

**UNDERSTANDING TURKISH EFL INSTRUCTORS' PROFESSIONAL
DEVELOPMENT NEEDS IN ICT**

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JUNE 2018

**UNDERSTANDING TURKISH EFL INSTRUCTORS' PROFESSIONAL
DEVELOPMENT NEEDS IN ICT**

**A THESIS SUBMITTED TO THE GRADUATE SCHOOL
OF EDUCATIONAL SCIENCES
OF
BAHÇEŞEHİR UNIVERSITY**

BY

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**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ARTS IN THE
DEPARTMENT OF ENGLISH LANGUAGE EDUCATION**

JUNE 2018

Approval of the Graduate School of Educational Sciences



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ABSTRACT

UNDERSTANDING TURKISH EFL INSTRUCTORS' PROFESSIONAL DEVELOPMENT NEEDS IN ICT

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Master's Thesis, Master's Program in English Language Education

Supervisor: Assist. Prof. Hatime Çiftçi

June 2018, 101 pages

The present study was conducted to obtain Turkish in-service English as a Foreign Language (EFL) instructors' needs in Information and Communication Technology (ICT) and determine the ways they prefer to take training to further their professional development in ICT. For this purpose, data were collected during 2017-2018 academic semester by administering a questionnaire of ICT competencies and professional development needs of teachers (adopted from Aduwa-Ogiegbaen, 2009). The participants of the study were 193 Turkish in-service EFL instructors who were teaching English to different levels of students at various state and foundation universities in Turkey. The data gathered through the questionnaire were analyzed by the help of Statistical Package for the Social Sciences (SPSS) 22 computer programme. The results of the findings pointed out that the majority of the EFL instructors lacked competencies in some technology areas, and they mentioned that they needed professional development (PD) in these areas. These Turkish in-service EFL teachers' most preferred modes of professional development in ICT were immersion or internship activities in which a teacher spends a concentrated period of time working in a lab or industrial setting with professionals in the subject area while the least preferred modes of professional development were workshops/conferences/seminars provided by professional organizations within the country. The statistical analysis of the data also indicated that demographic factors such as gender and teachers' having

Professional Development (PD) in ICT before had a significant effect on their ICT competency levels. The analysis also yielded significant results for the working place and teaching experience as factors affecting the ICT levels, PD needs in ICT and preferred modes of PD.

Keywords: Professional Development Needs, Information and Communication Technology (ICT), EFL Teachers, Technology Integration



ÖZ

TÜRKİYE’DE İNGİLİZCE’Yİ YABANCI DİL OLARAK ÖĞRETEN İNGİLİZCE ÖĞRETMENLERİNİN BİLGİ VE İLETİŞİM TEKNOLOJİLERİ ALANINDAKİ MESLEKİ GELİŞİM İHTİYAÇLARINI BELİRLEMEK

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Yüksek Lisans Tezi, İngiliz Dili Eğitimi Yüksek Lisans Programı

Tez Yöneticisi: Dr. Öğr. Üyesi Hatime Çiftçi

Haziran 2018, 101 sayfa

Bu çalışma Türkiye’de İngilizce’yi yabancı dil olarak öğreten öğretmenlerin Bilgi ve İletişim Teknolojileri alanındaki ihtiyaçlarını bulmak ve bu alandaki mesleki gelişimlerinde tercih ettikleri yöntemi belirlemek amacıyla yapılmıştır. Bu sebeple, veriler 2017-2018 akademik yılında Bilgi ve İletişim Teknolojileri alanında öğretmenlerin yeterliklerini ve eksikliklerini ölçen bir anket (Aduwa-Ogiegbaen, 2009’dan alınan) yoluyla toplanmıştır. Çalışmanın katılımcıları Türkiye’de farklı devlet ve özel üniversitelerde farklı dil seviyelerindeki öğrencilere eğitim veren 200 İngilizce öğretmenidir. Anket yoluyla elde edilen bilgiler SPSS 22 (Statistical Package for the Social Sciences) yardımıyla analiz edilmiştir. Çalışmadan elde edilen sonuçlar öğretmenlerin çoğunun bazı teknoloji alanlarında eksik olduğunu ve bu alanlarda öğretmenlerin profesyonel gelişim ihtiyacı hissettiklerini göstermiştir. İngilizce öğretmenlerinin Bilgi ve İletişim Teknolojileri alanında profesyonel gelişimlerinde en çok tercih ettikleri yöntemler alanında uzman kişilerle laboratuvar veya işlemsel ortamlarda öğretmenin dikkatini vererek çalıştığı sadece İngilizce dilinde eğitim verilen etkinlikler veya staj faaliyetleriyken en az tercih ettikleri yurtiçindeki kurumlar tarafından verilen çalıştaylar, seminerler, konferanslar ve seminerlerdir. Verinin istatistiksel analizi ayrıca katılımcıların cinsiyet ve daha önceden Bilgi ve İletişim Teknolojileri alanında eğitim alıp almaması gibi demografik bilgilerinin Bilgi ve İletişim Teknolojileri alanındaki yeterlik seviyelerine önemli derecede etkisi olduğunu

göstermiştir. Analiz sonuçları, öğretmenlerin çalıştıkları kurumun ve öğretmenlik deneyimlerinin Bilgi ve İletişim Teknolojileri alanındaki yeterlik seviyelerine, eksikliklerine ve bu alanda kendilerini profesyonel olarak geliştirmede tercih ettikleri yöntemlere etkileyen unsurlar olduğunu önemli bulgularla ortaya koymuştur.

Anahtar Kelimeler: Mesleki Gelişim İhtiyaçları, Bilgi ve İletişim Teknolojileri, İngilizce'yi Yabancı Dil Olarak Öğreten İngilizce Öğretmenleri, Teknoloji Entegrasyonu.





To my parents and all supporting colleagues

ACKNOWLEDGMENTS

I still cannot believe I could finish this thesis which has been one of the most challenging works I have ever done in my life. As this process is very demanding and continued while I was working as an English instructor, there are many people thanks to whom I could achieve to finish writing this thesis.

Firstly and foremost, I would like to express my deepest gratitude to my advisor Assist. Prof. Hatime Çiftçi who has supported me throughout the every part of this thesis with her patience, expert knowledge, and invaluable suggestions. She has always been tolerant, patient and kind towards me. I feel lucky for being a student of her during my graduate studies and believe that this thesis would be impossible to complete without her academic guidance and encouragement.

Besides my advisor, I would like to thank my thesis committee members, Assist. Prof. Mustafa Polat and Assist.Prof. Tuncer Can for their valuable comments and instructive suggestions. I appreciate their insightful feedback which shaped the latest form of the thesis.

I am more than grateful to Mert Topkaraoğlu and Ece Şıklar who were always perfectly willing to help me throughout many stages of this work and made this process easier for me by encouraging me all the time. They spent numerous hours helping me with proofreading my thesis and answering my questions without getting bored for a second.

I am indebt to my colleagues Yavuz Kamil Şevik for his helping me with SPSS programme and analyzing of data, Enes Uğuz and İrfan Kıryar who are as far as an e-mail or a call when I needed some help about software programmes.

I am thankful to my dear friend Seher Özdemir for planning and drafting of the thesis and for her sincere contributions.

I am more than grateful to Cihat Çorbacı for his eager attention to the details in the analysis and help in the interpretation of the results.

I must offer my sincere thanks to all the participant teachers for their appreciated performance. Without their willingness, the methodology of this study could not be achieved.

Special thanks must be given to my family who raised me with their infinite love, true compassion, and great patience. They have always respected my academic studies, and provided me all the conditions I need to study effectively for my thesis. I thank them so much for understanding the speechless days I had to have while writing this thesis. I am proud to be the daughter of my parents, Without their support, I wouldn't have overcome this tiring process.

Finally, and most importantly, I would like to express my deepest gratitude to my soulmate, Utku Kaçan, who has always motivated me to study on this work by providing me constant support I need at the moments of desperation during this process. With his great encouragement, I was able to finish this study.

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LIST OF ABBREVIATIONS

CALL	Computer Assisted Language Learning
CMC	Computer-mediated Communication
EFL	English as a Foreign Language
ELTTP	English Language Teacher Training Programs
ELT	English Language Teaching
ESP	English for Specific/Special Purposes
EU	European Union
ICT	Information and Communication Technologies
IT	Information Technologies
MNE	Ministry of National Education
NLC	Native Language and Culture
OECD	Organisation for Economic Co-Operation and Development
PD	Professional Development
SSPS	Statistical Package for the Social Sciences
TPCK	Teacher Pedagogical Content Knowledge
TPD	Teacher Professional Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
WWW	The World Wide Web

Chapter 1

Introduction

This chapter aims to provide an introduction of the present study titled “Understanding Turkish EFL Instructors’ Professional Development Needs in Information and Communication Technology (ICT)” covering background to the study, statement of the problem, purpose and significance of the study, research questions, and definitions of some key concepts.

Beyond the stages of changes that have been happening all over the world, digitalization of sectors doubled with Internet, requires newer skills and strategies to deal with adaptation or integration. Education is one of these sectors where automatization has happened and this creates a strong burden on the sector. Like in any other sector, automation has become in while manual has become out. Thus, ultimately sought skills and qualifications like utilizing newer ICT tools effectively and efficiently, good Internet research techniques with smart teaching strategies at a ‘smart learning environment’ where innovative features and capabilities are to a large extent exploited have been changing. (Merrill, 2013).

At national and international level, the governments and the organizations have taken some measures. The EU as a supranational organization has announced its recommendations and support for Digitalization in Digital Agenda for Europe by the European Commission (2015).

However, within the context of digitalization of education sector, ICT is the main ingredient of the integration where effective and efficient teaching/learning processes are guaranteed. However, because of some tangible and intangible barriers, ICT is not fully either more extensively exploited by teachers. For tangible factors, it is generally about having no or limited access to ICT tools and facilities or shortly physical conditions. But there are numerous intangible factors that are in relation with attitudes, motivations, and beliefs of teachers and learners. This study aims to explore both sides under a critical literature review and descriptive study.

1.1 Theoretical Framework

To improve the efficiency of learning with competent teachers holding high qualities, national governments have started development programs (Organisation for Economic Co-Operation and Development, 2005a). For the purposes of public policy making on education, Association for Teacher Education in Europe (2006) has announced that, teaching is considered to be a profession which subordinates “reflective thinking abilities, through continuing professional development, gaining autonomy, responsibility, and creativity with perfect research abilities and profound personal judgments” (p. 7). In the modern world, to satisfy the knowledge society needs governments are investing in transformation of public facilities where also a language is being taught. This is viable through interactive teaching and learning processes.

European Commission stressed that the teachers are the ones who will contribute to overall skill development by helping learners raise up as independent but more social individuals, should acquire life-long learning. That is why, it is very important for teachers to keep up with rapidly changing world (European Commission, 2007). With regard to this, Halton (2004) has expressed that for teachers who desire to contribute to the formation of a knowledge society, their learning should follow such an order where the change is being learnt, the way of teaching is being modified, the new conditions and obstacles are becoming apparent to deal with as an outcome. But the end is good, it is integration.

The power to change or adapt new conditions relies on teachers’ development which Ovens (1999) in his study considered three basic factors defining a teacher’s development: craft, authority, and reflective rationality. Thus, it is all about turning the input into the output effectively and efficiently. (Ovens, 1999).

ICT has been employed today as one of the main forces of Globalization, where economic and societal changes are taking place. The effect of ICT on education, especially language learning will result in transforming students into “productive knowledge workers” in the modern parts of the globe (Pelgrum, 2001, p. 163).

The embeddedness of the world through Internet as a communications tool is making the availability resources more fruitful (Oliver & Towers, 2000).

Language learning and teaching processes are demanding effective ICT use more than other fields. With respect to this, ICT in teaching/learning is useful for motivating students, by giving them access to authentic resources not only in classroom, but also homework activities. ICT use is also giving birth to the opportunities like practicing with native speakers through Internet (Warschauer & Meskill, 2000; Salaberry, 2001; Bral, 2006).

Based on these overviews, the present study emphasizes the use of technology in the classroom requires teachers to be knowledgeable and competent in ICTs and to integrate them into the curriculum. The study attempts to find out determine the professional development needs of the EFL instructors in Turkey and their preferred mode of professional development. Further details about the study are provided in the following chapters.

1.2 Statement of the Problem

There is no doubt that ICT affects the roles and practices of EFL teachers. In that old, traditional approaches to language teaching are replaced with the new student-centered approaches, new roles for both teachers and students are set. With the use of technology, teachers' roles turn into monitors and facilitators by having less control over transmitting knowledge and this makes learners to be interactive in receiving information (Lamtara, 2014). Hence, the use of technology in the classroom necessitates EFL teachers to use technology effectively to improve their students' language proficiency in English and requires them to be knowledgeable in ICT to integrate them into the curriculum in a way that aims to raise their academic development (Aduwa-Ogiegbaen, 2009). According to the findings of studies about the teachers' use of ICT in educational institutions, the reason why they fail in the practice of ICT in the classes is little effort or very few resources available for professional development of teachers (Aduwa-Ogiegbaen, 2009). The EFL teachers express that the most important professional development need is teaching English with ICT and to use new technologies in the workplace (Marin, 2015).

In spite of an increased interest in the use of technology in English Language Teaching (ELT), it is surprising that so little empirical research has been conducted on the topic, especially from the perspectives of in-service English language teachers' needs in ICT. The studies generally focus on teachers' perceptions on using ICT in their teaching, attitudes toward ICT integration into language instruction and very few studies have done on alternative solutions to empower EFL teachers with the necessary knowledge about ICT through hands-on practice. In the light of the unquestionable importance of ICT in EFL education, the present study focuses on Turkish in-service EFL instructors' professional development needs in ICT. First, their professional development needs in the use of technology in the classroom will be determined. Then, the factors that cause their lack of ICT skills will be found out so that appropriate recommendations can be made to improve the lapses detected.

1.3 The Purpose of the Study

In connection with the investments on ICT integration in Turkey, it is important to identify the gap in EFL instructors' ICT integration. It is also important to know to what extent they have the opportunity to enrich their teachings by ICT.

To this end, this study aims to fill this gap in the literature by focusing on the use of ICT by the EFL teachers for the purpose of professional development. Besides, it also aims to highlight future prospects and bring some recommendations for public policy making in education.

1.4 Research Questions

The present study seeks to reach the aforementioned purposes by addressing the following questions:

1. What is the level of ICT competence of EFL instructors in Turkey?
 - a. Is there any significant difference between the male and female EFL instructors in terms of general ICT competency levels?
 - b. Is there any significant difference between EFL instructors in foundation and state universities in terms of their general ICT competency levels?
 - c. Is there any significant difference between EFL instructors with regard to

- teaching experience in terms of general ICT competency levels?
- d. Is there any significant difference between EFL instructors having professional development and having no professional development in terms of general ICT competency levels?
2. What are the desired ICT training/professional development needs of EFL instructors?
- a. Is there any significant difference between the male and female EFL instructors in terms of their professional development needs?
- b. Is there any significant difference between EFL instructors in foundation and state universities in terms of professional development needs?
- c. Is there any significant difference between EFL instructors with regard to teaching experience in terms of professional development needs?
- d. Is there any significant difference between EFL instructors having professional development and having no professional development in terms of professional development needs?
3. What are the preferred modes of professional development of EFL instructors?

1.5 Significance of the Study

Turkey is among the countries which need highly trained teachers in ICT. Most of the pre-service teachers are still entering universities with little knowledge of computers and appropriate skills and many higher education institutions in Turkey are still failing to prepare pre-service teachers for technological experiences. This makes EFL teachers unable to transfer their ICT skills to the learners. Hence, EFL teachers' professional development on using ICT became a must. As teachers are the main characters to implement ICT in English teaching, they should be trained in how ICT can be integrated into the language teaching process (Hismanoğlu, 2015).

Therefore, this study addresses ICT needs of EFL instructors in Turkey in their classroom practice to fill this gap in the literature. The study is also significant in that there is not much research conducted with EFL instructors in Turkey on this issue. Besides, providing a clear picture of ICT use in Turkey, the findings of this study could be used as a baseline for further studies.

1.6 Definitions

The following terminologies are important expressions used throughout this particular study:

English as a Foreign Language (EFL): The term English as a Foreign Language can be defined as the use of English by speakers with different native languages.

