at the p>0.05 level. The regarding the finding, age was no significant according to the quality of the course material (Rowell, 2015). The finding of Kayastha (2011) supported this finding. However, the researcher has been thought that "the age groups of 20-25 and above 30 tend to be more satisfied" (p.49).

4.1.3.5 Relationship between online learning satisfaction of the system access problems, the system user-friendliness and gender

T-test results are shown dimensions of online learning satisfaction level of teacher candidates by gender as shown on Table 15.

Table 15: The system access problems and the system user-friendliness level depending on gender

Gender	N	X	SS	Sd	t	p
Female	151	25.92	4.24	278.18	1.31	0.190
Male	140	25.22	4.79			

As it seen from Table 15, the results of the analysis showed that there was no significant difference in the system access problems and the system user-friendliness by gender t(278.18)=1.31, p=0.19>0.05. The gender was no significant according to

the system access problems and the system user-friendliness. This is consistent with another similar result (Meiselwitz & Sadera, 2008).

4.1.3.6 Relationship between online learning satisfaction of the system access problems, the system user-friendliness and age

A one-way ANOVA test has conducted to test statistical meaningfulness to compare the teacher candidates' satisfaction for dimensions of the online learning in different age groups. Descriptive statistics of the system access problems and the system user-friendliness level depending on age is shown in Table 16 below:

Table 16: Descriptive statistics of the system access problems and the system user-friendliness level depending on age

Age	N	X	Std. Deviation
23-28	138	25.72	4.44
29-36	135	25.48	4.59
37-42	18	25.22	4.85
Total	291	25.58	4.52

The system access problems and the system user-friendliness level depending on age are shown in Table 17 below:

Table 17: The system access problems and the system user-friendliness level depending on age

Variance Source	Sum of Squares	sd	Mean Square	F	p
Between Groups	6.307	2	3.153		
Within Groups	5932.381	288	20.599	0.153	0.858
Total	5938.687	290			

As it seen from Table 16 and 17, a one-way ANOVA between subjects was conducted to examine the effect of age on the system access problems and the system user-friendliness. The results of the analysis showed that, there was no a significant effect of age [F(2.288)=0.15, p=0.858] on the system access problems and the system

user-friendliness at the p>0.05 level. The age was no significant according to the system access problems and the system user-friendliness. This is consistent with another similar result (Meiselwitz & Sadera, 2008; Adewole-Odeshi, 2014).

4.1.3.7 Relationship between online learning satisfaction of the material usefulness, actuality of materials and gender

T-test results are shown dimensions of online learning satisfaction level of teacher candidates by gender as shown on Table 18.

Table 18: The material usefulness and actuality of materials level depending on gender

Gender	N	X	SS	Sd	t	p
Female	151	30.29	5.75	287.18	-0.1	0.916
Male	140	30.36	4.91			

As it seen from Table 18, The results of the analysis showed that there was no significant difference in the material usefulness and actuality of materials by gender t(287.18)= -0.1, p=0.916>0.05. It can be interpreted that gender was no significant (Seters et al., 2012). These findings coincided with Özgür (2011) found that there was no significant difference terms of usability of the learners views. (Bilgiç, 2005; Şendağ et al., 2008). This finding contrasted with Omar et al., (2012).

4.1.3.8 Relationship between online learning satisfaction of the material usefulness, actuality of materials and age

A one-way ANOVA test has conducted to test statistical meaningfulness to compare the teacher candidates' satisfaction for dimensions of the online learning in different age groups. Descriptive statistics of the material usefulness and actuality of materials level depending on age is shown in Table 19 below:

Table 19: Descriptive statistics of the material usefulness and actuality of materials level depending on age

Age	N	X	Std. Deviation
23-28	138	29.50	5.88
29-36	135	31.08	4.70
37-42	18	31.00	5.01
Total	291	30.32	5.35

The material usefulness and actuality of materials level depending on age is shown in Table 20 below:

Table 20: The material usefulness and actuality of materials level depending on age

Variance Source	Sum of Squares	sd	Mean Square	F	p	Significant Difference
Between Groups	177.733	2	88.867			
Within Groups	8150.596	288	28.301	3.140	0.045	29-36/23-28
Total	8328.330	290				

As it seen from Table 19 and 20, a one-way ANOVA between subjects was conducted to examine the effect of age on the material usefulness and actuality of materials. The results of the analysis, there was a significant effect of age [F(2.288)=3.14, p=0.045] on the material usefulness and actuality of materials at the $p<0.05$ level. Post hoc comparisons using the LSD test indicated that the mean score for the age group 29-36 (X=31.08, SD=4.70) was significantly different than the age group 23-28 (X=29.50, SD=5.88). These results suggest that age group 29-36 really have more effect on the material usefulness and actuality of materials than age group 23-28. A study carried out by So and Swatman (2010) found that there was significant between age and e-learning materials. E-learning materials were sufficiently available for teacher of 30 years of age or less.

