AN INVESTIGATION OF ENGLISH LANGUAGE TEACHERS' ATTITUDES
TOWARD COMPUTER TECHNOLOGY AND THEIR USE OF TECHNOLOGY
IN LANGUAGE TEACHING

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KADİR KARAKAYA

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——————————————

Prof. Dr. Meliha ALTUNIŞIK
Director

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

——————————————

Prof. Dr. Wolf KÖNİG
Head of Department

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

——————————————

Assoc. Prof. Dr. Gölge SEFEROĞLU
Supervisor

Examining Committee Members

Assist. Prof. Dr. Cemal Çakır	(GAZİ, ELT)	——————————
Assoc. Prof. Dr. Gölge Seferoğlu	(METU, ELT)	——————————
Assist. Prof. Dr. Çiğdem Sağın Şimşek	(METU, ELT)	——————————

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Name, Last name : Kadir Karakaya

Signature   :

ABSTRACT

AN INVESTIGATION OF ENGLISH LANGUAGE TEACHERS' ATTITUDES TOWARD COMPUTER TECHNOLOGY AND THEIR USE OF TECHNOLOGY IN LANGUAGE TEACHING

Karakaya, Kadir

M.A., Department of English Language Teaching

Supervisor: Assoc. Prof. Dr. Gölge Seferoğlu

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This study aimed at investigating the attitudes of English language teachers in Turkey toward computer technology and the extent to which they use technology in language instruction. The data were collected from a sample of English teachers working at public schools all throughout Turkey. In order to ensure triangulation and complementarity, mixed methods research was used combining both quantitative and qualitative research methods. A questionnaire and semi-structured, face-to-face interview were used in order to collect the data. Both descriptive and inferential statistics as well as content analysis were conducted so as to analyze the data. The results of the data analysis yielded positive findings regarding English teachers' attitude toward technology; their use of technology in instruction, however, do not correlate with their positive attitudes.

The findings of the study revealed that a great majority of teachers attribute positive remarks for integrating technology in language teaching. However, they get difficulty in integrating technology into their instruction effectively. The interviews also showed

consistent findings with the questionnaire data by pointing out that the teachers do not use computer technologies as instructional tools. The findings showed that the respondents did not have professional training on integrating technology into education. Thus, in order to have teachers who can efficiently use computer technologies in language instruction, pre-service ELT teacher education programs should provide technology related courses for their students. It is also suggested that teachers be provided with in-service training on technology integration in order to realize effective use of technology in education.

ÖZ

İNGİLİZCE ÖĞRETMENLERİNİN BİLGİSAYAR TEKNOLOJİLERİNE OLAN TUTUMLARI VE DİL ÖĞRETİMİNDE TEKNOLOJİ KULLANIMLARININ İNCELENMESİ

Karakaya, Kadir

Yüksek Lisans, İngiliz Dili Öğretimi Bölümü

Tez Yöneticisi: Doç. Dr. Gölge Seferoğlu

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Bu çalışma Türkiye'deki İngilizce öğretmenlerinin bilgisayar teknolojisine olan tutumlarını ve teknolojiyi dil öğretiminde ne derece kullandıklarını araştırmayı amaçlamaktadır. Veriler Türkiye genelinde devlet okullarında görev yapan İngilizce öğretmenleri örnekleminden elde edilmiştir. Verilerin doğruluğunu ve bütünselliğini sağlamak amacıyla, nicel ve nitel araştırma yöntemlerinin birlikte kullanıldığı karma yöntem araştırması kullanılmıştır. Anket ve yarı yapılandırılmış yüz yüze röportaj veri toplamak için kullanılmıştır. Içerik analizi ile birlikte hem betimsel hem de sayısal istatistik hesaplamaları verileri analiz etmek için kullanılmıştır. Analiz sonuçları İngilizce öğretmenlerinin teknoloji tutumları ile ilgili olumlu bulgular ortaya koymuştur. Fakat öğretmenlerin teknoloji kullanımları teknolojiye olan tutumlarıyla bağdaşmamaktadır.

Araştırma bulguları, öğretmenlerin büyük bir çoğunluğunun teknolojiyi dil öğretimine entegre etmek için olumlu fikre sahip olduklarını göstermektedir. Ancak, teknolojiyi etkili bir şekilde dil öğretimine entegre etmede zorlanmaktadırlar. Röportajlar da öğretmenlerin bilgisayar teknolojilerini öğretim aracı olarak yeterli derecede kullanmadıklarını doğrulayarak anket verileriyle tutarlı bulgular göstermiştir. Bulgular,

katılımcıların teknolojiyi eğitime entegre etme konusunda profesyonel bir eğitim almadıklarını göstermiştir. Bundan dolayı, bilgisayar teknolojilerini dil öğretiminde etkili bir şekilde kullanabilecek öğretmenler yetiştirmek için İngilizce öğretmenliği bölümleri, öğrencilerine teknoloji ile ilgili dersler sunmalıdır. Ayrıca, eğitimde etkili teknoloji kullanımını gerçekleştirmek için öğretmenlere teknoloji kullanımı üzerine hizmetiçi eğitim verilmesi gerekmektedir.

Anahtar Kelimeler: Teknoloji Tutumları, Bilgisayar Teknolojisi, Karma Yöntem Araştırması, Hizmet Öncesi ve Hizmet İçi Teknoloji Eğitimi

To My Beloved Family

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ABBREVIATIONS

ANOVA	Analysis of Variance
CALL	Computer Assisted Language Learning
CMC	Computer Mediated Communication
EFL	English as a Foreign Language
ELF	English as a Lingua Franca
ICT	Information and Communication Technology
MONE	Ministry of National Education
MOO	Multi Object Orientation
MUD	Multi User Domain
NNS	Nonnative Speaker
NS	Native Speaker

CHAPTER I

INTRODUCTION

1.0 Presentation

This introductory chapter presents the background to the study and the importance of technology as an educational tool is provided. Next, primary purpose and scope of the research along with the specific context of this study are explained in this chapter. Lastly, a brief overview of the Turkish National Education System is also presented and the significance of the study is touched upon.

1.1 Boost of Technology

Technology has developed rapidly for the last five decades, and it has spread to almost all aspects of life from industry to education by playing a major role in the development of humanity and international relations through connecting people together from diverse places of the world. The last century has witnessed an unprecedented linear development and innovation thanks to the substantial boost of technology in peoples' lives. It has changed the lives of human beings dramatically and technological tools have been ubiquitous in the everyday lives of people. While people were using telephones only in their homes until recently, now, they are using cell phones for almost every thing instead of traditional home telephones. With the advent of sophisticated technologies, mobile phones have almost replaced the classic telephones used at homes. Humanity has seen a rapid shift in a short period of time, and such a shift also affected the behaviors and attitudes of people accordingly. While people were writing letters to each other in order to communicate they nowadays extensively prefer using e-mail and chat tools to correspond with each other. Technology can undeniably be said to have facilitated the life of people by providing them with easy and applicable solutions. People have benefited from the innovations of technology tremendously. For instance, before the development of technology it was rather difficult to send money from one place to another, but today technology has enabled people to make their banking transactions electronically with just one click in

seconds even internationally. As it has shown its effect in almost all areas of life, technology has also offered a lot of opportunities for education. However, the adoption of technology in educational contexts has not been as swift as in other areas (Jaber, 1997; Salaberry, 2001; Zhao & Frank, 2003). As technology is a general term, technologies related to computers (computer technology) are the primary focus of this study. A number of studies have explored the reasons why computer technology has not been adopted and used effectively. A bulk of research was conducted on the factors that hinder the efficient use of computer technology in educational practices (Hadley & Sheingold, 1993; Levin & Wadmany, 2008; Wozney, Venkatesh & Abrami, 2006; Yıldırım, 2000; Zhao & Frank, 2003). One of the most crucial findings of these studies is that teachers do have the most impact on the effective use of computer technology in education. Therefore, this study aims at investigating the issue from the perspectives of teachers who are the real actors in classroom settings. To this end, English teachers working at public schools throughout Turkey have been the focus of this research. In short, this study aimed to explore the attitudes of English language teachers toward computer technology and their use of technology in their language teaching practices.

1.2 Background to the Problem

It is a known fact that technology has drastically changed the lives of people. It has greatly brought about remarkable innovations. Some technologies have been taken for granted by people. To illustrate, CD-DVD ROMs have replaced the old cassettes. However, cassettes were widely used by people until recently. It is not surprising to see cassette players fixed on automobiles produced in the years 2000. What is surprising is that they have almost disappeared within just a few years. Thus, it is clear that new technologies are showing up quickly and they are affecting the lives of human beings substantially. In a similar vein, technology, particularly computer technology, has been also used in education. It would be impossible not to see the reflection of technology in education as well. In this respect, schools are tried to be equipped with

computers and other technological tools in order to enhance the quality of education and learning (Inan & Lowther, 2010). It is also highlighted by Zhang (2010) that "researchers from around the world have been exploring new learning programs, often supported by new technologies, to increase student capabilities of productive and collaborative knowledge work" (p.229).

Computer technology has also contributed to language teaching and learning. Particularly as English is considered as the *Lingua Franca* of the time, it has been the international language of the world. It has been used extensively in commerce, academia, international relations, politics, tourism, and in many other aspects of life. Through globalization and internationalization, people have been linked to each other more tightly and international relations have been more frequent. All these new developments in the world were largely due to computer technologies and more specifically to the World Wide Web. Chapelle (2003) highlights that "the role of English", depending heavily on changing technology, has also "expanded in ways" that affect the language teaching (p.xi). Chapelle (2003) also stresses that "the Internet and other electronic sources make large quantities of English available to learners, and accordingly amplify the importance of English internationally" (p.xi). Likewise, Warschauer and Kern (2000) contend that "Over the past 20 years, computer networks have introduced unprecedented opportunities for language learners to access and publish texts and multimedia materials and to communicate in new ways within and beyond the classroom" (p.281). Kern (2006) also exemplifies that:

> Images, animation, color, and visual design interact with language in Web-based communication. E-mail, instant messaging, chat rooms, Usenet groups, MOOs, blogs, and wikis enable new forms of discourse; new forms of authorship; new forms of identity construction; new ways to form, choose, and maintain learning communities and affinity groups that cross national boundaries (p.183).

Computer technologies such as CMC (Computer Mediated Communication) has shifted the way people communicate with each other by enabling people to interact

with each other and accordingly led to the new forms of literacies and discourse. Kern (2006) also adds that "CMC provides learners with the opportunity for social interaction, but because the interaction takes place primarily in writing, it also provides learners with ample opportunity to focus on form and content" (p.195). Therefore, CMC tools (e.g., e-mail, chat groups, instant messaging, blogs, wikis, MOOs) supply great opportunities for language learners such as getting ample amount of input and learning how to express themselves especially in communicative practices (Schuetze, 2008). In addition to this, CMC tools enable students to have greater confidence in interacting with people. Likewise, the Internet has greatly facilitated L2 learning and teaching by presenting endless input source for both learners and teachers.

When English Language Teaching (ELT) is taken into consideration, the Internet provides English teachers with unprecedented authentic materials, which is one of the key elements in ELT. Students are able to access to invaluable sources and materials in order to improve their language learning skills. Warschauer (2002) claims that "the extensive amount of online information and communication in English provides the possibilities and, in many contexts, the imperative to reconstruct the English language curriculum to incorporate technology-enhanced communication and project work" (p.455).

No matter how unlimited materials and opportunities are available thanks to computer technology in today's world, it is crucial to make best use of these technologies. Therefore, language teachers play a decisive role in turning technology into a functional tool that facilitates language learning and teaching. For this reason, this study aims to explore English language teachers' current perceptions of and attitudes toward computer technology and their use of technology in their language teaching practices.

1.3 Purpose of the Study

This study primarily aimed at investigating the attitudes of English language teachers toward computer technology and exploring their use of technology while teaching English. The data were collected from a sample of English language teachers working at public schools all throughout Turkey. First, their computer usage levels were investigated through a quantitative questionnaire and their levels of computer usage were gained. Second, their attitudes toward ICT (Information and Communication Technologies) and Computer Attributes were examined. Third, their attitudes toward Online Language Teaching were also explored. Through the qualitative semi-structured face-to-face interviews, the study aimed to probe into teachers' use of computer technology in language instruction. Regarding their use of computer technologies, autonomy of teachers and barriers of technology implementation were scrutinized deeply.

1.4 Research Questions

In order to realize the purpose of this study, the following research questions were formulated:

1. What are the attitudes of English language teachers in Turkey toward computer technologies in education and language instruction?
2. To what extent do English language teachers use computer technologies?
3. How do English teachers integrate technological tools into their language teaching practices?
4. What are the factors that affect English language teachers' use of computer technologies in classrooms within Turkish context?
5. To what extent are the following factors influential on teachers' attitudes toward ICT, online language teaching, computer attributes and their access to the Internet?
   a. Gender
   b. Age

c. Teaching experience

d. Degrees that English teachers hold

e. Geographical region

f. Institutions at which English teachers work

g. Use of Online Communities

1.5 Context

In this study, it is assumed that geographical region differences may affect the participants' attitudes toward computer technology as well as their technology incorporation in language instruction. As Turkey demonstrates great difference among regions in terms of educational standards, it is presumed that the variety of places from which the participants of this research come may result in diverse results for the study. Turkey is composed of seven geographical regions and its size is 780.580 km2 (OECD, 2007). There are a total of 81 cities in Turkey.

1. Aegean

2. Black Sea

3. Central Anatolia

4. Eastern Anatolia

5. Marmara

6. Mediterranean

7. Southeastern Anatolia

As Table 1 indicates, there are huge disparities among the regions in Turkey with regard to their socio-economic development. To illustrate, the Marmara Region' socioeconomic development index is 1,69; however, the Eastern Anatolian Region has -1.13 socioeconomic index, and it is anticipated that socioeconomic wealth of the regions may also affect the quality of education in these regions. OECD (2007) also states that "the Eighth Five-Year Development Plan notes that although Turkey has

made strides in regional development, disparities among regions are still a major problem" (p.16). For this reason, it is assumed that teachers coming from different regions within Turkey might have potentially different experiences in their teaching profession. Furthermore, specific conditions of each region presumably influence the attitudes of the participants of this study toward computer technology.

Table 1. Differences among regions in population, socio - economic status and GNP

Region	Percent of Population, 1997	Socio-economic development index, 1996	GNP Index Turkey=100
Marmara	25.8	1.69	156
Southeastern Anatolia	9.8	-1.03	56
Mediterranean	12.8	0.06	100
Aegean	13.4	0.5	25
Central Anatolia	16.8	0.46	100
Black Sea	12.5	-0.54	68
Eastern Anatolia	8.9	-1.13	41
Total	100	1.00	100

1.6 Turkish National Education System

In this part of the chapter, a very brief current structure of the Turkish National Education System is provided. Turkish National Education System comprises of two major components: Formal and Non-formal education. In line with the sphere of this study, only formal education structure of Turkish National Education System is dwelled on in this part of the chapter.

> Formal education is the regular education conducted within schools for individuals in a certain age group and at the same level, under programs developed in accordance with objectives (OECD, 2005, p.15).

Formal education consists of four main education levels and some other components within the Turkish National Education System. The beginning level of formal education in Turkey is pre-school education. OECD (2005) states that:

> Pre-school education covers the education of children between 36-72 months who have not reached the age of compulsory primary education. The purpose of pre-school education is to ensure the physical, mental and emotional development of the children and the acquisition of good habits as well as to prepare children for primary education (OECD, 2005, p.16).

After completing the pre-school education, children start primary education in Turkey. Primary education has been compulsory for all children in 1997 (MONE, 2002).

> Primary education covers the education of children in the 6-14 age group. The aim of primary education is to ensure that every Turkish child acquires the basic knowledge, skills, behaviors, and habits to become a good citizen, is raised in line with national concepts of morality, and is prepared for life and for the next education level in line with his or her interests and skills. Primary education is compulsory for all citizens, boys or girls, and is provided free of charge in public schools (OECD, 2005, p.17).

The third level of formal education in the Turkish National Education System is the secondary education.

> Secondary education follows primary education and covers general, vocational and technical high schools providing at least 4 years of education. The aim of secondary education is to give students a minimum common culture, to acquaint them with the problems of the individual and society, to teach how to seek solutions, to raise awareness to ensure their contribution to the socio-economic and cultural development of the country and to prepare students for higher education, for profession, for life and for business in line with their interests and skills (OECD, 2005, pp.17-18).

Secondary education is realized in the [1]following institutions:

> General High Schools
>
> Anatolian High Schools
>
> Science High Schools
>
> Anatolian Teacher Training High Schools
>
> Anatolian Fine Arts High Schools
>
> Social Sciences High School
>
> Sport High Schools
>
> Technical and Vocational High Schools

Secondary education institutions are generally called as 'High School' in Turkey. Among the high schools in Turkey are Anatolian High Schools and Science High Schools the most prestigious secondary education institutions. Both Anatolian High Schools and Science High Schools are the schools which accept students according to the results of a nationwide central examination. These high schools are preferred by both students and parents as they offer more quality of education than general high schools. The students graduating from Anatolian High Schools and Science High Schools are more likely to be enrolled in more prestigious universities. Therefore, there is a severe competition among students in primary schools to be accepted to Anatolian High Schools and Science High Schools. However, there are fewer Science High Schools (N=84) than Anatolian High Schools (N=748) in Turkey (MONE, 2010)

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[1] There are specific institutions available within the secondary education. However, the most common secondary education institutions are listed

Furthermore, there are 'General High Schools' and 'Technical & Vocational High Schools' in secondary education system of Turkey. These two types of high schools are more common than 'Science High Schools' and 'Anatolian High Schools'.

OECD (2005) also reports that private education is effective in Turkey since 1869, and it covers private "schools of all types and levels, which are opened in accordance with the Private Education Institutions Law numbered 625 issued on 08.06.1965" (p.24).

Students complete their secondary education and they have the opportunity to continue their education in higher education level.

> Higher education covers all institutions based on secondary education, lasting at least 2 years, and producing qualified manpower and academicians for scientific research in various fields. Higher education institutions are universities, faculties, institutes, higher education schools, conservatories, higher vocational education schools and application and research centers (OECD, 2005, p. 24).

Currently, there are 102 public universities and 52 private universities in Turkey according to the Higher Education Council statistics.

As is stated before, the data of this study were collected by English teachers working at public schools throughout Turkey. According to the National Education Statistics (2010), the teachers who work at public school settings in Turkey outnumber the teachers who work at private schools. To illustrate, as Table 2 indicates, there are a total of 485.677 teachers working at primary education institutions, and a landslide majority of these teachers (n=458.046) work at public schools whereas a slight number of teachers (n=27.631) work at private schools in Turkey. In addition to this huge disparity, there are a total of 206.862 teachers within secondary education institutions, and (n=190.433) teachers work at public schools while just (n=16.429) teachers work at private schools in Turkey. When both primary and secondary education statistics are considered together, it is clearly seen in Table 2 that 648.479 teachers work at public schools and 44.060 teachers work at private schools in Turkey. The numbers explicitly

indicate that private schools are not as common as public schools, and accordingly, there are fewer teachers working at private schools. For all these reasons, this study aimed to focus on English language teachers who work at public schools settings in Turkey in order to have a broader picture of Turkey with regard to English teachers' perceptions of computer technology and their use of technology in language teaching practices.

Table 2. Number of Schools, Students and Teachers by Education Levels
(2009-2010 Academic Year)[2]

Education Level	Number of Schools	Number of Students	Number of Teachers
Primary Education	33.309	10.526.695	485.677
Public	32.430	10.274.728	458.046
Private	879	251.967	27.631
Secondary Education	8912	3.639.101	206.862
Public	8181	3.520.879	190.433
Private	731	118.222	16429

Table 2 also shows that a great majority of the students in Turkey go to public schools. More specifically, it is seen in Table 2 that there are a total of (N=13.795.607) students in both public primary and public secondary schools. There are (N=370.189) students at primary and secondary schools in private institutions. As private schools are available more in big cities and populated centers, it would have been hard to achieve data representing the case of English teachers working in less crowded and small places of Turkey. Therefore, collecting data from English teachers who work at public schools enhances reaching more comprehensive findings for the scope of this study.

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[2] Numbers related to Open Primary and High Schools which are administered by distance education are not included in the Table 2.

For all these reasons, working with English language teachers from public schools in Turkey contributed substantially to the significance of this study.

Participants in this study (N=87) represent English language teachers who work at primary and secondary schools in the public education system in Turkey. More specifically, 21 of the teachers are from primary education institutions, namely from primary schools, 53 of the teachers work at Anatolian High Schools, and 13 teachers are from general high schools.

1.7 Significance of the Study

This study is based on a research methodology that combines both quantitative and qualitative research methods in one single study. In this study, English teachers' attitudes towards computer technology in English language teaching are investigated through quantitative and qualitative research methods. By employing semi-structured face-to-face interviews, English teachers' actual use of computer technologies in educational practices and their levels of computer usage are examined elaborately. A mixed method research design has made it possible for this study to gain a deeper understanding about English teachers' attitudes toward technology and their integration of computer technology in language instruction.

The significance of this study also comes from the fact that it explores English teachers perceptions of computer technology and also sheds light on their technology use in language teaching practices. Pertaining to this, there is not sufficient data available on ELT teachers' usage of technology as well as their attitudes toward technology within Turkey. Therefore, this research is unique in presenting rich data regarding the effect of technology on English language teachers in Turkey and their usage of computers in language learning and teaching processes.

One of the most important aspects of this study is that it provides a current overall picture of what English teachers think about technology, how they make use of it in their lives and teaching experiences, to what extent they are able to maximize their language teaching practices with technological tools, and how much they are aware of the contemporary technologies in the context of language teaching. This research, thus, reveals significant data and invaluable insights into the use of technology by English teachers in the context of Turkey. Based on the data, a developmental planning for inservice English teacher training on technology and language teaching can be launched. The data gathered from this study will provide trainers, administrators and policymakers with current technology competence and usage levels of English teachers who work at public schools in Turkey. To this end, the findings of this research are of paramount importance for carrying out a series of nationwide teacher training in order to increase the technology use of English teachers in their language teaching practices.

Another great dimension of this study springs from the fact that the participants of the study were selected purposefully. The participants of the study attended a total of four inservice training programs. The inservice trainings were jointly organized by the Turkish Ministry of National Education and the Board of Education, which is responsible for developing and implementing curricula at all levels of education in Turkey. The aim of the inservice training programs was to train English teacher coordinators/mentors (known in Turkey as 'English formator teachers') who were to become responsible for training their colleagues and disseminating the computer technology applications in English language teaching in their particular regions. The Turkish Ministry of National Education intended to reach other English teachers through training this first group of English teachers who show leadership in their profession. Therefore, English teachers were invited to the training program from various parts of Turkey. More specifically, there were English teachers from all seven geographical regions of the country and at least one English teacher attended the training programs from all cities of Turkey. It can be clearly stated that English

teachers who attended those inservice training seminars were coming from diverse places ranging from east to west, from north to south and central parts of Turkey.

This sample of English teachers was, thus, representative of English teacher population working at public schools all around Turkey. For all these reasons, the participants of this study were selected deliberately from English language teachers who attended those inservice trainings held jointly by the Ministry of National Education and the Board Education. As a consequence, the participants from whom the data of this research were collected also yielded invaluable information and insights for the scope and focus of this study. Their contribution as real actors of language teaching and technology implementers revealed significant results and made this study one of the most comprehensive and representative of the studies conducted on technology and language teaching in Turkey.

CHAPTER II

REVIEW OF LITERATURE

2.0 Presentation

In this chapter, literature on technology use in education is reviewed and the effect of technology on educational practices is provided. First, the historical development of CALL is discussed. Then, ICT in language teaching is presented. Next, research on the attitudes of teachers toward technology is dealt with by explicating the technology implementation of teachers in language teaching practices. Lastly, the chapter focuses on teacher education and technology.

2.1 Technology and Education

Technology has been changing the world substantially as it develops in the course of time. Almost all aspects of life are affected by the spread of technology all around the world. Education is also one of the most important aspects of life that is affected by the unprecedented growth of technology. Technology has considerably facilitated education in the world. If it were not computers, not only education but also all other aspects of life would pose a lot of problems for human beings. Technology became an integral part of education as it offers innovations and interaction for both students and teachers. With this respect, countries have spent large amounts of money to equip schools and educational settings with up-to-date technological tools in order to enhance the quality of education (Brown & Warschauer, 2006). It is reported that educational technology expenses increased from $21 to $729 million between the years 1995 and 2001 in the U.S (Russell, Bebell, O'Dwyer & O'Connor, 2003). Accordingly, student-to-computer ratio has decreased substantially. Zhao (2007) reports that:

> the recent National Education Technology Plan released by the U.S. Department of Education stated that over the past 10 years, 99% of American K-12 schools have been connected to the Internet with a 5:1 student to computer ratio. The

technology that has tremendously changed the world outside schools is now changing schools" (p.311).

It is now believed that technology has facilitated the lives of human beings through the new tools it has offered to life till now. Governments and policymakers regard the implementation of technology in education as an indispensable priority. Scheffler and Logan (2000) stress the importance of technology by stating that "in an increasingly technological and interconnected world, policymakers, educators, and the general public recognize the importance of computer knowledge and skills to the daily lives of individuals and for national economic competitiveness" (p.305). Furthermore, it is highlighted that

> With computers and advanced telecommunications technology revolutionizing nearly every aspect of life and work, the question is not whether states and local districts should incorporate technology into teaching and learning but how they should do it (Houghton, 1997, as cited in Scheffler & Logan, 1999, p.305).

More specifically, when technology and language learning are considered together, it can be clearly stated that technology is extensively used in language classes. The contribution of technology to language teaching is summarized as follows:

> ….adding a computer component has many benefits to language instruction, which included multimodal practice with feedback, individualization in a large class, pair and small group work on projects collaboratively or competitively, the fun factor, variety in the resources available and learning styles used, exploratory learning with large amounts of language data, and real-life skill building in computer use (Warschauer & Healey, 1998, as cited in Lin, Lee and Chen, 2004, p.135).