English Language Teaching (ELT): The term English Language Teaching is used to describe teaching English as a foreign or second language.

Technology: It is an umbrella term that covers different sorts of administrative and instructional applications involving calculators, overhead projectors, telephones, televisions and so forth. In this study technology refers to computers and computer-mediated technologies.

Information Technology (IT): It refers to the application of computers to store, study, retrieve, transmit, and manipulate data, or information.

Information and Communication Technologies (ICT): UNESCO (2002) defines it as “the combination of informatics technology with other, related technologies, specifically communication technology” (p.13).

Computer-Assisted Language Learning (CALL): Among various definitions, Levy (1997)’s definition is the most agreed one. He defines CALL as “the search for and study of applications of the computer in language teaching and learning” (Levy 1997, p.1).

In-service Teachers: This term refers to the teachers who had Bachelor of Arts (BA) in the field of education, who is presently teaching in his/her field of expertise.

Professional Development of Teachers: Professional development of teachers can be defined as activities that develop teachers' skills, and knowledge. It includes on-going training, practice and feedback.



Chapter 2

Literature Review

2.1 Introduction

Nowadays, we all hear about a term called ‘knowledge society’ like that of North-West Europe, where the economy is functioning at the hearth of industry 4.0, in other words at the 4th stage of Industrial Revolution. At this level, working class is composed of even factory workers who are capable of using smart technology. “Knowledge society is identified as a society with an economy in which knowledge is acquired, created, spread and applied to improve economic and social development and where information is used and exerted in different fields for learning and development” (GESCI, 2011).

According to Evers (2003) a knowledge society comprises such members that have gathered a higher standard of education. It includes knowledge workers which have been growing in numbers as a portion of total labor market. This society also trades or makes use of such products that have been integrated with the artificial intelligence. The economic and public institutions are transformed into kind of intelligent learning organizations.

The economy in such societies is demanding digitized skills, reformed organizational plans, more use of data banks, and expert systems. Administrative hierarchies are horizontally managed that they have noticeable epistemic ideas of knowledge use and knowledge production. Countries coming together like the European Union (EU) to be transformed into knowledge societies are adopting strategies and policies to support their development. Education is seen as a significant ingredient of the society that plays a role of engine for socio-economic development (UNESCO, 2004). In this context, when one talks about education and development, he should touch upon the issue of ICT which is the enabler of knowledge society with innovation and development (GESCI, 2011).

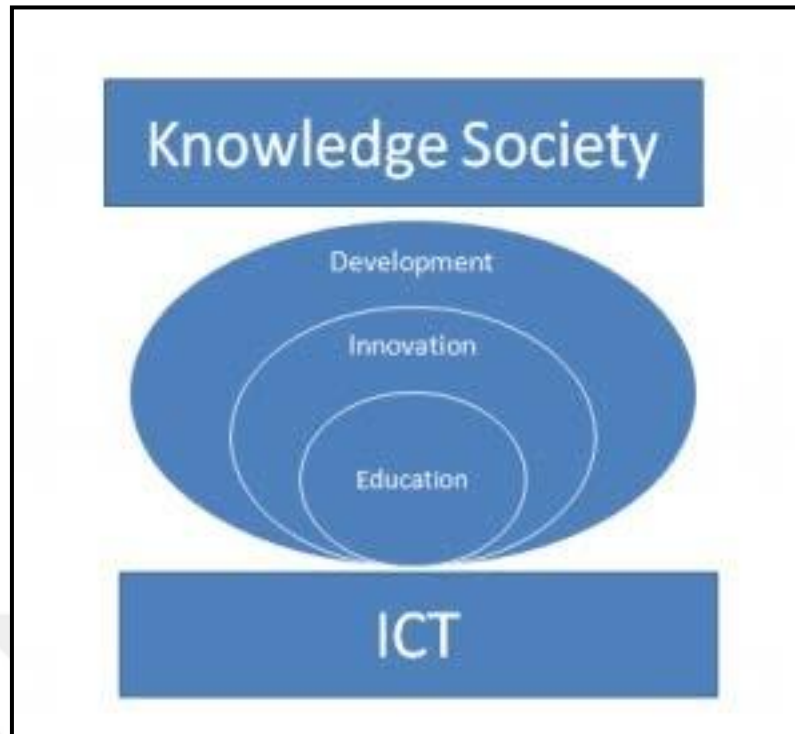


Figure 1. ICT as an enabler of innovation and development (GeSCI, 2011)

UNESCO (2004) has expressed three main reasons for emphasis in use of ICT in education systems:

- 1) Students are in need of knowledge society opportunities such as the ability to communicate, collaborate and think critically, gain lifelong learning habits, develop higher order thinking skills, synthesize and evaluate the knowledge.
- 2) Students should be prepared to work in an ICT oriented society and economy.
- 3) There is a need to solve structural problems, societal leaps and reactions and deficiencies by improving administrative and teaching efficiency and enabling equality of access to resources, knowledge and expertise clearly.

2.2 Language Teaching and Technology

In their publication of 'Handbook of Undergraduate Second Language Education' Warschauer and Meskill (2000) argue that teaching as itself has already had its own technologies to get support. They gave the example of Grammar-Translation Method, in which rules of grammar are clearly addressed by the teachers

and the process of learning going on a direct translation that is performed by the students. At this phase of teaching, the technology was the blackboard as a functioning item for a simple way to transmit the information by the method applied (Warschauer & Meskill, 2000). Following this, the Audio-lingual Method, which contains constant repetition in target language considered to teach the language with audio-tape technology. Lately, combining language teaching methods with the technologies introduced the terms like Computer Assisted Language Learning (CALL) and Computer-mediated Communication (CMC).

Expansion of technological development waves has brought about serious changes in different aspects of life and education. These days, most of the investigators believe that technology plays a crucial role in improving second language learning (Chapelle, 2001; Levy, 1997; Salaberry, 2001). As the potential coming from the technologic developments, it simultaneously gives birth to the adoption problems in the economy and social structure. Therefore, there has always been the need for detailed research and focus on each of related materials so that the best use of potential in foreign language teaching and learning can be possible.

Garret's (1991) revision on language teaching and learning put forward a different perspective for the subject. She pointed out to the fact that "the use of computer does not constitute a method" however; it is a "medium in which a variety of methods, approaches, and pedagogical philosophies may be implemented" (Garret, 1991, p. 75). She claims that there are tremendous number of cases in which teachers are just using technology at small scale, where they were often assigning simple computer related assignments and basic Internet research to the students. Hence, the potential of computers and Internet are rarely exploited.

The expansion of technological developments causes many expectations for better and efficient language teaching techniques and models increasingly. Davis (2006) stated that computers cannot change things positively without having trainers, and educators. Schrum (2000) argued that technological knowledge and expertise are not taking place in a quick way or by having access to it, it should be rather learnt and applied. Warschauer also sheds light on the possibility to accept that language teaching techniques have, in relation to greater level of changes in the society and technology

itself evolved and developed. Unconditionally, not depending on high or low expectations of the people, language instructors and their coordinators and aheads, should be ready to deal with the challenges that have already happened and been happening, or are happening. Shawcross (2004) remarked the things that technology is able to bring along in language teaching, as these factors: “greater availability, accessibility, and flexibility, integration of media and linguistic skills, constant access to authentic material, reaching larger and remote populations, speech samples and accents, appropriate content matter, feedback and monitoring, enhanced learner involvement and motivation, new classroom dynamics” (p. 2). We can ascertain the fact that while there are these benefits of technology in language teaching, it is worth saying that the future of education is lying on the roads of technological development.

2.3 Information and Communication Technology (ICT)

Applying the modern technology in in class and out class activities has gained momentum and become trendy since Millennium. It can simply be explained as: computers, digital technology, Internet, the three combined as a force of forming effective learning environment refines the learning and teaching process in which students have been engaged getting knowledge and applying it, in an active, self directed and constructive environment. (Hismanoglu, 2015; Volman & Van Eck, 2001).

Just after computers have been introduced, related items such as; scanners, printers, floppy disks and drivers were also exposed to the market. Then, the term Information Technology (IT) became widely used in different sectors in the economy and public institutions that sub-units of those all have IT departments. Following this, the Internet and the smart technologies boom, brought together the terms such as networks, the World Wide Web (WWW), search engines, and e-mails. That’s why, Internet’s togetherness with communications side, converted the term ‘IT’ into ‘ICT’, adding the communications between: Information and Communications Technology.

The rise of Internet with the use of computer in communications sector has reshaped functioning of computers for language learning. The recent worldwide shift to information-based economies made it necessary for students to learn how to manage

the flow of large amounts of information and to be able to communicate through languages and cultures. To sum it up, it should be noted that teacher training and respective professional development have to be considered as lifelong tasks, and should be coherently structured and resourced coordinated by the higher authorities. The Organization for Economic Cooperation and Development (2014) ascertains that basic teacher education is not sufficient to make teaching staff wear all the competences they would need to acquire throughout their professional life. Hence, in-service professional development is becoming a very important factor for ICT integration in language learning or teaching, and it must be structured in such a way that it would prompt up teachers to gain expertise continuously.

Integrative CALL puts emphasis on these subjects and respectively lets the learners into language learning community inexpensively bringing other learners and native speakers together.

In the research article of Lee (2000), he stated that technology of web or connectedness, is just one important feature of CALL that contributes significantly to learning based on experience, student motivation; empowered student achievement; availability of authentic materials for study; greater level of interaction; individual skills; alternatives towards phenomena, development of global understanding. Such kind of technological tool has been very effective to envisage opportunities for both teachers and learners who are demanding support that could help them walk the intermingling and thought-provoking ways of the information exchange.

2.3.1 Computer assisted language learning (CALL). Computers have been main tools of language teaching since the integration of computers into education. As a consequence of this integration, the term CALL has been invented. CALL's origin goes back to 60's when the first software for language learning was introduced (Todd, 2009). Definitions still vary, but with more comprehensive terms the CALL can be defined as "the search for and study of applications of the computer in language teaching and learning." (Levy, 1997 p.1). Furthermore it has been explained by Beatty (2003) as a process in which a learner improves his or her language by using computer and Garrett (2009) defines it as integrating technology into language learning entirely. CALL has built up itself as an innovative research base with international

organizations, annual conferences and series of refereed journals (Warschauer, 2012). Both technology's state of being and CALL's progress followed parallel advancements throughout the history.

Warschauer categorizes CALL with three phases as structural/behavioristic CALL, communicative CALL and integrative CALL as reflected in Table 2. However, these stages have followed incrementally pre-causing modes of sequence.

Table 1

Three Stages of CALL (Based on Warschauer 1996, 2000, 2004)

<i>Stage</i>	1970s-1980s: Structural/Behaviouristic CALL	1980s-1990s: Communicative CALL	21st Century: Integrative CALL
<i>Technology</i>	Mainframe	PCs	Multimedia and Internet
<i>English Teaching Paradigm</i>	Grammar-Translation Audio-Lingual	Communicative Language Teaching	Content-Based ESP/EAP
<i>View of Language</i>	Structural (a formal structural system)	Cognitive (a mentally-constructed system)	Socio-Cognitive (developed in social interaction)
<i>Principal Use of Computers</i>	Drill and Practice	Communicative Exercises	Authentic Discourse
<i>Principal Objective</i>	Accuracy	And Fluency	And Agency

2.3.1.1. Behavioristic/Structural CALL. Behaviorism was the superior psychology theory until the early 80's. Depending on this, education theories and educational approaches were built on this theory until 80's. Behaviorists had an understanding that the learning was a change in behavior, and the learning was taking place through response to external stimuli cognitive and positive or negative reinforcement reshaping the behavior (Demirel, 2007). Behavioristic theory was taken

as a base for Audio-Lingual method through which it was assumed that learners acquired target language's sentence formation by conditioning, shaping and reinforcement (Larsen-Freeman & Anderson, 2011).

2.3.1.2. Communicative CALL. Late 70's and early 80's followed some revision, as first the rejection of Behaviorism, then the acceptance of the Cognitivist theory. At that time, introduction of microcomputers had enabled the leap in technological change. Cognitivism relied on the innate process of mental states that had become very dominant pedagogical and theoretical component at that time. Simultaneously, Audio-Lingual method was unable to give expected results losing its popularity in the field of language teaching. There was a need for a more communicative approach which took attention through its interactive orientation. Therefore, this kind of teaching was called as 'Communicative Approach' that stressed the communicative competence, teaching of four skills, interdependence of language and communication (Richards & Rodgers, 2001). The everyday expanding popularity of microcomputers –first personal computers- let students work on themselves in a tremendous variety of tasks (Warschauer, 1996; Gündüz 2005; Yang, 2010). Combination of computers with language teaching approaches led to a new ground for CALL. Based on communicative approach, Communicative CALL moved away implicit grammar teaching and brought explicit grammar teaching. That was viable by focusing on forms usage instead of focusing on forms technically. It was encouraged to generate original statements instead of manipulating the language in technical details. This gave flexibility to students enabling them to give responses, and make exclusive use of target language. That created ground for the use of target language naturally (Underwood, 1984; Jones & Fortescue, 1987; Phillips, 1987). It is observed that the computer's role as a tutor maintained the same, but it gained two additional roles: computer as stimulus whose purpose was to stimulate discussions, writings and critical thinking of students; and computer as a tool which aimed to enable students to make use of the language efficiently (Warschauer, 1996). Programs containing word-sentence reconstructions, simulations and concordance programs were among the popular softwares that were used for language teaching at that time (Warschauer & Meskill, 2000).

2.3.1.3 Integrative CALL. The last phase that we are in right now, two crucial innovations have marked their names on it: the introductions of multimedia and Internet. At the same time, socio cognitive view which emphasized the observation, social interaction and experiences became dominant and the language teachers started to support the idea of using the natural language in a meaningful authentic context while integrating four language skills with integrative techniques such as; “content based, task based and project based learning” (Warschauer & Healey, 1998; Lee, 2000).

What the multimedia technology has brought was to create a more authentic environment for learning backing the integration of skills with less effort. Additionally, this technology supported students with some opportunities to have higher degrees of control over their learning process (Warschauer, 2000). Internet as an invention through WWW on phone lines and satellites in 1989, caused a significant effect on CALL through synchronous and asynchronous communication channels between the learning and teaching communities (Davies, Walker, Rendall & Hower, 2011). Furthermore, the Internet and media technologies gave an advantage for learners and teachers to be able to reach valuable sources and materials such as online activities aiming more interaction and outside of classroom activities; i.e., video conferencing or e-mailing.

2.3.1.4 The Opportunities of CALL. Technological integration into the language teaching with its new EFL teaching context offers a number of advantages for learning and teaching communities. Since, the term CALL is carried out through a diversity of technology uses for language teaching, there will be of course many advantages (Chapelle, 2008). On this issue, Khalsa, Maloney-Krichmar, and Peyton (2007) made a list of CALL’s advantages, which can be logically proven. They marked these advantages of educational technologies as “authenticity, voice, equal learning opportunities, individual attention, freedom of expression, convenience and accessibility, engagement, collaboration, and technological literacy” (ibid).

a. Authenticity: In traditional way, providing students with authentic material was a challenge in EFL teachings.

It is an outreaching feature of educational technologies for students and teachers, to have access over much more attractive and interesting materials. Rather than this, they would also have the chance of getting connected with people around the world via Internet. (Galavis, 1998, para. 3).