4.1.3.9 Relationship between online learning satisfaction of the quality of support services and gender

T-test results are shown dimensions of online learning satisfaction level of teacher candidates by gender as shown on Table 21.

Table 21: The quality of support services level depending on gender

Gender	N	X	SS	Sd	t	p
Female	151	32.20	5.87	289	2.16	0.031
Male	140	30.65	6.32			

As it seen from Table 21, the results of the analysis indicated that there was significant differences in the quality of support services $t(289)=2.16$, $p=0.031<0.05$ among both genders . Accordingly, the level of the quality of support services for female teacher candidates ($X=32.3$) is higher than the level of the quality of support services for male teacher candidates (30.65). This result can be interpreted that, women are more satisfied than men for the dimension quality of the support services. It contrasted with Kaba et al. (2012) founded that there was no significant relationship gender and support services.

4.1.3.10 Relationship between online learning satisfaction of the quality of support services and age

A one-way ANOVA test has conducted to test statistical meaningfulness to compare the teacher candidates' satisfaction for dimensions of the online learning in different age groups. Descriptive statistics of the quality of support services level depending on age is shown in Table 22 below:

Table 22: Descriptive statistics of the quality of support services level depending on age

Age	N	X	Std. Deviation
23-28	138	31.36	5.80
29-36	135	31.46	6.33
37-42	18	32.11	7.36
Total	291	31.46	6.13

The quality of support services level depending on age is shown in Table 23 below:

Table 23: The quality of support services level depending on age

Variance Source	Sum of Squares	sd	Mean Square	F	p
Between Groups	8.766	2	4.383		
Within Groups	10903.530	288	37.859	0.116	0.891
Total	10912.296	290			

As it figured by Table 22 and 23, a one-way ANOVA between subjects was conducted to examine the effect of age on the quality of support services. The results of the analysis mentioned that there was no a significant effect of age [F(2.288)=0.12, p=0.891] on the quality of support services at the p>0.05 level. To be more precise, age had no significant statistical relationship with the quality of support services. Results were consistent with the findings of Kaba et al., (2012).

4.1.4 Relationship between students' satisfaction and allocated time on the internet for teaching activities

A one-way ANOVA test has conducted to test statistical meaningfulness to compare the teacher candidates' satisfaction for online learning and dimensions of online learning in using the internet for teaching activities. Descriptive statistics of teacher candidates' satisfaction level depending in using the internet for teaching activities is shown in Table 24 below:

Table 24: Descriptive statistics of teacher candidates' satisfaction level depending on internet usage for teaching activities

Hour	N	X	Std. Deviation
0-1	78	160.56	24.11
2-3	121	165.12	24.19
4-5	77	175.38	18.83
6 and Above	15	173.06	28.89
Total	291	167.02	23.73

Teacher candidates' satisfaction level depending on internet usage for teaching activities is shown in Table 25 below:

Table 25: Teacher candidates' satisfaction level depending on internet usage for teaching activities

Variance Source	Sum of Squares	sd	Mean Square	F	p	Significant Difference
Between Groups	9628.215	3	3209.405			
Within Groups	153685.565	287	535.490	5.993	0.001	4-5 / 0-1 4-5 / 2-3
Total	163313.780	290				

As it observed from Table 24 and 25, a one-way between subjects ANOVA was conducted to examine the effect of using the internet for teaching activities on teacher candidates' satisfaction. The results of the analysis showed that there was a significant effect of teacher candidates' satisfaction at the $p<0.05$ level by using the internet [$F(3.287)=5.99$, $p=0.001$]. Post hoc comparisons using the LSD test indicated that the mean score for the 4-5 hour group ($X=173.38$, $SD=18.83$) was significantly different than the 0-1 hour ($X=160.56$, $SD=24.11$) and 2-3 hour groups ($X=165.12$, $SD=24.19$). These results have shown those 4-5 hours group have higher satisfaction level. Specifically, the results suggested that when students spent more hours for teaching activities, they satisfied with the online learning system. It was consistent with Gürpınar et al., (2007). Gürpınar et al., (2007) found that those who use more than 4 hours have been more satisfied from e-learning applications.

However, Kurt and Özkan (2014) found that there was no significant relationship between internet usage time and LMS satisfaction factors.