Integrating technology in language teaching ensures that students are interested in computers and they have generally positive attitudes toward it. Indeed, Russell et al. (2003) report that the U.S. Census Bureau's (2002) population survey revealed that American children aged between 9 and 17 use computers more than other age groups. Technology and, especially computers, have been indispensable part of the life. With the rise of communicative language learning, interaction and meaningful contexts have

gained importance because in this way language learners internalize the target language they strive for learning. Computers and the Internet have emerged as revolutionary innovations that offer language learners unlimited opportunities to access a world of materials for reaching ample amount of input, and thereby, facilitating learning English. Warschauer and Meskill (2000) maintain that "students need to be given maximum opportunity for authentic social interaction, not only to provide comprehensible input but also to give students practice in the kinds of communication in which they will later engage outside the classroom" (p.305). With regard to this current notion of language learning with socio-cognitive perspective, computers and the Internet are the most effective tool to provide learners with such opportunities and foster the learning of languages substantially. Regarding technology and language learning, CALL (Computer Assisted Language Learning) has come into being as the most important area of research.

2.2 Language Teaching and Technology

When language learning and technology is concerned, CALL[3] has been the most widely used expression, and it has progressed substantially particularly for the past three decades.

2.2.1 CALL (Computer Assisted Language Learning)

Warschauer (1996) provides a detailed overview of CALL in terms of its historical development by categorizing CALL into "somewhat distinct phases": behavioristic CALL, communicative CALL, and integrative CALL.

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[3] Computer Assisted Language Learning (CALL) was determined as an acronym at the 1983 TESOL convention in Toronto (Chapelle, 2001).

2.2.1.1 Behavioristic CALL

The first phase of CALL history is named as *behavioristic CALL* by Warschauer. This introductory phase of CALL was envisaged during the 1950s and behavioristic CALL was put into practice between the 1960s and '70s (Warschauer, 1996). The applications of CALL in language instruction were affected by the general approaches in learning at that time. As behaviorist approach was the supremacy of learning theories during the 1960s, the applications of CALL were incorporated into language teaching depending heavily on the behaviorist theory of learning. As behaviorist approach required repetition and habit formation, CALL activities were also based on repetitive drills and practice. The rationale behind CALL activities in behaviorist period was reported by Warschauer (1996) as follows:

- Repeated exposure to the same material is beneficial or even essential to learning.
- A computer is ideal for carrying out repeated drills, since the machine does not get bored with presenting the same material and since it can provide immediate non-judgmental feedback.
- A computer can present such material on an individualized basis, allowing students to proceed at their own pace and freeing up class time for other activities (p.2).

Torat (2001) explicates the fundamental characteristics of the behavioristic CALL in Table 3.

Table 3. Main Frame and Mini Computers

Main-frame and Mini Computers (1950s-1970s)		
Technological Development by Year	**Approaches to Language Teaching**	**Approaches to CALL & Examples**
• 1950 - Mathematician and computer pioneer Alan Turing predicted that one day there would be a machine that could duplicate human intelligence in every way. • 1951- Whirlwind, the first real-time computer was built. • 1957- FORTRAN language was developed. • 1959-COBOL (Common Business-Orientated Language) was developed. • 1960-Tandy Corporation founded. • 1964-DEC Mini Computer was built. • 1965-BASIC language was developed. • 1967-Development on PASCAL • 1968-LOGO language was developed. • 1970-Development of UNIX operating system. • 1971-First Microprocessor-4004 was invented. • 1972-C language was developed. • 1972-8008 Processor was released by Intel. • 1972-The first international connections to ARPANET are established. ARPANET became the basis for the internet. • 1974-Introduction of 8080. An 8 Bit Microprocessor from Intel. • 1975-Formation of Microsoft by Bill Gates and Paul Allen. • 1976-Apple Computer, Inc. founded, releasing the Apple II, first mass-market of PC. • 1979-Introduction of 8088 processor. • 1979-Compact disk was invented.	• Empiricist theory • Behaviorism • Audiolingualism • Structural Linguistics Principles of Language Learning: • Focus on stimulus, response, reinforcement. • Language learning is a process of habit-formation. • Focus on drill and practice. • Learn through imitation and repetition. • Give immediate feedback. Individualized instruction was included to serve the pace of the learner.	Behavioristic CALL (e.g. PLATO project: Aims at providing interactive, self-paced learning using mainframe computers.) Main characteristics of behavioristic CALL: • Based on behaviorist theory of learning. • Focus on receptive drills. • Mainly drill and practice type software. • Computer as tutor. • Learning activities promote language accuracy rather than fluency. • Designed to be implemented on mainframe and mini computers. Criticism of Behavioristic CALL: The Behaviorism and Audiolingualism were rejected theoretically and pedagogically by theorists and practitioners

As Table 3 also verifies behaviorist CALL period has been remarkably influenced by the behaviorist learning theory. The applications were mostly mechanical and drill based. In terms of historical development, Chapelle (2001) reports that computer assisted instruction took place during the 1950s. Even, the first examples of CALL were witnessed in the1960s.

2.2.1.2 Communicative Call

As was stated earlier, general language learning approaches influence the development of CALL in the course of time. Likewise, the second phase of the CALL, Communicative CALL, is affected by the communicative approach substantially. The communicative CALL phase lasted during the 1970s and 80s. With the rise of communicative approach, it was seen that behaviorist applications such as repetitive drills and practice did not account for the need for a more communicative and interactional approach. The applications of CALL were not able to provide authentic communication for the use of language learners (Warschauer, 1996).

Through the communicative CALL, it was aimed to focus more on the use of language and interaction via language. Actual use of language was the major focus of the communicative CALL. The use of communicative CALL also fostered the teaching grammar more inductively when compared with the previous phase of CALL (Underwood, 1984, as cited in Warschauer, 1996). In the communicative phase, the activities were largely based on communicative interaction and computers were used as a stimulus for communicative CALL activities. In this respect, Warschauer (1996) stresses that "the purpose of the CALL activity is not so much to have students discover the right answer, but rather to stimulate students' discussion, writing, or critical thinking" (p.3). As the communicative CALL itself suggests, language learners were more likely to encounter CALL activities that probes into the interactional dimensions of language. More productive skills such as writing and speaking came to the fore with the rise of communicative approach and CALL. Torat (2001) comes up with a through summary of the communicative CALL in Table 4.

Table 4. Personal Computers (PC) (1980s)

Personal Computers (PC) (1980s)		
Technological Development by Year	**Approaches to Language Teaching**	**Approaches to CALL & Examples**
• 1980-Development of MS-DOS/PC-DOS began by Microsoft • 1981-The first WIMP (Windows, Icons, Menus and Pointing Devices) by The Xerox Palo Alto Research Lab. • 1982-The TCP/IP Protocol established, and the "Internet" is formed. • 1982-80286 processor was released. • Compaq released their IBM PC compatible • 1983-MS-DOS 2.0 was released. • Hewlett-Packard released LaserJet printer • AT was released. • Apple Macintosh was released. • 1984- MS-DOS 3.0 was released. • 80386 DX was released. • 1985- Microsoft Windows was launched. • 1985- EGA was released. • 1985 - 80386 DX was released • VGA was released • 1988 - MS-DOS 4. The development of word processing such as: • WordMaster • WordStar • WordPerfect	Cognitive Psychology Communicative Language Teaching Transformational Grammar Principles of Language Learning: • Learning is process of discovery, expression, and development. • Focus on functions of the language. • Emphasis on language use rather than usage. • Contextualization is important. • Communicative competence is the desired goal. • Focus on using language forms rather than forms themselves. • Teach grammar implicitly. • Encourage students to produce language rather than manipulate the language, (Brown, 1994).	Communicative CALL: (e.g. Storyboard, Text reconstruction, Cloze exercises) • Serious educational applications appeared. • A boom of CALL due to the introduction of Personal Computer Main Characteristics: • View that drill and practice exercises did not yield enough genuine communication. • Computer-based activities • Focus on using the language in context. • Non-Drill Practice format Type • Text reconstruction • Paced reading • Cloze exercises Criticism of Communicative CALL: Computers were not fully well integrated into the curriculum. The greater contribution is on marginal rather than the central educational elements.

In the communicative CALL, Krashen's ideas affected the applications of CALL activities. The primary aim of the activities was to create "acquisition" rather than "learning". Furthermore, Brown's stance on individual differences in second language acquisition also affected CALL activities in this phase of CALL (Chapelle, 2001, pp.8-9).

2.2.1.3 Integrative CALL

The last phase of CALL timeline is the Integrative CALL. This current phase of CALL is based on two major technological developments: Multimedia computers and the Internet. Multimedia technology provided learners with more authentic materials and activities by combining texts, graphics, sounds, animation and video together. Accordingly, learners end up in a more authentic learning environment. They can figure out more what they do and experience through such technology. Warschauer (1996) highlights that multimedia necessitate the hypermedia that enables linking the multimedia resources together. It is also maintained by Warschauer (1996) that

> Hypermedia provides a number of advantages for language learning. First of all, a more authentic learning environment is created, since listening is combined with seeing, just like in the real world. Secondly, skills are easily integrated, since the variety of media make it natural to combine reading, writing, speaking and listening in a single activity. Third, students have great control over their learning, since they can not only go at their own pace but even on their own individual path, going forward and backwards to different parts of the program, honing in on particular aspects and skipping other aspects altogether. Finally, a major advantage of hypermedia is that it facilitates a principle focus on the content, without sacrificing a secondary focus on language form or learning strategies. For example, while the main lesson is in the foreground, students can have access to a variety of background links which will allow them rapid access to grammatical explanations or exercises, vocabulary glosses, pronunciation information, or questions or prompts which encourage them to adopt an appropriate learning strategy (pp.3-4).

Computer Mediated Communication (CMC) and the Internet have also considerably influenced the last phase of CALL. Through CMC tools such as electronic mails (e-mail), people have had the opportunity to communicate with each other. Additionally, the Internet and CMC tools have enabled human beings to have interaction

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synchronously. Especially such new forms of communications have led to the birth of new kinds of literacies and authorship.

Torat (2001) gives a comprehensive overview of the integrative CALL in Table 5. The table summarizes the integrative CALL and prominent applications of the last phase are provided.

Table 5. Multimedia CD-ROM (1980s-1990s)

Multimedia CD-ROM (1980s-1990s)		
Technological Development by Year	**Approaches to Language Teaching**	**Approaches to CALL & Examples**
• 1982 Audio CDs was introduced • 1982 Book on Audio CDs was introduced by Sony and Phillips-- beginning of the Compact Disk • 1982 MIDI, Musical Instrument Digital Interface was introduced. • CD-ROM, invented by Phillips, produced by Sony • 1989 CD-I released by Phillips and Sony. • 1989 Release of Sound Blaster Card, by Creative Labs • 1990 Introduction of Windows 3.0 by Bill Gates & Microsoft. • 1990 - MPC (Multimedia PC) was introduced. • 1991 - 80486 DX was released. A sound card and triple speed CD-ROM were added. • 1992 Introduction of CD-I launched by Phillips. • 1993 Pentium released • 1993 a CD-ROM drive capable of 300KB/sec (double speed) was introduced.	Humanistic Approach • Focus on Communicative Language Teaching: • Focus on meaning. • Use of authentic, meaningful and contextualized materials. • Fluency in language is a primary goal. • Focus on interactive language learning. • Consider learners' factors such as age, interest, learning styles, motivation. • Tasks relevant to students' real life interests and experiences (Felix, 1998) • Shift away from language usage to language use (Felix, 1998) • The teacher became a facilitator rather than the person who gives out information.	Integrative CALL: Multimedia CD- ROM (e.g.Toolbook, Authorware, Planet English, Real English, Wiser Educator) Main Characteristics Use advantages of multimedia CD-ROM in teaching language for communicative purposes. • Allow computer to incorporate a variety of media (text, graphics, sound, animation, and video) by Hypermedia. • Emerge of friendly-user, powerful authoring software such as ToolBook, Authorware, and Director. • Based on communicative language teaching approach • Built on student's intrinsic motivation • Foster the interactivity between the learner and the learner, and learner and computer. • Multimedia resources are linked together. • Learners can navigate their own path and set their own pace by pointing and clicking mouse. • More authentic language learning environment is created. • The four language skills are integrated. • Focus on content and language skills. • Allow learners to link to a variety of sources such as grammatical explanations, glossaries, pronunciation, exercises, etc.

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With the rapid expansion and spread of the Internet, the CALL activities and applications have changed substantially during the middle of the 1990s. The Internet offered universal access to CALL materials. Individuals began to make use of the Internet as a more instructional language learning tool. Chapelle (2001) states that "CALL activities were no longer limitedto interaction with the computer and with other students in the class but included communication with learners in other parts of the world" (p.23). In this respect, Computer Mediated Communication (CMC) has gained importance because the Internet provided human beings with unprecedented opportunities by offering them communication with people from different cultures of the word. Learners have been able to communicate with native speakers and improve their language learning skills. Torat provides a detailed picture of the Internet era in Table 6.

Table 6. Computer Mediated Communication (the Internet) (1990s)

Computer-Mediated Communication (Internet) (1990s)		
Technological Development by Year	**Approaches to Language Teaching**	**Approaches to CALL & Examples**

• 1969-Computer-mediated communication (CMC) but serious applications appeared in early 1990s.
• 1960s-Hypertext was invented by Ted Nelson.
• 1989- World Wide Web--the integration of hypertext and the Internet- was invented by Tim Berners-Lee.
• 1990- Internet applications became popular such as E-mail, FTP, Talk (UNIX system)
• 1992- Gopher was released.
• The release of CERN (WWW), a hypertext based system for finding and accessing internet resources.
• 1993- Mosaic (Web browser) was released.)
• 1994- Netscape 1.0 was released.
• 1995- Windows '95 was launched with Internet Explorer by Bill Gates & Microsoft.
• 1995 - JavaScript was introduced by Netscape.
• 1998 – Windows '98 was released.
• 1995-1999 - Development of:
• QuickTime
• Real Audio
• Real Movie
• Shockwave
• Web-based E-mail
• Web-based Chat
• Voice Chat
• Internet Phone
• Emerge of web authoring software such as Hot Potatoes, Authorware, and Director.
Desktop Conferencing
	Communicative Language Teaching
	
	Focus on using the internet applications for communicative language teaching:
	  • Foreign language learning will be an acquisition of language content through purposeful and reflective participation.
	  • The curriculum is dynamic.
	  • The role of the teacher is a facilitator, an inseminator of ideas, who draws student's motivation.
	  • The learner is responsible, reflective and creative.
	  • Textbook is a resource along with electronic resources.
	  • Classroom becomes a reconfigurable space with electronic facilities.
	(Debski (1997:47-48)
		Integrative CALL: Internet Applications
		
		(eg. E-mail communication, FTP, World Wide Web, Chat, Gopher sites, MOO servers, CU-SeeMe, Desktop Video Conferencing)
		  • Aim at integrating computer-mediated communication applications for communicative language teaching as follows:
		E-mail
		  • Allow learners to have direct communication around the globe.
		FTP
		  • Allow learners and teachers to download documents, graphics, sounds, videos, and animation.
		WWW
		  • Learners search and share different kinds of files on the internet (documents, graphics, sounds, video, animation).
		Chat:
		  • Allow learners to have real time communication.
		Main Characteristics:
		  • Allow computer to incorporate a variety of media from the internet such as text, graphics, sound, animation, and video.
		  • Internet resources are linked together by Hypermedia.

2.3 ICT and Language Teaching

Now that the historical development of CALL in relation to language instruction and technology has been reviewed, the benefits of ICT and the Internet are the focus of this section. Especially after 1990s, the Internet has considerably altered the conventional lifestyles of people. With the rise of communication technologies and the Internet mediated communication, people have developed new means of communication. Digital tools have been indispensable part of human beings. All these computer mediated tools have connected people together from different parts of the world. People have been able to access unlimited authentic communication. Human beings have developed new ways of social interaction with each other. People have learned how to interact with people from different cultures and they are able to share information, knowledge, and their experiences with other people. The internet and ICT have also enabled people to express and discuss their ideas and feelings. Such settings have led to the formation of new literacies and discourse settings. Through online communities, people formed social relations and they have been unconsciously exposed to incredible data of communication and interaction.

Studies on Computer Assisted Language Learning (CALL) were investigated from two major approaches. Most of earlier studies were conducted from Interactionist perspective (e.g., Blake, 2005, Doughty & Long, 2003; Meskill, 2005). Interactionist perspective suggests that interaction is a key process through which learners obtain necessary data for language learning (Long, 1996 as cited in Fuente, 2003). Therefore, Computer Mediated Communication (CMC) is an invaluable medium to provide learners with interaction in the course of communication. Also, CMC lets learners to be exposed to more input in language learning processes. Sociocultural approach is the other perspective that also affected the research carried out on CALL. Proponents of sociocultural perspective (e.g., Lantolf, 1994, 2001; Thorne, Black & Sykes, 2009) believe that external factors and human beings themselves are quite effective in creating a language learning atmosphere in CMC.

Whether ICT is investigated from sociocultural or interactionist framework, the benefits of ICT are undeniable and there is a growing interest in utilizing ICTs as educational tools. Warschauer (1997) highlights that computer mediated communication leads to "communication that is more equal in participation than face to face discussion" (p.473).

Warschauer and Meskill (2000) stress that the Internet provides a unique platform for foreign language learners who are far from the native speakers and use the target language in limited occasions. Students have the opportunity to have access to authentic language use by way of the Internet and they are able to practice target language in online settings (Warschauer and Meskill, 2000). Thus, the Internet presents unbelievable sources for especially foreign language learners to practice and communicate with the target language and culture. More specifically, a great majority of people would not have been able to improve their communication skills if it had not been the Internet for the use of humanity as most people do not have the opportunity to visit and experience the target cultures. As a result, the benefits of the Internet cannot be denied.

Meskill and Anthony (2005) also conducted a research to investigate the relationship between CMC and foreign language learning. The results of the research indicated that "the instructional opportunities afforded by electronic communications make CMC an excellent tool to complement live foreign language classes" (p.102). It was also observed that CMC enabled language instructors to ask questions and invite for the responses so that students can use accurate target language forms. Students also felt as unstressed as in the classroom when they were asked questions in CMC settings. Furthermore, feedback was smoothly integrated into the flow of conversation and students were able to correct their mistakes immediately

Abrams (2003) also investigated the effectiveness of CMC on oral performance through a quasi-experimental study. The data of the research were collected from 96 students taking intermediate German at university level. According to the findings of

the study, it was observed that students who were exposed to synchronous CMC outperformed the students in the face-to-face group. In addition to this, students who were in the synchronous CMC group had the opportunity to access the necessary lexical items easily, and this, accordingly, promoted learners' interlanguage development.

Another study was conducted by Kitade (2000) so as to explicate to what extent CMC contributes to L2 learning. To this end, the data of the research were gathered from a total of 24 Internet Chat (IC) discussion sessions among 18 students enrolled in advanced Japanese course in three different university settings. According to the results of the study, Internet Chat (IC) supplied various input for L2 learners from both non-native speakers and native speakers. The analysis of the data also revealed that "CMC not only provides opportunities for interaction in foreign language environments, but also facilitates collaborative and comprehensible interaction while providing individual learners an opportunity for learner-centred interaction" (p.163)

Lee (2002) carried out a study on CMC and task-based language learning. According to the results of the study, CMC provided an invaluable setting for the learners to reach to authentic materials and communicate in the target language

> This study demonstrates that CMC is an effective way for learners to negotiate both meaning and form and reinforce their communication skills, especially in written communication. Online interactions did not slow student output production; rather, students strove to respond to the input quickly so that they could follow the flow. In addition, students strongly agreed that CMC helped them develop both linguistic and metalinguistic skills as they used the target language and communication strategies during the negotiation (Lee, 2002, p.20).

Lin, Lee and Chen (2004) conducted a research in order to explore the potential uses of ICT in Chinese language arts instruction. Eight Chinese language arts teachers participated in the study by gathering for a total of 12 sessions and discussing on a web forum. The results of the study yielded that ICT usage has, to a great extent, facilitated the writing skill development. Online discussion board enabled students to

communicate with writers and get quick feedback on their writings. The study also indicated that ICT tools are believed to allow "online exchanges of ideas and engage students in more exciting learning activities that involve collaboration or competition" (p. 142).

Garrett (1991) also explored the function of technology in language learning. The study suggested that computers and ICT tools brought textual context such as transcripts, glossary help, and structural tools to accompany listening activities. Garrett (1991) highlighted that integrating the listening with textual elements facilitated "the upper level of language study where knowledge of formal language plays a much greater role in comprehension" (p.706).

Young (2003) conducted a study so as to investigate the impact of integrating ICT into an English as a second language class in a vocational senior high school in Taiwan. The stud took place with twenty-nine students and a male teacher of English. For the purpose of the research, Young employed a mixed methods research methodology and the data of the research were collected via students' chats, discussions, dialogues and email exchanges on the Internet observations of their online classroom activities, formal and informal interviews with their teacher as well as from a post-class questionnaire. According to the results of the study, Internet is regarded as useful and interesting tool by the students and utilizing ICT enables learners to express their ideas and participate in the discussions in a more comfortable atmosphere. The study also revealed that the integration of ICT into second language education helped students improve their communication and problem-solving skills through online activities. In a similar vein, Noytim (2010) also conducted a study in order to explore Weblogs' role in enhancing ELF students' English language learning in the context of a university in Thailand. According to the findings of the study, Weblogs fostered students' analytical and critical thinking skills. Furthermore, it was also claimed by Noytim that Weblogs enabled the students to improve their English and using Weblogs motivated students to gain confidence in writing and reading in English.

Chen, Belkada and Okamoto (2004) conducted an experimental study in order to investigate whether different forms of interactivity affect language acquisition in the Web-based listening environment. The participants of the study were twenty non-native university students from Southwest Normal University in China. The results of the study revealed that the Web-based course helped maximizing students' language learning experiences and enhance their language abilities in English. More specifically, "the modes of interaction (negotiation via inter-personal or intrapersonal tasks) were equally effective in promoting listening comprehension and L2 development" (Chen et al. 2004, p.47).

Another study was carried out by Lee (2004) via networked collaborative interaction. The data were gathered through online discussions between native and non-native speakers of English, end-of-semester surveys, and final oral interviews. The results of the study showed that "the Nonnative Speaker and Native Speaker online collaboration promoted the scaffolding by which the NSs assisted the NNSs in composing meaning (ideas) and form (grammar)" (Lee, 2004, p.83). It was also expressed by NNS that online exchanges provided not only a social but also linguistically meaningful setting for them to make use of target language. Furthermore, the findings of the study demonstrated that the NNSs strongly believed text based communication improve their writing ability in the target language. The effectiveness of online discussions was proved by the students' own statements:

> Chatting with the NS was definitely a new experience for me. When I experienced difficultyfinding appropriate words for expressing specific ideas, my partner's speech often served as amodel for me to make adjustments to my imperfect Spanish. I observed how she wrote and I likedthe way she used vocabulary, grammar and a range of registers. I noticed that there was a gapbetween her Spanish and mine. Mine was like "foreign talk" and not very coherent andappropriate but hers was just perfect and sounded so natural. I found it very helpful to work withsomeone who knows much more than I do. I am eager to improve my Spanish (Lee, 2004, p.89).

Chen (2008) examined EFL (English as a Foreign Language) teachers' Internet use in language instructions. A mixed methods research methodology was applied in this research in order to investigate to what extent EFL teachers in Northern Taiwan make use of the Internet in their classes as well as to uncover the barriers that EFL teachers encounter in the process of integrating the Internet into language curriculum. The data were collected from 311 EFL teachers and 22 teachers were also interviewed in order to triangulate the findings. The results of the study indicated that teachers were highly good at e-mail, online dictionaries and search engines; however, teachers were getting difficulty in dealing with MOO/MUDs (Multi-object Orientation/Multi-user Domain) and Webfolio/e-Portfolio. In addition to this, the results showed that two-thirds of the participants had training on technology. In terms of language skills, EFL teachers utilized the Internet respectively for reading, listening and writing skills. One of the most striking findings of the study was that teachers reported in-service training had a vital importance in order to incorporate technology in language instruction

2.4 ICT in Turkey

Computer technology and more specifically Information and Communication Technology (ICT) offer numerous opportunities for second and foreign language learning (Blake, 2007; Chapelle, 2007; Warschauer, 1997). In accordance with the growing interest in ICT and its benefits for language learning, most countries have invested large sums of money to the integration of technology in schools (World Bank, 1995). Turkey has also noticed the importance of educational technology and allotted a considerable amount of money for equipping schools with high technology tools (Özdemir, 2010; Somyürek, Atasoy & Özdemir, 2009). The use of information technology in education in Turkey started with the establishment of the "Specialized Commission on Computer Education at Secondary Schools" by the Ministry of National Education (MONE) in 1984 (OECD, 2005, p.64). The first pilot study was put into practice by purchasing 1100 computers for 121 secondary schools and a total

of 2400 computers were provided for secondary and vocational schools between 1985 and 1987 (Akkoyunlu, 2002). Afterwards, in 1991, more than 6500 computers were distributed to 2400 schools and The General Directorate of Computer Education and Services was established in 1992 within MONE (Akkoyunlu, 2002; Akcaoğlu, 2007).

After this first step into the use of information technology, the Ministry of National Education has increased its investment in technology integration of school within Turkey. To illustrate, the Basic Education Program (BEP), which covers primary schools in the country, was launched by MONE in order to obtain the following objectives:

- expand the eight years of compulsory primary education to have a universal scope
- increase the quality of primary education
- make primary schools a learning resource for the community (OECD, 2005, p.53)

One of the fundamental goals of the program was to integrate schools with technological tools. BEP's total cost was calculated approximately $11,3 billion. It was one of the largest national educational development programs executed in the World (Özdemir & Kılıç, 2007). Turkey received a loan of 300 million dollars from the World Bank for the implementation of the first phase (1998-2003) of BEP. Through this loan received from the World Bank, the MONE aimed at enhancing the quality of basic education via:

- enhancing Information and Communication technology (ICT) by providing computers and educational software.
- in-service training of teachers, school principals, inspectors and provincial MONE staff, especially on use of ICT, and providing educational materials and equipment to primary schools in rural areas (OECD, 2005).