As it was provided by Warschauer and Meskill (2000) that the educational technologies now really enable students to have access to authentic materials about the culture that also is being transferred and authentic language. What is more, it invites them to the channels of global communication at the end making them world citizens, and developing ways of their subjective sounds and dialects of the out-spoken language.

b. Voice: There can be two advantages by this factor: (a) the voice and culture of the target language is given to the learner via authentic materials such as vivid audio and video files (Chapelle, 2001; Lee, 2000). By means of the multimedia technologies students can gain a great amount of human experience (Lai & Kristonis, 2006). (b) Joining in online venues by interacting with others through video-conferences enables students to use their own voice and manage the interaction. (Jepson, 2005).

c. Equal Learning Opportunities: Every student is not the same. This can be a challenge in traditional classes as the teachers have to deal with all student types. Dominant or shy students are generally difficult to handle specifically because the classroom setting may not be decent for their learning process. According to Lai and Cristonis, introvert learners can greatly take advantage of the individualized technology-learning environment, and extrovert learners can prompt up their own speed to achieve higher competences (2006, p.3). Moreover, computers can help slow learners to review more while fast learners can continue their tasks without interruption or stepping back (Siskin, 1999).

d. Individual Attention: Likewise it is mentioned above, learning environments, which are backed with technology are known to be providing satisfying relationships between teachers and students, and also between individual students. Furthermore, customized conversations which may not be activated in face-to-face intercourse can be generated at online settings (LeLoup & Ponterio, 2003).

e. Freedom of Expression: Students might find it more convenient to express themselves in online settings compared to traditional classroom settings where they have to get used to the teacher or feel pressurized. The study of Walther & Boyd (2002) inspired by Khalsa et al. (2007) has proven that people often are more relaxed in an online environment, than holding a face to face conversation.

f. Convenience and Accessibility: Online learning platforms give students the chances of behaving more independently and also the flexibility to work on their tasks at any time of the day without any restriction (Lai & Kristonis, 2006). It is an opportunity for students to be able to have access on their tasks twenty-four hours making them “autonomous and independent learners” (Galavis, 1998 ; Warschauer & Healey, 1998).

g. Engagement: Being have to deal with creation of more activities for students needs more engagement and commitment from the language learners in a classic lesson. The multimedia materials which are backed with technology open the gate to a set of various learning styles, through which the engagement of students and teachers are truly empowered (LeLoup & Ponterio, 2003; Meskill, 2009).

h. Collaboration: In cognitive style language teaching, the students have more chances to collaborate and co-work on various tasks at an online platform. Cyber discussion forums and bulletins open the gates of cooperation online and enable them to discuss different types of subjects in various times. Shneiderman (2002) defines this as collaborative learning and community building.

i. Technological Literacy: The students and teachers can take courses in ICT themselves at school and this is going to promote technologic literacy and skills of the society, but it is claimed that they learn more in life, or at work. With respect to this, van Dijk (2005), proposes that “citizens learn more from practical applications of computer/information technology than from formal computer education”.

2.3.1.5 Constraints of CALL. However, what makes the situation a leap of technological development or expansion: the constraints and cons. Riasati, Allahyar and Tan (2012) made a categorization of these in five groups as: lack of access, lack of effective training, the attitude of teachers, the attitude of students and lack of time.

a. Lack of access: Technological integration with educational sciences is viable only through using a hardware, software and Internet connection (Hani Bani, 2014). These equipment may be relatively expensive for low-income class. Respectively in the classroom unequal conditions may appear (Gips, Di Matteo & Gips, 2004). Among the society, there will always be the ones who will have more inequitable opportunities when compared to that of other citizens. Having access to these can be challenging for both teachers and learners (Mike, 1996). Besides, keeping going with technological waves and their financing can be unaffordable and tiring for most of the citizens (Abu Seileek & Abu Sa'aleek, 2012).

b. Lack of effective training: Both teachers and students must have basic computer skills so that the use technology in classroom can be viable. Having bought a technology which is not used effectively and efficiently, does not prompt the quality of education if the teachers are not able to make use of this technology as an educational tool in the classroom setting (Romano, 2003). Nevertheless, it has been pointed out that many teachers still lack competency to use computers and the Internet effectively since there is insufficient training and technical back-up. (Levy, 1997; Coghlan 2004; Lai & Kritsonis, 2006; Lu, 2006; Abu Seileek & Abu Sa'aleek, 2012).

c. The attitude of teachers: Many teachers fear technology, they might feel more comfortable with the traditional methods (Abu Seileek & Abu Sa'aleek, 2012). This is because they see technological devices as unmanageable tools (McGrail, 2005). Traditional teachers are very picky about their authority and prestige in the classroom (Fang & Warschauer, 2004). "Teachers are lack of confidence in their technologic knowledge and are afraid of a failure and thus they feel anxious about using technology" (Beggs, 2000).

d. The attitude of students: It has also been considered that the students might be resistant to the technology use. On a sudden and radical shift from traditional

classrooms to technology based classrooms settings may give students negative feelings and distrust resulting in weak academic performance. What is more, for students the Internet might result in a shift of attention to time wasting stuff (Correa, 2001). Besides, some students may not be as equipped with basic skills like others to take part in the lessons regardless of how simple the programs used are and causing difficulties in the integration of computer technology into the education (Abu Seileek & Abu Sa'aleek, 2012).

e. Lack of time and technical support: Another limitation of CALL is coming from the technical expertise that technology users should know, we know that troubleshooting in a technology integrated classroom may take long time (Levy, 1997). Teachers report that “integrating technology into classroom environment is more time-consuming than traditional classroom environment in which computer technology does not exist” (ChanLin, Hong, Horng, Chang & Chu, 2006). Singhal (1997) also provides that accessing the relevant information may require lots of effort since the Internet contains a lot of irrelevant contents. Furthermore, Abu Seileek and Abu Sa'aleek (2012) claimed that constantly people face situations in which technical problems need assistance and fixing this break down takes considerable time.

Besides these disadvantages and limitations, Bani Hani (2009) claims that the teachers complain about the lack of authentic and efficient programs and show that as the reason for their unwillingness to commit technological integration in their classrooms. There are many unnecessary tools and expansions of the softwares that do not fit educational purposes. Additionally, the implementation of these excessive parts puts a pressure on teachers. Moreover, computers are just machines to apply a method, they are not mere practitioners (Abu Seileek & Abu Sa'aleek, 2012). However, the smart technology today has changed such attitudes of technology skeptics, since it applies multiple criteria decision making with the use of relevant data via smart technology, to the teaching process.

2.4 Common ICT Tools

There are varieties of ICT tools listed in Figure 2, 3, 4 and 5 (Millea & Putland, 2005), as devices and infrastructure which provide an overview of some of the

technologies the teachers might make use of when they teach and interact with learners of all ages. The list is by no means limited, it can be extended or sub-united. However, it aims to give guidance for thinking, planning, and future questions about if, how, why and when to use different forms of ICT in teaching process.

Example of tool, device, infrastructure	Definition
Web-based Tools and Applications for managing learning and teaching	
Learning Management Systems	Internet based software that deploys, manages, tracks and reports on interaction between the learner and the content, and the learner and the instructor. They enable student registration, track learner progress, record test scores and indicate course completions. They also allow the instructor to assess student performance. Example: WebCT. (p. 32)
Student Management Systems	May include financial, timetabling, student records and reporting. May also enable parents to review their child's performance online Example: PowerSchool (p. 34)
Digital Student Report Card Systems	A digitized system for transmitting student information. Can embed real examples of a student's work from an e-portfolio. (p. 36)
Plagiarism Detection Systems	Examines digital text and by comparing nature and frequency of particular word strings, provides feedback to educator on the likelihood that a particular piece of work has been plagiarised. Example: turnitin software. (p. 37)
Online Collaborative Workspaces	Online communication tools to enable collaboration. Examples: Bulletin board, email discussion lists. (p. 38)

Figure 2. ICT tools (Millea et al., 2005)

Example of tool, device, infrastructure	Definition
Virtual Classroom Software Systems	Deliver an interactive learning environment to students with a computer and Internet connection. The software presents the student with a screen consisting of an instructional area, bordered by items such as class location, message board etc. (p. 40)
e-Portfolios	Electronic (or digital) portfolio – digital storage to enable an individual to maintain an ongoing record of their work, achievements, awards and assessments. (p. 42)
Learning and teaching tools	
Interactive whiteboards	A whiteboard surface that displays digital files from a computer via a data projector. May function as a standard whiteboard i.e., teacher or student may write on it and then digitise the marked up material. (p. 50)
Personal communication	Digital communication, which enables individuals to talk to one person or more. E.g. web forums, Internet relay chat, sms (short messaging service) on mobile phones. (pp. 57–60)
Mobile delivery devices: The digital backpack	
Storage devices	Device for transferring electronic work between various devices and physical locations and to backup work, e.g. USB memory stick. (p. 63)
Personal Digital Entertainment Devices (PDEs) and MP3 Players	Enable user to download, store and play audio, photo and video files and in many cases, to take part in interactive activities. (pp. 64–65)
Personal Digital Assistants (PDAs) (also known as Handheld Devices)	PDAs and PocketPCs allow input of data via a mini keyboard or equivalent, they usually include a calendar, organiser functions, basic software functions such as word processing, email, spreadsheets, data storage and wireless capacity. (p. 67)
Mobile phones	Increasingly these allow communication via photos, video as well as text messaging. (p. 68)

Figure 3. ICT tools (Millea et al., 2005)

Example of tool, device, infrastructure	Definition
Laptops	A mobile computer that is operated with a battery away from power sources. Newer versions are now wireless and can connect to the Internet in wireless hotspots. (p. 70)
TabletPCs	A small screen (12") laptop PC in which data may be directly entered onto the screen with a special pen. (p. 72)
Gaming Devices	Consist of a gaming console (e.g. Gameboy) and games or a content delivery method. (p. 73)
Assistive and Adaptive Technologies	Technology that supports students with disabilities, such as screen readers, and virtual pencils. (p. 75)
Content delivery methods	
Podcasts	Podcasting is a method of publishing audio files via the Internet, allowing users to subscribe to a feed to receive new files automatically. (p. 78)
Vodcasts	Video on demand is the same concept as podcasting but with video files. (p. 80)
Blogs	A web-based journal or log book. Logs are chronologically ordered web-postings by an author or group of authors. They may be personal, individual records, group collaborations or representative of an institution. (p. 81)
Wikis	A Wiki or wiki is a website (or other hypertext document collection) that allows users to add content, on an Internet forum, but also allows anyone to edit the content. "Wiki" also refers the collaborative software used to create such a website. (p. 83)
Voice over Internet Protocol (VoIP)	Enables transmission of voice across the Internet. Example: Skype (p. 84)
Digital TV	Similar to analogue TV but has the capacity to deliver rich multimedia learning experiences. It enables interactivity. (p. 86)

Figure 4. ICT tools (Millea et al., 2005)

Example of tool, device, infrastructure	Definition
Other devices, concepts, and technologies	
Moblogs and Photoblogs	A combination of the words blog and mobile. It means the capacity to post items to a blog using a mobile phone or other mobile device. (p. 88)
Digital Cameras	Film is stored digitally.
Scanners	Enable the digitisation of analogue content. Digital items can then be manipulated by software on the computer and stored. (p. 89)
Swarming (also called "meetups")	People with a common interest come together quickly to experience or participate in an event. Mobile devices are often used to generate swarms. They may be used for educational, political or social reasons. Example: learning swarms – students come together for a learning event. (p. 89)
Peer-to-peer Networking and Technologies	A network that allows two or more computers to share their resources, such as hard drives, CD-Rom drives and printers. Enables students and teachers to share files locally and internationally. (p. 89)

Figure 5. ICT tools (Millea et al., 2005)

2.5 Internet as an ICT Tool

The Internet has become a very popular tool parallel to technology and data sciences. According to Warschauer and Meskill (2000, p. 6) the strength of the Internet can be used as a tool to promote language teaching and it can be considered as a vast medium. Dettori and Lupi (2010) emphasized the importance of web technologies since they turn the online platforms into language learning places.

Rise of web technologies has quickly turned the web into a very advantageous place for language teaching, there are quite many real documents which provide meaningful samples of current language use, but also that many web sites which are built up by prestigious agents, open the ways of access to educational learning materials that vary from simple exercise forms to complex activity sites. (Dettori & Lupi, 2010, p. 2714).

Tezci (2009) in his study found out that the Internet was the most widely used tool of ICT and well comprehended type of ICT for the teaching community in Turkey.

Similarly, Smith, Ruhl and Coghlan (2008) put forward that the Internet seemed to be used assertively by teachers and is considered to be the most needed skill for Continuing Professional Development (CPD) area. These results demonstrate how combined it is with the technology in language teaching. Since the Internet prompts people up to develop online skills not only in personal but also in professional terms, teachers feel free to make use of more of it. Kirschner and Davis (2003) claims that the Internet opens ways to huge range of beforehand untouched and unexplored information (p. 136). Depending on this, teachers should integrate it with their practices to take advantage of an ICT feature as much as possible (Kirschner & Davis, 2003).

Particularly, with the rise of Web 2.0 since 2004, the recent generation of web-based services has appeared with options for online interaction and co-work, and sharing which we can define mainly as wikis, blogs, social media, social bookmarking, online conferences, instant messaging, video and voice messaging. (Baltacı-Göktalay & Özdilek, 2010, p. 473).

2.6 Teacher's Motivation and Intrinsic Factors for ICT

Being ready to use technology defined as “e-readiness” proves that teachers who implement the technology are competent among themselves (Lawson & Comber, 1999). It is provided that instructors with sufficient e-readiness can only integrate ICT into their classroom teaching, as a result of the belief that ICT will help them and their students to reach more valuable knowledge and to share more meaningful content (Vrasidas & McIsaac, 2001). However, in literature it has also been claimed that there have been some factors that have influenced teachers' use of technology in the teaching process. These factors are the positive perceptions what make them use ICT and negative perceptions what disable the ways of use of ICT in their teaching activities. With regard to positive perceptions, if teachers have a sense of worthiness of ICT integration, they seem to be motivated to use it in their teaching process (Galanouli, Murphy & Gardner, 2004).

Furthermore, their compatibility towards the new regarding the technology use is depicted by their perception that technology can provide innovation in better

comprehension skills and better material acquisition for language teaching (Baylor & Ritchie, 2002). In addition to this, Cope and Ward (2002) pointed out the fact that teachers are concerned about how and in which ways technology affects the students. For example, it is also a matter for teachers if students can enrich language learning with some softwares and computers. They ask, if they are capable of technology and computer literacy. With this regard, teachers can also exploit the potential of technology to trigger their attention.

On the other side, negative perceptions arising from teachers' instinctive matters restrain the ICT integration in teaching. These generally occur based on the factors such as lack of capabilities, information, time, technical back up, insufficient training (Samuel & Bakar, 2003). For instance, if there are not adequate number of useable computers for all students, then this would result in a facility problem, as illustrated by Pelgrum (2001), as one of the most frequent problems. This can be the case, even if the teacher has good level of ICT expertise. Moreover, there can be a problem of networking access which connects computers to each other. This might cause frustration for both teachers and students in terms of full engagement (Samuel & Bakar, 2005).

If the teacher has limited or no ICT knowledge, this might also prevent them from performing an ICT integrated lesson. When they have lack computer literacy and technology skills, all the equipment provided will be useless. Thus, when they have not adequate tech-savy back ground, they are skeptic about ICT in their teachings.

It has been provided that technical trouble shooting and effective management of language teaching software are also among the factors that teachers feel motivated or demotivated about in their ICT applications in teaching (Demetriadis, Molohides, Barbas, Palaigeorgiou, Psillos, Vlahavas & Pombortsis, 2003). These factors might result in lack of self-confidence because the instructors will see themselves as incapable of mastering ICT applications (Lawson & Comber, 1999).

Generally, personal beliefs and concerns of the teachers about their capability in technology use are determinants of ICT integration (Angers & Machtmes, 2005). Regarding this, the way the instructors see their role will influence the way they teach

ICT integrated lessons (Angers & Machtmes, 2005). Their beliefs towards teaching practice with ICT will back up or limit their goals for technology use in teaching. Angers and Machtmes (1999) stressed that those teachers who believe ICT can facilitate their lessons, have higher motivation to make changes in their teaching strategies with more confidence. On the other hand, the ones who maintain their negative attitudes and beliefs regarding technology, will abandon implementing of ICT integrated strategies (Angers & Machtmes, 2005).

There is a Technology Acceptance Model (TAM) introduced by Davis, Bagozzi and Warshaw (1989), showing the intention of a person to make use of technology based on four factors, as “perceived usefulness, perceived ease of use, attitude toward using and behavioral intention to use”.

Perceived usefulness is the determinant of the benefiter's recognition of one specific technological item that is believed to be causing effective usefulness in their practices (Davis, Bagozzi & Warshaw, 1989). The benefiter in general are acknowledged with pros of a technology they should use, that is why they are more inclined to facilitate the teaching and increase their performances up on proved usefulness of an ICT tool. This will for sure prompt up their motivation to employ ICT tools in teaching.