Descriptive statistics of teacher candidates' interests and attitudes level depending in using the internet for teaching activities is shown in Table 26 below:

Table 26: Descriptive statistics of teacher candidates' interests and attitudes level depending on internet usage for teaching activities

Hour	N	X	Std. Deviation
0-1	78	45.20	8.30
2-3	121	46.52	7.71
4-5	77	49.36	6.40
6 and Above	15	49.20	8.52
Total	291	47.05	7.74

Teacher candidates' interests and attitudes level depending in using the internet for teaching activities is shown in Table 27 below:

Table 27: Teacher candidates' interests and attitudes level depending on internet usage for teaching activities

Variance Source	Sum of Squares	sd	Mean Square	F	p	Significant Difference
Between Groups	780.872	3	260.291			
Within Groups	16597.134	287	57.830	4.501	0.004	4-5 / 0-1 4-5 / 2-3
Total	17378.007	290				

As it seen from Table 26 and 27, a one-way between subjects ANOVA was conducted to examine the effect of using the internet for teaching activities on teacher candidates' interests and attitudes. The results of the analysis showed that there was a significant effect of internet usage for teaching activities [F(3.287)=4.50, p=0.004] on teacher candidates' interests and attitudes at the $p<0.05$ level. Post hoc comparisons using the LSD test indicated that the mean score for the 4-5 hour group

(X=49.36, SD=8.52) was significantly different than the 0-1 hour (X=45.20, SD=8.30) and 2-3 hour groups (X=46.52, SD=7.71). These results have shown that, 4-5 hour group has satisfied more than the other groups according to the teacher candidates' interests and attitudes. Accordingly, greater usage of the internet affects the perceptions and attitudes of teacher candidates (Hong, 2002). The study of Özgür (2011) found that, there was significant difference statistically between daily internet usage of 3-4 hours, 5-6 hours and 1 hours. those who use the daily internet usage of 3-4 hours and 5-6 hours had more positive towards Web-based teaching attitudes. İngeç et al., (2014) were found to have no impact on attitudes towards e-learning internet usage.

Descriptive statistics of the course materials quality and traceability of personal development level depending in using the internet for teaching activities is shown in Table 28 below:

Table 28: Descriptive statistics of the course materials quality and traceability of personal development level depending on internet usage for teaching activities

Hour	**N**	**X**	**Std. Deviation**
0-1	78	34.67	5.80
2-3	121	35.75	7,39
4-5	77	38.37	6.47
6 and Above	15	35.93	7.15
Total	291	36.16	6.85

The course materials quality and traceability of personal development level depending in using the internet for teaching activities is shown in Table 29 below:

Table 29: The course materials quality and traceability of personal development level depending on internet usage for teaching activities

Variance Source	Sum of Squares	sd	Mean Square	F	p	Significant Difference
Between Groups	570.189	3	190.063			
Within Groups	13058.560	287	45.500	4.177	0.006	4-5 / 0-1 4-5 / 2-3
Total	13628.749	290				

As it seen from Table 28 and 29, a one-way ANOVA between subjects was conducted to examine the effect of using the internet for teaching activities on the course materials quality and traceability of personal development. The results of the analysis showed that there was a significant effect of internet usage for teaching activities [F(3.287)=4.18, p=0.006] on the course materials quality and traceability of personal development at the $p<0.05$ level. Post hoc comparisons using the LSD test indicated that the mean score for the 4-5 hour group (X=38.37, SD=6.47) was significantly different than the 0-1 hour (X=34.67, SD=5.80) and 2-3 hour groups (X=35.75, SD=7.39). These results have shown that, 4-5 hour group has satisfied more than the other groups according to the course materials traceability quality and personal development of students.

Descriptive statistics of the system access problems and the system user-friendliness level depending in using the internet for teaching activities is shown in Table 30 below:

Table 30: Descriptive statistics of the system access problems and the system user-friendliness level depending on internet usage for teaching activities

Hour	N	X	Std. Deviation
0-1	78	24.80	4.59
2-3	121	25.60	4.63
4-5	77	26.09	3.63
6 and Above	15	26.86	6.74
Total	291	25.58	4.52

The system access problems and the system user-friendliness level depending in using the internet for teaching activities is shown in Table 31 below:

Table 31: The system access problems and the system user-friendliness level depending on internet usage teaching activities

Variance Source	Sum of Squares	sd	Mean Square	F	p
Between Groups	91.516	3	30.505		
Within Groups	5847.171	287	20.373	1.497	0.215
Total	5938.687	290			

As it seen from Table 30 and 31, a one-way between subjects ANOVA was conducted to examine the effect of using the internet for teaching activities on the system access problems and the system user-friendliness. The results of the analysis showed that there was no a significant effect of internet usage for teaching activities [F(3.287)=1.5, p=0.215] on the system access problems and the system user-friendliness at the p>0.05 level. As a result of the analysis, it was determined that this variable was no significant. It contrasted with Al-Harbi, (2011). Al-Harbi (2011) found that there was a relationship between perceived e-learning ease of use and internet experience.