In order to realize these objectives, the Ministry of National Education established IT (Information Technology) classes in all primary schools. More specifically, "the infrastructure for 3.188 IT classes in 2.802 primary schools was completed and IT classes were opened as well as 56.605 computers and other related equipment were distributed to 26.244 village primary schools in rural areas"(OECD, 2005, p.54). In addition to these, the investment in instructional technology has been supported by the following steps:

- Instructional materials were distributed to 2.993.692 students in 22.287 primary schools in rural areas throughout the country.
- Including 2.802 IT classes, 6.513 TVs, 9.456 overhead projectors and 6.503 video players 49 were distributed to 6.180 schools, and video cassettes and transparency sets were distributed to 6.254 schools.
- Including the schools where IT classes have been established, projection equipment was bought and distributed to 6.255 primary schools
- Also, overhead projectors were bought and distributed to 18.517 primary schools in rural areas (OECD, 2005, p.54)

In parallel with the growing interest and huge investment in educational technology, several studies were conducted in order to investigate the integration of technology in Turkish educational context. Also, some studies related to the incorporation of technology in language instruction were also carried out to explore the implementations of technology in language curricula. To illustrate, Gülbahar (2007) conducted a descriptive study that employed both quantitative and qualitative research methods on how to integrate technology successfully at schools. The primary concern of her research was to show "how a school could frame a prescriptive technology plan that takes into consideration all key players in a school and technology for successful technology integration in the school" (p.945). The results of the study suggested that teachers should have easy access to technological resources and computer laboratories should be set up for the effective use of students at schools. Another important finding

of the study was that teachers should be offered ongoing inservice training in order to be competent technology users.

Seferoğlu (2005) conducted a quasi-experimental study in order to investigate the effect of integrating a commercial accent reduction software in classes of advanced EFL learners at the university level on students' pronunciation at the segmental and suprasegmental levels. The participants of the study were two senior year classes in the Department of Foreign Language Education at Middle East Technical University in Turkey. One class was experimental and the other one was control group. There were a total of 40 students:20 students in the control and 20 students in the expemental group. A 5-point Likert-type scale was used to assess students on each aspect of their pronunciation. The results of the study showed no significant differences between the two groups for the pre-test; however, the post test scores revealed significant differences between the control and experimental group. The students in the experimental group performed better than the control group in the post-test. In short, accent rduction software was useful in improving students' pronunciation.

Şimşek (2008) also conducted a research on students' attitudes toward integration of ICTs in a reading course. An attitude questionnaire and interview were used in order to collect data from thirty freshmen majoring in English Language Teaching (ELT) at Middle East Technical University, Ankara. The results of the study revealed that students had positive attitudes towards ICT integrated course. It was also found out that ICT integrated courses appealed to the students' interests as students were able to learn at their pace and had more tie flexibility in ICT integrated courses when compared to face-to-face classes. Another major finding of the study was that students participated more in ICT integrated classes than traditional face-to-face classes. One striking result of the study was that all students stated that ICT integrated course enhanced their reading skills. The results of the study also indicated that students were for the most part satisfied with the feedback sent by the instructor and it was reported

by the students that the feedback had a positive effect on students' motivation and participation in the course.

Arkın (2003) also investigated teachers' attitudes toward computers and the use of computer technology resources in language teaching and learning. A questionnaire and interviews were used in order to explore 97 English language instructors' perceptions of technology and their use of computer technology in language instruction. According to the results of the study, teachers overall are optimistic of technology use in language teaching. It was observed through the study that teachers made use of computers frequently and they utilized computers more for general purposes rather than instructional purposes. In that, teachers were rather undecided about incorporating technology in their language teaching practices. The results of the study also revealed that teachers who had training on technology and language teaching tended to use computer technology in their classes when they have sufficient time and access to technological tools.

Akcaoğlu (2007) also explored technology integration approaches and practices of both preservice and inservice English language teachers through a mixed methods research methodology. Three major aspects of technology integration were investigated in the scope of the study. First, inservice and preservice teachers' computer literacy and usage levels were examined. Second, the factors affecting teachers' technology integration and use were investigated. Last, preservice and inservice teachers' perceptions about technology were explored. According to the results of the study, teachers make use of technology more as "teacher tools" rather than "student tools" which would facilitate the "learner autonomy" and "higher order thinking skills" (p.116). It was also observed that age, gender and the institutions at which teachers work influenced teachers' computer usage.

Timuçin (2006) carried out a case study of the implementation of CALL in Turkish University's EFL preparatory school. Within the scope of the study, teachers were distributed pre and post questionnaires and they were also interviewed. The results of

the study suggested that teachers themselves played a major role in implementing CALL in their language instruction and teachers were considered as the key factor that might affect the integration of technology in language curriculum. The results also indicated that school administrations influence teachers' use of CALL in their classes.

As is demonstrated before, there have been a number of studies to explore the technology integration processes of Turkey. Accordingly, it was stated in the studies mentioned above, Turkey has progressed considerably in terms of technology integration since the beginning of the years 2000s, and investments in integrating technology into schools have expanded (Akkoyunlu, 2002). However, one common result of the aforementioned studies was that ICT was not used as effectively as it was expected in Turkish educational context (Akbaba-Altun, 2006; Özdemir & Kılıç, 2007). It was also reported by Özdemir (2010) that there are some "chronic" problems that hinder the efficient use of technology in Turkish education curricula. The "chronic" impediments were listed by Özdemir (2010) as follows:

- the lack of adequate educational software
- the low quality of in-service training for staff (i.e., teachers, administrators and inspectors)
- lack of financial, technical and pedagogical support to schools
- insufficient funding for staff training
- attitudes of policymakers toward ICT (p.102).

2.5 Teachers' Attitudes toward Technology

Teacher attitudes are considered as one of the most important factors that affect the use of technology in educational contexts as teachers directly impact the learning and teaching processes substantially. Therefore, in order to ensure effective use of technology in education, teachers' perceptions should be taken into consideration meticulously (Becker, 2001; Herman's, Tondeur, van Braak & Valcke, 2008). Without exploring the attitudes of teachers toward technology, it is almost impossible to realize

desirable implementation of technology in education. As a result, a large body of literature has focused on teachers' attitudes toward technology, and some of those studies are provided in this section of the chapter.

Zhao and Frank (2003) conducted a study in order to investigate the technology use in schools. To this end, they collected descriptive data about current technology implementations in schools and they determined the influences that could affect technology uses. According to Zhao and Frank, teachers are one of the most important agents of technology integration in educational settings, and their attitudes are substantially effective in the use of technology in education. One of the results that they reached indicated that "teachers use computers in ways that address their most direct needs, bring them maximal benefits, do not demand excessive time to learn, and do not require them to reorganize their current teaching practices" (p.821).

Albirini (2004) conducted a study to explore the Syrian EFL teachers' attitudes toward ICT. Albirini tried to investigate EFL teachers' perceptions regarding ICT, computer attributes, cultural perceptions, computer competence and computer access. By employing a mixed-method research design, Albirini worked with a random sample of 326 Syrian high school English teachers. The findings of the study showed that Syrian EFL teachers had positive attitudes toward ICT use in language teaching. However, it was found out by Albirini that teachers had low-levels of computer competence and access. The study also revealed that Syrian high school EFL teachers need inservice training on ICT as they show limited use of technology in their classes. Albirini proposed that teachers should be given more training on integrating technology in language teaching for their professional development and meeting the needs of their students.

Hadley and Sheingold (1993) carried out a descriptive survey study on teachers' attitudes toward technology integration and their applications. There were about 608 participants from 576 different schools in 50 states of the U.S. According to the findings of the study, teachers' motivation to use computers in their classes contributes

to the effective use of technology in education. Additionally, sufficient access to technology facilitates the effective use of technology in education. Hadley and Sheingold reported that examples of writing and language projects are used more than other applications by teachers. One of the teachers in Hadley and Sheingold's (1993) study stated that:

> Language arts classes through writing labs generate some fantastic copy for DTP [the class publication]. Students also have open access to the computer room beyond writing labs to utilize software tools to organize, edit, proof, and illustrate their writing pieces for publication. Our literature-based curriculum is a perfect setting to effectively use technology in developing writing skills and changing student attitudes. Students share their ideas and learn to appreciate the ideas of other students and the skills needed for effective communication." (p.271).

Another study was conducted by Tondeur, Hermans, Braak and Valcke (2008) in order to analyze the relationship between teachers' educational beliefs and their typical approach to computer use in the classroom. The participants of the study were 574 elementary school teachers. The results of the study indicated that the perceptions of teachers and their teaching beliefs directly affected their class use of computers. Tondeur et al (2008) stated that "teachers use computers in ways that are consistent with their personal beliefs, a broader spectrum of educational beliefs might result in a more diverse use of ICT" (p.2550). With regard to this, it was found out that teachers who have traditional teaching styles are less likely to use "computers as information tools" as such use of computers entails a more autonomous and student-centered learning, which opposes the traditional view of teaching. The same findings were also found out by Judson (2006), who stated that teachers use technology according to their established way of teaching and learning and they get difficulty in adapting to new technological tools and making the instruction more student-centered.

In a recent study, Ertmer and Ottenbreit-Leftwich (2010) explored "technology integration through the lens of the teacher as an agent of change: What are the necessary characteristics, or qualities, that enable teachers to leverage technology resources as meaningful pedagogical tools" (p.255). The findings of the research indicated that teachers are hesitant to make use of new instructional technologies.

Ertmer and Ottenbreit-Leftwich (2010) also stressed that teachers should be equipped with the necessary skills how to integrate technology in their teaching; however, before that, teachers should have positive attitudes toward technology and feel confident enough to master those skills related to technology implementation in their teaching experiences.

Another study on the perceptions of teachers about technology was carried out by Wozney, Venkatesh and Abrami (2006) in order to investigate the attitudes of teachers towards computer technology and their computer technology practices among 764 elementary and secondary teachers from both private and public school sectors in Quebec. The findings of the research indicated that teachers utilize computers mostly for informative purposes (i.e., Internet and CD-ROM) and expressive purposes (i.e., Word Processing, online journal). In addition to this, the study also revealed that a great majority of teachers did not use computers for instructional or communicative purposes. It was also found out that teachers who use computers outside school for personal purposes tend to integrate computer technology more in the class.

Al-Zaidiyeen, Mei and Fook (2010) investigated the attitudes of Jordanian secondary school teachers towards the use of ICT for educational purposes. The data for the study were collected through the use of quantitative data from 650 Jordanian teachers. According to the results of the study, a great number of the teachers had rather low level of computer use for educational purposes. Teachers prefer utilizing applications such as the Internet, CD-ROM, Word Processing that do not entail teachers to conduct high level applications with technology.

2.6 Technology, Teacher Education and Professional Development

With the rise of computer technologies and multimedia tools, vast amounts of money have been invested in integrating technology in schools and educational contexts. However, it is not known clearly to what extent technology is used effectively by

teachers. A large body of research has accumulated so as to investigate the factors that might potentially affect teachers' adoption and use of computer technology in their teaching profession. Few of those studies relied on the descriptive factors shaping the manners of teachers about technology and teaching. In this respect, some research has been conducted in order to explore the relationship between technology and teacher education. In order to enhance the integration of technology in education, teacher education and professional development on technology should be given priority. To this end, in this part of the chapter, an overview of research related to technology and teacher education is provided.

Byous (2007) conducted a case study in order to investigate high school language arts teachers experiences with integrating technology after participating a technology professional development course. The findings of the study suggested that training of teachers on technology resulted in more effective technology implementation and influenced the classroom practice considerably. The study also indicated that technology should not be considered as a "separate entity" and it should be incorporated into teaching curriculum. In a similar vein, it was stated that teacher attitudes toward computers, and implementation of technology can be maximized positively through effective training of staff (Brennan1991, as cited in Wilson, Notar & Yunker, 2003; Chin & Hortin, 1993). The importance of teacher training on technology was stated as follows:

> Current required coursework that is designed to meet the state and national accreditation standards may not be supplying future teachers with he background or confidence to utilize those skills effectively in their classrooms for instructional purposes. Extended integration of technology into professional education, beyond the required introductory technology classes or as a replacement for stand alone classes, may encourage teachers to design learning experiences that incorporate a variety of technological components. Student teachers may need more opportunities to apply instructional technology during prior practicum field experiences as well as during their final internship…Faculty should be encouraged to model and integrate computer technology. (Wilson et al., 2003, p.262)

Russell et al. (2003) examined teachers' technology use and came up with some very important findings. They collected survey data from 2894 teachers to investigate to what extent technology was used by teachers in their educational practices. According to Russell et al. (2003), the quality of teacher training may be increased by providing teachers with opportunities through which they can experience the advantages of integrating technology on teaching and learning. The study also showed that young teachers do have more positive attitudes toward technology, but they cannot integrate it into their teaching curriculum. Thus, both pre and inservice training of teachers are of great importance in order to form a vision that follows the innovations and bring them to the class through technology. It was also stressed by Lawless and Pellegrini (2007), it is true that technology facilitates learning and teaching; however, "coherent" instruction and training should be established in order to benefit from technology at the maximum level.

CHAPTER III

METHODOLOGY

3.0 Presentation

This study aims to investigate the attitudes of English Language teachers toward computer technologies. It also explores the use of technology in language teaching settings by English teachers. Both quantitative and qualitative research methods were employed in order to address the research questions. Thus, a mixed methods research methodology was conducted for the implementation of this research.

3.1 Research Questions

In order to realize the purpose of this study, the following research questions were formulated:

1. What are the attitudes of English language teachers in Turkey toward computer technologies in education and language instruction?

2. To what extent do English language teachers use computer technologies?

3. How do English teachers integrate technological tools into their language teaching practices?

4. What are the factors that affect English language teachers' use of computer technologies in classrooms within Turkish context?

5. To what extent are the following factors influential on teachers' attitudes toward ICT, online language teaching, computer attributes and their access to computers and the Internet?

        a. Gender

        b. Age

        c. Teaching experience

        d. Degrees that English teachers hold

        e. Geographical region

        f. Institutions at which English teachers work

g. Use of online communities

3.2 Research Design of the Study

Until recent years, a great majority of research studies were based either on quantitative or qualitative research methods (Bryman, 2006). In the course of time, there emerged a group of "purists" on each side (Denzin & Lincoln, 2000; Johnson & Onwuegbuzie, 2004). The advocates of the quantitative research maintained that the research designs should be organized on the objective and concrete plans. On the other hand, the proponents of qualitative research claimed that the research should be based on interpretive and "hermeneutic" approaches (Guba, 1990; Johnson & Onwuegbuzie, 2004). However, it is clearly known that qualitative and quantitative research methodologies have both inherent strengths and weaknesses. For example, quantitative research is very useful for making generalizations about populations, but it cannot profoundly address respondents' internal perspectives. Conversely, qualitative research supply researchers with "in-depth and rich information about participants' viewpoints" (Johnson & Christensen, 2004 p.410), but its findings cannot be easily generalized due to small number of samples. Thus, it is clearly known that both quantitative and qualitative research methods have some natural shortcomings, and these shortcomings have led to the birth of a new third research paradigm which is called as "mixed methods research, mixed research, mixed methodology, and multimethod research". Johnson, Onwegbuzie and Turner (2007) define mixed methods research as "a class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study or set of related studies" (p.120).

The power of mixed research as a third research paradigm springs from the fact that it creates a "practical synthesis" for the researcher to utilize both quantitative and qualitative research methods, in this way, the researcher can ensure "complementary strengths and nonoverlapping weaknesses" (Johnson & Onwuegbuzie, 2007, p.3). Likewise, in this study, both qualitative (interview) and quantitative (questionnaire)

research methods were used to avoid the limitations of monomethod studies. In this way, a more practical research methodology was employed and this let the researcher select different methods in order to answer the research questions in a broader sense.

Mixed methods research has gained importance in recent years because it enables researchers to combine both qualitative and quantitative research methods in a single study. Accordingly, this combination provides the researcher with various data collection instruments and data analysis techniques, which bring about more valid and reliable findings in order to address the research questions. Likewise, in this study, a mixed methods research was conducted in order to obtain more reliable results and have a deeper understanding of the research findings. Pertaining to this objective, Greene, Caracelli, and Graham (1989) came up with five major purposes for carrying out mixed methods research: "triangulation, complementarity, initiation, development and expansion" (p.259).

This study was based on the triangulation and complementarity purposes of the mixed methods research in order to obtain more valid and reliable research findings. Through triangulation, the researcher aimed at achieving "convergence, corroboration and correspondence of the results from different methods" (Greene et al., 1989, p.259). According to Greene et al. (1989):

> Triangulation refers to the designed use of multiple methods, with offsetting or counteracting biases, in investigations of the same phenomenon in order to strengthen the validity of inquiry results. The core premise of triangulation as a design strategy is that all methods have inherent biases and limitations, so use of only one method to assess a given phenomenon will inevitably yield biased and limited results. However, when two or more methods that have offsetting biases are used to assess a given phenomenon, and the results of these methods converge or corroborate one another, then the validity of inquiry findings is enhanced. (p.256)

Green et al. (1989), with regard to their own study, state that:

> Complementarity can be illustrated by the use of a qualitative interview to measure the nature and level of participants' educational aspirations, as well as influences on these aspirations, combined with a quantitative questionnaire to

measure the nature, level, and perceived ranking within peer group of participants' educational aspirations" (p.258).

Another purpose of this study was to achieve complementarity within the results. To this end, both quantitative questionnaire and qualitative interview were used in order to elaborate on the results of the study. Two different sets of data contributed to the researcher to clarify the results and elaborate on the research findings. In a similar vein, Green et al. (1989) highlight that "in a complementarity mixed-method study, qualitative and quantitative methods are used to measure overlapping but also different facets of a phenomenon, yielding an enriched, elaborated understanding of that phenomenon" (p.258).

In mixed methods research, there are two major dimensions shaping the design of the research, in that "time" and "paradigm" dimensions determine the research methodology. "Time orientation" is divided into two sub-dimensions as "concurrent versus sequential", and "paradigm orientation" is also divided into two sub-dimensions as "equal status versus dominant status" (Johnson & Christensen, 2004, p. 418). The mixed method design can be seen in Table 7.

Table 7. Mixed method Design Matrix

		Time Order Decision	
		Concurrent	**Sequential**
Paradigm Emphasis Decision	**Equal Status**	QUAL + QUAN	QUAL →QUAN QUAN→QUAL
	Dominant Status	QUAL + quan	QUAL→quan qual→QUAN
		QUAN + qual	QUAN→qual quan→QUAL

- The letters qual or QUAL stand for qualitative research.
- The letters quan or QUAN stand for quantitative research.
- Capital letters denote priority or increased weight.
- Lowercase letters denote lower priority or weight.
- A plus sign (+) represents a concurrent collection of data.
- An arrow (→) represents a sequential collection of data (Johnson & Christensen, 2004, p.418).

In terms of time, a research is concurrent when the quantitative and qualitative parts of a study are conducted at the same time, and it is sequential when the quantitative and qualitative phases take place at different times. With regard to paradigm dimension, a mixed methods research has equal status if both the qualitative and quantitative parts respond to the research questions of the study equally, and dominant status emerge in a mixed methods study when one paradigm outweighs the other in answering the research questions. In this regard, this study was conducted on the concurrent basis in terms of time, and it has a quantitative dominant status paradigm. To put in a nutshell, this study is based on a dominant-status concurrent design.

3.3 Participants

The participants of this study were (N=87) inservice teachers of English who work at public schools in Turkey. The respondents were purposefully selected for the implementation of this research for two reasons. First, the respondents were all working at public schools in various parts of Turkey. As they were working at different parts of the country, the data collected from these respondents were representative of the situation at public schools in Turkey. Second, the participants were selected by the Board of Education and the Turkish Ministry of National Education (MONE) as English teacher coordinators/mentors (known in Turkey as 'English formator teachers') who were to become responsible for training their colleagues and disseminating the computer technology applications in English language teaching in their particular regions.

The data were gathered during a series of inservice English language teacher trainings that were jointly organized by the MONE and the Board of Education which is responsible for developing and implementing curricula at all levels of education in Turkey. The MONE and the Board of Education intended to reach other English teachers through training this sample of English teachers who show leadership in their profession. Therefore, English teachers were invited to the training program from various parts of Turkey. More specifically, Table 8 indicates that there are English teachers from all seven geographical regions of the country and at least one English teacher attended the training programs from all cities of Turkey. Thus, the participants provided enriched data source for the study. As the participants of the study come from various parts of Turkey, it is assumed that geographical region differences may affect the participants' attitudes toward computer technology as well as their technology incorporation in language instruction. As Turkey demonstrates great difference among regions in terms of educational standards, it is presumed that the variety of places from which the participants of this research come may result in comprehensive results for the study.

Table 8. Geographical Distribution of the Participants

Region	Frequency	Percent
Marmara	11	12,6
Aegean	15	17,2
Mediterranean	9	10,3
Eastern Anatolia	10	11,5
Central Anatolia	19	21,8
Black Sea	12	13,8
Southeast Anat.	8	9,2
Missing data	*3*	*3,4*
Total	87	100,0

More specifically, it is explicitly seen in Table 8 that there are at least (n=8) English language teachers from a region. Central Anatolia contains (n=19) respondents. There are (n=15) participants coming from the Aegean Region. As Table 8 shows, Marmara (n=11), Black Sea (n=12), Eastern Anatolia (n=10) regions have approximately similar number of respondents. To sum up, this research was carried out among inservice English teachers coming from various parts of Turkey. Table 8 also clearly indicates that the number of the participants is almost well-balanced among the regions in Turkey, which verifies that this research was carried out with English language teachers who came from diverse settings of Turkey.

When the age of the participants is taken into consideration, it is observed that the participants who are under 40 years old constitute the majority of the English language teachers in this study. More specifically, as Figure 1 shows, a great majority of the total population *(57,5%)* is from the 31-40 age group, while almost half of the population is mainly from 21-30 *(27,6%)* and 41-over *(14,9%)* age groups. It is seen that 41-over age group constitutes a small fraction of the overall population when compared with the other groups.
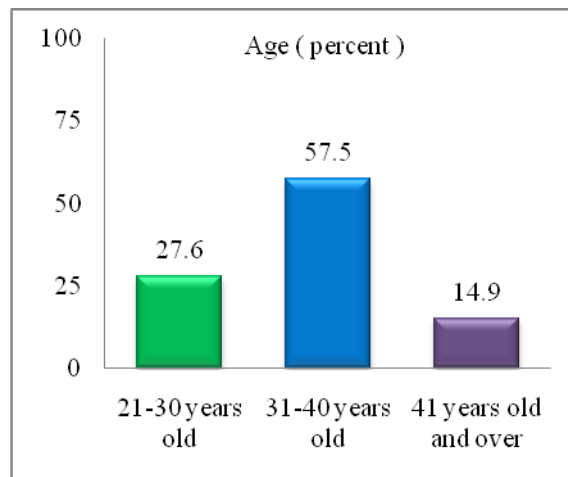
Figure 1. Age Statistics of the Participants

Parallel with the age distribution of the participants, the teaching experience of English language teachers shows correlation. To illustrate, as Figure 2 demonstrates a great majority of English language teachers fall under the category of 7-15 years experience, which to a great extent refers to 31-40 years old age group. Namely, this group *(66,7%)* constitutes 2/3 of the overall population. The other one third of the population almost equally belongs to 0-6 year experience *(17,2%)* and 16- over years experience *(16,1%)* groups.
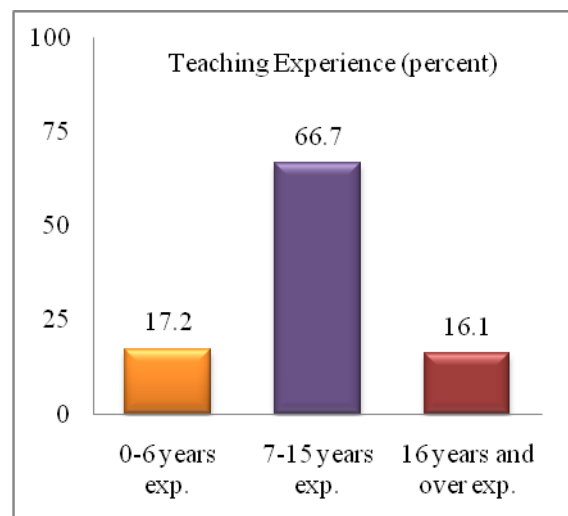
Figure 2. Teaching Experience Statistics of the Participants

In terms of gender, the participants of this study are well balanced. Figure 3 displays that the number of the female and male English language teachers is almost at the same rate. Both females *(48,3%)* and males *(51,7%)* have near similar percentages within the sample.
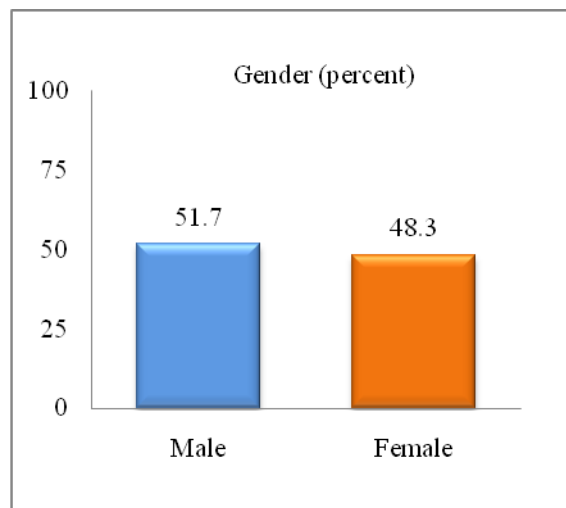
Figure 3. Gender Statistics of the Participants

Within the scope of this study, it was the aim of the researcher to examine whether the degree that the participants hold affects the attitudes toward computer technologies along with their use of technology in language teaching. Figure 4 shows that there is a huge disparity between the number of English teachers having a Bachelor's Degree and the participants who had a Master's Degree.
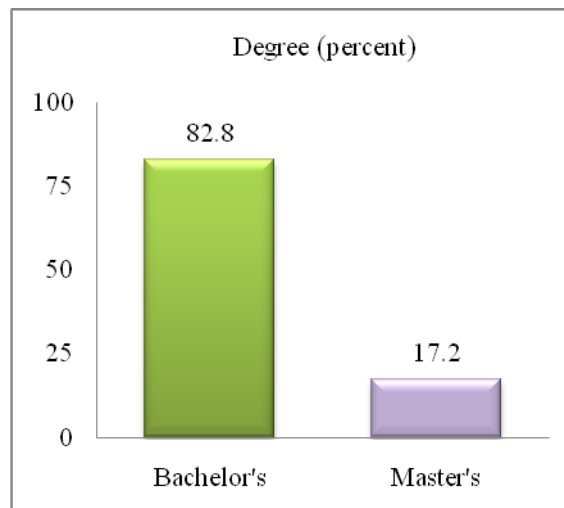
Figure 4. Distribution of the Degrees the Teachers hold

According to Table 9 (82,8%) of the respondents (n=72) hold a bachelor's degree while (17,2%) of them (n=15) hold a master's degree. None of the participants hold a doctoral degree.