Perceived ease of use is the factor that relies on the degree of facilitated use of ICT by themselves (Lederer, Maupin, Sena & Zhuang, 2007). Thus, they tend to apply ICT, as long as it facilitates their jobs. In the literature it is given that the barriers to apply ICT may be consequences of technical and non-technical things. Technical things as we have covered in the previous sections are about tangible conditions but on the other hand, most teachers skip ICT use in their teaching since they are not capable of using the technology efficiently and effectively at the same time. They find themselves in crossroads of unmanageable classrooms, and inappropriate pedagogical outcomes coming from ICT use such as distraction of students' attention on the web. These conditions lead to teachers view that applying ICT in their teaching requires much more effort than traditional teaching and therefore causing a demotivation.

As it was underlined in the previous parts attitude toward using ICT is about

teachers' desirability of employing the ICT in their teaching. They might feel either positive or negative to employ ICT. However, this is generally about their level of expertise in technology and/or external factors.

As the last factor, behavioral intention to use ICT emphasizes the overall attitude towards use, and direct and indirect effects of perceived usefulness and perceived ease of use. Both usefulness and easiness levels of use of given technology concurrently impact attitude towards applying ICT in teaching, while it should be noted that perceived ease of use has a direct effect on perceived usefulness. All these matters cause an automatic formation of behavior against ICT integration in teaching (Venkatesh, Speier & Morris, 2002).

2.7 Student Teachers' Perceptions Toward ICT

While evaluating teachers' tendency to exploit ICT use in their teachings, one should also focus on the context under teacher education. It is really crucial that a teacher when he was a student whether he has maintained an ICT integrated student life. For the prospects of this research, with increasing number of next generation student teachers who get placed at the universities or institutes to get pedagogy and technical, it is important to see if now they are more prepared to teach with ICT than previous generations. However, the literature about the current generation of student teachers is limited. The research that has already done on pre-service capabilities of student teachers show factors as self-efficacy, computer efficacy, attitudes toward ICT use define overall willingness of the new teachers to employ ICT (So, Choi, Lim & Xiong, 2012).

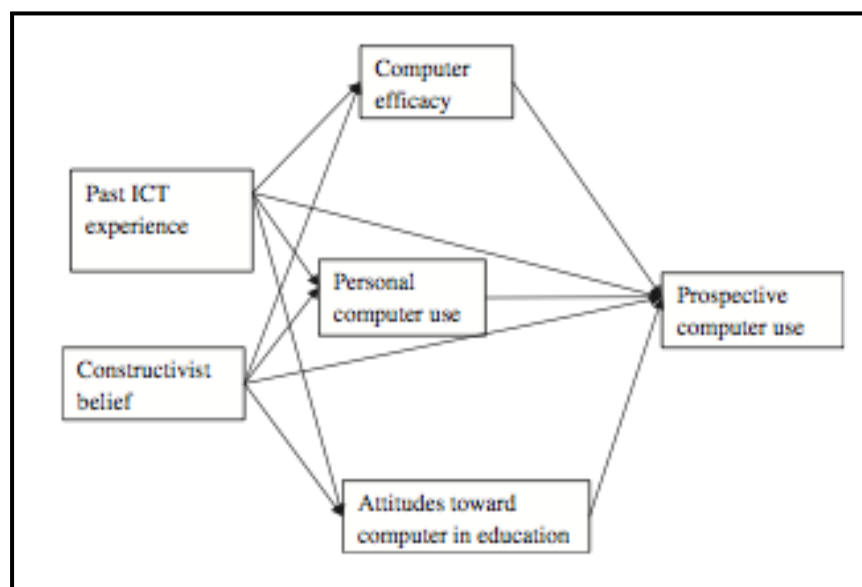


Figure 6. The beliefs, efficacy, and attitudes of prospective EFL teachers' direct or indirect effects on student teachers' intention to use ICT in their future teaching

Furthermore, it has been really favorable to examine student teachers' perceptions towards ICT with a set of correlated psychological factors such as epistemological beliefs, pedagogical beliefs, and other individual attributes (ibid).

Often, it has been the case for researchers to measure student teachers' tendency to integrate ICT in their prospective teachings. With respect to this, Sang, Volcke, Braak and Tondeur (2010) empirically scrutinized the beliefs, efficacy, and attitudes of prospective EFL teachers and found out how a spectrum of factors has direct or indirect effects on student teachers' intention to use ICT in their future teaching (See Figure 6). Accordingly constructivist beliefs, computer efficacy and attitudes are in a rounded context, they presume that pedagogical beliefs and past ICT experience make up the constructivist beliefs underlying the teachers' attitudes toward using ICT in education and defining their computer self-efficacy levels. They also proved that pedagogical beliefs, in combination with self-efficacy for teaching and computer use, and attitudes toward ICT in education could give good estimations about possible next generation teachers' tendency for ICT integration at their work.

2.8 Exploring Conditions for Integrating ICT in Education

When innovation is the case, innovative pedagogical practices are required by applying ICT extensively. It is because the emergence of ICT has not only taken place in computer science, but also has triggered the need for pedagogical change (Kozma 2003; Kozma and Vota, 2014) The integration of ICT should be considered with the same constraints or difficulties as outcomes of innovation in education. Fullan (1991) declared some key conditions that can be considered as vital factors to implement a profound ICT integration strategy (Albion, Tondeur, Baruch & Peeraer, 2015):

- a) There should be a vision oriented structure
- b) Teachers should be initiative in taking and empowering the learners
- c) Head officers should support staff development and enable resources
- d) There should be a functioning monitoring system
- e) Teachers should be able to cope with problems and good troubleshooters

The factors all to be considered by community leaders and public policy makers since the roles of teachers have been changing and there is a growing need for in-service training support programs concerning the pedagogical use of ICT in teaching languages (Kalogiannakis, 2010).

The teachers' role is defining the capability or extension of conditions for integration of ICT in education sector. Therefore, there will be a need to better understand the teachers' role, and subsequently their professional development models and strategies. Leask and Younie (2013) define quality of ICT knowledge, as their responsiveness to the rapid changes occurring in ICT and the sector. In relation to this there will be a demand for effective teacher professional development.

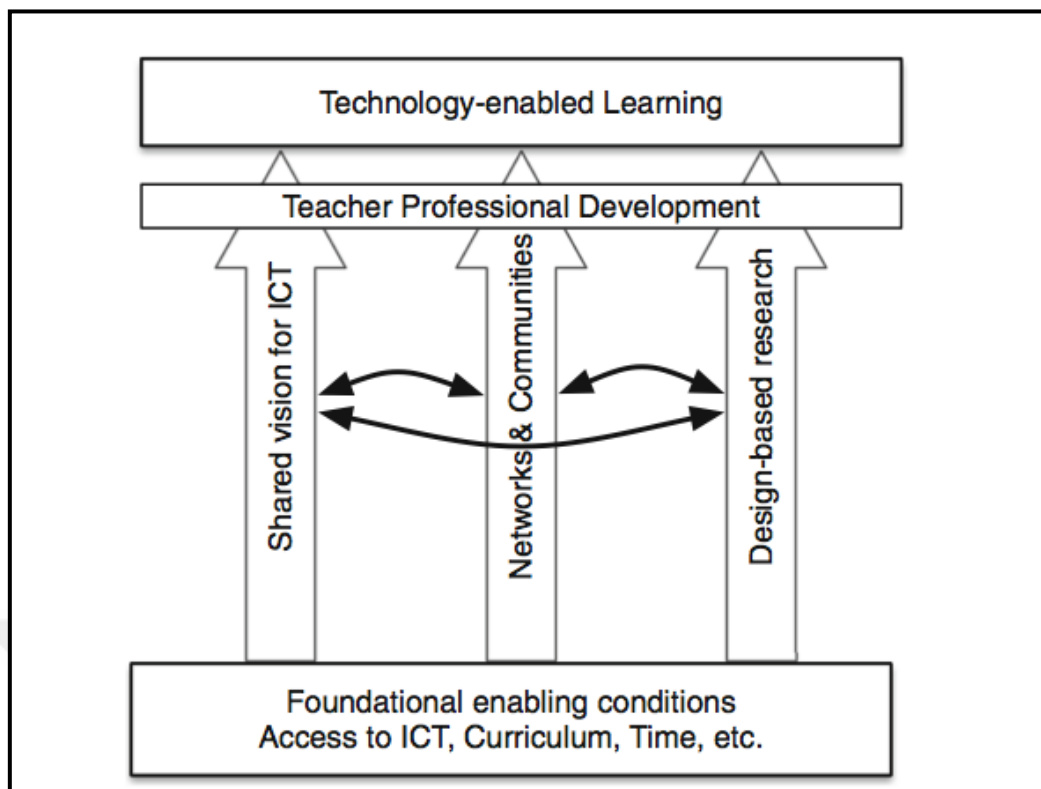


Figure 7. Teacher Professional Development (TPD) for technology enabled learning model (Albion et al., 2015)

In the figure, it is provided that accessibility of foundational enabling conditions are reaching out the TPD through shared vision, digitalized networks and innovative research.

However, continuing professional development is a vital part of highly motivated ICT oriented change in education since the research field on ICT based teaching required fragmentary and heterogeneous for concepts, methods and instruments due to complexity of variables. Therefore, it is getting more complicated to test complex multi-level models about the impact of teacher learning on ICT.

To sum it up, it should be noted that teacher training and respective professional development have to be considered as lifelong tasks, and should be coherently structured and resourced coordinated by the higher authorities. The OECD (2014) ascertains that basic teacher education is not sufficient to make teaching staff wear all the competences they would need to acquire throughout their professional life. Hence,

in-service professional development is becoming a very important factor for ICT integration in language learning or teaching, and it must be structured in such a way that it would prompt up teachers to gain expertise continuously.

UNESCO (2011) has reported that having gained basic ICT skills is never enough. A teacher, today has to be able to make use of technology in the process of teaching so that the learning process can be as interactive as possible and responding to the learner's needs. However, the way a teacher prefers to apply ICT in their teaching process will heavily depend on the subject being taught, the learning objectives and of course the nature of the learners. Therefore, teachers are the ones who will enable collaborative environment, and creative learners through applying necessary ICT tools. As a result of this, the community will be consisting effective citizens and members of the workplace. As all these make up a true knowledge society, gaining skills such as problem solving, communication, collaboration, experimentation, critical thinking and creative expression has become more and more crucial.

2.9 ICT Usage in Turkey

Based on statistics, some work has been done to demonstrate how ICT is being deployed in Turkey who is one of the leading countries investing in e-transformation and increasing the percentage of computer literacy. ICT sector in Turkey has risen to a size of \$160 billion by 2016 (International Investors Association, 2017). To this end, Turkey has been making huge investments in the ICT sector.

There has also been a significant step to prompt up education with technology in Turkey. Since the beginning of 21th century, Ministry of National Education (MNE) has invested in ICT to facilitate and enrich teaching. Some schools were provided with ICT classrooms, education software, computers, overhead projectors, printers and Internet connection (Gülbahar & Güven, 2008). The latest attempt of MNE to increase ICT support in schools was projected as “Movement of Enhancing Opportunities and Improving Technology” (presented as FATİH project). It started in 2010, with an overall aim to promote equality in education and efficient use of technology and communication tools. By setting an ICT infrastructure in schools (MNE, 2012),

570.000 classrooms were equipped with interactive white boards, multi-functional printers and broadband Internet connection. Besides, all the students and teachers were provided with a tablet PC.

The Ministry of Development (2014) has announced that it has invested ₺1,4 billion for ICT. The MNE has been working on a website to use as an Education and Information Network called “EBA- (<http://www.eba.gov.tr/>)”. It aims to broadcast free electronic resources for effective use of ICT tools in classrooms. What is more, besides electronic resources EBA offers videos, images, audios, e-books, discussion groups and educational software to all communities of education. Furthermore, the MNE has launched a school system as a portal. This portal is used by both foundation and public schools for any kind of administrative purpose. For instance: “registration, application for national exams, grades, e-reports and graduation” (ibid). Parents are now able to follow their children’s progress at this online platform. With MNE’s initiatives the web-page has been updated and a mobile application has been developed for the e-school system. Following this, MNE has come up with the educational software DynEd which is the abbreviation for “Dynamic Education” and has been used in language teaching in primary and secondary schools since 2007-2008 academic year with the cooperation of SANKO Holding. Respectively its use has been compulsory for all levels of schools and students as a supplement to their English lessons since then.

When we look at Turkish Statistical Institute’s survey which was conveyed with samples between 16 and 74 ages, overall computer use at homes increased from 23,6% in 2004 to 53,5% in 2014. Respectively, there has been a significant increase in the percentage of houses having access to Internet and citizens using the Internet. Turkey’s household with access to Internet was only 7% in 2004, and it has climbed up to 60,2% in 2014. Portion of people using Internet was 18,8% in 2004 and it is 53,8% in 2014 which is beyond the global standards. However, the purposes of the Internet usage are as follows: “participating in social networks (78,8%). reading online news (74,2%), searching information about services or goods (67,2%), playing or downloading films, music, images and games, sending and receiving e-mails (53,9%), uploading self-created contents (47,8%), listening to web radio or watching television (46,8%),

making phone calls or video calls through the Internet (37,1%) and making online appointments with health institutions (31,6%)” (ibid). It can be clearly read from results that Turkish society has been more and more engaged to the ICT and web technologies.

However, things in detail do not seem so satisfying when Uzun (2015) proposed that teacher training programs (TTP) in Turkey have been largely technologically investigated and modified starting from their establishment, but in parallel to this there has been a mislead or incapacity to apply theory. That is why, the Turkish education in its technology captivation has faced crucial problems in applying the theory. Integrating ICT with education was a global trend in which technology backed education was tried to be given by traditional means and materials. More controversially, the space has been equipped with modern technologies but the mentality of the teachers and learners has not changed enough to activate the change (ibid). What is more, TTPs and curriculums have not been updated in an innovative way to alter the educational viewpoints of the teachers and learners. That is to say, there has been a little or limited effort to realize the ideological change from traditional base to digital or innovative base. It is claimed that it is because of the top down process of decision-making in Turkish culture, innovative or digital mindset is also being asserted by high authorities. We also know that innovation and technology use requires self-commitment which is far difficult in Turkish society where tolerant discussions are limited through hierarchies (ibid).

In against the significant improvement of ICT within the last three decades followed by a considerable expansion of technological development within education systems, it would not be so easy to claim that educational technologies and technology supported learning practices have been effectively progressed (Kirkwood & Price, 2005; Kirkwood & Price, 2014). Making use of technology effectively in the education systems has been a crucial aim of education policies of mainstream developed and developing regions of the world. To this end, ICT integration capacity of an education system has been associated with attitudes of teachers and students.

The current English Language Teacher Training Programs (ELTTP) seems to be

not close to technologically collaborative and updated and innovative content resembling programs since the minds of the teachers that expose contents and procedures of the courses to students have not respectively changed. These programs in general comprise old approaches, methods, materials, procedures combined with outdated knowledge. To be able to update ELTTPS, some serious points should be re-questioned as in the following by policy-makers, academicians, and heads of the teachers (Uzun, 2016):

- a) How can the language teachers' overall education knowledge be more qualified with ICT?
- b) Who will make teachers' educational knowledge technology capable of applying ICT in their training process?
- c) Which courses does the TTP involve, as topics, procedures and philosophy?
- d) Is it enough to combine current pedagogical knowledge and technical knowledge of language teaching to enable ICT backed education?
- e) Is there a need to update TTPs with newer technology based courses?
- f) Do current TTPs have effective ICT courses?

2.9.1 The ELTTP in Turkey. The last version of ELTTP may be with some small differences of the names, contents, and procedures among universities can be observed, this is the program that is applied concurrently in ELT Departments of Turkish Universities. The courses as seen in the Table 3, can be grouped as 'technical' and 'educational' where we must seek ICT integration (Uzun, 2015). In the group of technical courses, now we can see "Educational Technologies and Materials Development" and "Language Teaching Materials Adaptation and Development" combined with "Computer I-II" as ICT based and innovative courses. However, applying these courses in the 'educational' or 'pedagogic' part is much more important than having them as standards. In this study, we will be able to observe to what extent, this has been the case to apply these technical courses on educational purposes in EFL teachings.