Descriptive statistics of the material usefulness and actuality of materials level depending in using the internet for teaching activities is shown in Table 32 below:

Table 32: Descriptive statistics of the material usefulness and actuality of materials level depending on internet usage for teaching activities

Hour	N	X	Std. Deviation
0-1	78	29.46	5.45
2-3	121	30.02	4.99
4-5	77	31.71	5.27
6 and Above	15	30.20	7.07
Total	291	30.32	5.35

The material usefulness and actuality of materials level depending in using the internet for teaching activities is shown in Table 33 below:

Table 33: The material usefulness and actuality of materials level depending on internet usage for teaching activities

Variance Source	Sum of Squares	sd	Mean Square	F	p
Between Groups	217.905	3	72.635		
Within Groups	8110.425	287	28.259	2.570	0.054
Total	8328.330	290			

As it is observed by Table 32 and 33, a one-way ANOVA between subjects was conducted to examine the effect of using the internet for teaching activities on the material usefulness and actuality of materials. The results of the analysis showed that there was no a significant effect of internet usage for teaching activities [F(3.287)=2.57, p=0.054] on the material usefulness and actuality of materials at the p>0.05 level. As a result of the analysis, it was determined that this variable was no significant. This finding was consistent with Bilgiç (2005). Although of this findings, those who use the internet for a longer time, opinions about the usefulness of the material caused to grow in a positive direction (Koohang & Weiss, 2003;Özgür, 2011).

Descriptive statistics of the quality of support services level depending in using the internet for teaching activities is shown in Table 34 below:

Table 34: Descriptive statistics of the quality of support services level depending on internet usage for teaching activities

Hour	N	X	Std. Deviation
0-1	78	29.67	5.89
2-3	121	30.86	6.50
4-5	77	33.68	5.11
6 and Above	15	34.06	5.31
Total	291	31.46	6.13

The quality of support services level depending in using the internet for teaching activities is shown in Table 35 below:

Table 35: The quality of support services level depending on internet usage for teaching activities

Variance Source	Sum of Squares	sd	Mean Square	F	p	Significant Difference
Between Groups	773.971	3	257.990			4-5 / 0-1
Within Groups	10138.324	287	35.325	7.303	0.000	4-5 / 2-3
Total	10912.296	290				6-7 / 0-1

As it seen from Table 34 and 35, a one-way ANOVA between subjects was conducted to examine the effect of using the internet for teaching activities on the quality of support services. The results of the analysis showed that there was a significant effect of internet usage for teaching activities [F(3.287)=7.30, p=0.00] on the quality of support services at the $p<0.05$ level. Post hoc comparisons using the LSD test indicated that the mean score for the 4-5 hour group (X=33.68, SD=5.11) was significantly different than the 0-1 hour (X=29.67, SD=5.89) and 2-3 hour groups (X=30.86, SD=6.50). Also 6 and above hours group (X=34.06, SD= 5.31) were significantly different than 0-1 hour group. Based on these findings, the most important point of this finding was 6 and above hours group. The excess of the internet usage affect positively according to the quality of support services.

Chapter 5

CONCLUSION

5.1 Conclusion

The main aim of the current study is to identify the satisfaction level of teacher candidates registered to EMU Faculty of Education Pedagogical Formation Program towards the online learning system and an examination of several variables concerning this matter. The E-Learning Student Satisfaction Model was employed for the current study. The E-Learning Student Satisfaction Model consists of five dimensions the findings were also discussed by considering these dimensions According to the findings, the following results were obtained.

Current study stressed that the majority of teacher candidates were satisfied with the online learning system. Findings which gathered from the qualitative data, teacher candidates have stated that online learning system was economic and it is more flexible in terms of time and location. Besides of this, online learning satisfaction of teacher candidates did not show any difference in terms of gender and age. One-way Anova test results expressed that online learning environment shows a statistical meaningful difference in terms of using the internet for teaching activities.

Study has also mentioned that teacher candidates were satisfied with online learning system in terms of the teacher candidates' interests and attitudes. Moreover, during the interview teacher candidates also expressed the importance of level of computer

knowledge. Furthermore, t test results also indicated that, there was no significant meaningful statistical difference about teacher candidates' interests and attitudes in terms of gender and age. However, study revealed that there is a significant meaningful difference about Internet usage regarding teaching activities in terms of interests and attitudes of teacher candidates.

The findings of the present study also concluded that the majority of teacher candidates were satisfied with online learning system about quality of course materials and traceability of personal development. Teacher candidates have noticed that the course materials contain detailed information about teaching profession. Study also revealed that, there was no significant meaningful statistical difference about quality of course materials and traceability of personal development in terms of gender and age. However, One-way Anova tests results declared that in terms of internet usage regarding teaching activities show a meaningful statistical difference for the course materials quality and traceability of personal development.

It is also discussed that the majority of teacher candidates were satisfied with online learning system in terms of system access problems and the system user-friendliness. Findings which gathered as a result of qualitative data collection method stressed that teacher candidates have emphasized problems related with electricity cut–off and internet connection which occur in the online learning system. Furthermore, independent t test and One-way Anova results indicated that in terms of gender, age and internet usage for teaching activities there is no meaningful statistical difference for the system access problems and the system user-friendliness.

As a result of this study, it could be concluded that majority of teacher candidates were satisfied from the online learning system according to the material usefulness and actuality of materials. Teacher candidates have pointed out that course materials have constant access to qualitative data. Moreover, current study also revealed that in terms of gender and internet usage for teaching activities, there is no statistical difference for the material usefulness and actuality of materials. However, in terms of age, there is statistical meaningful difference for material usefulness and actuality of materials.