Table 9. Degree Statistics of Participants

Degree	Frequency	Percent
Bachelor's	72	82,8
Master's	15	17,2
Total	87	100,0

As for the institutional distribution of the participants, Figure 5 shows that an overwhelming *(60.9%)* majority of the teachers work at Anatolian High Schools. In Turkey, Anatolian High schools are regarded as more prestigious than general high schools. Students are able to enroll in Anatolian High Schools according to the results of a nationwide central placement examination held by the Turkish Ministry of National Education. Thus, these schools are preferred by most of the students. In the same way, teachers prefer working at these Anatolian High Schools thanks to the success rates of the students at these schools. When the remaining 39.1% of the

teachers is considered, it is seen that *(14,9%)* of the participants work at general high schools, and *(24,1%)* of the respondents come from primary schools.
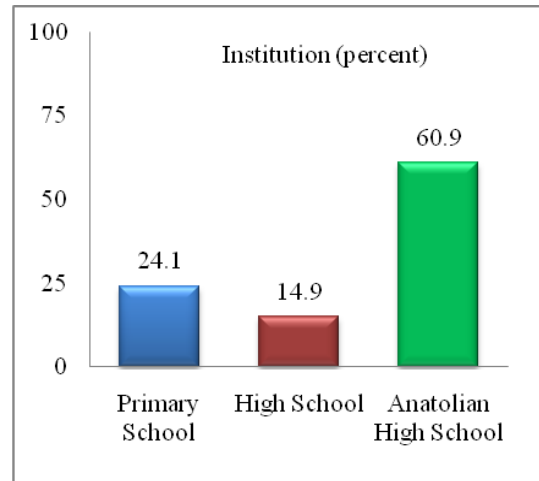
Figure 5. Institutional Distribution of the Participants

3.4 Data Collection Instruments

In this study, both quantitative and qualitative data collection instruments were employed in order to collect the data. Specifically, this research was based on a questionnaire consisting of five main parts, and semi-structured face-to-face interviews.

3.4.1 The Questionnaire

The questionnaire employed in the study encompasses five major sections. The first section of the questionnaire is about the background information of the participants. This part of the questionnaire presents basic demographic information about the respondents. The items in this section are as follows:

- Age
- Gender
- Teaching experience
- The last degree earned
- Online Community Use

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- Geographical Region
- The schools where the participants work (Institution)

The second part of the questionnaire, Computer Use and Literacy, was developed by the researcher in order to find out for what purposes English language teachers use computers, to what extent they are able to maximize their language teaching practices with technological tools, and how much they are aware of the contemporary technologies in the context of language teaching. This section was primarily developed based on Arkın's (2003) study in which he explored teachers' attitudes toward computer technology use in vocabulary instruction. There are four major items in the second section of the questionnaire. The first item tries to explore for what purposes English language teachers use computers. The second item explores how many hours the participants use the Internet in a day. The third and forth items are open-ended questions related to computer technology and inservice training.

The third section of the questionnaire, Attitudes toward ICT, developed by Albirini (2004), was used in order to explore the perceptions of the respondents about ICT and their attitudes toward computers in general. The respondents' attitude toward ICT was obtained by utilizing a 5-point Likert-type scale with 20 items, ranging from "strongly disagree" (1 point) to "strongly agree" (5 points). Gliem and Gliem (2003) state that most of the time "information gathered in the social sciences, marketing, medicine, and business, relative to attitudes, emotions, opinions, personalities, and descriptions of people' environment involves the use of Likert-type scales" (p.82). There are a total of twenty items in this part of the questionnaire which explores the attitudes of the participants towards ICT. Through this ICT scale, the opinions of the teachers about the roles of computers in education were collected.

The forth part of the questionnaire, Computer Attributes Scale, developed by Albirini (2004), aimed at finding out how English language teachers consider computers in

educational contexts, more specifically in classroom settings and language instruction. Computer Attributes Scale consisted of eighteen Likert-type items. The respondents selected from the options ranging from "strongly disagree" (1 point) to "strongly agree" (5 points).

Attitude toward Online Language Teaching, the last section of the questionnaire, tried to investigate participants' viewpoints about online language teaching and e-learning environments and developed by the researcher in accordance with the previous studies in the literature (e.g., Chen, 2008; Kessler, 2007; Mahdizadeh, Biemans & Mulder, 2008). This last part of the questionnaire is composed of 26 items. The respondents were able to select from the options raging from "strongly disagree" (1 point) to "strongly agree" (5 points). Online Language Teaching scale probed into the ideas of the participants regarding online education and language learning along with e-learning environments.

3.4.1.1 Reliability of the Questionnaire

"Reliability refers to the consistency of a set of test scores and it is calculated by using some type of correlation coefficient" (Johnson & Chrstensen, 2004). One type of reliability is named as internal consistency, and one of the most frequently used means of calculating internal consistency is Cronbach Alpha Coefficient. Cronbach's Alpha proves the reliability by indicating whether "the items of a test or instrument measure the same attribute or dimension" (Kottner & Streiner 2010, p. 926). Dörnyei (2007) tells that Cronbach Alpha Coefficient is a figure ranging between 0 and +1. Regarding the reliability, cronbach alpha coefficient over $r=.70$ is considered acceptable (Dörnyei, 2007). As it was stated above, the third "Attitudes toward ICT" and forth "Computer Attributes Scale" sections of the questionnaire were developed by Albirini (2004). Albirini (2004) reports that a pilot study was conducted with the target population of his study. Thirty (30) participants were administered the pilot study. Cronbach Alpha was used so as to measure the internal-consistency of the

questionnaire (Albirini, 2004). In light of the results of the pilot study, some changes were made in the questionnaire in order to increase the reliability in the major study. The changes included adding two items to the "ICT Attitude Scale", omitting two from the "Computer Attribute Scale" (Albirini, 2004). The changes have shown their effect and the reliability of the questionnaire increased Cronbach's Alpha from the pilot study, and actual study of Albirini (2004) are reported in Table 10.

Table 10. Summary of Reliability Analysis

	Number of Items	Cronbach Alpha Coefficient for the Pilot Study	Cronbach Alpha Coefficient for the Actual Study
Part 3	20	.87	.90
Part 4	18	.84	.86

Albirini (2004) reports that the reliability analysis of the questionnaire was done by using SPSS.12 Statistical Package. It is shown in Table 10 XX that reliability coefficient of the questionnaire part three *r=.90* and part four *r=.86* are far beyond the acceptable level.

3.4.2 Semi-structured Interviews

Apart from administering a questionnaire and getting quantitative data, semi-structured interviews were employed in order to gain a deeper understanding of the research questions and the respondents' attitudes toward computer technologies in language teaching.

The fundamental strength of interviews stems from their "adaptability". An experienced interviewer may easily build rapport with the interviewee, and the rapport results in obtaining information that the respondent "probably would not reveal by any other data collection method" (Gall, Gall & Borg, 2007, p.228). When the interview is considered, less structured interviews tend to be preferred more in qualitative research, and there is an inclination to probe extensively respondent's stance on the subject

under investigation (Bryman, 2004; Krathwohl, 1998). To this end, in this study, semi-structured face-to-face interviews enabled the researcher to explore some untouched points that were not uncovered via the questionnaire. Thus, the interviews yielded in-depth results for the scope of this research and gave rise to the detailed exploration of the research questions. The researcher had predetermined interview questions in accordance with the research questions of the study. Those predetermined questions helped focusing on the scope of the study as well as scrutinizing the experiences and perceptions of the respondents.

"No interview succeeds unless the interviewer builds a relationship with the respondent in which both are comfortable talking with one another" (Krathwohl, 1998, p.290). Thus, the researcher tried to build rapport with the respondents before the interview sessions by spending time with the interviewees in social settings. Therefore, the participants were comfortable enough while reflecting their own particular viewpoints and experiences regarding the questions. Pertaining to this, Marshall and Rossman (2006) point out that:

> Qualitative, in-depth interviews typically are much more like conversations than formal events with predetermined response categories. The researcher explores a few general topics to help uncover the participant's views but otherwise respects how the participant frames and structures the responses. This method, in fact, is based on an assumption fundamental to qualitative search: The participant's perspective on the phenomenon of interest should unfold as the participant views it (the emic perspective), not as the researcher views it (the etic perspective) (p.101).

3.5 Data Analysis

3.5.1 Analysis of the Questionnaire

The questionnaire implemented in this study was analyzed by using SPSS 16. (Statistical Package for the Social Sciences). Both descriptive and inferential statistics were calculated in order to address the research questions of the study. Through descriptive statistics, English language teachers' computer usage levels were obtained.

In addition to this, frequency calculations also helped exploring for what purposes English language teachers in Turkey use computer technology in their language instruction practices. Inferential statistics were also calculated by conducting Analysis of Variance (ANOVA) and independent sample t-tests. Through inferential analysis, the effect of the following variables was investigated on English language teachers' attitudes toward computer technology.

- Age
- Gender
- Teaching experience
- Degree the teachers hold
- Use Online Communities
- Geographical Region (Location)
- The schools where the participants work (Institution)

The reliability statistics of the questionnaire administered in this study are above the acceptable as Dörnyei states regarding the reliability, cronbach alpha coefficient over *r=.70* is considered acceptable

Table 11. Reliability Statistics of the Questionnaire

	Number of Items	**Cronbach Alpha Coefficient**
Section 3. ICT Attitude	20	.84
Section 4. Computer Attributes Scale	18	.77
Section 5. Online Language Teaching Scale	26	.87

3.5.2 Analysis of the Interviews

Qualitative research offers various data analysis techniques such as ethnographic analysis, content analysis, phenomenological analysis. This study employed content analysis in order to analyze the data collected by the semi-structured interviews. Regarding the analysis of the interview data, the researcher had pre-determined questions before conducting the interview sessions in accordance with the research questions and scope of the study. Therefore, coding the interview data was easy and smooth. Though there were pre-determined set of questions for the smooth running of interview sessions, the respondents were quite comfortable to express their opinions and providing enriched information on their own stance.

The interviews were realized during an inservice English language teacher training seminar. The setting was comfortable enough to collect detailed data for the purposes of the research. Before the interview sessions were held, the questionnaire was implemented with the interviewees. Therefore, they were aware of the scope and content of the study. This awareness enabled the teachers to express their ideas and experiences in a broader sense. As it was a long training seminar, the researcher had the opportunity to spend time with the respondents and doing recreational activities during the seminar. The interviews were recorded through a sound recorder in order not to miss any single point in the interviews. After the interviews were recorded, they were transcribed. As the interviews were semi-structured, it became easy to follow the flow of interviews in accordance with the pre-determined questions. At the end of the transcribing and coding procedures, the following major content categories were obtained:

Computer usage levels

Barriers to technology use

Language skills and computer technology

Online insruction and language teaching

Teacher autonomy and technology

CHAPTER IV

DATA ANALYSIS AND RESULTS

4.0 Presentation

In this study, a questionnaire and semi-structured face-to-face interviews were utilized to collect the data. Both descriptive and inferential data analysis procedures were used to analyze the data gathered via the questionnaire. The data were analyzed using the SPSS.16 (Statistical Package for the Social Sciences) and content analysis was conducted in order to analyze the data collected through the semi-structured face-to-face interviews.

This study aimed at examining the attitudes of English language teachers toward computer technologies as well as the use of technology in language teaching. Additionally, through this study, the factors affecting the perceptions and behaviors of English teachers about technology use in language teaching were explored. More specifically, the following six aspects were investigated in terms of six different variables:

1. English language teachers access to the Internet (Section 2 Question 2).
2. The courses about computers and technology use in language teaching taken during undergraduate years (Section 2 Question 3).
3. English teachers' attendance at inservice training on technology use in language teaching (Section 2 Question 4).
4. The attitudes of English language teachers toward ICT (Section 3, ICT Scale)
5. The attitudes of English language teachers toward the use of computers in educational settings, especially in language instruction (Section 4, Computer Attributes Scale)
6. The attitudes of English language teachers toward online language teaching and e-learning environments (Section 5 Online Language Teaching Scale)

While the aspects 1, 2 & 3 refer to open-ended questions within the questionnaire, the ICT Scale (4th section) is made up of 20, Computer Attributes Scale (5th section) encompasses 18 items, and Online Language Teaching scale (6th section) constitutes 26 items.

4.1 Computer and the Internet Usage

4.1.1 Access to the Internet at Home

In order to learn how often the participants use computers and the Internet, this study investigated the access of the respondents to computers and the Internet from their homes, from their schools and from other places apart from home or school. As Figure 6 displays *(80,5%)* of the respondents have access to the Internet and computers on a daily basis. Second, *(10,3%)* of the participants log into the Internet two or three times a week. Third, *(4,6 %)* of the respondents have access to the Internet just once a week. Lastly, very few participants (n=4) never uses the Internet or computers at their home. The overall analysis of the respondents computer and the Internet usage amount (hours) at home indicates that a considerable number of inservice EFL teachers have access to the Internet and computers daily. In short, rapid development of technology and the Internet in recent years yielded more frequent use of computers and the Internet among inservice teachers of English.
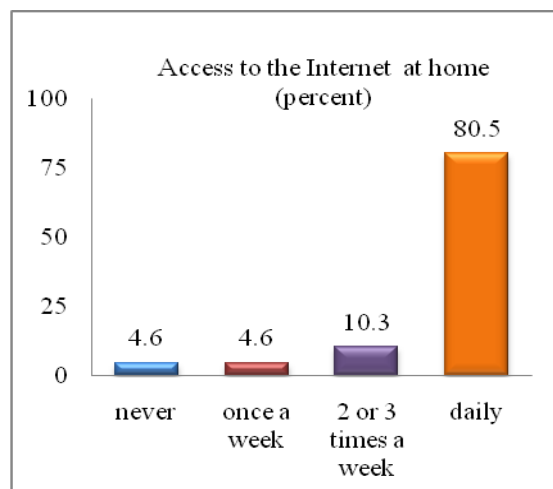
Figure 6. The Internet (Home) Access of the Respondents

4.1.2 Access to the Internet at School

When the access of the participants to the Internet and computers at school is taken into consideration, it is clearly seen that the respondents' usage of the Internet and computers decreases when compared with their usage at home. Table 12 shows that *(57,5%)* of the participants (n=*50*) use the Internet and computers daily at school. Second, (24,1%) of the respondents (n=*21*) use the Internet and computers two or three times a week at school. The remaining (n=*16*) English language teachers use the Internet and computers once a week or once a month.

Table 12. The Internet (School) Access of the Respondents

Access to computers or the Internet at school	Frequency	Percent
Never	2	2,3
Once a month	5	5,7
Once a week	9	10,3
2 or 3 times a week	21	24,1
Daily	50	57,5
Total	87	100,0

When the home usage and school usage statistics are compared, it is seen that English language teachers in Turkey use the Internet and computers more at home than at school. Figure 7 reveals that the teachers either do not have computers and the Internet access at their institutions or they cannot make use of computers and the Internet as instructional tools in their classes while teaching English.
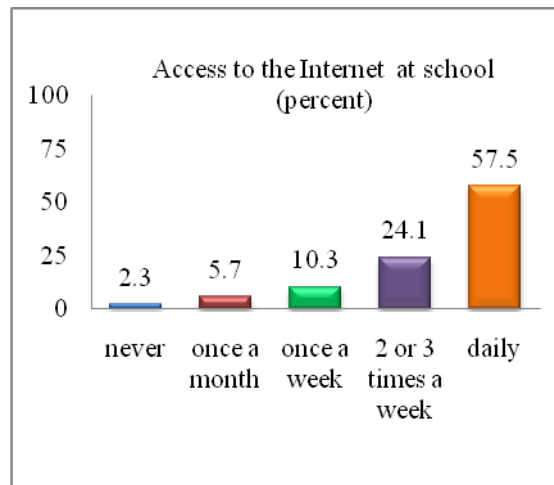
Figure 7. The Internet (School) Access Statistics

4.1.3 Use of Online Communities

As Figure 8 indicates, while (52,9%) over half of the respondents are aware of the online communities and use them in their lives, almost other half of them (47,1%) do not use online communities.
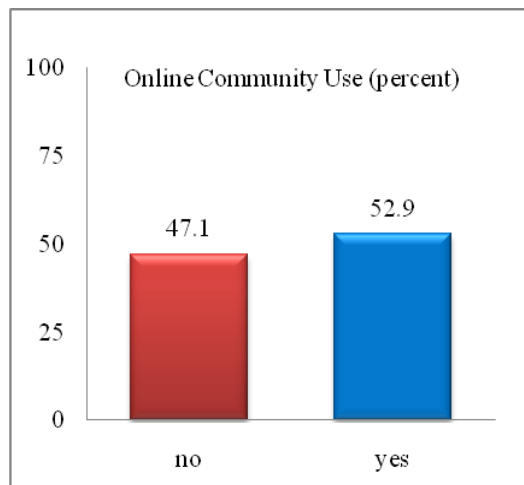
Figure 8. Statistics for the Use of Online Communities

4.2 Computer and the Internet Usage Purposes

In the second part of the questionnaire, the respondents were asked to select from 19 options that show the reasons why the respondents use computers and the Internet. The respondents were able to select more than one item. This section of the questionnaire enabled the researcher to understand the functions and importance of the computers and technology for the language teaching practices of English language teachers in Turkey (Table 13).

Table 13. Descriptive Statistics for Computer & the Internet Usage

Section2 Question 1	What do you use computers for?		Frequency	Percent
1	Chatting	No	37	42,5
		Yes	50	57,5
2	E-mail and mail listing	No	3	3,4
		Yes	84	96,6
3	Online discussion boards on language teaching	No	49	56,3
		Yes	38	43,7
4	Finding materials related to lessons	No	3	3,4
		Yes	84	96,6
5	Course management software	No	68	78,2
		Yes	19	21,8
6	Video conferencing and net-meeting	No	64	73,6
		Yes	23	26,4

7	Search engines	No	24	27,6
		Yes	**63**	**72,4**
8	Web blogs	No	62	71,3
		Yes	**25**	**28,7**
9	Moo/ muds	No	77	88,5
		Yes	**10**	**11,5**
10	Games	No	42	48,3
		Yes	**45**	**51,7**
11	Webfolios/e-portfolios	No	66	75,9
		Yes	**21**	**24,1**
12	Shopping online	No	40	46,0
		Yes	**47**	**54,0**
13	Preparing presentations	No	24	27,6
		Yes	**63**	**72,4**
14	Assigning homework	No	35	40,2
		Yes	**52**	**59,8**
15	Presenting course material	No	25	28,7
		Yes	**62**	**71,3**
16	Online dictionaries	No	14	16,1
		Yes	**73**	**83,9**
17	Wikis	No	56	64,4
		Yes	**31**	**35,6**
18	Giving feedback to students	No	53	60,9
		Yes	**34**	**39,1**
19	Other	No	72	82,8
		Yes	**15**	**17,2**

As Table 13 clearly indicates, the highest frequency belongs to two groups: They are the second and forth statements. Namely, almost all of the respondents (n=84) use the computers and the Internet for "e-mailing" (96,6%) and "finding materials related to lessons" (96,6%). It is also seen in Table 13 that the lowest frequency belongs to Statement 9 asking for the use of "MOO/MUD". The results of the frequency analysis reveal that respondents (n=10) do not frequently make use of computers and the Internet for "MOO/MUD".

Table 13 also shows that teachers (n=19) do not frequently use "course management software" for the implementation of their courses. This is due to their limited technical knowledge of computer software for the course delivery. In that, the interview data verify this finding by claiming that a great majority of teachers do no feel competent

enough to manage course software program and navigate the courses via such software. Another reason why few teachers utilize course management software is that it may be rather difficult for them to implement course management software in high school settings. This low frequency may also be associated with economic status of the students studying at high school levels. They may have a computer at their home, but the Internet Access may be limited. One of the chief reasons why teachers do not utilize course management software would be arising from the fact that both teachers and high school students have come from a system which is based heavily on pen and paper: hence, it is very challenging for both parties to escape from their old style and get accustomed to a new system.

One of the most striking findings Table 13 shows is that the WEB 2.0 tools such as blogs, wikis have very low usage statistics by the teachers. More specifically, a limited number of respondents (n=31) use "Wikis" *(35,6%)* for their language teaching practices. By the same token, fewer teachers (n=25) benefit from "Blogs". Sykes, Oskoz and Thorne (2008) highlight that "wikis and blogs are spaces in which students have the potential to move from the conventional epistemic stance of knowledge consumer to that of knowledge producer," (p.530). In this way, students may be more productive in language learning process. However, the technology integration of teachers and students may not be permitting the efficient use of these dynamic WEB 2.0 tools. As students are asked to contribute and reflect in WEB 2.0 applications, such applications may not appeal to students' established fashion of learning.

Another noticeable finding of Table 13 showing the Internet usage preferences of teachers is that Statement 13 "preparing presentation" and Statement 14 "assigning homework" have relatively high usage percentages by teachers. A remarkable number of the respondents (n=63) state that they prepare presentations *(72,4%)* for the courses they teach. Similarly, the teachers (n=52) assign homework *(59,8%)* via the Internet. When these two usage preferences are considered, it is clearly seen that these

applications require a superficial knowledge of computer technology. For instance, presentations are prepared via a common Microsoft Office PowerPoint application, which is extensively used by many people. In such basic applications, there is almost no communicative relation between teacher and students: There is just one way communication, and this does not significantly contribute to language learning process.

4.3 Attitudes toward Computer Technologies for Language Teaching

This study aimed at finding out English language teachers' attitudes toward computer technology through three major scales:

- ICT (Information and Communication Technology) Scale

- Computer Attributes Scale

- Online Language Teaching Scale

4.3.1 ICT Scale

ICT Scale is the third section of the questionnaire and it investigates English language teachers' attitudes toward ICT. More specifically, the role computers in the lives of the participants of the study is tried to be explored via the ICT Scale in the questionnaire.

Table 14. ICT Scale Frequencies

(1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

Item No	Statements		1	2	3	4	5	Total
1.	Computers do not scare me at all.	Frequency	3	9	12	19	44	87
		Percent	3,4	10,3	13,8	21,8	50,6	100,0
2.	Computers make me feel uncomfortable.	Frequency	45	28	10	2	2	87
		Percent	51,7	32,2	11,5	2.3	2.3	100,0
3.	I am glad there are more computers these days.	Frequency	3	1	7	28	48	87
		Percent	3,4	1,1	8,0	32,2	55,2	100,0
4.	I do not like talking with others about computers.	Frequency	17	31	27	9	3	87
		Percent	19,5	35,6	31,0	10,3	3,4	100,0
5.	Using computers is enjoyable.	Frequency	2	3	6	44	32	87
		Percent	2,3	3,4	6,9	50,6	36,8	100,0
6.	I dislike using computers in teaching.	Frequency	49	29	2	3	4	87
		Percent	56,3	33,3	2,3	3,4	4,6	100,0
7.	Computers save time and	Frequency	6	1	5	32	43	87

	effort.	Percent	6,9	1,1	5,7	36,8	49,4	100,0
8.	Schools would be a better place without computers.	Frequency	47	31	6	1	2	87
		Percent	54,0	35,6	6,9	1,1	2,3	100,0
9.	Students must use computers in all subject matters.	Frequency	2	10	18	34	23	87
		Percent	2,3	11,5	20,7	39,1	26,4	100,0
10.	Learning about computers is a waste of time.	Frequency	61	19	4	1	2	87
		Percent	70,1	21,8	4,6	1,1	2,3	100,0
11.	Computers motivate students to study more.	Frequency	1	5	18	41	22	87
		Percent	1,1	5,7	20,7	47,1	25,3	100,0
12.	Computers are a fast and efficient means of getting information.	Frequency	0	0	3	28	56	87
		Percent	0	0	3,4	32,2	64,4	100,0
13.	I do not think I would ever need a computer in my classroom	Frequency	59	22	5	1	0	87
		Percent	67,8	25,3	5,7	1,1	0	100,0
14.	Computers can enhance students' learning	Frequency	1	2	9	51	24	87
		Percent	1,1	2,3	10,3	58,6	27,6	100,0
15.	Computers do more harm than good	Frequency	17	48	18	4	0	87
		Percent	19,5	55,2	20,7	4,6	0	100,0
16.	I would rather do things by hand than with a computer.	Frequency	26	42	12	5	2	87
		Percent	29,9	48,3	13,8	5,7	2,3	100,0
17.	If I had some money, I would buy a computer.	Frequency	0	3	10	32	42	87
		Percent	0	3,4	11,5	36,8	48,3	100,0
18.	I avoid using computers as much as possible	Frequency	40	39	5	3	0	87
		Percent	46,0	44,8	5,7	3,4	0	100,0
19.	I would like to learn more about computers.	Frequency	1	0	2	36	48	87
		Percent	1,1	0	2,3	41,4	55,2	100,0
20.	I have no intention to use computers in the near future.	Frequency	54	26	4	0	3	87
		Percent	62,1	29,9	4,6	0	3,4	100,0

It is observed explicitly in Table 14 that English language teachers have generally positive attitudes toward ICT (Information and Communication Technology). To illustrate, (67,8%) of the participants (n=59) state that they need computers in their classes while teaching English according to Statement 13. Likewise, Statement 3 displays the respondents strongly agree that they are content with the availability of computers in their lives. Additionally, a great majority of the respondents (n=73) feel comfortable enough to use computers and they do not think of a school setting without computers according to Statement 8 in Table 14.