Table 2

The ELTTP in Turkey

Technical courses	Educational courses
Computer I-II	Introduction to Educational Sciences
Literature and FL Education I-II	Psychology of Education
Linguistics I-II	Approaches to ELT I-II
Language Acquisition	Instruction Principles and Methods
Scientific Research Methods	ELT Methodology I-II
Educational Technologies and Materials Development	Teaching English to Young
Short Story Analysis and Teaching	Learners I-II
Poetry Analysis	Teaching Language Skills I-II
Novel Analysis and Teaching	Classroom Management
Testing and Evaluation	<i>School Experience</i>
Elective I (Pragmatics)	Guidance
English Language Testing and Evaluation	Special Education
Elective III (Discourse Analysis)	<i>Teaching Practice</i>
Comparative Education/Syntax	
Language Teaching Materials Adaptation and Development	
49 credits-75 ECTS	59 credits-81 ECTS

Intentionally, the technical courses should aim to contribute to the skills of language teaching in ELTTPs, like Linguistics, Pragmatics, Syntax, Discourse Analysis, Comparative Education with an effective use of ICT. It should be also the same for the pedagogical spectrum of studies.

2.9.2. ICT statistics of Turkey. Before, entering the research phase, it can be creditworthy to have a look on ICT statistics of Turkey in comparison with the EU member states. These statistics have been gathered from EU Commission's (2013) Survey of Schools: ICT in Education.

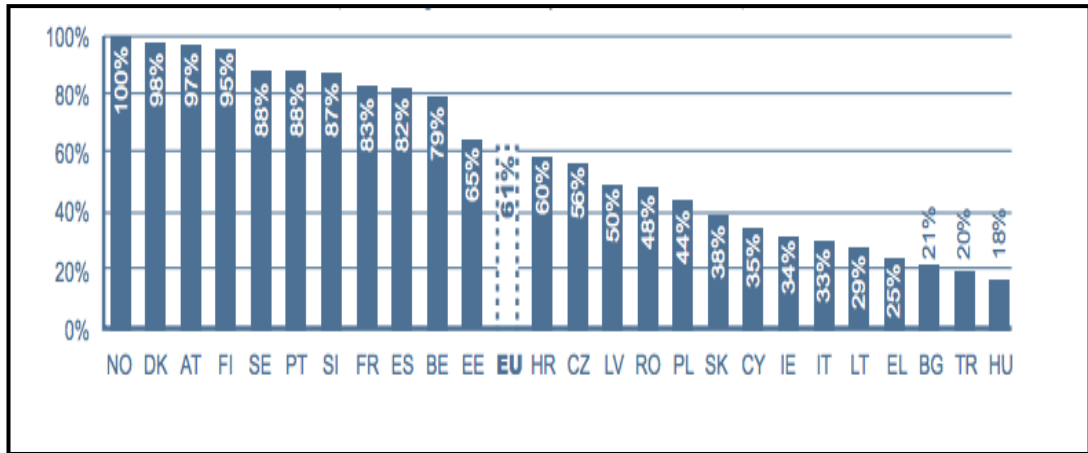


Figure 8. Percentages of students in schools with a virtual learning environment

Based on survey of schools, ICT in education survey of the EU, in Turkey 20% of schools have online learning platforms as shown in Figure 8.

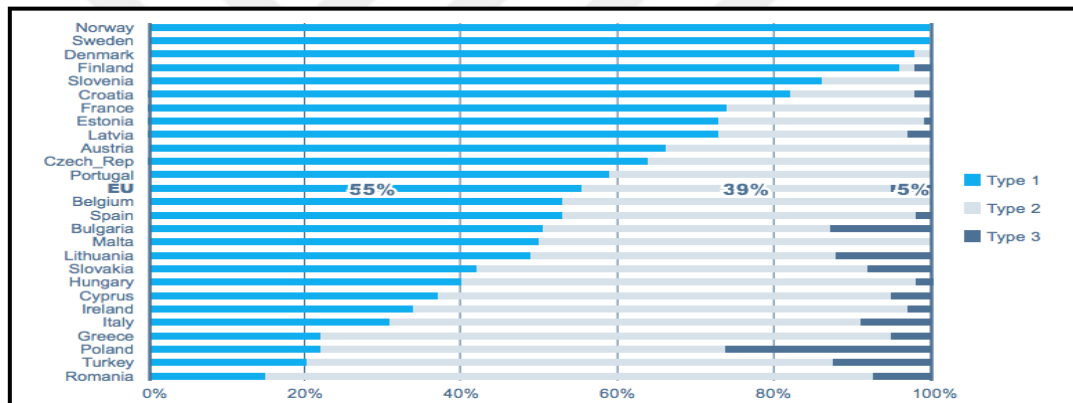


Figure 9. Percentages of students by school type in terms of equipment

Cluster analysis was carried out to define “three school profiles”:

-Type 1: Highly digitally equipped schools, characterized by relatively high equipment levels, fast broadband and relatively high connectedness

-Type 2: Partially digitally equipped schools, with lower than type 1 equipment levels, slow (less than 10mbps) or no broadband, and some connectedness

- Type 3: As type 2 but with no connectedness

At this scale, as illustrated in Figure 9, Turkey stands slightly above the average EU in terms of digitalization of the sector.

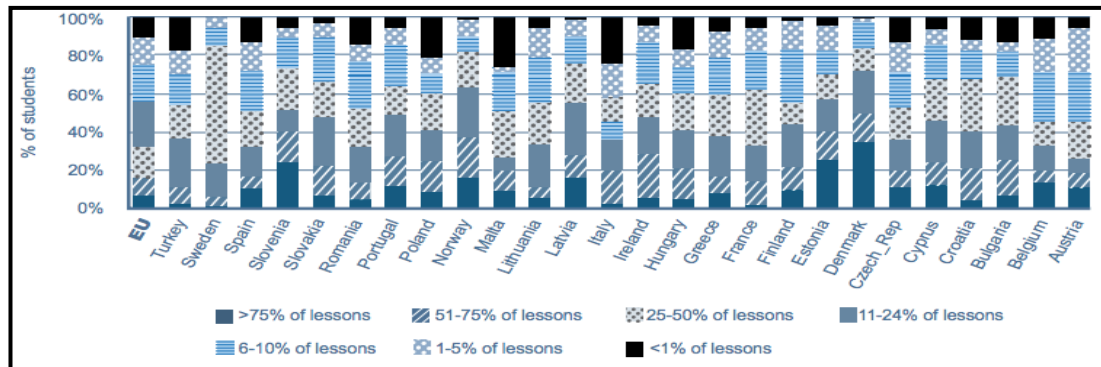


Figure 10. Intensity of use of ICT in lessons by teachers over 12 months

The graph in Figure 10 illustrates that in almost 20% of the 11. grade lessons, ICT has not been employed, whereas this ratio for the EU general is 10%. %5 of all 11th grade students have their lessons done with ICT with an intensity of more than 75%. 20 % of the all 11th grade students, had covered their courses with 11% to 24% of ICT intensity.

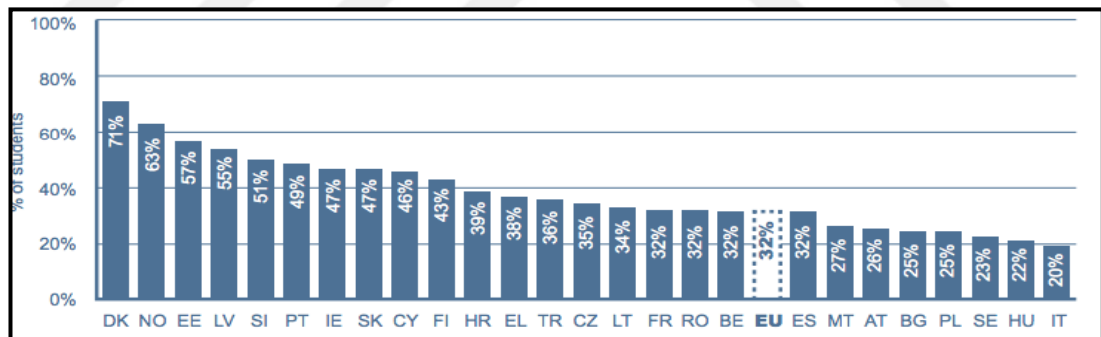


Figure 11. Teachers' use of ICT in more than 25% of lessons

This graph in Figure 11 shows, percentages of students whose teachers made use of ICT in more than 25% of the lessos. At this case, Turkey (36%) has an above EU score.

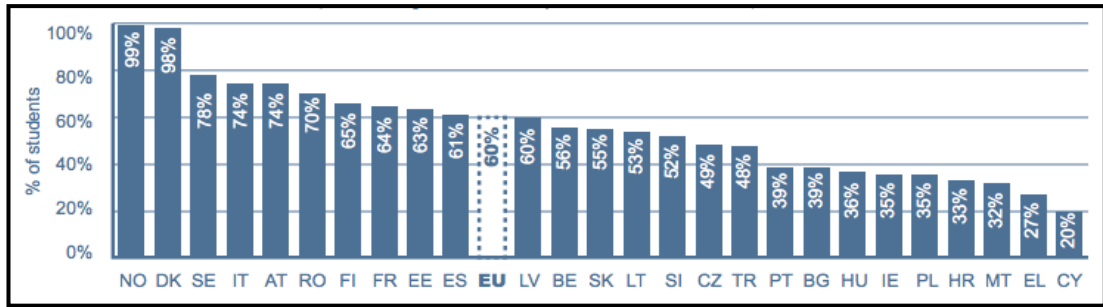


Figure 12. Availability of ICT to students as well as teachers in lessons

This graph in Figure 12 shows ICT availability percentages of the EU countries, Turkey's ratio is above the EU average.

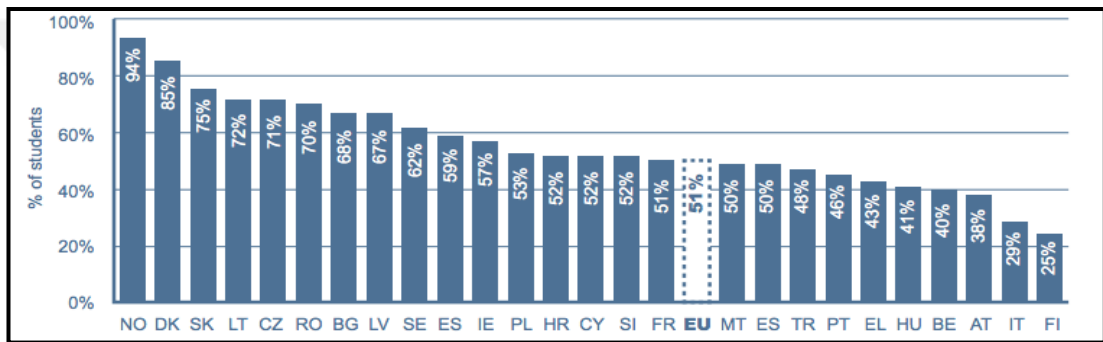


Figure 13. Use of school desktop/laptop for learning purposes at least weekly

Turkey, in the graph in Figure 13 is slightly below the EU average for using a desktop or laptop for learning at least once a week. 48% percent of the students at 11th grade use computers for learning at least once a week.

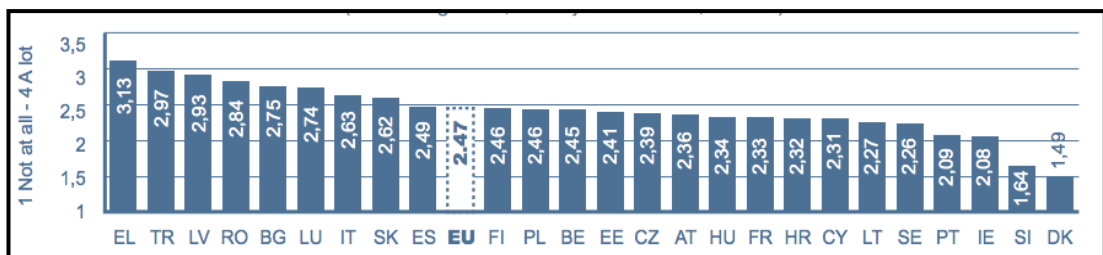


Figure 14. Extent to which insufficient or inoperative equipment inhibits use of ICT for teaching and learning

The graph in Figure 14 indicates that on a 1-4 scale (1-not at all, 4-a lot), there are complaints about technical support and inefficient use of ICT equipment. In Turkey, this scale is above EU average.

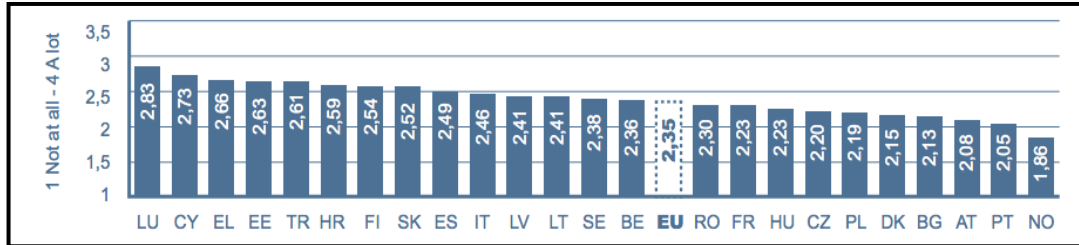


Figure 15. Extent to which pedagogical factors inhibit use of ICT for teaching and learning

According to the graph in Figure 15 on a scale from 1 to 4, 1 being not at all and 4 being a lot, 2,61 points have been directed to lacking necessary pedagogical background to back up ICT use in teaching and learning.

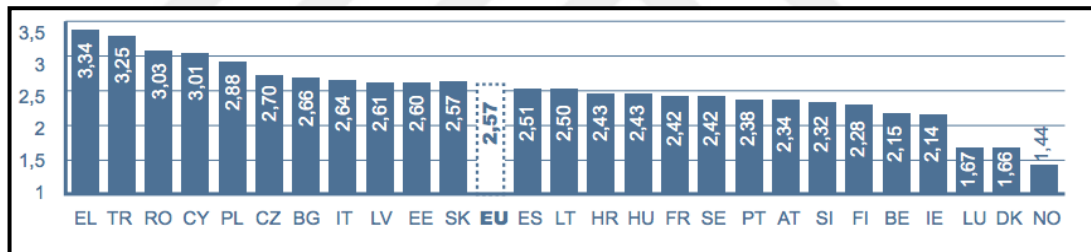


Figure 16. Extent to teachers' perception of equipment inhibitors

The graph in Figure 16 indicates that 3.25 point of ICT non-use at 11th degree students classes is because of not having necessary equipment on a 1 to 3 scale in Turkey.

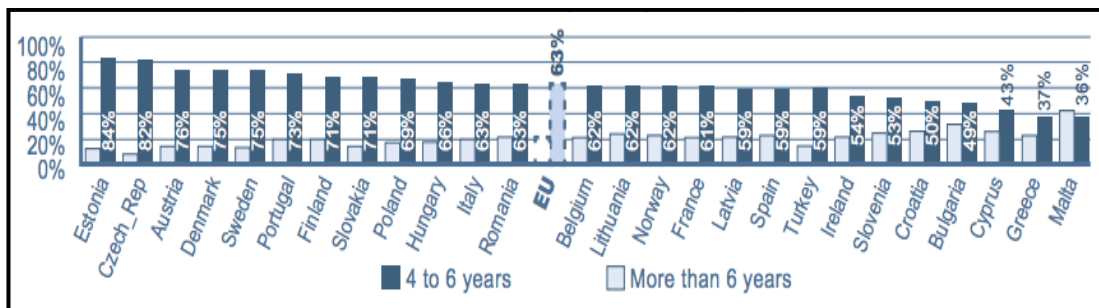


Figure 17. Teachers' experience in using computers/Internet at school, at grade 11 general education

The graph in Figure 17 shows that only 18% of teachers teaching to 11th level have experience with computers and Internet more than 6 years in Turkey.

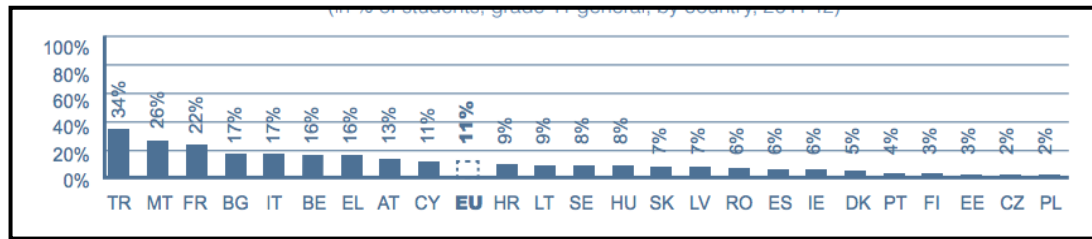


Figure 18. Teachers' reporting having spent no time at all on ICT related professional development activities during the past two years

The graph in Figure 18 is an illustration of 11th grade teachers ICT related professional development activities. 34% of the teachers in Turkey had no opportunity to take any professional development activity in last two years.