Last but not least, it was concluded that the majority of teacher candidates were satisfied with online learning system in terms of quality of support services. Results which obtained from the semi–structured interview indicated that there is a system related problems for online learning environment and respondents also pointed an importance of rapid solutions to overcome system related problems. In addition, in terms age, One-way Anova test results stated that there is no statistical meaningful difference in terms of quality of support services. On the other hand, in terms of gender and internet usage for teaching activities, there is a statistical meaningful difference for the quality of support services.

5.2 Recommendations

As previously mentioned the current study has tested the level of satisfaction of the teacher candidates on online learning system.

For future related studies, it could be suggested to increase sample size Furthermore, diversity of course materials might be increased in order to gain more efficient outcomes from the process of online learning. Besides of this, addition of animations

and videos may be helpful to enrich contents of online learning environment. Lastly, more efforts are needed particularly towards to login system to prevent problems related with internet connection.

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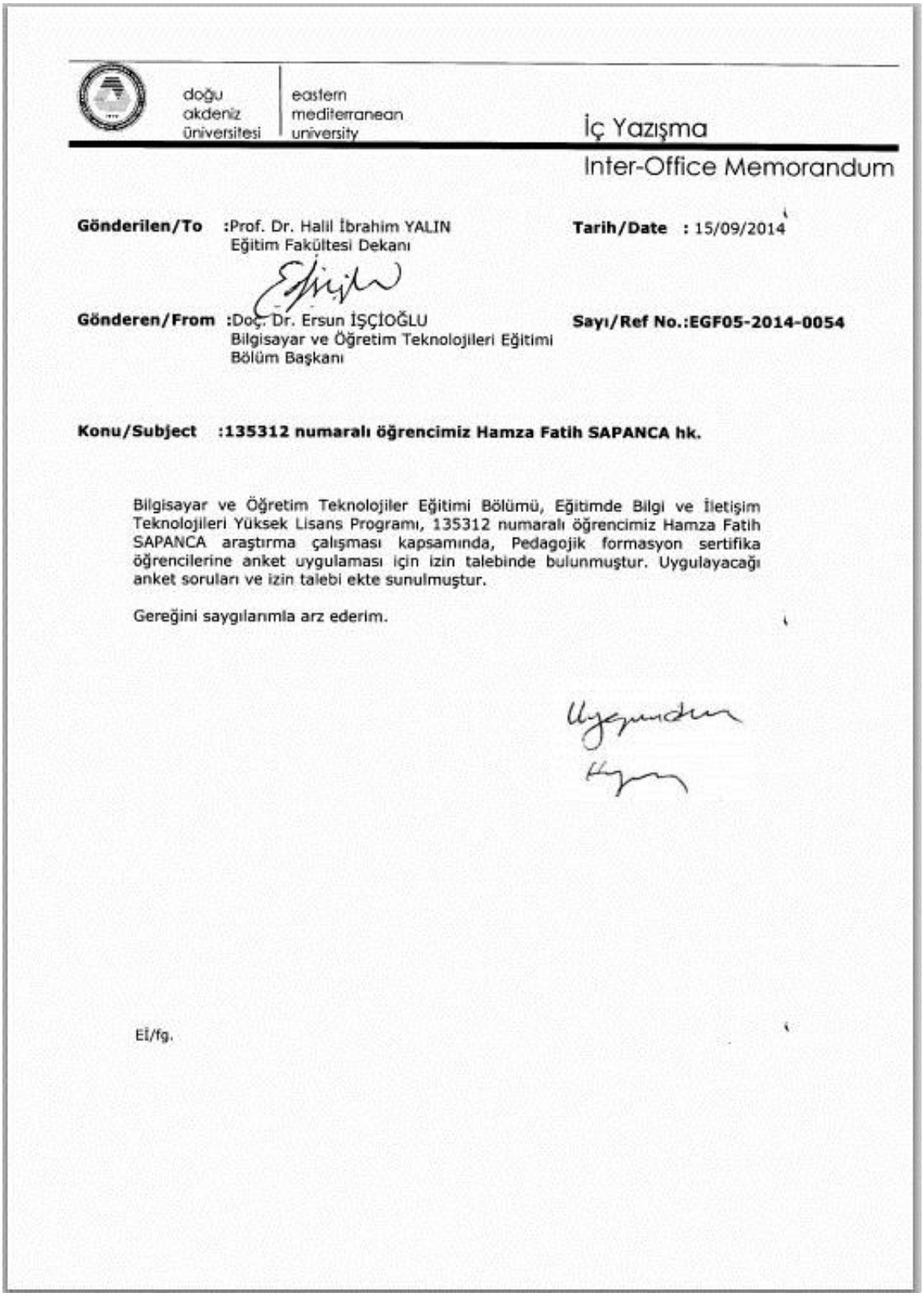
APPENDICES