4.3.2 Computer Attributes Scale

One of the primary concerns of this study is to investigate how English language teachers in Turkey feel the use of computer technologies as educational tools. With regard to the use of computers in educational settings, a Computer Attributes Scale was administered within the questionnaire as the forth section of the questionnaire.

Table 15. Frequencies of Computer Attributes Scale

(1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

Item No	ICT ATTITUDE 5		1	2	3	4	5	Total
1.	Computers improve education.	Frequency	0	0	6	44	37	87
		Percent	0	0	6,9	50,6	42,5	100,0
2.	Teaching with computers offers real advantages over traditional methods of instruction.	Frequency	0	0	2	52	33	87
		Percent	0	0	2,3	59,8	37,9	100,0
3.	Computer technology cannot improve the quality of students' learning.	Frequency	33	44	8	2	0	87
		Percent	37,9	50,6	9,2	2,3	0	100,0
4.	Using computer technology makes the subject matter more interesting.	Frequency	0	0	2	47	38	87
		Percent	0	0	2,3	54,0	43,7	100,0
5.	Computers are not useful for language earning.	Frequency	47	37	3	0	0	87
		Percent	54,0	42,5	3,4	0	0	100,0
6.	Computers have no place in schools.	Frequency	49	27	7	4	0	87
		Percent	56,3	31,0	8,0	4,6	0	100,0
7.	Computer use fits well into my curriculum goals.	Frequency	0	2	15	54	16	87
		Percent	0	2,3	17,2	62,1	18,4	100,0
8.	Class time is too limited for computer use.	Frequency	5	23	18	32	9	87
		Percent	5,7	26,4	20,7	36,8	10,3	100,0
9.	Computer use suits my students' learning preferences and their level of computer knowledge.	Frequency	0	4	24	48	11	87
		Percent	0	4,6	27,6	55,2	12,6	100,0
10.	Computer use is appropriate for many language learning activities	Frequency	0	0	7	60	20	87
		Percent	0	0	8,0	69,0	23,0	100,0
11.	It is hard for me to learn to use the computer in teaching.	Frequency	34	41	8	3	1	87
		Percent	39,1	47,1	9,2	3,4	1,1	100,0
12.	I have no difficulty in understanding the basic functions of computer.	Frequency	4	6	6	38	33	87
		Percent	4,6	6,9	6,9	43,7	37,9	100,0

13.	Computers complicate my task in the classroom.	Frequency	18	34	19	10	6	87
		Percent	20,7	39,1	21,8	11,5	6,9	100,0
14.	Everyone can easily learn to operate a computer.	Frequency	1	3	25	37	21	87
		Percent	1,1	3,4	28,7	42,5	24,1	100,0
15.	I have never seen computers at work.	Frequency	61	24	2	0	0	87
		Percent	70,1	27,6	2,3	0	0	100,0
16.	Computers have proved to be effective learning tools worldwide.	Frequency	1	0	4	42	40	87
		Percent	1,1	0	4,6	48,3	46,0	100,0
17.	I have never seen computers being used as an educational tool.	Frequency	51	30	3	3	0	87
		Percent	58,6	34,5	3,4	3,4	0	100,0
18.	I have seen some of my colleagues use computers for teaching English	Frequency	1	5	9	50	22	87
		Percent	1,1	5,7	10,3	57,5	25,3	100,0

Table 15 indicates that English language teachers have overall positive attitudes towards computers attributes. They believe that computers improve the quality of education. Statements 1 and 3 confirm that computer technology is regarded as a beneficial tool in education by teachers. For instance, 54% of the teachers (n=47) pointed out that computers are useful for language learning. Though the teachers consider computers as useful for language learning, they are somewhat hesitant to adopt that computers suits to all language learning activities according to Statement 10.

4.3.3 Online Language Teaching Scale

This study also aimed at probing into the perceptions of the participants about online instruction and language teaching. To this end, an Online Language Teaching Scale consisting of 26 items was developed and used in the questionnaire.

Table 16. Frequencies of Online Language Teaching Scale

(1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

Item No	Online Language Teaching		1	2	3	4	5	Total
1.	Online education saves time and effort in teaching.	Frequency	0	2	13	41	31	87
		Percent	0	2,3	14,9	47,1	35,6	100,0
2.	I would like to implement an online course if I have chance.	Frequency	1	1	16	39	30	87
		Percent	1,1	1,1	18,4	44,8	34,5	100,0
3.	Online education is more effective than traditional teaching methods.	Frequency	2	7	32	33	13	87
		Percent	2,3	8,0	36,8	37,9	14,9	100,0
4.	Online education does not offer the sense of face to face interaction.	Frequency	5	16	25	34	7	87
		Percent	5,7	18,4	28,7	39,1	8,0	100,0
5.	Keeping track of the students is rather difficult in online education.	Frequency	6	22	36	21	2	87
		Percent	6,9	25,3	41,4	24,1	2,3	100,0
6.	Online education appeals to my interests.	Frequency	0	3	22	49	13	87
		Percent	0	3,4	25,3	56,3	14,9	100,0
7.	I currently carry out an online instruction in my teaching.	Frequency	10	32	25	17	3	87
		Percent	11,5	36,8	28,7	19,5	3,4	100,0
8.	There is less interaction between teacher and students in online instruction.	Frequency	4	11	36	30	6	87
		Percent	4,6	12,6	41,4	34,5	6,9	100,0
9.	Totally online courses are not effective in teaching English.	Frequency	12	39	23	7	6	87
		Percent	13,8	44,8	26,4	8,0	6,9	100,0
10.	Online instruction offers more communicative practices.	Frequency	2	11	31	36	7	87
		Percent	2,3	12,6	35,6	41,4	8,0	100,0
11.	It would be better if the course has both online and face-to-face component.	Frequency	0	0	9	35	43	87
		Percent	0	0	10,3	40,2	49,4	100,0
12.	Online courses does not provide satisfaction for the students	Frequency	6	29	40	11	1	87
		Percent	6,9	33,3	46,0	12,6	1,1	100,0
13.	Online courses create problems in terms of access to the Internet.	Frequency	4	12	40	29	2	87
		Percent	4,6	13,8	46,0	33,3	2,3	100,0
14.	The workload is too much in online courses	Frequency	3	13	54	15	2	87
		Percent	3,4	14,9	62,1	17,2	2,3	100,0
15.	I am competent enough to offer an online course	Frequency	1	23	30	26	7	87
		Percent	1,1	26,4	34,5	29,9	8,0	100,0
16.	I can use many more materials in online teaching.	Frequency	2	4	29	42	10	87
		Percent	2,3	4,6	33,3	48,3	11,5	100,0
17.	Assigning tasks and homework is easy in online	Frequency	1	4	22	47	13	87
		Percent	1,1	4,6	25,3	54,0	14,9	100,0

	teaching.							
18.	Students learn more doing web-based activities than activities on paper.	Frequency	1	3	27	38	18	87
		Percent	1,1	3,4	31,0	43,7	20,7	100,0
19.	Designing, updating, managing and maintaining a website is difficult.	Frequency	7	18	25	28	9	87
		Percent	8,0	20,7	28,7	32,2	10,3	100,0
20.	Using e-learning environments is difficult for learners.	Frequency	6	31	35	14	1	87
		Percent	6,9	35,6	40,2	16,1	1,1	100,0
21.	E-learning environments are not clear and understandable.	Frequency	8	32	40	6	1	87
		Percent	9,2	36,8	46,0	6,9	1,1	100,0
22.	Using e-learning environments is complicated for me	Frequency	12	38	29	6	2	87
		Percent	13,8	43,7	33,3	6,9	2,3	100,0
23.	I have supportive network and internet access at my work.	Frequency	6	11	24	30	16	87
		Percent	6,9	12,6	27,6	34,5	18,4	100,0
24.	Online instruction has the potential to empower students in well-designed learning environments.	Frequency	0	1	35	45	6	87
		Percent	0	1,1	40,2	51,7	6,9	100,0
25.	Students can easily access to a wide range of materials on the web.	Frequency	0	1	9	53	24	87
		Percent	0	1,1	10,3	60,9	27,6	100,0
26.	It takes much time to prepare materials and activities for online classes.	Frequency	7	23	35	18	4	87
		Percent	8,0	26,4	40,2	20,7	4,6	100,0

Table 16 indicates that the participants do not strongly support online instruction and language teaching. That is to say, they do have more neutral ideas as to the online language teaching. The interview data also confirm the same finding. The respondents in the interview sessions pointed out that they would like to try offering online language teaching; however, they are hesitant to implement online instruction because they feel that they are not competent enough to offer online instruction. Furthermore, the teachers stressed that Turkey has not yet reached the stage in which online instruction can be managed easily.

4.4 The Factors Affecting the Attitudes of English Language Teachers toward Computer Technologies & Their Use of Technology in Language Teaching

In this study, the following aspects were investigated in terms of age, gender, teaching experience, the institutions where the participants work, the degrees that English language teachers held, the geographical regions from which the participants come, use of online communities by the participants,

- English language teachers access to the Internet (Section 2 Question 2).
- The courses about computers and technology use in language teaching taken during undergraduate years (Section 2 Question 3).
- English teachers' attendance at inservice training on technology use in language teaching (Section 2 Question 4).
- The attitudes of English language teachers toward ICT (Section 3, ICT Scale)
- The attitudes of English language teachers toward the use of computers in educational settings, especially in language instruction (Section 4, Computer Attributes Scale)
- The attitudes of English language teachers toward online language teaching and e-learning environments (Section 5 Online Language Teaching Scale)

4.4.1 Age

In this study, the age of the respondents was assumed to have an influence on their attitudes towards computer technology as well as on their use of technology in their classes and language teaching practices. Therefore, the age of English teachers was considered and analyzed as a factor that might potentially affect the use of computer technologies in language instruction by English language teachers in Turkey.

4.4.1.1 Age and Daily Access of the respondents to the Internet

Daily computer and the Internet usage of the participants were analyzed using a one-way ANOVA. The results of the analysis indicated a significant difference for the 21-30 years old group, $F (3,418) = .0037, p< .05$, so considering the results of the one

way ANOVA, the null hypothesis can definitely be rejected at the .05 level of significance.

Table 17. ANOVA for the Internet Access by Age

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Access to the Internet	Between Groups	10,210	2	5,105	3,418	0,037
	Within Groups	125,446	84	1,493		
	Total	135,655	86			
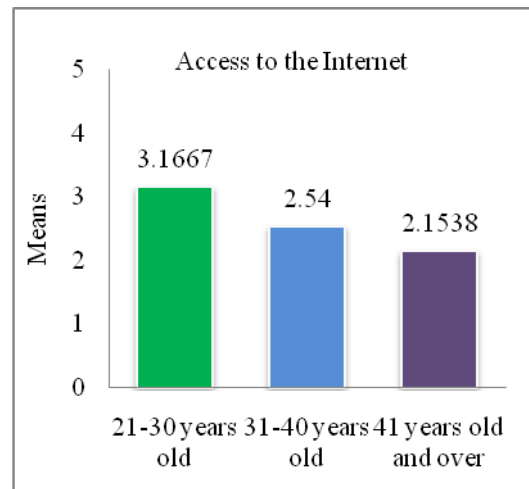
Figure 9. Age and the Internet Access Statistics

Figure 9 also indicates that the 21-30 year old group *(M=3,16, SD=1,129)* is different from the 31-40 year old group *(M=2,54, SD=1,328)* and 41 and over year old group *(M=2,153, SD=,898)* as it is seen that 21-30 years old group has higher mean scores than the other age groups (Table 18).

Table 18. Descriptive Statistics for Age and the Internet Access

		N	Mean	Std. Deviation	Std. Error
Access to the Internet	21-30 years old	24	3,1667	1,12932	,23052
	31-40 years old	50	2,5400	1,32803	,18781
	41 years old and over	13	2,1538	,89872	,24926
	Total	87	2,6552	1,25594	,13465

4.4.1.2 Age and the other constructs

A one-way ANOVA was also conducted in order to find out whether the age affects the respondents' attitudes toward ICT, online language teaching, and computer use in education. However, the analysis of the one-way ANOVA did not yield significant differences among the age groups. Table19 and 20 show the averages and the ANOVA results of different age groups for their attitudes toward the other constructs. It is seen that the age difference of the participants do not result in significant differences in terms of English language teachers' attendance at an inservice training on technology. In addition to this, the age factor does not differ in the technology related courses that teachers might have taken. Table 19 also indicates that the attitudes of English language teachers do not show difference in terms of ICT, Computer Attributes and Online Language Teaching.

Table 19. Desriptive Statistics for Age and Other Constructs

		N	Mean	Std. Deviation	Std. Error
Technology Related Courses	21-30 years old	24	0,3333	0,48154	0,09829
	31-40 years old	50	0,1600	0,37033	0,05237
	41 years old and over	13	0,1538	0,37553	0,10415
	Total	**87**	**0,2069**	**0,40743**	**0,04368**
Attendance at In-service training	21-30 years old	24	0,3750	0,49454	0,10095
	31-40 years old	50	0,4000	0,49487	0,06999
	41 years old and over	13	0,4615	0,51887	0,14391
	Total	**87**	**0,4023**	**0,49320**	**0,05288**
ICT Scale	21-30 years old	24	4,3646	0,37633	0,07682
	31-40 years old	50	4,1870	0,48147	0,06809
	41 years old and over	13	4,0615	0,31567	0,08755
	Total	**87**	**4,2172**	**0,44059**	**0,04724**
Computer Attributes Scale	21-30 years old	24	4,1692	0,28178	0,05752
	31-40 years old	50	4,1246	0,39377	0,05569
	41 years old and over	13	3,9962	0,29823	0,08271
	Total	**87**	**4,1177**	**0,35354**	**0,03790**
Online Language Teaching Attitude	21-30 years old	24	3,4492	0,34759	0,07095
	31-40 years old	50	3,4302	0,49210	0,06959
	41 years old and over	13	3,4246	0,24639	0,06834
	Total	**87**	**3,4346**	**0,42290**	**0,04534**

Table 20. ANOVA for Age and Other Constructs

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Technology Related Courses	Between Groups	0,530	2	0,265	1,620	0,204
	Within Groups	13,746	84	0,164		
	Total	14,276	86			
Attendance to Inservice Training	Between Groups	0,064	2	0,032	0,128	0,880
	Within Groups	20,856	84	0,248		
	Total	20,920	86			
ICT Scale	Between Groups	0,882	2	0,441	2,343	0,102
	Within Groups	15,812	84	0,188		
	Total	16,694	86			
Compter Attribute Scale	Between Groups	0,258	2	0,129	1,033	0,360
	Within Groups	10,491	84	0,125		
	Total	10,749	86			
Online Language Teaching Attitude	Between Groups	0,007	2	0,004	0,020	0,980
	Within Groups	15,373	84	0,183		
	Total	15,381	86			

4.4.2 Gender

This study also aimed at investigating whether gender plays a role in the attitudes of English teachers toward computers and technology. Differentiating the gender as the determining factor was not the main focus of the research; however, it was the aim of the researcher to find out whether there is any difference between the male and female respondents.

In this study, an independent sample t-test was conducted in order to investigate whether the gender influences the attitudes of the respondents toward:

- Inservice English language teachers' daily access to the Internet (Section 2 Question 2)
- The courses about computers and technology use in language teaching taken during undergraduate years (Section 2 Question 3)
- English teachers' attendance at inservice training courses on technology use in language teaching (Section 2 Question 4)
- The attitudes of English language teachers toward ICT (Information and Communication Technology) (Section 3, ICT Scale)
- The attitudes of English language teachers toward the use of computers in educational settings, especially in classroom. (Section 4, Computer Attributes Scale)
- The attitudes of inservice EFL teachers toward online language teaching and e-learning environments (Section 5 Online Language Teaching Scale)4.3.2.1 Gender and Online Language Teaching

Table 21. *t*-test statistics for Gender and Online Language Teaching

		Levene's Test for Equality of Variances		t-test for Equality of Means				
Independent Sample t-test								
		F	**Sig.**	**t observed**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**
Online Language Teaching Attitude	Equal variances assumed	0,022	0,882	2,200	85	0,031	0,19532	0,08877
	Equal variances not assumed			2,203	84,909	0,030	0,19532	0,08866

As to the effect of gender on respondents' attitudes toward online language teaching, an independent sample t-test was conducted. The result of the t-test yielded statistically significant difference in terms of gender, *t(85) = 2,200, p= .0031*, for the attitudes toward online language teaching and e-learning environments.
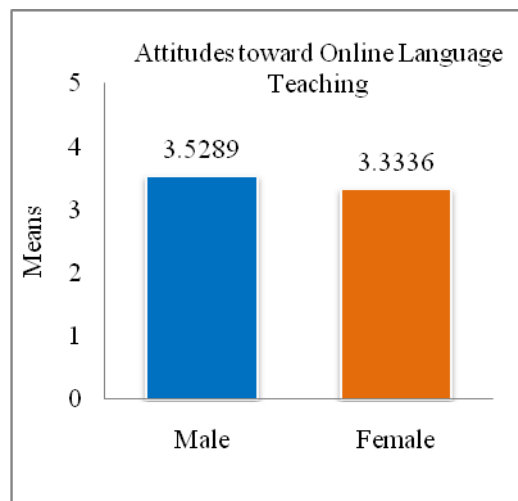
Figure 10. Gender and Online Language Statistics

Figure 10 and Table 22 also show that male respondents (n=45) have higher mean scores *(M=3,52 SD= .042)* than female respondents (n=42) have *(M=3,33 SD= .040)* with regard to their attitudes toward online language teaching and e-learning environments.

Table 22. Descriptive Statistics for Gender and Online Language Teaching

Group Statistics					
	GENDER	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Online Language Teaching Attitude	Male	45	3,5289	0,42107	0,06277
	Female	42	3,3336	0,40577	0,06261

4.4.2.1 Gender and other Constructs

Table 23. Descriptive Statistics for Gender and Other Constructs

Group Statistics					
	GENDER	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Access To The Internet	Male	45	2,5556	1,30655	0,19477
	Female	42	2,7619	1,20587	0,18607
Technology Related Courses	Male	45	0,1556	0,36653	0,05464
	Female	42	0,2619	0,44500	0,06867
Attendance To Inservice Training	Male	45	0,3778	0,49031	0,07309
	Female	42	0,4286	0,50087	0,07729
ICT Scale	Male	45	4,2578	0,43432	0,06474
	Female	42	4,1738	0,44834	0,06918
Computer Attributes Scale	Male	45	4,1251	0,34854	0,05196
	Female	42	4,1098	0,36288	0,05599

As for the attitudes toward ICT scale in term of gender, the t-test did not yield significant results. Both male and female respondents have similar statistics for their attitudes toward ICT. According to the results of the t-test, gender did not differ in the attitudes of English teachers toward the use of computers in educational settings, especially in classroom. Both female and male participants have approximately the same manners for the use of computers in educational contexts. Similarly, as for the daily access of the inservice English teachers to the Internet, no significant result was obtained through the t-test. Furthermore, there is no significant difference between female and male respondents in terms of their attendance to inservice training on

technology use in language teaching. As for the courses about computers and technology use in language teaching taken during undergraduate years, there is no significant difference with regard to gender.

4.4.3 Degrees Teachers Hold

In this study, the degrees that English teachers hold were taken as a factor that might affect the attitudes of the teachers toward computers and the Internet as well as their use of technology in language teaching.

When the questionnaire was administered, the respondents were asked to indicate the degrees they held. There were three options in the questionnaire: Bachelor's, Master's and Doctoral Degree. According to the submitted questionnaires, there was nobody who had a doctoral degree among English teachers. There were (n=72) respondents holding a Bachelor's Degree and (n=15) respondents holding a Master's Degree. As there were two factors in terms of degree type, an independent sample t-test was conducted in order to find out whether the type of degree leads to a difference in the attitudes of English teachers towards the computers and the Internet along with the use of technology in language teaching practices.

4.4.3.1 Degrees Teachers Hold and Attitudes toward ICT

One of the main concerns of this study was to uncover whether there were differences between the graduates of Bachelor's Degree and Master's Degree in terms of their attitudes toward ICT (Information and Communications Technology). To this end, an independent sample t-test was run in order to investigate any possible difference. According to the results of the t-test, there was a significant difference between the Bachelor's and Master's Degree holders, $t(85) = -2,165, p=.033,$ with regard to their attitudes toward the ICT.

Table 24. *t*-test statistics for Degree and Attitudes toward ICT

		Levene's Test for Equality of Variances		t-test for Equality of Means				
Independent Sample t-test								
		F	**Sig.**	**t** observed	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**
ICT Scale	Equal variances assumed	0,676	0,413	-2,165	85	0,033	-0,26514	0,12245
	Equal variances not assumed			-2,263	21,226	0,034	-0,26514	0,11714

As Table 25 displays, Master's Degree holders have higher average *(M=4,436 SD=0,407)* than the Bachelor's Degree holders *(M=4,171 SD=0,435)* when their attitudes toward ICT are taken into consideration. The participants holding a master's diploma seemed to be content with the availability of computers in their lives. They ponder that computers are fruitful technological tools for the improvement of education and in particular for language teaching and learning. When compared with the respondents who had a Bachelor's Degree, the Master's Degree holders would rather do things through computers than by hand. Their results indicate that they feel comfortable with the computers and they make use of ICT in their profession. Furthermore, they consider the computers as a fast and efficient means of getting information and presenting to the students.

Table 25. Descriptive Statistics for Degree and Attitudes toward ICT

	DEGREE	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Group Statistics					
ICT Scale	Bachelor's	72	4,1715	0,43596	0,05138
	Master's	15	4,4367	0,40772	0,10527

4.4.3.2 Degrees Teachers Hold and Online Language Teaching

As it was stated before, there were (n=72) English teachers holding a Bachelor's Degree and (n=15) English teachers holding a Master's Degree. The attitudes of English teachers toward online language teaching were also analyzed in terms of the degrees that the teachers had using an independent sample t-test. The test was statistically significant, $t(85) = -2,789, p= .007,$ by showing that there is a significant difference between the Master's and Bachelor's Degree holders in terms of their attitudes toward online language teaching.

Table 26. *t*-test statistics for Degree and Online Language Teaching

Independent Sample t-test								
		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t $_{observed}$	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Online Language Teaching Attitude	**Equal variances assumed**	1,268	0,263	-2,789	85	0,007	-0,32231	0,11556
	Equal variances not assumed			-2,416	17,958	0,027	-0,32231	0,13343

Figure 11 shows that the teachers who had a Master's Degree have higher averages *(M=3,701)* for online language teaching and the teachers holding a Bachelor's diploma. When the online language teaching scale was observed, it is seen that English teachers having a Master's Degree have positive attitudes for implementing an online course if they have chance. They also feel that online instruction has the potential to empower students in well-designed learning environments. Furthermore, the Master's Degree holders maintain that students learn more doing web-based activities than activities on paper. To put in a nutshell, a great majority of English teachers who had a Master's Degree competent enough to offer an online course for teaching English.
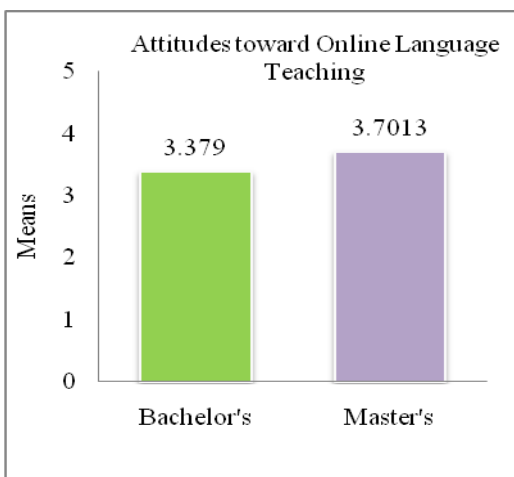
Figure 11. Degree and Online Language Teaching Statistics

Table 27 also displays the difference between two groups (Bachelor's vs. Master's). When the table is examined, it is seen that Master's Degree holders are also different from the Bachelor's Degree holders in terms of their mean and standard deviation scores for online language teaching.

Table 27. Descriptive Statistics for Degree and Online Language Teaching

Group Statistics					
	DEGREE	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Online Language Teaching Attitude	Bachelor's	72	3,3790	0,38994	0,04596
	Master's	15	3,7013	0,48513	0,12526

4.4.3.3. Degrees Teachers Hold and Other Constructs

Within the scope of this study, the degree type of the respondents was also analyzed with respect to the following aspects:

- daily access of the inservice English teachers to the Internet
- the courses about computers and technology use in language teaching taken during undergraduate years

- the attendance of the participants at an inservice training on technology use in language teaching

However, t-test did not yield any significant results for the degree type and these constructs. When the results of the relationship between the degree type and the attendance to an inservice training on technology use in language teaching were considered, it is seen that there is not a significant difference between the teachers holding a Master's and Bachelor's degree.
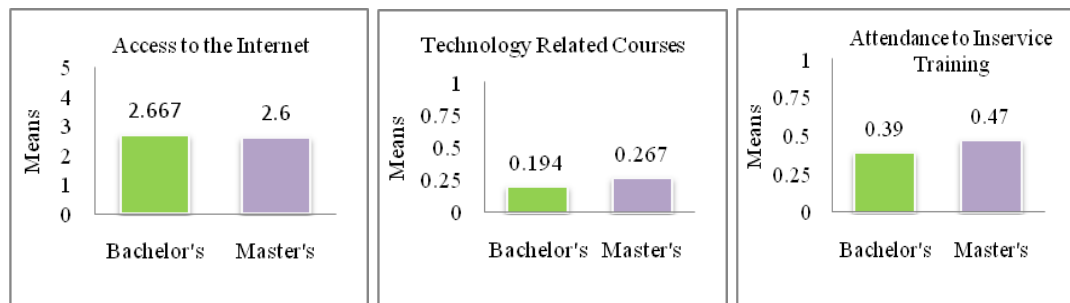
Figure 12. Mean Scores for Degree and Other Constructs

4.4.4 Teaching Experience

One of the primary concerns of this study was to investigate whether teaching experience of English teachers affect their attitudes toward computers and their use of technology in language teaching. In the study, there were three groups of English teachers in terms of their teaching experience. The first group is the teachers who had 0-6 year experience. There were (n=15) teachers in this group. The second group consists of (n=58) teachers. This group is the largest group among the participants. They have 7-15 year teaching experience. The third group of teachers (n=14) have at least 16 years teaching experience.