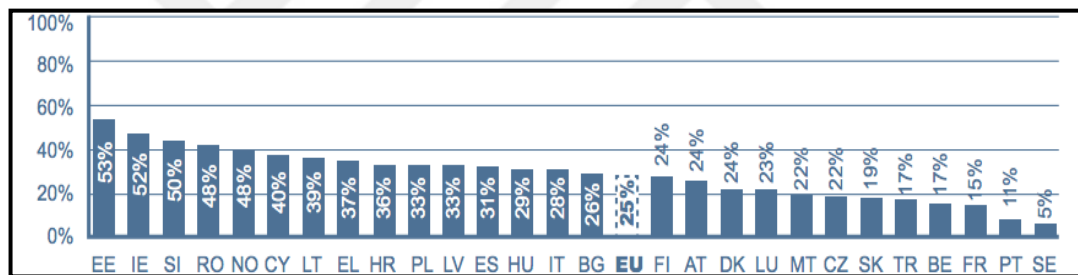


Figure 19. Teachers' participation in subject-specific training on learning applications

According to the graph in Figure 19, in Turkey, 17% percent of the 11th grade teachers had subject specific training on ICT.

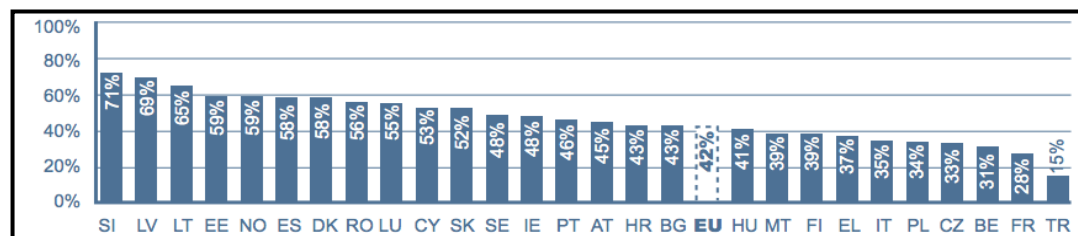


Figure 20. Teachers' participation in courses on the pedagogical use of ICT in teaching and learning

The graph in Figure 20 demonstrates Turkey has the lowest pedagogical use of ICT on 11th degree classes, 15%.

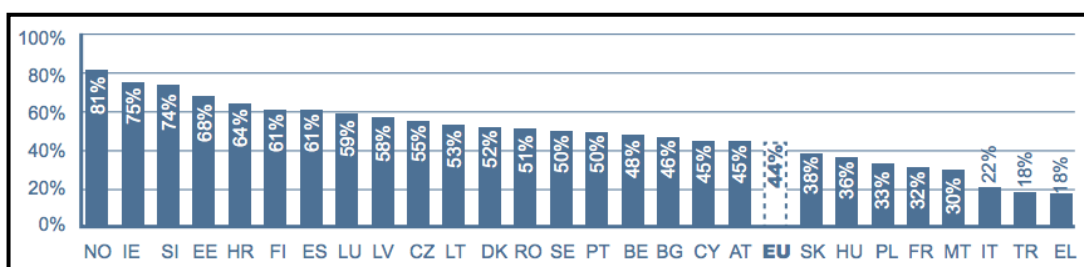


Figure 21. Teachers' participation in ICT training provided by school staff

According to the graph reflected in Figure 21, only 18% of teachers have attended ICT training provided by the school.

2.10 Existing International Literature on ICT Use in English Language Teaching

Sipilä (2013), having observed 292 Finnish teachers' level of ICT competence in language teaching and has asserted that the majority of the teachers were deficient in sufficient knowledge or skills because of the lack of ICT competence to maintain proper learning and the limited number of teachers who advanced in ICT. In a previous study by Sipilä (2011), he had investigated a research to shed light on Finnish teachers' purposes of ICT use and their perceived values to apply ICT tools in teaching. He had proved that ICT use generally was mostly being limitedly applied by administrative reasons, teachers exploitation of ICT in the classroom had steadily correlated their level of expertise, and specifically early age school teachers preferred using ICT in teaching activities with a more positive than secondary education school teachers having the controversy that the secondary education school teachers engaged more actively in use of ICT in their classroom teaching. Another noteworthy result of the study was that pedagogical reasoning in universities had failed to keep track with the technological advancements. Beyond that in a case study Chen, Tan & Lim (2012) had drawn attention to the impact of intrinsic and extrinsic limits determining the teacher's attempts to exploit ICT tools and programs put forward that limited time, stricts curriculums, personal beliefs and attitudes and ICT ergonomics were the main limits preventing an extensive use of ICT.

Duran and Fossum (2010a) had shed light on the fact that ICT integrated classroom teaching, necessitated engagement among three findings: the content expertise, methods and educational technology expertise, and practitioner expertise. Based on this theoretical foundation, Duran and Fossum (2010b) then conducted a second study to check these three findings' correlation and reliability. To this regard, they formed six focus groups. First group involved 4 prospective teaches, second group was made of 4 classroom teachers who were in cooperation with each other from K-12 schools, third group consisted of one university field expert, fourth group was an instructor from ICT department of a faculty, fifth group consisted of an instructor from methods department of a faculty, sixth group was represented by a content faculty member from related school and colleges. Each group was assigned to develop field specific authentic projects in which technology was employed to enhance teaching and learning in specific subjects.

The researchers aimed to define the impact of the use of Native Language and Culture (NLC) approach to professional development in relation to technological expertise and integration of it to education among K-16 educators. They also wanted to find out the impact of specific varieties of professional development activities which were offered to them within the context of NLC to promote and/or affect K-16 educators' professional development with integration in the classroom. The participants tried their best to outline and activate technology-rich lessons, journals that have meaning content and electronic portfolios that can be efficiently and effectively taught. The first observation was that the participants had made use of the computers for 'ordinary purposes'. To use computers for ordinary reasons was generally backed with the motivations of their confidence level and their level of expertise in technology. This was the motivation what prompted their integration capabilities of technology into the teaching and learning processes. This research suggests that NLC model is effective and efficient to create ICT integrated teaching portfolios.

Vallance and Martin (2008) in their work had designed a 12-week blended undergraduate course called ‘Computer applications in Language and Literature’ in Singapore. During the project, the participants actions were being recorded. After they finished with their discussions and actions to create curriculum, a summary of their discussions was published in an online article. At the end of the 12 week of application of the pre-modeled program it had been observed that the pre-service teachers’ pedagogical beliefs had changed through this immersed unique synchronous network collaboration. They also had reached to a greater level of competence which supported their abilities to design courses with more outreaching learning possibilities.

Chen (2008, pp. 1018-1026) had also made a observatory study on 311 EFL teachers in higher education entities in Taiwan and tested their Internet use in their teaching, and the possible factors that fall behind in the use of the Internet. The results showed that the majority of the teachers (80%) employed the Internet use in their teaching. Furthermore, it was proven that seven different factors as expertise, external support, perceived capability, beliefs, attitudes, the constructive thinking, and classroom pedagogy – had correlated to the use of Internet. However, the teacher’s expertise was the most directly affecting factor on the Internet use.

In his study, Ping (2005) tried to define the level of pre-service teachers’ ICT competency and the impact of taking ICT specific courses on changing individual attitudes towards using ICT. He also tried to point out their perspectives and experimental results within their class preparation experience. He stressed out that the capability to teach with ICT was an “idiosyncratic” and “developmental” process placed in multiple individual and social contexts. Since the exploitation of ICT had helped the pre-service teachers prompt up their content expertise, and meaningful inclusive education, a sense of identity, collegiality and leadership potential, for him technology applied experiences had altered their views of teaching and their perceptions. Furthermore, Dexter, Anderson and Becker (1995) explained that in any kind of application new instructional strategy by teachers, they must have discovered new information about it and then compose this to the demands of the curriculum, classroom setting and cohesion, and existing instructional skills. Teachers were in need

of gathering information about how, and why they should have employed ICT use in meaningful ways. Having lacked knowledge about each element could significantly cut off the potential effect that these strong resources might have been imposed on student learning. Ertmer, Conklin, Lewandowski, Osika, Selo and Wignell (2003) aimed to stress out the effects of electronic models on pre-service teachers' perceptions about self efficacy in relation to ICT integration in the classroom. They concluded that the more ideas pre-service teachers have about the ICT, the stronger their belief would be so that they could more successfully be integrating ICT into the classroom.

Gao et al. (2009) focuses prospective teachers' process of learning to teach with ICT throughout their training program in Singapore. This study appears with a suggestion of variation in the prospective teachers' technology literacy, stances, decision-making and related actions in employing ICT for classroom activities. Many of sample teachers seemed to fail to turn their teaching practice into increased technological expertise and adopted a constructivist orientation which was learnt by the coursework. They also tended to apply ICT tools and methods to better off and enrich teacher-centred lecturing periodically during the teaching training. However, three focus samples were able to show student-centred lecturing by their application of ICT tools and methods. They also demonstrated their leadership skills to encourage other prospective teachers to make use of ICT for outright student-centred learning. Additionally, their findings propose that prospective teachers might have been in need of more support, role-models and co-work to generate an empathy over technology based pedagogy from their personal practice so that they can compound their constructivist orientation, student-centred learning process and effective ICT applications.

The study conducted by Sang, Valcke, van Braak, Tondeur and Zhu (2010) in Chinese context claimed that ICT use in China might be divided into two classifications as teacher supportive use and classroom use. Teacher supportive use involved using ICT for classroom practices which can be administered outside of the classroom while using ICT in the classroom enhanced to the quality of learning and teaching process in the classroom. The findings of their study showed that teachers' ICT use in the classroom was directly affected by teachers' competencies in computers

and the supportive use of ICT directly. In another study conducted by China, Li and Walsh (2010) reached a conclusion that ICT was essential for the EFL students despite the fact that teachers were supported with satisfactory technological setting but the use of computers was largely limited to slide show presentations of pictures, sentence and grammar structures. They also agreed that teachers expressed the need for both pedagogical and technical training in order to integrate ICT into their classroom practices.

2.11 Existing National Research on ICT Use in ELT

Özdemir (2013), took the central premise of his doctoral project to improve the pre-service English Language Teachers' ICT skills and to help them develop positive attitudes towards the use of ICT in classroom teaching. With regard to this, an online course was attained. The researcher made use of three tools to collect data from 27 participants as fourth grade pre-service students of English Language Faculty of a university in Turkey. The tools as 'Computer Technologies Survey' and 'ICT Can Do List' were prepared as pre-test and post-test to depict the change in their attitudes towards ICT, computer self-efficacy and computer technology literacy. The last tool was a semi-structured interview that was employed to get some useful information about the perceptions of the participants on the use of ICT in teaching English. The outright results showed that the treatment, giving an online educational technology course to them did not really have an important impact on the attitudes and self-efficacy of the pre-service teachers about applying ICT in the classroom. It had instead created a significant effect on the level of computer literacy of prospective teachers towards computers on an individual level.

Akçaoğlu (2008) had tried to discover the ICT integration approaches and practices of pre-service and in-service English language teachers in his study. His research focused on three aspects of ICT integration in English Language Teaching within the scope of foundation universities in Ankara. His survey involved 120 in-service and 62 pre-service teachers. First he defined the level of their involvement with the computers in their activities, their computer expertise, perceived barriers behind applying ICT and their attitudes towards computers. He did this by exploring three aspects of ICT integration in English Language Teaching. He also examined the

educational value they attained to ICT exploitation in their language teaching practice and their personal ideas of an effective integration. He pointed out that teachers make use of computers at their schools at limited times; the results also had indicated that they had higher levels of instructional computer usage outside the school extra activities. Although these teachers thought that technology would help make their lessons more student centered, they believed applying ICT more as a teacher tool rather than a student tool would help them foster higher thinking skills and better learner autonomy. He concluded that the schools in Turkey were still at the stage of fighting with first order barriers of, even at foundation institutions, indicating that there was lack of a vision towards ICT integration.

Selvi (2015) developed a questionnaire to be applied to 103 participating EFL teachers working in Artvin and its towns. Following the questionnaire, he applied semi constructed interview with 10 participants to examine EFL teachers' use of ICT in their classroom practice. The results indicated that participants regarded ICT as a valuable tool and maintained an interest in developing their ICT capabilities. EFL teachers were mostly found to use ICT mostly in classroom and home activities for drill and practice, and also in explaining new information and doing presentation of student works.

Acıkalın (2009) scrutinized the opinions of pre-service elementary school social studies teachers' about using the Internet in-class activities. Most of the participants were found to be favoring using the Internet in classroom practice of social studies. However participants reported that there were several disadvantages and unfavourable features of using the Internet too. For instance they stated that the sources in the Internet were not trustable, the Internet could impede students from improving their research skills, students seemed to heavily depended on ready to take information and what is more, the Internet had found to be a time-consuming tool when used unconsciously. According to the results, the most noteworthy benefits of the Internet were just visuals and images and priori information.

Tezci (2009) performed a study with 1540 primary school teachers in order to define the effect of teacher capabilities to make use of ICT in classroom teaching. He

reached to the point that the attitudes of the teachers concerning the Internet and computer use were commonly affirmative and the most well-known and widely-applied ICT tool was the Internet, graphics and presentation application as power point, word-processing as MS Word and e-mail tools.

In his study, Uzun (2016) investigates the level of satisfaction or contribution of the pedagogic and technical courses in the English Language Teacher Training Program (ELTTP) at undergraduate level, in Turkey with relation to the information and communication technologies (ICT) expertise of the students. He took a sample of 74 teachers/trainees at their last year in the Faculty of Education at Uludag University and some graduates of the ELTTP from nine different universities in Turkey. A Likert scale questionnaire was applied, by which teacher trainees were to range each course with their ICT contribution. The interviews through which the contribution of technical degree courses were evaluated to detect their ICT capability, and it was questioned that if they were ready to make use of ICT in their classes as teachers.

Oral (1994) conducted a comprehensive survey on 1300 teachers to assess the thoughts of teachers towards the computer-assisted teaching in his doctoral dissertation. The results revealed that more teachers should be trained in terms of computer proficiency and computer-assisted teaching.

In a research study administered by Karakaya (2010) at Middle East Technical University (METU), the attitudes of English language teachers towards computer and their use of technology in language teaching were explored. The results of the study indicated that almost all of teachers had positive opinions for integrating technology in language teaching. Nonetheless, they had hard times in integrating technology into their instruction effectively. It was also found out that the teachers did not use computer technologies as instructional tools. The data obtained showed that the respondents did not have professional training on integrating technology into education. Thus, he proposed that in order to make prospective teachers competent in ICT skills in language instruction, preservice English language teacher education programs should provide technology related courses for their students. It is also

recommended that teachers be provided with in-service training on technology integration in order to realize effective use of technology in education.

Results showed that none of the courses were promoting the ICT knowledge and skills of the teachers and trainees at a sufficient level, coining that the pedagogical knowledge given to the participants was not going in line with the technical knowledge which actually should have eased the application of pedagogical skills with the technological developments. The studies proved that the inadequate technical expertise and weaker technical skills would cause avoidance of technology use and development higher education. Also how much should teachers know about technology, not only English teachers, teachers of all subjects should be determined. Then it can be decided better what should be included in a technology integration program in a teacher training institutions.

Chapter 3

Methodology

This chapter aims to explain the methodology of the study by describing the philosophical paradigm, research design of the study, setting and participants, procedures, limitations and lastly, delimitations. The procedures include data collection instrument, data collection procedures, reliability and validity, data analysis.

The research questions investigated in this study are as follows:

1. What is the level of ICT competence of EFL instructors in Turkey?
 - a. Is there any significant difference between the male and female EFL instructors in terms of general ICT competency levels?
 - b. Is there any significant difference between EFL instructors in foundation and state universities in terms of their general ICT competency levels?
 - c. Is there any significant difference between EFL instructors with regard to teaching experience in terms of general ICT competency levels?
 - d. Is there any significant difference between EFL instructors having professional development and having no professional development in terms of general ICT competency levels?