Appendix A: Faculty Research Authorization



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İç Yazışma

Inter-Office Memorandum

Gönderilen/To :Prof. Dr. Halil İbrahim YALIN
Eğitim Fakültesi Dekanı

Tarih/Date : 15/09/2014

Gönderen/From :Doç. Dr. Ersun İŞÇİOĞLU
Bilgisayar ve Öğretim Teknolojileri Eğitimi
Bölüm Başkanı

Sayı/Ref No.:EGF05-2014-0054

Konu/Subject :**135312 numaralı öğrencimiz Hamza Fatih SAPANCA hk.**

Bilgisayar ve Öğretim Teknolojiler Eğitimi Bölümü, Eğitimde Bilgi ve İletişim Teknolojileri Yüksek Lisans Programı, 135312 numaralı öğrencimiz Hamza Fatih SAPANCA araştırma çalışması kapsamında, Pedagojik formasyon sertifika öğrencilerine anket uygulaması için izin talebinde bulunmuştur. Uygulayacağı anket soruları ve izin talebi ekte sunulmuştur.

Gereğini saygılarımla arz ederim.

Uygundur

Eİ/fg.

Appendix B: Questionnaire

E-ÖĞRENME ÖĞRENCİ MEMNUNİYET ANKETİ

Değerli Katılımcı;

Bu anket formu, Pedagojik Formasyon programı öğrencilerinin e-öğrenme sistemi hakkındaki memnuniyet düzeylerini belirlemek amacıyla düzenlenmiştir. Anketten elde edilecek bilgiler, bilimsel bir çalışmaya temel oluşturacak ve başka bir amaçla kullanılmayacaktır.

Cinsiyetiniz :	☐	**Bayan**	☐	**Bay**

Yaşınız :	☐	**17-22**	☐	**23-28**	☐	**29-36**	☐	**37-42**	☐	**43-48**	☐	**49 ve üzeri**

1) İnterneti hangi amaçla kullanıyorsunuz ?

☐ Öğretim faliyetleri (e-ders, ödev, forum,sınav, vs.) ☐ Bankacılık işlemleri ☐ Araştırma yapmak

☐ Anlık ileti gönderme(Whatsapp, Msn, Skype) ☐ e-posta gönderme - alma ☐ Sosyal iletişim (Facebook, Twitter,Google Plus, vb.)

☐ Müzik, video amaçlı ☐ Gazete, tv, dergi vb. Medya araçları ☐ Hepsi

2) İnternet kullanımına günde ayırdığınız süre yaklaşık ne kadardır ?

☐ 0-1 saat ☐ 2-3 saat ☐ 4-5 saat ☐ 6-7 saat ☐ 8 saat ve üzeri

3) Öğretim faliyetleri için günde kaç saat internet kullanıyorsunuz ?

☐ 0-1 saat ☐ 2-3 saat ☐ 4-5 saat ☐ 6-7 saat ☐ 8 saat ve üzeri

Aşağıdaki ifadelere katılım derecenizi belirtiniz.

(5) Tamamen katılıyorum; **(4)**Kısmen katılıyorum; **(3)** Ne Katılıyorum Ne de Katılmıyorum; **(2)**Katılmıyorum; **(1)**Hiç Katılmıyorum.

	Bilgisayarda çalışma hakkında ne düşünüyorsunuz ?					
	"Bilgisayarda çalışmanın"	**5**	**4**	**3**	**2**	**1**
1-	Çok zor ve karmaşık olduğunu düşünüyorum.					
2-	Teknik bilgi gerektirdiğini düşünüyorum.					
3-	Kişinin verimliliğini artırdığını düşünüyorum.					
	"Bilgisayarda çalışmak"					
4-	Benim için zevkli bir uğraştır.					
	"Bilgisayarda çalışmaktan"					
5-	Hoşlanmıyorum.					

Bilgisayarda e-öğrenme ile ilgili hangi programları kullanmakta deneyimlisiniz?						
		5	**4**	**3**	**2**	**1**
1-	*İnternet kullanımında (bilgi arama vs.) deneyimliyim*					
2-	*E-posta alma gönderme işlemlerinde deneyimliyim.*					
3-	*Kelime işlemci, hesap tablosu ve sunum programları (MS Office) kullanmada deneyimliyim.*					
4-	*İnternet sayfaları tasarlama ve kodlamada deneyimliyim.*					

E-öğrenmede iletişim hakkında ne düşünüyorsunuz ?						
	"E-öğrenme sisteminde"	**5**	**4**	**3**	**2**	**1**
1-	*Öğretim üyeleri ve diğer kullanıcılar ile etkileşim sağlamada sorun yaşamıyorum.*					
2-	*Öğretim üyeleri ve okul yöneticileri ile gerektiğinde e-posta veya telefon araçları ile iletişim sağlayabiliyorum.*					
3-	*Forum üzerinden iletişim kurmak beni motive ediyor.*					
4-	*Sorun bildirme sisteminden sorularıma cevap alabiliyorum.*					
5-	*Platform mesaj modülünden (özel mesaj) sorularıma cevap alabiliyorum.*					