Teaching experience of the teachers was analyzed in terms of its effect of the participants' attitude toward ICT, Online Language Teaching, Access to the Internet, Computer Attributes Scale

4.4.4.1 Teaching Experience and Access to the Internet

Teaching experience was another concern of this study as to the effect it has on the respondents' access to the Internet. In order to find out whether teaching experience of English teachers affects their access to the Internet, a one-way ANOVA was conducted. The analysis of the one-way ANOVA yielded significant results, *$F(3,607)= 3.07, p=.003$*. Thus, the analysis ensured the hypothesis that not all three groups within teaching experience have the same attitudes toward computers and the Internet. More specifically, according to the results of the one-way ANOVA, the teachers who have up to six years teaching experience show different attitudes when compared to the teachers who have more teaching experience. When the characteristics of 0-6 year group are considered, it is known that these teachers are at the beginning of their teaching profession. Most of these teachers are recent graduates and they have experienced the contemporary technologies related to computers and the Internet. Furthermore, it is very likely that these teachers with up to six-year teaching experience have enrolled in courses related to computers and technology use in education during university. For all these possible reasons, these groups of respondents have more access to the Internet than other respondents of the study.

Table 28. ANOVA for Teaching Experience and Access to the Internet

One-way ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
ACCESS TO THE INTERNET	Between Groups	10,728	2	5,364	3,607	0,031
	Within Groups	124,927	84	1,487		
	Total	135,655	86			

It is also clearly seen in Figure 13 that the respondents (n=15) in 0-6 year group
(M=3,33 SD=1,17) have higher averages in terms of their access to the Internet. The
respondents (n=58) in 7-15 year group *(M=2,60 SD=1,29)* have less access to the
Internet than 0-6 year group. Lastly, the remaining respondents (n=14) who have at
least 16 years teaching experience *(M=2,14 SD=0.86)* have the least amount (hour) of
access to the Internet. As Figure 13 explicitly reflects, teaching experience of English
teachers is a determining factor in their access to the Internet and computers. The
younger and less experienced teachers have diversely more access amount (hour) to
the Internet. Figure 13 reveals that there is a diverse relationship between the teaching
experience and teachers' access to the Internet.
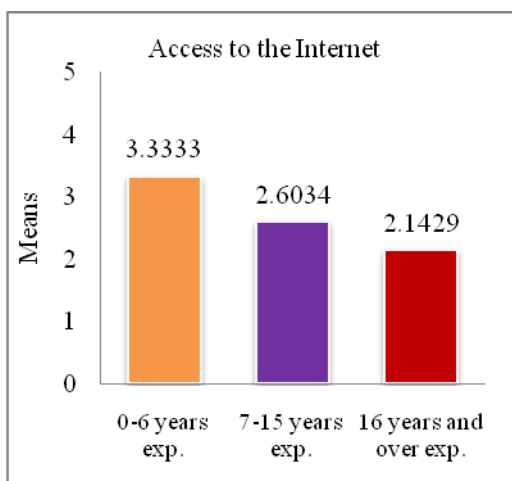
Figure 13. Teaching Experience and the Internet Access Statistics

Teaching experience of the teachers was also analyzed with regard to teachers' attitude
toward ICT, Online Language Teaching, and Computer Use in Classroom Settings.
However, according to the results of one-way ANOVA, there is no significant
difference among teaching experience groups in terms of attitudes toward ICT, Online
Language Teaching and Computer Use in Classroom settings. One of the remarkable
points to be considered for the results of the analysis is that English teachers who have
more access to the Internet do not have the similar attitudes to the use of computers in

classroom settings. This situation shows that a great majority of these teachers are using computers and the Internet for their own personal use, and they are not able to bring the computer technology and the Internet to the classroom setting.

4.4.5 Institution

This study also aimed at investigating whether there are any differences among institutions in which English teachers work. In Turkey, English classes are offered compulsorily at the 4th and 5th grades of public primary schools, and it is offered also at high schools. In this study, there were (n=21) English teachers working at primary schools and (n=66) teachers working at high schools throughout Turkey. High schools are also chiefly categorized into two groups. One is general high schools and the other is Anatolian High Schools. In this sample of teachers working at high schools, there are (n=53) teachers working at Anatolian High Schools and (n=13) teachers working at general high schools. The overall purpose of this section of the analysis was to understand whether teachers at primary schools were different from high school teachers. To this end, a one-way ANOVA was conducted with respect to the following aspects:

- Respondents' access to the Internet and computers
- Attitudes toward ICT
- Attitudes toward computer use in classroom settings
- Attitudes toward online language teaching
- Attendance to inservice training on technology
- Courses related to computers and technology use at university

4.4.5.1 Institution and Access to the Internet and Computers

One-way ANOVA yielded a statistically significant difference among teachers working at different institutional settings in terms of their access to the Internet and computers. The test was statistically significant for access to the Internet, $F(3,654)=$

10,859, p= .003. More specifically, the test suggests that English teachers (n=15) who work at primary schools are different from teachers (n=53) who work at high schools in terms of their access to the Internet and use of computers.

Table 29. ANOVA for Institution and the Internet Access

ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
ACCESS TO THE INTERNET	Between Groups	10,859	2	5,429	3,654	0,030
	Within Groups	124,796	84	1,486		
	Total	135,655	86			

With a further analysis, it is seen in Figure 14 that English teachers working at primary schools have the highest averages *(M=3,28 SD=1,26)* for the use of computers and access to the Internet. Second, English teachers *(M=2,76 SD=1,09)* working at general high schools seem to use computers and access to the Internet less than primary school English teachers. Third, as Figure 14 indicates, teachers *(M=2,39 SD=1,23)* working at Anatolian High Schools have the least access to the Internet and computers. The reasons why this last group of English teachers has access to the Internet less than other teachers may be varied. First, the physical conditions of the schools may have an effect on their use of computers. Second, technological efficiencies such as computers and the Internet may not be settled at some schools because of financial problems. Third, the attitude of school administration is a major factor that affects English teachers' access to the Internet and computers. Some school administrations implement some restrictions on the use of computers and the Internet.
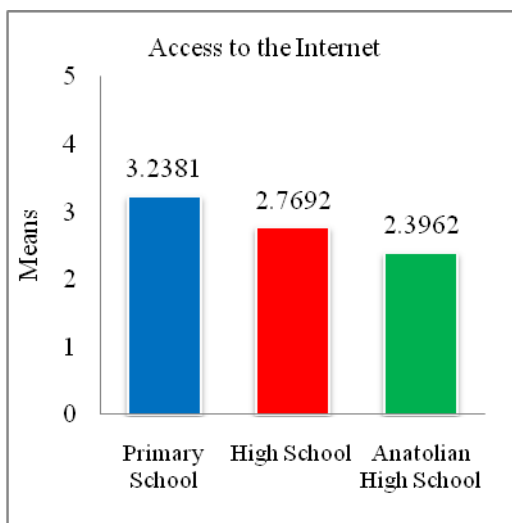
Figure 14. Institution and the Internet Access Distribution

As for the effect of Institution on English teachers' attitudes toward ICT, one-way ANOVA did not yield significant results. Three groups of English teachers have similar attitudes toward ICT (Table 30). Second, as Table 30 displays, the institutional differences did not lead to any difference for the attitudes of English teachers toward the use of computers in classroom settings. Third, there was no significant difference for online language teaching among the teachers working at different institutions.

Table 30. Descriptive Statistics for Institution

	School Type	N	Mean	Std. Deviation	Std. Error
ICT Scale	Primary School	21	4,3548	0,41890	0,09141
	High School	13	4,0231	0,52465	0,14551
	Anatolian High School	53	4,2104	0,41584	0,05712
	Total	**87**	**4,2172**	**0,44059**	**0,04724**
Computer Attributes Scale	Primary School	21	4,1486	0,38835	0,08474
	High School	13	3,9923	0,30488	0,08456
	Anatolian High School	53	4,1362	0,35014	0,04810
	Total	**87**	**4,1177**	**0,35354**	**0,03790**
Online Language Teaching Attitude	Primary School	21	3,5619	0,47400	0,10344
	High School	13	3,3969	0,23038	0,06389
	Anatolian High School	53	3,3934	0,43415	0,05964
	Total	**87**	**3,4346**	**0,42290**	**0,04534**

4.4.6 Online Community Use

Online community use of English teachers was one of the fundamental aspects of this study. In this respect, the respondents were asked to indicate whether they make use of online communities for their professional development and language teaching practices. They were provided with two options to choose. The respondents indicated whether they use online communities or not. At the beginning of the data collection, it was thought that the use of online community would result in significant findings for the study. Thus, an independent sample t-test was conducted and according to the results of the analysis, there was no significant result for online community use of English teachers.

Table 31. Descriptive Statistics for the Use of Online Communities

Group Statistics					
	ONLINE	N	Mean	Std. Deviation	Std. Error Mean
Access to the Internet	No	41	2,3902	1,22225	0,19088
	Yes	46	2,8913	1,25128	0,18449
Technology Related Courses	No	41	0,1707	0,38095	0,05949
	Yes	46	0,2391	0,43127	0,06359
Attendance to Inservice Training	No	41	0,3171	0,47112	0,07358
	Yes	46	0,4783	0,50505	0,07447
ICT Scale	No	41	4,1549	0,46862	0,07319
	Yes	46	4,2728	0,41119	0,06063
Computer Attribute Scale	No	41	4,0649	0,35893	0,05606
	Yes	46	4,1648	0,34576	0,05098
Online Language Teaching Attitude	No	41	3,4117	0,44884	0,07010
	Yes	46	3,4550	0,40226	0,05931

English teachers' use of online communities was analyzed as follows:

- Teachers' attitudes toward ICT

- Teachers' attitudes toward computer use in classroom settings

- Teachers' attitudes toward Online language teaching

- Teachers' attendance at inservice teacher training on educational technology

- Computer and technology courses teachers enrolled in at university

However, as Table 31 indicates, the use of online communities by the participants did not show significant differences in terms of the aforementioned scales. The reason why online community use did not differ among the respondents arise from the fact that a considerable number of the respondents considered some websites such as Facebook and Twitter are some examples of online communities, and a great majority of those respondents selected that they use online communities. Facebook and Twitter can be regarded as online communities; however, most of those teachers were using these websites for their own personal affairs (detailed information can be found in interview analysis section of the chapter 4). They were not able to make use of online communities for their professional development and language teaching practices.

4.4.7 Geographical Region

The data were collected from English teachers during a series of inservice training organized by the MONE and the Board of Education in Turkey. Board of Education launched a project to train some promising and skilled English teachers all around the country. In this regard, there were English teachers from different parts of Turkey. More specifically, there were English teachers from all seven geographical regions of Turkey. Thus, this sample of English teachers was purposefully selected by the researcher in order to collect data from English teachers who work at various parts of the country. In this way, this study aimed at reflecting the whole picture of Turkey in

terms of English teachers' attitudes toward computers and the Internet as well as their use of technology during the process of language teaching and learning. To this end, geographical region where English teachers work was taken as a factor that might potentially affect the attitudes of English teachers toward technology and language teaching. Pertaining to this, geographical region of the respondents was analyzed by conducting a one-way ANOVA with respect to their attitudes toward ICT, Online Language Teaching, and Computer use in classroom settings. However, the results of the analysis were not statistically significant.
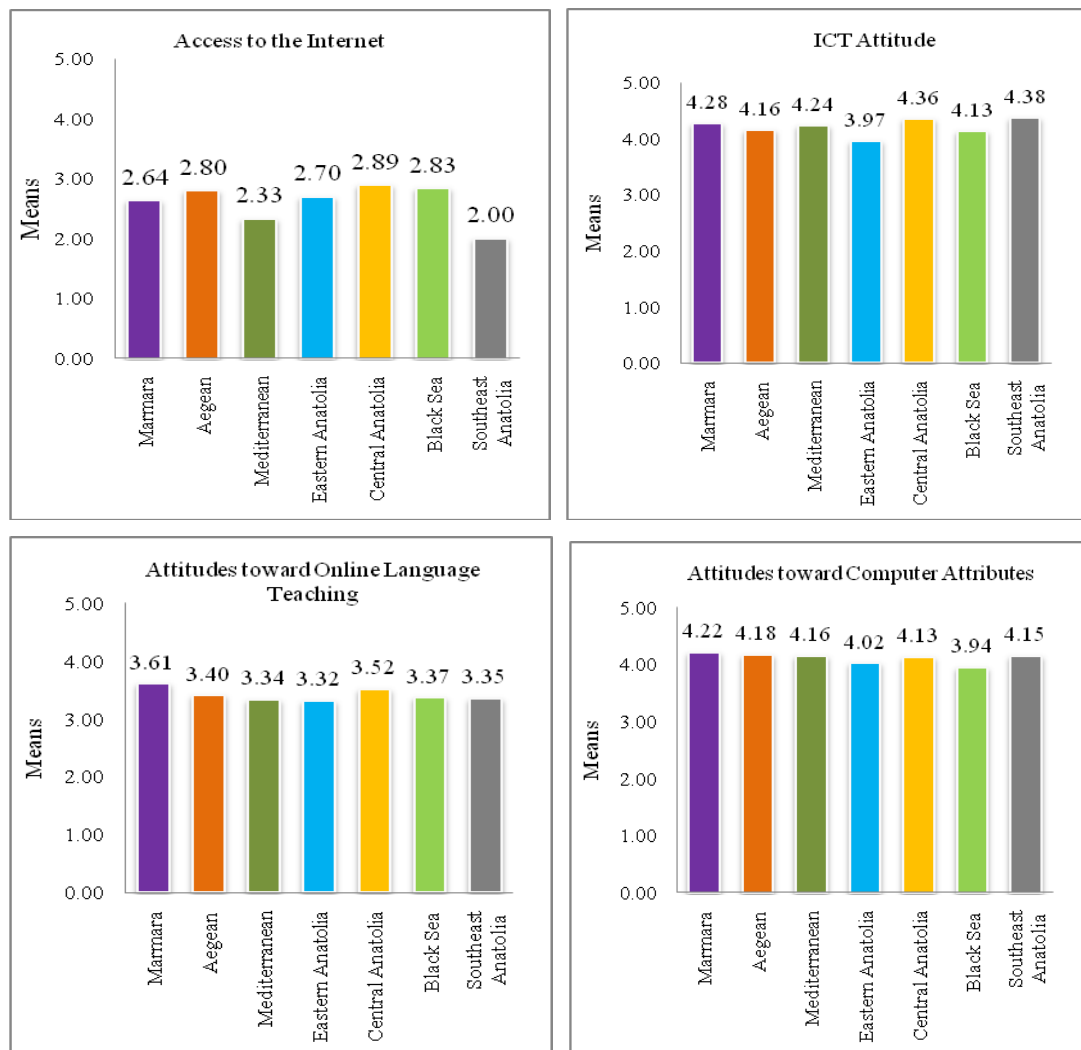
Figure 15. Geographical Region Statistics

As Figure 15 indicates, geographical regions of the respondents did not show any difference for their attitudes to technology and language teaching. For instance, when attitudes toward computer use in classroom settings are taken into consideration, it is clearly seen that almost all geographical regions have similar averages. Marmara Region *(M=4,22)*, Aegean Region *(M=4,18)*, Mediterranean Region *(M=4,16)*, Southern Anatolian region *(M=4,15)*, and Central Anatolian Region *(M=4,13)* have very close averages for computer use in classroom settings. Apart from these regions, Eastern Anatolian Region *(M=4,02)* has a little less average than the first five regions, and Black Sea Region *(M=3,94)* has the lowest average among the geographical regions of Turkey. However, as Figure 15 reveals these averages are almost the same and they do not differ substantially. Therefore, geographical region does not result in significant differences for the attitudes of English teachers. Likewise, when respondents' attitudes toward online language teaching are considered, it is explicitly seen that all regions have similar results. In that, the averages of seven regions range from *(M=3,32) to (M=3,61)*. Thus, different regions have almost the same averages for online language teaching.

4.5 Qualitative Analysis (Interview Data)

In addition to data collected through a quantitative questionnaire, semi-structured face-to-face interviews were employed to gain a deeper understanding and elaborate on the results of the quantitative analysis. Interview is a widely used means of qualitative research methods because interviews provide the researcher with unique opportunities and original thoughts that would not be uncovered by other data collection techniques. To this end, this study made use of semi-structured face-to-face interviews so as to triangulate and corroborate the findings of the quantitative analysis.

The interview sessions of the study took place during an inservice English teacher training. The researcher also attended the training seminar and had time among the

respondents. In the course of time, the researcher built a close relationship with the respondents. There emerged a rapport between the interviewer and interviewee before the interview sessions took place. To illustrate, the researcher and the participants spent time together for social activities such as visiting some historical places as a group, going for the rafting as well as swimming. All these activities enabled the researcher to get to know well the respondents and build a joyful atmosphere. While spending time with the respondents, the researcher was able to differentiate the respondents who would produce rich and in-depth data for the study. Thus, the interviewees were selected purposefully by spending time with them and observing their behaviors as to whether they would yield in extended data for addressing the research question of this study.

The researcher had a pre-determined framework for the interview sessions; however, the interviewees were quite comfortable to mention their viewpoints and experiences regarding the questions. The interviewees were able to navigate some points that they want to touch on. Semi-structured, face-to-face interviews were conducted in order to address the research questions of this study. The researcher provided some pre-determined framework for the respondents, and they shaped the overall design of the interviews. In accordance with the purpose of this research and in-depth responses gained from the respondents, the researcher reached major themes as follows

- Computer usage levels

- Teacher autonomy and technology

- Obstacles to technology use

- Professional development and online communities

4.5.1 Computer Usage Levels

The questions related to the attitudes toward computers in Part A in the interview questions (Appendix 2) sought answers for the computer usage levels of English teachers. According to the results of Part A, all the participants who have been interviewed consider themselves competent enough to use computers easily. They have positive attitudes toward computers. They state that they are accustomed to using computers for a long time. A great number of the respondents have their own personal computers. Furthermore, English teachers have positive attitudes towards the use of computers in educational settings, more specifically in classrooms while teaching English. Although these teachers tend to make use of computers more and more, their usage level is too limited. One of the remarkable results of the interview data is that English teachers use computers mostly for their own purposes rather than making use of them for the implementation of their courses as instructional tools. (Al-Asmari, 2005; Levin and Wadmany, 2008; Wozney, Venkatesh and Abrami, 2006). They use computers for their daily lives and they do not benefit from computers as instructional tools in their classrooms. One of the respondents report that:

> I am able to use computers and the Internet easily. Most of the time, I make use of PowerPoint presentations for my students because I think such presentations are colorful and entertaining for the students. However, preparing presentations take too much time. (B.B)

Another respondent also stated the similar words with regard to his use of computer and the Internet:

> I like computers very much because they make my job easier than before. I use Word, Excel and PowerPoint quite frequently. Computers are excellent tools for having students watch films. Students are into watching films. Watching films appeal to their interests. They find it amusing and computers catch the attention of students easily.

It is seen that though computer technologies have spread extensively in educational settings, the respondents of this study do not seem to exploit the benefits of computers

for their language teaching practices at the desired level in accordance with the rapid expansion of information and communication technologies (ICT) (Levin & Wadmany, 2008; Russell et al, 2003; Yıldırım, 2000). To illustrate, when the respondents were asked how they used computers in their classrooms, they told that they write their test questions in Microsoft Word, and they feel that writing exam questions is a way of using computers in language teaching practices. Likewise, it was observed during the interviews that teachers make use of mostly traditional Microsoft Office programs such as excel, powerpoint, word etc. However, they are not able make use of other computer applications in their classrooms. The reasons why these teachers cannot apply computer technologies in their classrooms may be various. First, teachers themselves are extremely influential in their use of technologies. Most of these teachers have an established method of teaching pedagogy. Akcaoğlu (2007) states that teachers tend to use computers more for "recreational" purposes than instructional ones and explains that teachers are not willing to change their "traditional teaching practices"(p.100). Most probably they did not oversee that such technologies would be incorporating into the teaching pedagogy until 10 years ago. However, they are now confronting an era which is in a way putting technology into the lives of people. Thus, it has become inevitable to escape from the implications of technology in education as well as language learning and teaching. Second, teachers' computer skills are one of the factors that hamper the efficient use of computer technologies at schools. Third, lack of technological tools such as computers and projections is another reason that might potentially affects the effective use of computer technologies.

The respondents indicated that they utilize computers particularly for "informative" purposes such as using PowerPoint presentations in order not to lose time while writing on the board as Wilson, Notar and Yunker (2003) and Wozney et al. (2006) have also reported. For instance, one of the interviewees states that it was easy and handy for him to find exercises on the Internet and using the questions in the PowerPoint format to show to the entire classroom. The teacher used the program to reflect the questions to the board and taking attention of the students to the questions.

Another common "informative" usage of the respondents was CD-DVD ROMs. A great majority of the teachers pointed out that they make use of CD-DVD ROMs especially by getting students to watch films in English. Pertaining to this, the respondents highlight that watching films or cartoons considerably stimulate the interest of the students on the subject matter and also motivate them to work harder. However, some respondents warn that teachers should be cautious while choosing CD and DVDs. To illustrate, it was stated that most of the textbooks have their own CD and DVDs; however, these CD and DVDs are mechanically prepared. More specifically, most of the speakers on these CD and DVDs are put into studios in order to record the audio files or conversations of textbooks. Contrary to expectations, these recordings do not reflect the natural setting and spoken language of the target language. Thus, some teachers find their own materials especially on the Internet. They highlight that they are able to find numerous listening files via the Internet, and in this way, students are exposed to the natural spoken language rather than bookish artificial one.

When the responses of the interviews are considered, it is clearly observed that they see computers as helpful tools that make lessons more colorful and motivating for students (See also Table 13). Teachers make use of especially PowerPoint presentations and utilize LCD Projectors instead of the boards. Most of the respondents use common school technologies in their classes. Lin et al (2004) also state that "among various application software, either generic or subject-specific, word processors and presentation software probably are used most often in language education" (p.135). These are the established types of technologies in schools. However, these type of uses of computers are generally one directional. Namely, students are not actively involved in technology use in their classrooms. Zhao and Frank (2003) also emphasize that "the most frequently used technologies are e-mail, telephone systems, and computers in the classroom" (pp. 819-820). This finding shows that simpler and existing technologies that are compatible with the established practices of teachers are preferred by the teachers in classroom settings. Teachers

prefer these types of computer usages because they fit well into the traditional teaching fashions of the teachers.

4.5.2 Obstacles to Technology Use

Part C in the interview questions (Appendix 2) was about the factors that might affect the efficient use of computer technologies in language instruction. The results of the responses given to questions in Part C (Appendix 2) revealed that one of the most influential factors that hinder the implementation of computer technology in language teaching and learning process is the lack of technological tools at schools. In this respect, a great majority of the respondents complain that they either do not have any computer labs at schools or have a very limited one in their institutions. More specifically, even if there is a computer lab at a school, this lab is shared by all the teachers at that school, which results in a limited use of computer lab by teachers. One of the respondents stated that:

> I have five separate classes to teach English this term, but I can use computer lab for just one class due to the fact that other teachers do also demand for using computer lab in their classes. (E.K)

Furthermore, four interviewees reported that their classrooms are too crowded to implement their classes in computer labs. They also stated that computer labs have about 25-30 computers, which prevents students from having a single computer. Teachers also report that there are always computers which do not function properly. Thus, all of these technological inefficiencies hamper the effective use of computers for language teaching practices at schools. Another primary factor that impedes the technology use of teachers is the shortage of some technological equipment such as LCD Projectors and computers at classrooms. Some teachers state that they do not have LCD Projectors in their classrooms, and this situation restricts their classroom teaching to a great extent. As is stated before, a great majority of the respondents rely heavily on LCDs for making their presentations to students. In relation to this, one of the interviewees pointed out that:

> LCD Projectors do really help me to teach English more effectively. For every unit in the textbook, I have my students prepare presentations related to the subject of the lesson. Students exhibit their presentations on the LCD prıjectors. If there is not a projector available, students get bored while depending solely on the textbook. However, LCDs and the Internet access remarkably facilitate my class activities. In the course of the classes, it is possible to download a listening material from the Internet related to a reading passage which is dealt with in the classroom. I wish I had a computer, an LCD Projector and the Internet access fixed in my classes permanently. (Ö.K)

Therefore, if they do not find such facilities whenever they need, it becomes rather problematic for the teachers. Some respondents even complain that they do not have speakers in their classrooms even if they have a computer in their classrooms. To sum up, most teachers reported that their access to computer resources was very limited and there emerged technological problems frequently.

Another important barrier for the implementation of computer technologies is the low access to the Internet at schools. The respondents reported that they download the pre-determined file before coming to school and show the related file to the students. There are natural differences among the schools. Some schools have better financial and physical conditions while some others have worse conditions in terms of having computers at schools or access to the Internet. Therefore, the respondents have various experiences related to the access to the computers and the Internet in their institutions.

Socio-economic level of the students also affect the technology implementation process at schools. One of the respondents who work in the eastern part of the country reports that his students do not have their own computers at their home. He further explains that the families of the students are very poor, and they cannot afford buying a computer for their children. He adds that even if they have computers, they cannot have access to the Internet at their home. Therefore, some places within the country have almost no facilities regarding the computer technologies. This discrepancy among the places of the same country hinders having near-level complete picture of the country. However, this situation does not mean that all schools are poorly equipped with technological tools in the eastern part. There are technologically efficient schools available in the eastern regions as well. The teachers working especially in the eastern

and southeastern parts of the country complain that they do not have such facilities due to the low economic status of those places. The economic status also affects the technology implementation at rural places all around the country. The desired level of computer technology implementation is to some extent seen especially in western part of the country and big cities.