2. What are the desired ICT training/professional development needs of EFL instructors?
 - a. Is there any significant difference between the male and female EFL instructors in terms of their professional development needs?
 - b. Is there any significant difference between EFL instructors in foundation and state universities in terms of professional development needs?
 - c. Is there any significant difference between EFL instructors with regard to teaching experience in terms of professional development needs?
 - d. Is there any significant difference between EFL instructors having professional development and having no professional development in terms of professional development needs?

3. What are the preferred modes of professional development of EFL instructors?

3.1 Philosophical Paradigm

A research paradigm is defined by Kuhn (1962) as the group of views and opinions agreed by researchers about how problems can be solved. According to him, there are two primary features of a paradigm. The first is that paradigm should be unique enough to appeal to persistent group away conflicting modes of scientific action while the second is it should be enough to open-ended to abandon all kinds of problems for the scientists who practise to solve (Kuhn, 1962). Qualitative and quantitative research methods are two types of research paradigms commonly used by researchers.

Quantitative research which is carried out in current study aims to solve the problem by quantifying data that can be transformed into statistics using numerable data. It is mostly used to quantify attitudes, opinions, behaviors, and other variables of a population by studying a sample of that population and generalizes results from a larger sample population. It uses measurable data to explicate facts and reveal patterns in research. The intent of present study is to enquire the ICT competency levels of the EFL instructors and to determine their professional development needs in the use of technology in the classroom. By this way, appropriate recommendations can be made to improve the lapses detected. For the purposes of this study, quantitative research approaches were used in the data collection and analysis processes demonstrating several statistical procedures employed.

3.2 Research Design

The current study was conducted through quantitative research methods based on the survey of ICT competencies and professional development needs of teachers. This non-experimental research is a survey study which provides a quantitative or numeric description of opinions of a population by studying a sample of that population (Creswell, 2014). Depending on the sample results, the researcher generalizes or makes claims about the population. In this context, EFL instructors' general ICT competency levels and their professional development needs were analysed on the basis of the variables of gender, place of work (state or foundation university), teaching experience and their past professional development experiences

in ICT and their preferred modes of professional development were determined by interpreting the mean scores of eight items in Section D.

Briefly, to understand the use of the ICT by EFL instructors for the aim of searching for PD needs and preferred PD modes of EFL instructors, the questionnaire was used and the results of the questionnaire were analyzed quantitatively.

3.3 Setting and Participants

The population of the present study consists of non-native in-service EFL instructors who worked at English preparatory schools of state and foundation universities in Turkey in 2017-2018 academic semester. The the number of people in the homogeneous sample population was 193 EFL instructors working at different foundation and state universities in İstanbul, Ankara, İzmir, Kocaeli and Yalova in Turkey. They taught English as a foreign language to different levels of learners and their teaching experience ranged from 1 to more than 12 years.

As the one of the aims of this study was to determine ICT needs of Turkish EFL instructors, 200 questionnaires were randomly distributed and sent online to potential respondents in the population. 131 of them were handed out while the rest was sent online because of the time constraints and impracticality of collection. Out of 200, 62 were completed online and 131 were returned to the researcher by hand.

The first section of the questionnaire requires demographic information such as gender, place of work, teaching experience and asks participants to respond whether they have received any professional development (training) in the use of computers in the past three years. Demographic features of participants and frequencies of related data were calculated and presented in Table 3.

With respect to gender of the participants, 37% of the participants were male and 63% of the participants were female. The majority of the participants (58,5%) were teaching at foundation universities, 41,5% of them were working at state universities. The teaching experience of the participants is presented in five categories which are 1-3, 4-6, 7-9, 10-12 and more than 12 years. 30,5% of the participants had 1-3 years of

teaching experience, 22,5% of the participants had 4-6 years of teaching experience, 18,5% of the participants had 7-9 years of teaching experience, 12% of the participants had 10-12 years of teaching experience and 16,5% of them had more than 12 years of teaching experience. As for their past professional development training in ICT, 38% of the participants stated they have received professional development training in ICT while 62% asserted they haven't any.

The setting and sample were appropriate for this study because participants represent a cross-section of EFL instructors working at state and foundation universities in the country where there are 112 state and 71 foundation universities. These universities, located in different cities (İstanbul, Ankara, İzmir, Kocaeli and Yalova) in Turkey, were chosen because they implement ICT across many programs and they have been offering postgraduate programs for EFL instructors on full-time and part-time basis.

Table 3
Demographic Features of the Participants

	Variables	<i>N</i>	%
Gender	Female	122	63
	Male	71	37
Place of Work	State University	123	64
	Foundation University	36	64
Teaching Experience	1-3 years	60	31
	4-6 years	43	22
	7-9 years	37	19
	10-12 years	22	11
	More than 12 years	31	16
Instructors having PD in ICT	Yes	69	36
Instructors having no PD in ICT	No	124	65

3.3.1 Sampling. Sampling design of the target population was decided as convenience sampling because participants were chosen regarding their willingness to be part of this study and their availability to be studied (Fraenkel & Wallen, 2003). A group of participants in the study were described, descriptive statistics on these

samples were computed and to make inferences from the sample to the population they were compared with the larger population. This sample provided useful information for answering research questions.

3.4 Procedures

In this part of the study data collection instrument, data collection procedures, data analysis procedures, reliability and validity of the study were presented in detail respectively.

3.4.1 Data collection instrument. Questionnaires are the common type of quantitative data collection tools and mostly consist of a set of questions to collect data from participants. Using questionnaire is very efficient and quick way of gathering information from a large amount of individuals. The aim of this study is to determine the professional development needs of EFL instructors and their preferred mode of professional development. In order to obtain related quantitative data a questionnaire was used.

The modified questionnaire of the present study was developed by Aduwa-Ogiegbaen (2009) who investigated Nigerian in-service teachers' self-assessment in core technology competences and their professional development needs in ICT. To test the adequacy of the questionnaire, it was revised and Likert-type scale from 1–4 with ratings aligning with evaluations were adapted as 5-point Likert-type scale for the current study. All of the items in the questionnaire were adopted. Also the researcher who designed the questionnaire was informed about using the questionnaire in the research study via e-mail.

The questionnaire of the current study has four sections: A, B, C, and D. Section B had 25 items, Section C had 27 items, and Section D had 9 items, there are 61 items in total. Section A of the instrument consisted of demographic information of the participants. The questions include gender, place of work, teaching experience and whether they have received any training in the use of computers in the past three years. In Section B, respondents were asked to indicate their level of professional skills they have in ICT areas in a modified Likert-type scale from 1–5 with ratings aligning with

evaluations of very high, high, medium, low, and none (1-none; 5-very high). Section C required participants to identify the quantity of training they need in 27 ICT skill areas, also on a five-item modified Likert-type scale with ratings aligned with evaluations of extensive, lots, some, minimal and none (1-none; 5-extensive). In Section D of the questionnaire, the participants were asked to indicate their preferred modes of professional development and rate their preferred professional development modes according to whether they are very high, high, medium, low, or none in their scale of preference.

In sum, there were four parts of the questionnaire focusing on Turkish EFL instructors' competence in using ICT tools, their professional development needs/requirements and their preferred mode of professional development in areas where they are deficient. The questionnaire is presented in Appendix A.

3.4.2 Data collection procedures. Data collection procedures took place during the spring academic semester of 2017-2018. Before starting to collect data, the researcher who designed the questionnaire was informed about its implementation for this study by e-mail. Moreover, Heads of Foreign Languages Departments where EFL instructors work were contacted via e-mail one by one and permission for the application of the questionnaires was obtained. The majority of them (7) were visited after the approval of the related Head or Director and written permission letters were signed by them. Then, the 131 questionnaires were distributed by hand and asked participants to fill out the questionnaires on the day they handled. The data collection also involves creating an Internet survey and administering it online. The rest of the questionnaires were sent to only 4 of the universities online as instructors' having busy schedule during the semester made face to face meeting impossible. For the mailed survey links, participants were informed about steps for administering the survey in the e-mail content they received. Before starting to fill in the survey, they were asked to accept that they willingly consent to participate in this research.

The quantitative data was collected from 6 state universities and 5 foundation universities. Although the majority of the instructors were visited and contacted in various times in a month of time, 80% of the intended participants ($n=193$) filled in

the questionnaires. One intended participant refused to fill in the questionnaire without expressing any reason.

In order to increase the validity and reliability of the study, all the participants who took part in the study were informed that they would be a part of the study and they signed written consent form for questionnaires. Teachers were requested to fill in the questionnaire and return it to the researcher. Of the 200 questionnaires distributed by hand and sent online, 193 questionnaires (96,5%) were filled and returned voluntarily.

3.4.3 Data analysis procedures. Walliman (2006) mentions that quantitative data is analyzed through numbers and mathematical operations. As the quantitative data for this study includes questionnaire, the data collected through questionnaires were analysed using Statistical Package for the Social Sciences (SPSS) program. The version of SPSS 22 for Windows was used to measure general descriptive statistics such as means, standard deviations and percentages. 193 participants returned the survey out of 200 sent and distributed surveys but it was realized that some of the individuals filled in questionnaires but skipped some parts and didn't rated anything in some sections of the questionnaire. Therefore, these were omitted from the data set. After that, missing data pattern was checked and it was found that the data were missing at random so incomplete observations were replaced with new data using an expectation-maximization (EM) algorithm. For the Section B in the survey 193 participants' rates, for Section C 182 participants' rates and for Section D 146 participants' rates could be evaluated because of the missing data. Before examining group differences, the skewness and kurtosis statistics were checked for normality and Levene's test was examined for equality of the variances. The statistics of interest were given in the results and it was concluded that the data met the normality assumption for some groups as the standard error was between -1.96 and +1.96 in skewness and kurtosis values. In Levene statistics, significant p value shows heterogeneity of variances and it should be more than 0.05 to meet the homogeneity of variances. When the assumptions were satisfied, one-way analysis of variance (ANOVA) was used for comparing more than two groups. For the groups in which there is violation of

normality and equal variance assumption, the non-parametric tests (Mann-Whitney U and Kruskal-Wallis test) were performed to compare group differences. The .05 level of significance is adopted for the whole data analysis. For Section D, the mean scores of the eight items were found and shown by column chart. The results of the study are discussed in chapter 4.

3.4.4 Reliability and validity. The questionnaire of the present study is adapted from the questionnaire in the study of Aduwa-Ogiegbaen (2009). Survey of ICT Competencies and Professional Development Needs of Teachers was also found to be reliable and valid by Aduwa-Ogiegbaen (2009) in his study. To test the reliability of the instrument, Aduwa-Ogiegbaen (2009) piloted the questionnaire to 30 in-service teachers who were not used for the final study. To test the reliability of the instrument, Chronbach alpha value was used and coefficient was found .81, which proves its internal consistency indicating a satisfactory level of reliability. After adaption of the Likert-type scale in the questionnaire for present study, a quantitative analysis of the investigation was implemented to statistically test the reliability of the research instrument. Therefore, each section of the questionnaire was tested with Cronbach alpha coefficient, and for Section B .95, for Section C .98 and for Section D .85 were obtained as reliability coefficients, which showed a strong reliability of the data collection tool.

The sample was large enough for SPSS software to determine significant statistical differences between independent variables, which provides internally and externally valid as well as reliable quantitative data sets. That's why, it is possible to generalize the findings of the present study to the populations having the same characteristics as described in the methodology part. However, methodological triangulation technique could be used to increase the validity and credibility of the present study.

3.5 Limitations

There are several limitations in the present study. As the target population of the study is the in-service EFL instructors working at foundation and state universities in

Turkey and the sample size of the study are limited to 193 EFL instructors, the findings may not be generalizable to the other EFL settings since the instructors' knowledge, past experiences and working places might affect their professional and personal development needs in ICT. Hence, the situation might be quite different in different parts of Turkey. Also, the scope of this study focused on English language preparatory programs at universities in Turkey. Future research should expand to K-12 educational settings, adult EFL/English for Specific/Special Purposes (ESP) programs at language institutions or similar settings in different cities in Turkey. Despite these limitations, the present study is important for the use of ICT in EFL classes because it provides basis for further research.

3.6 Delimitations

This study also has a few delimitations. First, EFL instructors working at English preparatory schools at foundation and state universities were purposefully chosen since there are not many studies in the literature administered to English preparatory school instructors. These participants are selected by the investigator since they are accessible and their characteristics are appropriate for the aim of the study. Universities in different cities were chosen regarding their availabilities.

In addition to this, as a data collection instrument, self-administered survey was the preferred type of data collection procedure for current study regarding its advantages such as the economy of the design and the fast returns in data collection. Also it has the advantage of diagnosing dimensions of a large population from a small group of individuals (Babbie, 1990; Fowler, 1988 as cited in Creswell, 2014).

Chapter 4

Findings

4.1 Introduction

The goal of the current study was to find out Turkish in-service EFL instructors' professional development needs in ICT. This chapter presents the analyzed data collected from the questionnaires of ICT competencies and professional development needs of teachers which were implemented to 193 EFL instructors in Turkey. The data collected from the data collection tool were shown by means of number of statistical analyses in order to explore, describe and interpret results from the sample. Therefore, to arrive intended comparative analyses several sets of statistical analyses were performed using SPSS version 22 of a computer programme: Mean and Standard Deviation, ANOVA, Mann-Whitney U and Kruskal-Wallis test.

Firstly, missing data pattern was checked and it was found that the data were missing at random so incomplete observations were replaced with new data using EM algorithm. Then, it was observed if certain assumptions were realized to determine whether the data should be analyzed via parametric or non-parametric tests. One of these assumptions is that the data were to disperse in a normal distribution. For this, kurtosis and skewness values were calculated. Second assumption is equality of variances and Levene's test was examined for this. If the standard error in kurtosis and skewness values was between -1.96 and +1.96, it was regarded as normal distribution. For Levene statistics, it was interpreted as equal variance when significant p value is above 0.05. If the data didn't disperse in a normal distribution, non-parametric tests (Mann-Whitney U and Kruskal-Wallis test) were employed to compare two conditions since different groups took part in each condition. If there was no violation of normality and equal variance assumption, one of parametric tests (ANOVA) was conducted to test the relationship between variables and respondents' background information.

The participants' responses to the questionnaire items were analyzed regarding research questions of the study. The results include the findings about whether there is any significant difference between participants' background information and their responses to the survey which is composed of the sub categories as 'Level of ICT Competencies' and 'Desired ICT Training/Professional Development Needs'. For Section D, the mean scores of the eight items were found and shown by column chart.

4.2 Research Question 1: What is the Level of ICT Competence of EFL Instructors in Turkey?

The second section (Section B) of the instrument was used in this study to get the response to this research question as the first section (Section A) consists of demographic information of the participants. In order to measure EFL instructors' ICT competencies, 25 items were posed. These 25 items were collapsed into seven major areas to get a clear indication as follows:

- i) Word processing skills (items 1, 2, 3, 4, 8, and 9)
- ii) Spreadsheet skills (items 11, 14, 18)
- iii) Database skills (items 5, 6, 7, 10, 12)
- iv) Electronic presentation skills (items 16, 17, and 19)
- v) Web/Internet navigation skills (items 20, 21, 22, 23, and 24)
- vi) Graphic tools skills (items 13, 15)
- vii) Integration skills (item 25)

The mean scores and standard deviation values for ICT competency areas are given in Table 4.

Table 4

The Mean and Standard Deviation Values for ICT Competency Areas

	Word	Spreadsheet	Database	Electronic	Web/Internet	Graphic	
	Processing Skills	Skills	Skills	Presentation	Navigation	Tools	Integration
	Skills	Skills	Skills	Skills	Skills	Skills	Skills
<i>N</i>	193	193	193	193	193	193	193
Mean	1.5538	1.7974	1.8275	1.7513	1.4272	1.9462	1.8290
Std. Deviation	.72122	.80012	.73748	.81172	.58424	.92784	.89953

In the questionnaire used in the study, the Likert-type scale ranges from 1 to 5 (indicating that 1= very low competency, 2= below average competency, 3=average competency, 4=above average competency and 5=very high competency). The researcher used the mean values for seven major skills to analyze Research Question 1. In Table 4 the mean values for seven major skills range from 1.43 to 1.95. The table shows that EFL instructors assess themselves as having low skills in the seven major skills areas above.