Öğretim üyeleri sorularınıza zamanında yanıt veriyorlar mı?						
	"E-öğrenme sisteminde"	**5**	**4**	**3**	**2**	**1**
1-	*Öğretim üyeleri sorularıma en kısa zamanda cevap veriyorlar.*					
2-	*Öğretim üyelerinin öğrencilerle yeterince ilgilenmediklerini düşünüyorum.*					

Öğretim üyelerinin bilişim teknolojileri kullanımları hakkında ne düşünüyorsunuz?						
		5	**4**	**3**	**2**	**1**
1-	*Bana göre e-öğrenmedeki öğretmenler, geleneksel sınıflardaki öğretmenlere göre bilgisayar kullanımına daha yatkındırlar.*					

Öğretim kalitesi sizce hangi seviyededir?						
"E-öğrenme sisteminde sağlanan öğretim kalitesinin"		**5**	**4**	**3**	**2**	**1**
1-	*Çok iyi olduğunu düşünüyorum.*					

Öğretim kalitesini etkileyen özellikler sizce nelerdir?						
"E-öğrenme sisteminde sağlanan öğretim kalitesi"		**5**	**4**	**3**	**2**	**1**
1-	*Ders sunumlarının kaliteli olması ile ilgilidir.*					
2-	*Ders araçları çeşitliliği (video, animasyon, canlı yayın vs.) ile ilgilidir.*					

E-öğrenme sistemini kullanmak size göre zor mudur?						
"E-öğrenme sisteminde"		**5**	**4**	**3**	**2**	**1**
1-	*Basit ve kolay bir biçimde e-öğrenme işlemlerini gerçekleştiriyorum.*					
2-	*E-öğrenme bileşenlerini kolaylıkla bulabiliyorum.*					
3-	*Sık sık teknik sorunlar yaşıyorum.*					
4-	*Kullanıcı ara yüzü (grafiksel ara yüz) çok karmaşık bir yapıda olduğundan çalışmayı zorlaştırmaktadır.*					

E-öğrenme sistemi kullanma size hangi yararları sağlar?						
"E-öğrenme sisteminin"		**5**	**4**	**3**	**2**	**1**
1-	*Verimliliği artırdığını düşünüyorum .*					
2-	*Geleneksel öğretimden farklı olduğunu düşünmüyorum.*					
3-	*Kullanıcı ara yüzü e-öğrenme sistemleri için uygundur ve e-öğrenme etkinliklerinde fayda sağlamaktadır.*					

E-öğrenme sistemine girişte zorluk yaşıyor musunuz?						
	"E-öğrenme sistemine"	**5**	**4**	**3**	**2**	**1**
1-	*İnternetten hızlı ve kolay biçimde girebiliyorum*					
2-	*Erişim, farklı internet tarayıcıları ve farklı internet erişim teknolojileri (ADSL, kurumsal yüksek hızlı internet, mobil) gibi değişik platformların sadece bazılarından sağlanabiliyor.*					
3-	*7*24 saat erişim sağlanmasına rağmen sık sık kesintiler yaşanıyor*					
"E-öğrenme sisteminde"						
4-	*Bilgiye yüksek hızlı olarak ulaşılabiliyor.*					

Diğer öğrenciler veya öğretim üyeleri ile etkileşim kurarken sistem sorun çıkarıyor mu?						
"E-öğrenme sisteminde"		***5***	***4***	***3***	***2***	***1***
1-	*Kullanıcılar ile sistem arasında etkileşimde (online sınav esnasında sistemin kopması gibi) sorunlar sıklıkla yaşanıyor.*					
2-	*Sunulan etkileşim araçları(forum, e-posta, özel mesaj,tartışma ortamı vs.)sınıftaki aktifliğimi artırıyor.*					

Öğrenme seviyenizin değerlendirilmesi sizi motive ediyor mu?						
"E-öğrenme sisteminde"		***5***	***4***	***3***	***2***	***1***
1-	*Kısa sınavlar, ödevler, ara sınavlar, alıştırmalar gibi çeşitli araçlar ile öğrenme durumumu ölçebiliyorum.*					
2-	*Öğrenme durumumu bilmek bana eksiklerimi tamamlama ve motive olma açısından fayda sağlıyor*					
3-	*Öğretim üyeleri ödev, kısa sınav vb. gibi değerlendirme notlarını çok geç açıklıyorlar.*					

E-öğrenme sistemi size hangi yönlerden esneklik sağlamaktadır?						
"E-öğrenme sisteminde derslerin"		***5***	***4***	***3***	***2***	***1***
1-	*Animasyon, resim, ses, görüntü gibi araçlarla desteklenmesi daha kolay öğrenmemi sağlıyor.*					
2-	*İçeriklerinin çok uzun olması gereksiz zaman kaybına neden oluyor.*					
3-	*Bileşenleri (e-ders, ödev, sınav vb. gibi) belirlidir ve açıkça anlaşılabilmektedir.*					
4-	*İçerikleri, ödev soruları, kısa sınav ve vize soruları öğretim üyeleri tarafından yeterince güncellenmiyor.*					