One of the fundamental obstacles to the implementation of computer technologies at schools is school administrations. If school administration has positive attitudes toward the use of computers in learning and teaching, teachers become more motivated to make use of computers. One of the respondents state that:

> I like using computers in my classrooms. Especially, I make use of films while I teach English. My students are also into watching films. I think that their listening skills improve remarkably through watching films. While watching films together, I sometimes pause the film and ask for their comments about a specific scene in films. Students try to speak about the film and scene, and in this way, they improve their speaking skills gradually. They also become critical thinkers in this way. However, one day, one of the people from the school administration saw me watching films with the students, and asked me that "Why are you having these students watch films? Will they be film directors?" in a sarcastic way. (U.D)

Through this statement of the teacher, it is clearly understood that some people who have administrative duties have biases to computers and the use of technology in classrooms. They have a traditional way of teaching pedagogy, and they cannot go beyond the frontiers of their established teaching manners. Most of the teachers stated that classroom is not only comprised of board, desk and chairs.

4.5.3 Teachers and Technology

Part G in the interview (Appendix 2) is about the role of teachers in using technology in language instruction. Teachers as human beings have the potential to interpret new trends and applications both positively and negatively. It is teachers who can adapt or resist to new parameters. The responses of the interviewees to Part G of the interview revealed that when the technology is the subject under discussion, teachers are, no doubt, the most fundamental agents that shape the developmental process of technology implementations in learning and teaching environments. Likewise, the

interviewees in this study highlighted that although there are numerous technological difficulties and environmental problems, teachers can succeed in effective use of computer technologies for the development of their language teaching practices. Zhao and Frank (2003) also maintain that "most factors do not directly influence technology uses in a linear fashion; rather, their influence is mediated or filtered by teachers' perceptions" (p.817).

If teachers are enthusiastic about using utilizing technology in their classes, they can manage it despite all the barriers and difficulties. However, in this respect, when the respondents were asked whether the current curriculum followed at schools was compatible with the implementation of computer technologies, a great majority of the teachers stated that curriculum encourages teachers to make use of educational technologies. Teachers do not see curriculum as a hindrance for the technology use in their teaching practices. One of the the inteviewees highlighted that:

> The curricula followed at schools in Turkish education system is compatible with the technology integration and also encourages teacher to utilize educational technology in their classes. However, there is still a tendency to neglect technology use in instruction. In my opinion, first teachers should handle the technology integration in their minds. (U.D)

Regarding the teacher factor in technology use, teachers are themselves decisive of their teaching. The interview sessions of this study suggest that while some teachers are desirably willing to do whatever is needed to improve their language teaching practices, some others are trying ways of escaping from improving themselves and adapting to new conditions. For instance, one of these English teachers searches for all the possible ways by making use of computers in order to appeal to the contemporary interests of her students. She reports that:

> I am involved in the projects that are carried out by different countries. Within the objectives of the projects, enhancing the cultural exchange is of paramount importance, so my students also have the opportunity to communicate with somebody from other countries. In this way, students get to know other cultures well, and unconsciously learn new things from the corresponding students . In one of the projects, students first began writing each other via traditional pen and paper. However, after a while, they quit pen and paper and preferred writing to

each other via the MSN and other Chat tools. My students felt confident enough to communicate with people around the world. For example, they wrote to students from England, Poland and Germany. They also improved their English by writing to each other and talking on the Internet. (Z.D.Y)

As a result, this respondent proves that a teacher is considerably influential on the use of computers by her/his students. However, some teachers indicate an attitude which regards the computers as useless machines for improving the education and avoids using it. To this end, teachers' pedagogical beliefs emerge as a major factor that affects the implementation of computer technologies in language teaching process. When the specific conditions of the country are taken into consideration, it can be clearly argued that almost all of these teachers have come from an educational system which is too mechanical and teachers-centered. The constructivist approach has recently gained importance in Turkish educational context, so it may take time for teachers to adapt themselves to the new system because the training these teachers had is rather different from the current one.

4.5.4 Language Skills and Technology

Teaching language skills has been the major component of the language teaching over the years. It has been the fundamental focus of language teaching practices. More specifically, four basic language skills have been portrayed: reading, writing, listening and speaking. Almost all textbooks have been organized according to the improvement of these skills. Furthermore, TOEFL (Test of English as a Foreign Language) has also been updated in 2005 in order to assess the speaking, writing, reading, and listening skills of the test-takers. Regarding the computer technology and language skills, the interviewees unanimously maintained that computer technology has boosted especially the listening and writing abilities of their students. The interview sessions have suggested that writing skill was the most neglected skill before the spread of computers. However, computers have contributed to improvement of writing skill of the students tremendously. Through the means of communication on the Internet such as chat environments, students have become more interested in writing. One of the interviewees reported that:

> Students are now quite different than before. They are able to manage sophisticated applications with computers. We would play real football on the streets; however, students now play online football games. Students try to understand the rules of the online games by using forums which are generally in English. In time, they learn a lot of things by writing to online gamers. Students also like watching videoclips and such things improve their listening skills as well. (U.D)

Students have achieved the opportunity to write to people from other countries and learn about their cultures and lives. Students unconsciously learned how to express themselves especially for the colloquial language, which is neglected in coursebooks. Apart from the writing skill, teachers are able to improve their listening abilities by the help of computers and the Internet. Whenever students need to listen to any news or songs, they can reach them with one click and download plentiful listening materials according to their interests. One of the respondents reported that

> One of my students learned Korean by chatting and listening Korean. Also, students are lucky to be able to reach unimited sources in English. Chat tools also contributed a lot to improve writing skills of my students. They write more than before because they find it entertaining and encouraging. (Ö.D.)

Therefore, it is clear that when students use the Internet while communicating with people all around the world, they both learn about other cultures and improve their language skills.

4.5.5 Online Language Teaching and Technology

One of the primary concerns of this study was to investigate the attitudes of English teachers towards online instruction, particularly online language teaching. Apart from asking for their attitudes towards online language teaching by conducting a Likert-type questionnaire, their perceptions and implementation of online systems were explored by semi-structured face-to-face interviews. Part E in the interview (Appendix 2) is about the ideas of the teachers about online instruction and language teaching. When the respondents were asked whether they would like to offer a course through online instruction, they stated that they would offer their courses online; however, they maintained that they did not have necessary skills to offer such courses. The

interviewees mention the reasons why they do are hesitant to offer online instruction for language teaching as follows:

- Keeping track of the students may be difficult in online settings

- Difficulty of preparing materials for online instruction

However, the respondents also pointed out that online language teaching has certain advantages. The positive remarks about online instruction raised by the teachers are:

- Students may feel more confident to express their view as there is not pressure from the environment.

- Online instruction may foster the autonomy of both students and teachers.

- There less time and space limitation in online instruction

- Students may gain more access to teacher

The responses given to questions in Part E indicated that only one teacher was able to offer online course. A great majority of the interviewees believe that their knowledge and experience to offer an online course is not at the desirable level. Furthermore, the respondents highlight that carrying out online language teaching is an extremely new phenomenon when the technology integration of the whole country is taken into consideration. They reported that conducting online courses is suitable for the university level courses rather than the classes in high or middle schools.

When their views were probed in a detailed way, the respondents maintained that online language teaching would enable some introvert students to express themselves well when compared with the traditional classroom environment. As the classroom setting creates a natural atmosphere in which students may not disguise their feelings and attitudes, students can be adversely affected by the behaviors of their classmates. Therefore, as Aykaç (2005) stated, some students may escape from participating in the class discussions and activities. In order for these types of students to express

themselves more, online classes would be eligible because students may feel comfort when there is nobody that might potentially laugh at them. On the other hand, most teachers claimed that online instruction hinders the human factor which is essential for education. They report that if they cannot see and feel their students, they cannot satisfy their expectations for the teaching profession. They strongly believe that students also need a warm smile of their teachers so that they can motivate themselves for the classes. Besides, one of the respondents also emphasizes that online language teaching do not refer to culture of Turkish people by stating that:

> Online Language Teaching leads to the individualism, but our culture is a collectivist one. For instance, I am carrying out a European Union project with two countries in Europe. The cooperating countries came to Turkey, and we welcome them. On the next day, I accidentally touched the shoulder of a student from other country. Upon this, the students found it very strange and felt a little bit uneasy due to my behavior. These students are afraid of getting together and having close collectivist relationships. They are also used to being more individual and spending time more on the Internet when compared with our students and culture. However, our students are not that much individual and they like spending their time with their friends and they prefer being in the classrooms rather than surfing on the Internet. Therefore, at this stage, it is rather difficult to conduct online instruction for language teaching especially in high school settings. (A.Ö)

CHAPTER V

DISCUSSION AND CONCLUSION

5.0 Presentation

In this chapter the purpose of the research and the findings of the study will be summarized. Implications for practice and further research related to technology and language teaching will be suggested.

5.1 Summary of the Study

This study aimed at investigating the attitudes of English teachers toward computer technology. The study also explored English teachers' use of technology during the process of language learning and teaching. In order to conduct this study, both quantitative and qualitative research methods were used. In other words, a mixed methods research was conducted in order to collect data for the implementation of this research. The reason why both research methods were employed is that the findings of the study are triangulated and corroborated by the use of mixed methods research. Through a questionnaire consisting of five main parts, the attitudes of English teachers were investigated. The questionnaire was primarily assessing the attitudes of the teachers as follows:

- English teachers' computer usage levels

- English teachers' access to the Internet

- English teachers' attitudes toward ICT

- English teachers' attitudes toward computer attributes

- English teachers' attitudes toward online language teaching

Both descriptive and inferential statistical analyses were done in order to analyze the data gathered by the quantitative questionnaire. Teachers' attitudes were examined

according to their age, gender, teaching experience, degrees they hold, geographical region, online community use, and access to computers and the Internet. Besides, computer usage types/purposes of the participants were explored.

Another data collection instrument of the study was semi-structured, face-to-face interviews. The researcher had determined constructs before the interview sessions in order to address the research questions of the study. The interviewees were comfortable enough to reflect their own experiences and perceptions regarding the technology and language teaching. The fundamental reason why interviews were used in this study is to gain a deeper understanding of the findings obtained by the quantitative analysis. Using semi-structured, face-to-face interviews enabled the researcher to probe into some untouched areas within the spectrum of this study. The interview sessions of the study suggested invaluable insights for the technology implementation practices in Turkey and shed light on the overall computer usage levels of the current English teachers.

5.2 English Teachers' Computer Usage Levels

Both the quantitative and qualitative data yielded invaluable findings regarding English teachers' attitude toward technology and their use of computer technology. According to the results of the quantitative questionnaire, it was found out that English teachers overall had positive attitudes toward computers and computer technologies. Almost all teachers have their personal computers and *(80,5%)* of the respondents (n=70) have access to the Internet on a daily basis. The descriptive statistics of the questionnaire data showed that English teachers used computers quite frequently. However, when their usage levels were considered, it was understood that they use computers and the Internet at low-levels as Warschauer (2002) and Zhao and Frank (2003) also stated. The quantitative analysis of the respondents' usage levels indicated that they use computers mostly for e-mailing and finding materials for their classes (96,6%), which are lower-level applications for computer use. The interview data also verified that teachers are not able to use computers for high level tasks. Although the

teachers stated that they use computers efficiently, the interview data revealed that some of the respondents are not equipped with necessary skills to manage harder tasks while using computers. Zhao and Frank (2003) also came up with a similar finding in a study by stating that:

> The most frequent types of uses were by teachers, who used the computers for communication with parents and preparation for instruction; the least frequent were activities directly involving students in using the computers (e.g., student-to-student communication, remediation, and student inquiry). This finding again confirms the assumption that simpler technologies that require little change-and therefore cost less in terms of time and energy are used more frequently. As we know, computers have a broad range of uses, some more complex than others. Teachers' communication with parents and preparation for instruction are much simpler to implement than are uses that involve students, because the latter require teachers to reconfigure their teaching practice (p.821).

Another significant result of the questionnaire data is that English teachers used computers more for personal purposes. To illustrate, a great majority of the respondents did online shopping (54%) and chat (57,5%) on the Internet. However, they could not make use of computers effectively for the tasks which included the students and classroom activities. Besides, few teachers (n=25) used web blogs (28,7%) in their language teaching practices. Through web blogs, teachers would provide the participation of their students in blogs and they would encourage their students to reflect on the classroom discussions and contents under discussion. The reason why teachers use computers for personal purposes, to a great extent, springs from the fact that technical inefficiencies and specific conditions of the schools affect teachers' use of computers in language instruction. While some schools have unlimited opportunities to provide computer technology for the teachers and the students, some other schools lack in technological tools. Therefore, teachers cannot use compuer technologies due to limited facilities in their schools. Computer usage can be categorized under two major purposes: uses for students and uses for teachers. When a teacher makes use of computers for his own purposes, he becomes the person or entity that benefits from the uses of computers rather than his students who should benefit

from computers more. However, it is very likely that teachers can gradually utilize computers for the use of their students.

Regarding the low-level usage of computers in language teaching practices by English teachers, the interview data revealed that teachers play a major role in using computers and technology effectively in their language teaching practices. One of the respondents stated that teachers are one of the most difficult types of people who resist tremendously changes and new applications. They tend not to adapt to new approaches easily. When their resistance to using technology was examined, it was found out that their established traditional fashion of language teaching impedes effective use of technology while teaching language. The questionnaire data (Figure 13) also revealed that older teachers who have more teaching experience and relatively traditional style of teaching have less access to computers and the Internet. They, accordingly, make little use of computer technologies when compared to younger and less-experienced teachers. Pertaining to this Rogers (1995) proposed that teachers' attitude towards and their expertise in technology are the determining factors in slow adoption and ineffective use of computers by teachers by stating that:

> Many technologists believe that advantageous innovations will sell themselves, that the obvious benefits of a new idea will be widely realized by potential adopters, and that the innovation will therefore diffuse rapidly. Seldom is this the case. Most innovations, in fact, diffuse at a disappointingly slow rate (p.7).

5.3 Obstacles to Language Teaching through Technology

In addition to teachers' own perceptions about technology and computers, it was observed that external factors are quite influential on teachers use of computers and technology. The common factor is the lack of technological tools that can be utilized while teaching classes. The interview data suggested that a great many English teachers use LCD projectors considerably in order to present the course content to their students. However, it was also found out that just a few respondents have projectors in their classes every time. A majority of English teachers had to share some limited projectors with their colleagues. Because there are limited technological tools, this

insufficiency sometimes affects English teachers' overall use of computers in their classes.

Another paramount factor that hampers the use of technology by English teachers is students' placement system to universities in Turkey. In Turkish education system, students do have a four-year high school education. After their first years at high school, students choose their area of study according to their success and interests. There are four major areas of study: Science, Social Science, Foreign Language and one more which combines Science and Social Science. Students tend to prefer the study of Science more than other study areas. Secondly, students prefer studying at the area that combines both Science and Social Science. Third, students tend to be majoring in Social Science. Last, the Foreign Language is preferred by students less than the rest of other study areas. After students choose their area of study, they continue their remaining high school education primarily on the basis of their specific area of study. In order to be placed at universities as undergraduates, students are subject to take a nationwide university placement examination held by the Student Selection and Placement Center (ÖSYM) within the Higher Education Council. Students are responsible on the exam for the courses in their areas of study. According to the ÖSYM statistics there were a total of 1.451.350 students who applied to the center to take the exam in 2009. However, a small number of those students took the the Foreign Language Examination. More specifically, approximately 35000 students took the Foreign Language Examination in order to be placed at departments related to foreign language education, linguistics and literature.

At this point, pertaining to this issue, the interview data revealed that English teachers are not content with this system as students who study Science or Social Science are not responsible for the Foreign Language exam while they are placed at universities. It was found out that English teachers cannot make use of technology in their classes because students do not want to study and spend time for English as they are not assessed based on their foreign language ability. Teachers complain that student selection and placement system is too mechanical to conduct an interactive lesson

supplied by the technological tools. The interview data also yielded that students focus primarily on this placement examination and they clearly disregard English classes as they are not responsible for English questions in the exam. Even, students whose area of study is Foreign Language do tend to neglect computer assisted language learning classes because they take a rather mechanical test of English in the University Placement Examination. Warschauer (2002) also argues that mechanical testing systems badly affect the interactive use of computer technologies in language instruction. Thus, the interviews indicated that Student University Placement System implemented in Turkey substantially hinders the use of technology in language classrooms. This system also leads to low-quality language learning practices especially in universities. Because students come from an extremely mechanical system, they get difficulty in adapting themselves for a more interactive, communicative, and computerized system at university level.

5.4 Technology and Teacher Training

Data collected from English teachers showed that teachers do have positive attitudes toward computers and technology, but their adoption of computers and their use of technology in their language teaching practices do not correlate with their positive attitudes. They are using computers at low-levels which do not require complex applications and their use of technology cannot enhance interactive student participation in language learning and teaching process. However, the more teachers have access to computers and make use of them, the better they will learn how they can conduct more complicated tasks using technology in their language teaching practices (Ertmer, 2005; Wozney et al., 2006). Both the quantitative and qualitative data showed that English teachers did not have a course at the university while they were undergraduate students. Therefore, their use of technology in their classes is extremely limited. In this respect, it is suggested that pre-service English language teachers be provided with courses on technology integration by ELT teacher education programs in Turkey in order to realize effective use of technology in education.

Inservice English teachers should be given more training on technology and language teaching. Gilmore (1995) states that technology-related training of teachers has a vital role in teacher development. According to the program held by Gilmore, teachers felt more secured and confident while using a computer at the end of the training program. Likewise, particularly the interview data suggested that teachers are in need of professional training on technology use. Furthermore, it was understood from the interviews with the teachers that inservice training should be organized in such a way that there should be a developmental process that will gradually increase the competency of teachers with computers. One of the most crucial aspects of carrying out inservice trainings on technology is that trainers should have expertise in technology and language teaching. As Warschauer (2002) also maintains, teachers should be provided with basic computer knowledge and later trainings should be built on the previous trainings as to combine language teaching activities with computer technologies.

The interview data also suggested that there should be a follow-up system regarding teachers' use of computers in their language teaching practices after the training sessions are over in order to understand whether teachers apply what they learn during inservice trainings. Teachers claim that inservice trainings do not become effective if there is no follow-up after the trainings. Therefore, technology related trainings should also be supplied with additional observation of teachers in their actual classroom settings.

5.5 Technology and Language Skills

It is an inevitable fact that the advancement of technology triggered the use language skills considerably. Before the advent of WWW (World Wide Web), it was rather difficult for people to have access to the materials. When language teaching and learning are considered specifically, people were not able to find large amounts of listening materials. Through computer technologies, people had the opportunity to

communicate with people from other countries who talk different languages. They formed intercultural communications and learned each others' cultures and languages (Aykaç, 2005). They have become aware of new type of communications such as chat, e-mail and all these new means of communication have brought about new "authorships" and discourse of communication (Kern, 2006). In this respect, people have become critical of what is stated or put on the Internet. For instance, they have learned reflecting on other peoples' ideas and writings. People have begun accessing limitless reading texts. They have been more aware of the latest news and developments on the globe with just one-click. Accordingly, all these benefits of computers and the Internet have contributed to the overall development of education and humanity.

When the language learning is considered, it is understood from the data gathered by English teachers that technology has also affected language skills of their students. Teachers points out that especially writing skills of students have been fostered tremendously by the use of computers. Students were not interested in writing essays or other type of writings before the widespread use of computers. Students found writing activities mostly boring and writing components of English classes were neglected accordingly. However, students strive more for writing via computer technologies nowadays. The reason why students have more positive attitudes towards writing is that they have a more communicative purpose while they are writing on the computers. For instance, most students have international friends and they are writing to each other via chat or e-mail systems. In this kind of communication, they do not have to obey some official writing rules as in the traditional writing activities. They can make use of spoken language in their writings and this lets them express themselves comfortably. They learn by writing how to express themselves in daily encounters and they feel that they are learning more applicable things by way of writing.

English teachers also stressed that another skill fostered by the use of computers and the Internet is listening. One of the respondents states that most of her students have been watching some popular TV series on the Internet and they are used to listening them and getting natural input. In this manner, improving the listening skills of the students is quite important with the spread of the Internet in peoples' lives. It was understood from the interview sessions that students were not interested in listening old textbook cassettes because those cassettes were prepared in the studios which do not reflect real feelings or gestures of a normally speaking people. Either the voice or intonation of the speakers was exaggerated.

5.6 Pedagogical Implications for Teaching and Teacher Education

The findings of the study revealed that computer use of English language teachers in language instruction ranges between low and average levels generally. However, there are certain teachers who are capable of using computer technologies in higher levels. The quantitative data showed two major findings related to English teachers' computer use. First, English teachers make use of computers for low/average level tasks such as word processing, assigning homework. Second, they use computers mostly for personal purposes (i.e., online shopping) or informative purposes (i.e., PowerPoint presentation). Furthermore, the qualitative data also confirmed that teachers attribute positive remarks for integrating technology in language teaching. However, they do not know how to integrate technology in their classes as is supported by Wozney et al., (2006). The interview sessions also showed consistent findings with the questionnaire data by exploring that teachers have positive attitudes toward computer technologies in instruction; however, they are not at the desired level of technology competence. Thus, teachers should be provided with in-service trainings on technology in language teaching.

When the factors affecting English teachers' low/average level use of computers and insufficient integration of technology were taken into consideration, it was seen that the respondents did not have professional training on technology. Thus, in order to

have teachers who can use computer technologies efficiently, pre-service ELT teacher education programs should provide technology related courses for their students. Pertaining to this, a great majority of the respondents stated that they did not receive any computer course while they were at university. Few of the young respondents stated that they had the opportunity to take computer courses. Although they received computer classes at university level, they pointed out that they could not make use of computers in their classes. Therefore, more courses that integrate technology and language teaching should be offered to pre-service English teachers at the university. That is, CALL (Computer Assisted Language Learning) classes should be offered as regular required courses in order to train prospective teachers of English for the rapidly developing digital era in the world.

As literature indicates, the more teachers have access to computers, the more they use them. Accordingly, as teachers use computers more, they tend to incorporate them in their teaching practices. Therefore, teachers should be trained on how to integrate technology in language teaching. For this reason, inservice trainings can be organized and teachers become more skilled and use computers in their classes. Wozney et al. (2006) also highlighted that

> the amount of technology-related inservice training was significantly related to computer use in the classroom. Teachers in our study generally reported the need for inservice training and when asked what resources could make their implementation easier, teachers referred to applied training that goes beyond skill development. (p.194)

Lin, Lee and Chen (2004) also proposed a set of important changes that should be considered while offering technology courses or training:

- The randomly offered individual courses should be replaced by a well-organized sequence of courses so that teachers can learn ICT skills systematically.

- The courses should connect training material to real classroom experiences so that it can better convince teachers of relevance and value of integrating ICT.

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- In addition to training on software tools, there should be training in methodologies and practices of ICT integration so that teachers can have clearer ideas of how to apply their ICT skills in teaching.

- Some training in basic hardware troubleshooting and maintenance is necessary.

- Each training course should be adequately paced to reduce teachers' anxiety about learning (p.146).

One of the most important findings of the interview data is that teachers should be engaged in online communities in order to discuss their ideas and problems about language teaching. Online discussion groups and communities provide an excellent opportunity for teachers to have access to rich data about language teaching and for their professional development. Therefore, a nation-wide online community or discussion board can be set up by the Ministry of National Education in order to gather all English teachers together online. There are some places in Turkey where English teachers work alone and they do not have colleagues as English teachers in their environment. For such English teachers who work as single English teachers in small towns or villages, online communities can be very useful by presenting unlimited exchange of ideas for the use of teachers. Through sharing and peer learning, teachers may gain great insights into what an online community can bring to them: World of knowledge, social sharing. Ertmer (2005) also points out that effective training of teachers can be ensured by the establishment of online communities.

5.7 Suggestions for Further Research

A further study can be conducted as a longutidunal research. After collecting data about the attitudes of English teachers through quantitative research methods, the second phase of the study can be conducted at schools. Teachers can be observed and seeing teachers in real classroom setting can provide the researcher with more observable actual technology integration practices of teachers. The researcher may also compare teachers' responses to survey study with their real classroom applications.

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This study aimed at investigating the attitudes of inservice English teachers toward technology in language teaching and provided the readers with English teachers' use of computer technology in their language teaching practices. This research also focused of the factors affecting technology implementation of English teachers. Another study may be designed to explore the factors affecting the attitudes of teachers in a more in-depth manner. As attitudes are affecting technology adoption of teachers, it may be useful to probe into details of attitudes of teachers.

Another research can be carried out in order to assess the effect of inservice trainings on the professional development of teachers. As there has been enormous investment in integrating educational technology at schools, teachers should be a follow up system in order to ensure the optimum use of educational technologies at schools. Therefore, in order to learn whether teacher training leads to the optimum use of technologies at schools, a further study may seek for the effect of training on technology use.

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APPENDICIES

APPENDIX 1

Questionnaire Sample

Dear Participant,

I am currently conducting a research on Information and Communication Technology (ICT). The study aims at exploring the attitudes of Turkish EFL teachers towards ICT and their use of technology in their English language teaching experiences. The researcher of this study thinks that the best information comes from you, the teacher who is on stage at schools. This type of information is quite beneficial for gaining insights into what is happening in classes and provides invaluable reflective data for future teacher training and technology implementation plans in Turkey.

Completing this survey is quite important, and the survey takes approximately 10-15 minutes to complete. Please complete the survey and feel free to make notes on the survey as needed.

Thank you for providing this valuable information. If you would like to receive the results of this study, please contact me via [karakaya@metu.edu.tr.](mailto:karakaya@metu.edu.tr) Your time and effort in completing the survey are greatly appreciated.

Note: If you write your communication information at the end of the survey, I will be grateful to you because I will need to contact you again for further analysis of the study.

Sincerely,

Kadir Karakaya

General Instructions: The purpose of this questionnaire is to investigate your attitudes towards Information and Communications Technology and explore your use of technology in your language teaching practices. The questionnaire consists of six sections. Each section begins with some directions related to that part only. As you begin each section, please read the directions carefully and provide your responses in the format requested.