Derslerin kalitesini yeterli buluyor musunuz?						
"E-öğrenme sisteminde derslerin"		***5***	***4***	***3***	***2***	***1***
1-	*Kalitesi bana göre yeterlidir.*					
2-	*İçerik ve sunumunun kaliteli olması, öğrenme performansımı artırıyor.*					
3-	*Kalitesi bana göre geleneksel sınıf ortamından pek farklı değil.*					

Öğretim üyelerinin size olan yaklaşımı ne düzeydedir?						
"E-öğrenme sisteminde"		***5***	***4***	***3***	***2***	***1***
1-	*Öğretim üyelerinin öğrencilere karşı tutumu olumludur.*					
2-	*Öğretim üyeleri ile iletişim kurmakta zorlanıyorum.*					

Üniversite yönetimi sizi yeterince destekliyor mu?						
"Üniversitemizde"		***5***	***4***	***3***	***2***	***1***
1-	*E-öğrenme sistemine kayıt olma esnasında teknik sorunlarla karşılaşıyorum.*					
2-	*E-öğrenme sistemine kayıtlarda karşılaşılabilen problemler kolaylıkla çözülüyor.*					
3-	*E-öğrenme servisi fakülte/enstitü/meslek yüksekokulu yönetimi tarafından yeterli seviyede destekleniyor ve ilgili birim personeli ile etkileşimde sorun yaşamıyorum.*					
4-	*E-öğrenme servisi işlemlerinde sorun yaşadığımda yetkili birimler tarafından çözüm sağlama çok gecikiyor.*					
5-	*E-öğrenme final sınavları ve stajları gibi okulda yapılan uygulamalarda sağlanan fiziksel şartları yeterli bulmuyorum.*					

Derslerin işlenmesinde öğretim üyelerinin etkinliği sizce yeterli mi?						
"E-öğrenme sisteminde"		***5***	***4***	***3***	***2***	***1***
1-	*Derslerde anlaşılmayan bir konu olduğunda öğretim üyesinden rahatlıkla yardım alabiliyorum.*					
2-	*Öğretim üyeleri ders içerikleri hakkında yeterli düzeyde bilgiye sahipler.*					
3-	*E-öğrenme bileşenleri önceden belirlenen takvime göre hazır halde bulunmaktadır.*					
"Okulun web sitesinde"						
1-	*İçerikler beni yeterince bilgilendirecek düzeydedir.*					

2-	*Sık sorulan sorular gibi faydalı araçlardan yararlanıyorum.*					
3-	*Yayınlanan duyuru ve haberler ile güncel bilgilere ulaşıyorum.*					

E-öğrenme sisteminden memnun musunuz?						
		5	***4***	***3***	***2***	***1***
1-	*Öğretim üyelerinin yardım ve önerilerde bulunmaları, sistemden memnuniyetimi olumlu etkiliyor.*					
2-	*E-öğrenme kurslarına katılmak isterim.*					
3-	*Öğretim faaliyetleri dışındaki işlerime daha fazla zaman ayırma imkanı sağlaması beni memnun ediyor.*					
4-	*Etkili öğretim yöntemleri başarımı artırıyor.*					
5-	*Öğretimsel aktivitelerden memnunum.*					
6-	*E-öğrenme sisteminden aldığım hizmetten çok memnunum.*					

Katılımınız için Teşekkür Ederim.

Appendix C: Interviews Questions

1. Çevrimiçi olarak almış olduğunuz pedagojik formasyon eğitimden hakkında düşünceleriniz nelerdir? Memnun kaldınız mı?

2. E-öğrenem sistemine kolaylıkla erişim sağlayabildiniz mi? Erişim esnasında ne tür sorunlarla karşılaştınız?

3. E-öğrenme sistemi için sunulan destek hizmetleri kalitesi hakkında neler düşünüyorsunuz?

4. E-öğrenme derslerin kalitesini yeterliliği konusunda düşünleriniz nelerdir ? Bu yeterliliğin kişisel gelişiminiz üzerine etkisi nasıl oldu?

5. Bilgisayar kullanım düzeyiniz ve öğretim elemanları ile etkileşim bu sistem için başarı sağlayan etkenler arasında olduğu fikrine katılıyor musunuz ? Neden?

6. E-öğrenme sistemi içerisinde sunulan materyallerin kullanışlılığı ve güncelliği hakkında neler düşünüyorsunuz.

Appendix D: Turnitin Originality Report

Turnitin Originality Report

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14 < 1% match (publications)
Kim, J., "Assistance and possibilities: Analysis of learning related factors affecting the online learning satisfaction of underprivileged students", Computers & Education, 201112

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