Section (1) Background Information

Instructions: Please indicate your response to the following questions by checking the appropriate circles:

1.1 Age:
- ○ 21-25
- ○ 26-30
- ○ 31-35
- ○ 36-40
- ○ 41-45
- ○ 46-50
- ○ 51 and over

1.2 Gender:

- ○　　Female
- ○　　Male

1.3 The Last Degree Completed:

- ○　　Bachelors
- ○　　Master's
- ○　　Doctorate

1.4 Teaching Experience:

- ○　　Less than a year
- ○　　1-3 Years
- ○　　4-6 Years
- ○　　7-10 Years
- ○　　11-15 Years
- ○　　16-20 Years
- ○　　21 Years and over

1.5 Which kind of school do you work at:

- ○　　Primary School
- ○　　High School
- ○　　Anatolian High School

1.6 Class size (Please consider the average size of your classes):

1.7 Online Community Use (for language teaching and learning): e.g., facebook, myplace, the tappedin etc.: If you use, please write the one(s) you use:

1.8 In which city do you work?

Section (2) Computer Use & Literacy

Instructions: Please indicate your response to the following items:

2.1 What do you use computers for? Please tick (√) the **appropriate ones**. You can choose more than one choice. You can list the choices from 1 to 18 according to your **frequency of use** and **preferences.**

Example: _√_ shopping online

- ○ chatting
- ○ games
- ○ e-mail and mail listing
- ○ webfolios/e-portfolios
- ○ online discussion boards on language teaching
- ○ shopping online
- ○ finding materials related to lessons
- ○ preparing presentations
- ○ course management software (e.g., WebCT, Nicenet, Moodle)
- ○ assigning homework
- ○ video conferencing and net-meeting
- ○ presenting course material
- ○ search engines
- ○ online dictionaries
- ○ web blogs (e.g., blogger)
- ○ wikis
- ○ MOO/MUDS (multi-object orientation / multi-user domain)
- ○ giving feedback to students
- ○ other………………………………

2.2 How many hours do you have access to the Internet in a day?

- ○ Less than one hour
- ○ 1-2 hour(s)
- ○ 2-3 hours
- ○ 3-4 hours
- ○ 4 hours and over

2.3 Have you ever attended any course about instructional technology **during your undergraduate years**? If yes, have those courses contributed to your teaching as an English teacher? How?

2.4 Have you ever attended any **inservice training**, **seminar** or **workshop** on instructional technology or integrating technology in language teaching? If yes, was it beneficial? How?

Section (3): Instructions: Please indicate your reaction to each of the following statements by circling the number that represents your level of agreement or disagreement with it. Make sure to respond to each statement.

Item No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	Computers do not scare me at all.	1	2	3	4	5
2.	Computers make me feel uncomfortable.	1	2	3	4	5
3.	I am glad there are more computers these days.	1	2	3	4	5
4.	I do not like talking with others about computers.	1	2	3	4	5
5.	Using computers is enjoyable.	1	2	3	4	5
6.	I dislike using computers in teaching.	1	2	3	4	5
7.	Computers save time and effort.	1	2	3	4	5
8.	Schools would be a better place without computers.	1	2	3	4	5
9.	Students must use computers in all subject matters.	1	2	3	4	5
10.	Learning about computers is a waste of time.	1	2	3	4	5
11.	Computers motivate students to study more.	1	2	3	4	5
12.	Computers are a fast and efficient means of getting information.	1	2	3	4	5
13.	I do not think I would ever need a computer in my classroom	1	2	3	4	5
14.	Computers can enhance students' learning	1	2	3	4	5
15.	Computers do more harm than good	1	2	3	4	5
16.	I would rather do things by hand than with a computer.	1	2	3	4	5
17.	If I had some money, I would buy a computer.	1	2	3	4	5
18.	I avoid using computers as much as possible	1	2	3	4	5
19.	I would like to learn more about computers.	1	2	3	4	5
20.	I have no intention to use computers in the near future.	1	2	3	4	5

**Section (4): Instructions:** Please indicate your reaction to each of the following statements by circling the number that represents your level of agreement or disagreement with it. Make sure to respond to each statement.

Item No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	Computers improve education.	1	2	3	4	5
2.	Teaching with computers offers real advantages over traditional methods of instruction.	1	2	3	4	5
3.	Computer technology cannot improve the quality of students' learning.	1	2	3	4	5
4.	Using computer technology makes the subject matter more interesting.	1	2	3	4	5
5.	Computers are not useful for language earning.	1	2	3	4	5
6.	Computers have no place in schools.	1	2	3	4	5
7.	Computer use fits well into my curriculum goals.	1	2	3	4	5
8.	Class time is too limited for computer use.	1	2	3	4	5
9.	Computer use suits my students' learning preferences and their level of computer knowledge.	1	2	3	4	5
10.	Computer use is appropriate for many language learning activities.	1	2	3	4	5
11.	It is hard for me to learn to use the computer in teaching.	1	2	3	4	5
12.	I have no difficulty in understanding the basic functions of computer.	1	2	3	4	5
13.	Computers complicate my task in the classroom.	1	2	3	4	5
14.	Everyone can easily learn to operate a computer.	1	2	3	4	5
15.	I have never seen computers at work.	1	2	3	4	5
16.	Computers have proved to be effective learning tools worldwide.	1	2	3	4	5
17.	I have never seen computers being used as an educational tool.	1	2	3	4	5
18.	I have seen some of my colleagues use computers for teaching English	1	2	3	4	5

Section (5): Instructions: Please indicate your reaction to each of the following statements by circling the number that represents your level of agreement or disagreement with it. Make sure to respond to each statement.

Item No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	Online education saves time and effort in teaching.	1	2	3	4	5
2.	I would like to implement an online course if I have chance.	1	2	3	4	5
3.	Online education is more effective than traditional teaching methods.	1	2	3	4	5
4.	Online education does not offer the sense of face to face interaction.	1	2	3	4	5
5.	Keeping track of the students is rather difficult in online education.	1	2	3	4	5
6.	Online education appeals to my interests.	1	2	3	4	5
7.	I currently carry out an online instruction in my teaching.	1	2	3	4	5
8.	There is less interaction between teacher and students in online instruction.	1	2	3	4	5
9.	Totally online courses are not effective in teaching English.	1	2	3	4	5
10.	Online instruction offers more communicative practices.	1	2	3	4	5
11.	It would be better if the course has both online and face-to-face component.	1	2	3	4	5
12.	Online courses does not provide satisfaction for the students	1	2	3	4	5
13.	Online courses create problems in terms of access to the Internet.	1	2	3	4	5
14.	The workload is too much in online courses	1	2	3	4	5
15.	I am competent enough to offer an online course	1	2	3	4	5

16.	I can use many more materials in online teaching.	1	2	3	4	5
17.	Assigning tasks and homework is easy in online teaching.	1	2	3	4	5
18.	Students learn more doing web-based activities than activities on paper.	1	2	3	4	5
19.	Designing, updating, managing and maintaining a website is difficult.	1	2	3	4	5
20.	Using e-learning environments is difficult for learners.	1	2	3	4	5
21.	E-learning environments are not clear and understandable.	1	2	3	4	5
22.	Using e-learning environments is complicated for me	1	2	3	4	5
23.	I have supportive network and internet access at my work.	1	2	3	4	5
24.	Online instruction has the potential to empower students in well-designed learning environments.	1	2	3	4	5
25.	Students can easily access to a wide range of materials on the web.	1	2	3	4	5
26.	It takes much time to prepare materials and activities for online classes.	1	2	3	4	5

Section (6): Instructions: Please identify **how often you have access to computers or the Internet** in the following contexts:

Item No	Statements	Daily	2 or 3 times a week	Once a week	Once a month	Never
1.	At your home	1	2	3	4	5
2.	At school (computer lab, library etc.)	1	2	3	4	5
3.	Other (like Internet cafes and etc.)	1	2	3	4	5

Name & Surname:

E-mail:

Mobile:

APPENDIX 2

Sample Interview Questions

A. Questions Related to the Attitudes toward Computers in General

- How do you feel yourself while using computers?

- What does a computer mean for you?

- Do you think you are competent enough to use a computer?

B. Questions Related to the Use of Computers in Education

- Can you make use of computers in your classes?

- How do you use computers while teaching English?

- To what extent curriculum is compatible with the use of technology in your classes?

- Which computer and the Internet applications do you use frequently while teaching English

C. Questions Related to the Factors that Affect the Use of Computer Technologies in Language Teaching

- What kind of difficulties do you encounter in the technology integration process?

D. Questions Related to Computers and Language Teaching practices

- What language learning and teaching skills are fostered much by the use of computer technology?

- How can computer technologies facilitate the language learning?

- What is the strength of computers in improving language skills?

E. Questions Related to Online Instruction and Language Learning/Teaching

- Would you like to offer an online English course?

- Would it be more difficult than face-to-face instruction to manage an online course?

- What are the advantages and disadvantages of online language instruction?

- How e-learning settings contribute to language learning and teaching?

F. Questions Related to the Internet and Professional Development

- What does the Internet offer for your professional development?

- Do you use the Internet efficiently for your own training and development?

- Do you use online discussion groups or online communities for the things related to your profession?

- What do you think of inservice trainings on technology?

- Have you witnessed any improvement in your teaching by using technology in the class?

G. Teachers Role and Technology

- How do you consider your role in integrating technology in language teaching?

Descriptive Statistics for Degree and Online Language Teaching Scale

	Attitudes toward Online Language Teaching	Degree	N	Mean	Std. Deviation	Std. Error Mean
1	Online education saves time and effort in teaching.	Bachelor's	72	4,1111	0,77923	0,09183
		Master's	15	4,4000	0,63246	0,16330
2	I would like to implement an online course if I have chance.	Bachelor's	72	4,0278	0,83872	0,09884
		Master's	15	4,4667	0,63994	0,16523
3	Online education is more effective than traditional teaching methods.	Bachelor's	72	3,4583	0,88711	0,10455
		Master's	15	4,0000	1,00000	0,25820
4	Online education does not offer the sense of face to face interaction.	Bachelor's	72	2,6389	1,01128	0,11918
		Master's	15	3,2667	1,03280	0,26667
5	Keeping track of the students is rather difficult in online education.	Bachelor's	72	3,0417	0,92596	0,10912
		Master's	15	3,4000	0,91026	0,23503
6	Online education appeals to my interests.	Bachelor's	72	3,7500	0,72675	0,08565
		Master's	15	4,2000	0,56061	0,14475
7	I currently carry out an online instruction in my teaching.	Bachelor's	72	2,6250	0,98492	0,11607
		Master's	15	2,8667	1,24595	0,32170
8	There is less interaction between teacher and students in online instruction.	Bachelor's	72	2,6667	0,91928	0,10834
		Master's	15	3,0667	0,96115	0,24817
9	Totally online courses are not effective in teaching English.	Bachelor's	72	3,4167	1,09737	0,12933
		Master's	15	3,9333	0,70373	0,18170
10	Online instruction offers more communicative practices.	Bachelor's	72	3,3750	0,89502	0,10548
		Master's	15	3,5333	0,91548	0,23637
11	It would be better if the course has both online and face-to-face component.	Bachelor's	72	4,4028	0,64261	0,07573
		Master's	15	4,3333	0,81650	0,21082
12	Online courses does not provide satisfaction for the students	Bachelor's	72	3,2083	0,78610	0,09264
		Master's	15	3,8667	0,83381	0,21529
13	Online courses create problems in terms of access to the Internet.	Bachelor's	72	2,9028	0,82496	0,09722
		Master's	15	2,6000	0,98561	0,25448
14	The workload is too much in online courses	Bachelor's	72	2,9306	0,73784	0,08696
		Master's	15	3,3333	0,72375	0,18687
15	I am competent enough to offer	Bachelor's	72	3,0833	0,93070	0,10968

	an online course	Master's	15	3,6000	0,98561	0,25448
16	I can use many more materials in online teaching.	Bachelor's	72	3,5417	0,85477	0,10074
		Master's	15	4,0000	0,65465	0,16903
17	Assigning tasks and homework is easy in online teaching.	Bachelor's	72	3,7083	0,81253	0,09576
		Master's	15	4,0667	0,70373	0,18170
18	Students learn more doing web-based activities than activities on paper.	Bachelor's	72	3,7500	0,88413	0,10420
		Master's	15	4,0000	0,65465	0,16903
19	Designing, updating, managing and maintaining a website is difficult.	Bachelor's	72	2,7500	1,07140	0,12627
		Master's	15	3,2667	1,27988	0,33046
20	Using e-learning environments is difficult for learners.	Bachelor's	72	3,2500	0,83497	0,09840
		Master's	15	3,6000	0,98561	0,25448
21	E-learning environments are not clear and understandable.	Bachelor's	72	3,4028	0,79894	0,09416
		Master's	15	3,7333	0,79881	0,20625
22	Using e-learning environments is complicated for me	Bachelor's	72	3,5556	0,90209	0,10631
		Master's	15	3,8000	0,86189	0,22254
23	I have supportive network and internet access at my work.	Bachelor's	72	3,4028	1,15867	0,13655
		Master's	15	3,6667	1,04654	0,27021
24	Online instruction has the potential to empower students in well-designed learning environments.	Bachelor's	72	3,5556	0,57870	0,06820
		Master's	15	4,0667	0,70373	0,18170
25	Students can easily access to a wide range of materials on the web.	Bachelor's	72	4,0972	0,65348	0,07701
		Master's	15	4,4000	0,50709	0,13093
26	It takes much time to prepare materials and activities for online classes.	Bachelor's	72	3,1944	0,86625	0,10209
		Master's	15	2,8000	1,42428	0,36775
	Total		*87*	*3,4346*	*0,42290*	*0,04534*

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APPENDIX 4

Descriptive Statistics for Age and ICT Scale

	Attitudes toward ICT	Age	N	Mean	Std. Deviation	Std. Error Mean
1	Computers do not scare me at all.	21-35 years old	61	4,1148	1,22608	0,15698
		36-50 years old	23	3,9565	1,10693	0,23081
		50 years old and over	3	3,6667	0,57735	0,33333
2	Computers make me feel uncomfortable.	21-35 years old	61	4,4098	0,82416	0,10552
		36-50 years old	23	4,0870	1,08347	0,22592
		50 years old and over	3	3,3333	1,15470	0,66667
3	I am glad there are more computers these days.	21-35 years old	61	4,3607	1,01707	0,13022
		36-50 years old	23	4,3043	0,76484	0,15948
		50 years old and over	3	4,3333	0,57735	0,33333
4	I do not like talking with others about computers.	21-35 years old	61	3,6066	1,00463	0,12863
		36-50 years old	23	3,5217	1,12288	0,23414
		50 years old and over	3	3,3333	1,15470	0,66667
5	Using computers is enjoyable.	21-35 years old	61	4,2623	0,75059	0,09610
		36-50 years old	23	4,0000	0,95346	0,19881
		50 years old and over	3	3,3333	2,08167	1,20185
6	I dislike using computers in teaching.	21-35 years old	61	4,3770	1,03544	0,13257
		36-50 years old	23	4,2609	0,91539	0,19087
		50 years old and over	3	4,0000	1,73205	1,00000
7	Computers save time and effort.	21-35 years old	61	4,1967	1,09270	0,13991
		36-50 years old	23	4,3043	0,92612	0,19311
		50 years old and over	3	3,6667	2,30940	1,33333
8	Schools would be a better place without computers.	21-35 years old	61	4,4426	0,74217	0,09503
		36-50 years old	23	4,2609	1,00983	0,21056
		50 years old and over	3	4,0000	1,73205	1,00000
9	Students must use computers in all subject matters.	21-35 years old	61	3,7541	1,14972	0,14721
		36-50 years old	23	3,7391	0,75181	0,15676
		50 years old and over	3	4,0000	1,00000	0,57735
10	Learning about computers is a waste of time.	21-35 years old	61	4,5410	0,80775	0,10342
		36-50 years old	23	4,6087	0,98807	0,20603
		50 years old and over	3	5,0000	0,00000	0,00000
11	Computers motivate students to study more.	21-35 years old	61	3,9180	0,95385	0,12213
		36-50 years old	23	3,8696	0,75705	0,15786
		50 years old and over	3	3,6667	0,57735	0,33333
12	Computers are a fast and	21-35 years old	61	4,5738	0,59045	0,07560

	efficient means of getting information.	36-50 years old	23	4,7391	0,44898	0,09362
		50 years old and over	3	4,3333	0,57735	0,33333
13	I do not think I would ever need a computer in my classroom	21-35 years old	61	4,6557	0,60236	0,07712
		36-50 years old	23	4,5217	0,73048	0,15232
		50 years old and over	3	4,0000	1,00000	0,57735
14	Computers can enhance students' learning	21-35 years old	61	4,0984	0,81045	0,10377
		36-50 years old	23	4,0435	0,63806	0,13304
		50 years old and over	3	4,3333	0,57735	0,33333
15	Computers do more harm than good	21-35 years old	61	3,8852	0,75495	0,09666
		36-50 years old	23	4,0000	0,73855	0,15400
		50 years old and over	3	3,3333	1,15470	0,66667
16	I would rather do things by hand than with a computer.	21-35 years old	61	4,0328	0,96553	0,12362
		36-50 years old	23	3,7826	0,90235	0,18815
		50 years old and over	3	4,3333	0,57735	0,33333
17	If I had some money, I would buy a computer.	21-35 years old	61	4,3115	0,84737	0,10849
		36-50 years old	23	4,2609	0,75181	0,15676
		50 years old and over	3	4,3333	0,57735	0,33333
18	I avoid using computers as much as possible	21-35 years old	61	4,3934	0,73663	0,09432
		36-50 years old	23	4,2174	0,79524	0,16582
		50 years old and over	3	4,0000	0,00000	0,00000
19	I would like to learn more about computers.	21-35 years old	61	4,5082	0,56636	0,07252
		36-50 years old	23	4,4348	0,89575	0,18678
		50 years old and over	3	4,6667	0,57735	0,33333
20	I have no intention to use computers in the near future.	21-35 years old	61	4,6066	0,68990	0,08833
		36-50 years old	23	4,2609	1,00983	0,21056
		50 years old and over	3	3,3333	2,08167	1,20185
	Total		*87*	*4,2172*	*0,44059*	*0,04724*

APPENDIX 5

Descriptive Statistics for Teaching Experience and ICT Scale

	Attitudes toward Computer Attributes	Experience	N	Mean	Std. Deviation	Std. Error Mean
1	Computers improve education.	0-6 years exp.	15	4,4667	0,51640	0,13333
		7-15 years exp.	58	4,3103	0,65446	0,08593
		16 years and over exp.	14	4,4286	0,51355	0,13725
2	Teaching with computers offers real advantages over traditional methods of instruction.	0-6 years exp.	15	4,6667	0,48795	0,12599
		7-15 years exp.	58	4,3448	0,51476	0,06759
		16 years and over exp.	14	4,0714	0,47463	0,12685
3	Computer technology cannot improve the quality of students' learning.	0-6 years exp.	15	4,4667	0,63994	0,16523
		7-15 years exp.	58	4,1897	0,75989	0,09978
		16 years and over exp.	14	4,2143	0,57893	0,15473
4	Using computer technology makes the subject matter more interesting.	0-6 years exp.	15	4,5333	0,51640	0,13333
		7-15 years exp.	58	4,3966	0,56006	0,07354
		16 years and over exp.	14	4,3571	0,49725	0,13289
5	Computers are not useful for language earning.	0-6 years exp.	15	4,4667	0,63994	0,16523
		7-15 years exp.	58	4,5172	0,56944	0,07477
		16 years and over exp.	14	4,5000	0,51887	0,13868
6	Computers have no place in schools.	0-6 years exp.	15	4,0667	0,79881	0,20625
		7-15 years exp.	58	4,5172	0,80003	0,10505
		16 years and over exp.	14	4,2143	0,89258	0,23855
7	Computer use fits well into my curriculum goals.	0-6 years exp.	15	4,0667	0,59362	0,15327
		7-15 years exp.	58	3,9828	0,71307	0,09363
		16 years and over exp.	14	3,7857	0,57893	0,15473
8	Class time is too limited for computer use.	0-6 years exp.	15	2,6000	1,18322	0,30551
		7-15 years exp.	58	2,8966	1,16513	0,15299
		16 years and over exp.	14	2,6429	0,84190	0,22501
9	Computer use suits my students' learning preferences and their level of computer knowledge.	0-6 years exp.	15	3,6667	0,72375	0,18687
		7-15 years exp.	58	3,8103	0,78264	0,10277
		16 years and over exp.	14	3,6429	0,49725	0,13289
10	Computer use is appropriate for many language learning activities	0-6 years exp.	15	4,1333	0,51640	0,13333
		7-15 years exp.	58	4,2069	0,55436	0,07279
		16 years and over exp.	14	3,9286	0,47463	0,12685
11	It is hard for me to learn to use the computer in teaching.	0-6 years exp.	15	4,2000	0,94112	0,24300
		7-15 years exp.	58	4,3103	0,73046	0,09591
		16 years and over exp.	14	3,7143	0,99449	0,26579
12	I have no difficulty in understanding the basic	0-6 years exp.	15	4,0000	1,06904	0,27603
		7-15 years exp.	58	4,0862	1,11268	0,14610

	functions of computer.	16 years and over exp.	14	3,8571	0,94926	0,25370
13	Computers complicate my task in the classroom.	0-6 years exp.	15	3,3333	1,04654	0,27021
		7-15 years exp.	58	3,6207	1,19689	0,15716
		16 years and over exp.	14	3,5000	1,09193	0,29183
14	Everyone can easily learn to operate a computer.	0-6 years exp.	15	3,9333	0,70373	0,18170
		7-15 years exp.	58	3,8793	0,85998	0,11292
		16 years and over exp.	14	3,6429	1,08182	0,28913
15	I have never seen computers at work.	0-6 years exp.	15	4,5333	0,51640	0,13333
		7-15 years exp.	58	4,7069	0,53010	0,06961
		16 years and over exp.	14	4,7143	0,46881	0,12529
16	Computers have proved to be effective learning tools worldwide.	0-6 years exp.	15	4,6000	0,50709	0,13093
		7-15 years exp.	58	4,3448	0,73870	0,09700
		16 years and over exp.	14	4,2857	0,61125	0,16336
17	I have never seen computers being used as an educational tool.	0-6 years exp.	15	4,3333	0,81650	0,21082
		7-15 years exp.	58	4,4828	0,75490	0,09912
		16 years and over exp.	14	4,6429	0,49725	0,13289
18	I have seen some of my colleagues use computers for teaching English	0-6 years exp.	15	3,8667	0,91548	0,23637
		7-15 years exp.	58	4,0000	0,77233	0,10141
		16 years and over exp.	14	4,1429	1,02711	0,27451
	Total		*87*	*4,1177*	*0,35354*	*0,03790*

Descriptive Statistics for Degree and ICT Scale

	Attitudes toward ICT	Degree	N	Mean	Std. Deviation	Std. Error Mean
1	Computers do not scare me at all.	Bachelor's	72	4,0278	1,12553	0,13265
		Master's	15	4,2000	1,42428	0,36775
2	Computers make me feel uncomfortable.	Bachelor's	72	4,1806	0,95425	0,11246
		Master's	15	4,8000	0,56061	0,14475
3	I am glad there are more computers these days.	Bachelor's	72	4,2917	0,98492	0,11607
		Master's	15	4,6000	0,63246	0,16330
4	I do not like talking with others about computers.	Bachelor's	72	3,4306	1,04580	0,12325
		Master's	15	4,2667	0,59362	0,15327
5	Using computers is enjoyable.	Bachelor's	72	4,0694	0,90890	0,10711
		Master's	15	4,6000	0,50709	0,13093
6	I dislike using computers in teaching.	Bachelor's	72	4,2361	1,08112	0,12741
		Master's	15	4,8000	0,41404	0,10690
7	Computers save time and effort.	Bachelor's	72	4,1111	1,15741	0,13640
		Master's	15	4,6667	0,48795	0,12599
8	Schools would be a better place without computers.	Bachelor's	72	4,4028	0,79894	0,09416
		Master's	15	4,2667	1,09978	0,28396
9	Students must use computers in all subject matters.	Bachelor's	72	3,7361	1,02081	0,12030
		Master's	15	3,8667	1,18723	0,30654
10	Learning about computers is a waste of time.	Bachelor's	72	4,5556	0,83731	0,09868
		Master's	15	4,6667	0,89974	0,23231
11	Computers motivate students to study more.	Bachelor's	72	3,7778	0,89162	0,10508
		Master's	15	4,4667	0,63994	0,16523
12	Computers are a fast and efficient means of getting information.	Bachelor's	72	4,6111	0,51882	0,06114
		Master's	15	4,6000	0,73679	0,19024
13	I do not think I would ever need a computer in my classroom	Bachelor's	72	4,5972	0,62031	0,07310
		Master's	15	4,6000	0,82808	0,21381
14	Computers can enhance students' learning	Bachelor's	72	4,0833	0,76453	0,09010
		Master's	15	4,1333	0,74322	0,19190
15	Computers do more harm than good	Bachelor's	72	3,8750	0,78610	0,09264
		Master's	15	4,0000	0,65465	0,16903
16	I would rather do things by hand than with a computer.	Bachelor's	72	3,9306	0,96890	0,11419
		Master's	15	4,2000	0,77460	0,20000
17	If I had some money, I would buy a computer.	Bachelor's	72	4,2500	0,80053	0,09434
		Master's	15	4,5333	0,83381	0,21529
18	I avoid using computers as much as	Bachelor's	72	4,3056	0,72460	0,08539

	possible	Master's	15	4,4667	0,83381	0,21529
19	I would like to learn more about computers.	Bachelor's	72	4,5139	0,67120	0,07910
		Master's	15	4,4000	0,63246	0,16330
20	I have no intention to use computers in the near future.	Bachelor's	72	4,4444	0,93280	0,10993
		Master's	15	4,6000	0,50709	0,13093
	Total		*87*	*4,2172*	*0,44059*	*0,04724*

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