Under the first research question, there are three following sub-questions:

- a. Is there any significant difference between the male and female EFL instructors in terms of general ICT competency levels?
- b. Is there any significant difference between EFL instructors in foundation and state universities in terms of their general ICT competency levels?
- c. Is there any significant difference between EFL instructors with regard to teaching experience in terms of general ICT competency levels?
- d. Is there any significant difference between EFL instructors having professional development and having no professional development in terms of general ICT competency levels?

4.2.1 Is there any significant difference between the male and female EFL instructors in terms of general ICT competency levels? In this question, test differences between two conditions in which different participants have been used are asked to be analyzed. First of all, it was analyzed whether normality and equal variance

assumptions were realized to determine whether the data should be analyzed via parametric or non-parametric tests. To see if the data dispersed in a normal way, skewness and kurtosis values were calculated and Levene's test was examined to check homogeneity of the variances. Table 5 demonstrates skewness and kurtosis values and Levene's statistics.

Table 5

Skewness and Kurtosis Values for Checking Normality and Test of Homogeneity of Variances

Gender		Statistic	Std. Error
Female	Skewness	1.247	.219
	Kurtosis	1.461	.435
Male	Skewness	.621	.285
	Kurtosis	-.672	.563

Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
6.349	1	191	.013

As seen in Table 5 data did not turn up normally distributed. Hence, Mann-Whitney U test which is one of the non-parametric tests for comparing two independent samples was used to answer the question. Table 6 indicates Mann-Whitney U test results.

Table 6

Mann-Whitney U Test Results

Gender	N	Mean Rank	Sum of Ranks	U Statistic	p
Female	122	90.11	10993.50	3490.50	.025
Male	71	108.84	7727.50		

With the female EFL instructors having a mean rank of 90.11 and the male EFL instructors having a mean rank of 108.84, the Mann-Whitney U test of difference shows that there is a significant difference between the male and female EFL instructors in their general ICT proficiencies ($p=.02 < 0.05$). The male EFL instructors assess themselves more competent than female counterparts.

4.2.2 Is there any significant difference between EFL instructors in foundation and state universities in terms of their general ICT competency levels?

To check the normality of the data distribution and equality of the variances, skewness and kurtosis values were calculated and Levene's test was examined. Table 7 reflects skewness and kurtosis values and Levene's statistics.

Table 7

Skewness and Kurtosis Values for Checking Normality and Test of Homogeneity of Variances

Work Place		Statistic	Std. Error	
State University	Skewness	.792	.218	
	Kurtosis	-.040	.433	
Foundation University	Skewness	1.475	.287	
	Kurtosis	1.644	.566	
Test of Homogeneity of Variances				
Levene Statistic		df1	df2	Sig.
1.699		1	191	.194

Because of the of the violation of normality and equal variance assumption, Mann-Whitney U test was applied to investigate this research question. Table 8 shows Mann-Whitney U test results.

Table 8

Mann-Whitney U Test Results

Work Place	N	Mean Rank	Sum of Ranks	U Statistic	p
State University	123	102.30	12583.00	3653.00	.080
Foundation University	70	87.69	6138.00		

With the instructors in state universities having a mean rank of 102.30 and the instructors in foundation universities having a mean rank of 87.69, the Mann-Whitney U test of difference shows that there is not any significant difference between instructors in state and foundation universities in terms of their general ICT proficiencies ($p=.08 > 0.05$). In other words, EFL instructors in both state and foundation universities do not differ in terms of ICT competency levels.

4.2.3 Is there any significant difference between EFL instructors with regard to teaching experience in terms of general ICT competency levels? To learn whether the data meet the normality and variance equality assumption, the skewness and kurtosis statistics were checked for normality and Levene's test was examined for equality of the variances. Skewness and kurtosis values and Levene's statistics were given in Table 9.

Table 9

Skewness and Kurtosis Values for Checking Normality and Test of Homogeneity of Variances

Teaching Experience		Statistic	Std. Error
1-3 years	Skewness	.689	.309
	Kurtosis	-.405	.608
4-6 years	Skewness	1.227	.361
	Kurtosis	1.326	.709
7-9 years	Skewness	.959	.388
	Kurtosis	.291	.759
10-12 years	Skewness	1.333	.491
	Kurtosis	.481	.953
More than 12 years	Skewness	.753	.421
	Kurtosis	-.157	.821
Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
2.705	4	188	.032

Skewness and kurtosis values and Levene statistics show that the data violated normality and equal variance assumption. To answer this question, another non-parametric test called Kruskal-Wallis test which was used to test for differences between several independent groups when the data did not meet the normality and equal variance assumption was performed. Table 10 shows Kruskal-Wallis test results.

Table 10

Kruskal-Wallis Test Results

Teaching Experience	<i>N</i>	Mean Rank	<i>df</i>	Chi-Square	<i>p</i>
1-3 years	60	95.82	4	2.322	.677
4-6 years	43	92.56			
7-9 years	37	92.15			
10-12 years	22	98.52			
More than 12 years	31	110.16			

With the instructors' groups (1-3 years, 4-6 years, 7-9 years, 10-12 years and more than 12 years experience) having a mean rank of 95.82, 92.56, 92.15, 98.52 and 110.16 respectively, the Kruskal-Wallis test of difference shows that there is not a significant difference between instructor groups having different teaching experience years in terms of their general ICT proficiencies ($\chi^2 = 2.322$, $p = .677 > 0.05$). In other words, EFL instructors having different experience do not differ in terms of their ICT competency levels.

4.2.4 Is there any significant difference between EFL instructors having professional development and having no professional development in terms of general ICT competency levels? To understand if normality and equal variance assumptions were satisfied, the skewness and kurtosis statistics were checked for normality and Levene's test was applied for equality of variances. Skewness and kurtosis values and homogeneity variances were indicated in Table 11.

Table 11

Skewness and Kurtosis Values for Checking Normality and Test of Homogeneity of Variances

PD in ICT		Statistic	Std. Error
Having personal development/training in the use of computers	Skewness	1.661	.289
	Kurtosis	1.803	.570
Having no personal development/training in the use of computers	Skewness	.547	.217
	Kurtosis	-.579	.431

Test of Homogeneity of Variances				
Levene Statistic		df1	df2	Sig.
.563		1	191	.454

As reflected in Table 11, the test distribution is not normal. That's why, Mann-Whitney U test was conducted to answer the question. Table 12 shows Mann-Whitney U test results.

Table 12

Mann-Whitney U Test Results

PD in ICT	N	Mean Rank	Sum of Ranks	U Statistic	p
Having No Professional Development	124	80.73	5570.50	3155.50	.003
Having Personal Development	69	106.05	13150.50		

With the EFL instructors (having professional development) having a mean rank of 80.73 and EFL instructors (having no professional development) having a mean rank of 106.05, the Mann-Whitney U test shows that there is a significant difference between the EFL instructors having and not having professional development in their general ICT proficiencies ($p=.003 < 0.05$). The EFL instructors having professional development assess themselves more competent in ICT competency than English language instructors having no professional development.

4.3 Research Question 2: What Are the Desired ICT Training/Professional Development Needs of EFL Instructors?

To determine EFL instructors' training/development needs, Section C of the questionnaire consisting of 27 items was used. Mean and standard deviation was used in order to answer this research question. The questionnaire consisting of Likert-scale options have 5 points (1= none, 2= minimal, 3= some, 4=lots, 5=extensive) with a mean of 3,0. The means and the standard deviations for the items in the questionnaire are given in the Table 13.

Table 13
The Mean and Standard Deviation for the Items

Items	N	Mean	Std. Deviation
1. Create a document on a word processor	182	3.5714	2.67724
2. Operate computers and use basic software for word processing	182	3.4547	1.50403
3. Create effective computer-based presentations	182	3.3077	1.45422
4. Access information on CD-ROM	182	3.5934	1.54832
5. Search the Internet for resources	182	3.4451	1.68344
6. Integrate ICT tools into student learning activities in my teaching subject	182	3.1152	1.31009
7. Evaluate educational software	182	2.9945	1.20082
8. Advanced input/output devices-scanner, digital camera	182	3.1154	1.35959
9. ICT for school management grading, attendance, student records.	182	3.1203	1.46450
10. Electronic research using Internet and other online resources to enhance my research	182	3.2527	1.50941
11. Create multimedia documents to support instruction	182	3.1429	1.38717
12. Accessing and sending e-mail	182	3.5604	1.70283
13. PowerPoint presentation	182	3.3681	1.61884
14. Using computers for grading and producing assignments for my students	182	3.2527	1.44584
15. Evaluate and use computers and related ICT tools for instruction	182	3.1067	1.30326
16. Desktop publishing	182	3.1461	1.25967
17. Drill/practice programs/tutorials	182	3.1209	1.31574

Table 13 (cont.d)

Items	N	Mean	Std. Deviation
18. Use of spreadsheet for several instructional applications	182	3.1462	1.30274
19. Use of word processor for my written professional works	182	3.2637	1.44769
20. Use of graphics in my word processing or presentations	182	3.2161	1.30437
21. Set up my computer and peripheral devices, load software, print and use operating system tools	182	3.1489	1.36446
22. To organize my files, locate files quickly, and back up my files to floppy disk or other storage devices	182	3.2802	1.48046
23. To manipulate/analyze/interpret data and perform calculations	182	3.1498	1.26357
24. To create models or simulations	182	2.9176	1.22984
25. To use metasearch tools and subject directories (Google, Internet, public library, Yahoo) to locate materials in my subject area	182	3.2659	1.51171
26. Use presentation devices (video data projector, scan converter/monitor, document camera) for classroom presentation	182	3.1868	1.47099
27. To demonstrate ethical usage of ICT materials(e.g., software)	182	3.1012	1.26684

The table shows that items in the questionnaire have a mean of 3.0 and above, and this shows that EFL instructors need “some” and “lots” training/personal development in these areas. To be more precise, Table 13 shows that EFL instructors need “some” training /professional development in 5 out of the 27 ICT areas and need “lots” training /professional development 22 out of the 27 ICT areas.

Under the second research question, there are three following sub-questions:

- a. Is there any significant difference between the male and female EFL instructors in terms of their professional development needs?
- b. Is there any significant difference between EFL instructors in foundation and state universities in terms of professional development needs?
- c. Is there any significant difference between EFL instructors with regard to teaching experience in terms of professional development needs?

d. Is there any significant difference between EFL instructors having professional development and having no professional development in terms of professional development needs?

4.3.1 Is there any significant difference between the male and female EFL instructors in terms of their professional development needs? Before examining group differences, to see if the data is dispersed in a normal distribution way, the skewness and kurtosis statistics were checked Levene's test was examined again. Skewness and kurtosis values and homogeneity of variances were presented in Table 14.

Table 14

Skewness and Kurtosis Values for Checking Normality and Test of Homogeneity of Variances

Gender		Statistic	Std. Error	
Female	Skewness	-.289	.227	
	Kurtosis	-1.124	.451	
Male	Skewness	-.300	.289	
	Kurtosis	-1.011	.570	
Test of Homogeneity of Variances				
Levene Statistic		df1	df2	Sig.
.033		1	180	.856

The Table 14 indicates that the data didn't turn up normally distributed. Therefore, the data was analyzed with one of the non-parametric tests. To answer this question, Mann-Whitney U test for two independent samples was conducted. Table 15 shows Mann-Whitney U test results.

Table 15

Mann-Whitney U Test Results

Gender	N	Mean Rank	Sum of Ranks	U Statistic	p
Female	113	91.41	10329.00	3888.00	.976
Male	69	91.65	6324.00		

With the female EFL instructors having a mean rank of 91.41 and the male EFL instructors having a mean rank of 91.65, the Mann-Whitney U test shows that there is no significant difference between the male and female EFL instructors in their professional development needs ($p=.976 > 0.05$). In other words, the male EFL instructors are identical to female counterparts in terms of professional development.

4.3.2 Is there any significant difference between EFL instructors in foundation and state universities in terms of professional development needs? Mann-Whitney U test was applied to investigate this research question as there is a violation of normality and equal variance assumption according to skewness and kurtosis values and homogeneity variances illustrated in Table 16. Mann-Whitney U test results are given in Table 17.

Table 16

Skewness and Kurtosis Values for Checking Normality and Test of Homogeneity of Variances

Work Place		Statistic	Std. Error
State University	Skewness	-.265	.221
	Kurtosis	-1.124	.438
Foundation University	Skewness	-.301	.304
	Kurtosis	-1.103	.599

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.487	1	180	.486

Table 17

Mann-Whitney U Test Results

Work Place	N	Mean Rank	Sum of Ranks	U Statistic	p
State University	120	93.56	11227.50	3472.50	.462
Foundation University	62	87.51	5425.50		

With the instructors in state university having a mean rank of 93.56 and the instructors in foundation university having a mean rank of 87.51, the Mann-Whitney U test shows that there is no significant difference between instructors in state and foundation universities in terms of their professional development needs ($p=.462 > 0.05$). In other words, EFL Instructors in both state and foundation universities do not differ in terms of professional development needs.

4.3.3 Is there any significant difference between EFL instructors with regard to teaching experience in terms of professional development needs? Firstly, as implemented in previous sub-questions of the research questions to decide whether the data should be analyzed with parametric and non-parametric tests, skewness and kurtosis values and homogeneity variances were computed and they were indicated in Table 18.

Table 18

Skewness and Kurtosis Values for Checking Normality and Test of Homogeneity of Variances

Teaching Experience		Statistic	Std. Error
1-3 years	Skewness	-.169	.314
	Kurtosis	-1.230	.618
4-6 years	Skewness	-.613	.374
	Kurtosis	-.716	.733
7-9 years	Skewness	-.099	.393
	Kurtosis	-1.327	.768
10-12 years	Skewness	-.515	.524
	Kurtosis	-.244	1.014
More than 12 years	Skewness	-.320	.434
	Kurtosis	-1.054	.845

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.152	4	177	.334

In respect to the values shown in Table 18, it was found that the data distribution is normal. Therefore, the data was analyzed with one of the parametric tests. One-way

ANOVA test which is used to analyze situations in which we want to compare more than two conditions was performed to answer the question. One-way ANOVA results are given in Table 19.

Table 19

One-way ANOVA Test Results

Teaching Experience	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	907.916	4	226.979	.213	.931
Within Groups	188834.035	177	1066.859		
Total	189741.950	181			

According to the values shown in Table 19, statistically no significant difference was found between instructor groups having different experience years in terms of their professional development needs ($F=.213, p=.931 > 0.05$). In other words, English language instructor groups having different experience do not differ in terms of professional development needs.

4.3.4 Is there any significant difference between EFL instructors having professional development and having no professional development in terms of professional development needs? When Table 20 is observed, it can be clearly seen that the data did not disperse normally. Therefore, to answer this question, the data analyzed with Mann-Whitney U test. Table 21 shows Mann-Whitney U test results.

Table 20

Skewness and Kurtosis Values for Checking Normality and Test of Homogeneity of Variances

PD in ICT		Statistic	Std. Error
Having personal development/training in the use of computers	Skewness	-.480	.297
	Kurtosis	-.959	.586
Having no personal development/training in the use of computers	Skewness	-.214	.224
	Kurtosis	-1.127	.444

Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
.366	1	180	.546

Table 21

Mann-Whitney U Test Results

PD in ICT	N	Mean Rank	Sum of Ranks	U Statistic	p
Having Professional Development	65	99.08	6440.50	3309.50	.148
Having No Professional Development	117	87.29	10212.50		

With the EFL instructors (having professional development) having a mean rank of 99.08 and EFL instructors (having no professional development) having a mean rank of 87.29, the Mann-Whitney U test shows that there is not significant difference between the EFL instructors having and not having professional development in their professional development needs ($p=,003 < 0,05$). The EFL instructors having professional development and not having professional development are identical in terms of professional development needs.

4.4 Research Question 3: What are The Preferred Modes of Professional Development of EFL Instructors?

To determine preferred professional development mode, Section D of the questionnaire consisting of 8 items was used. The mean scores were used in order to answer this research question. The questionnaire consisting of Likert-scale options have 5 points (1= none, 2= minimal, 3= some, 4=lots, 5=extensive) with a mean of 3.0. The means of the rates to the eight items in Section D range from 2.26 to 2.68 and were shown by column chart in Figure 22.

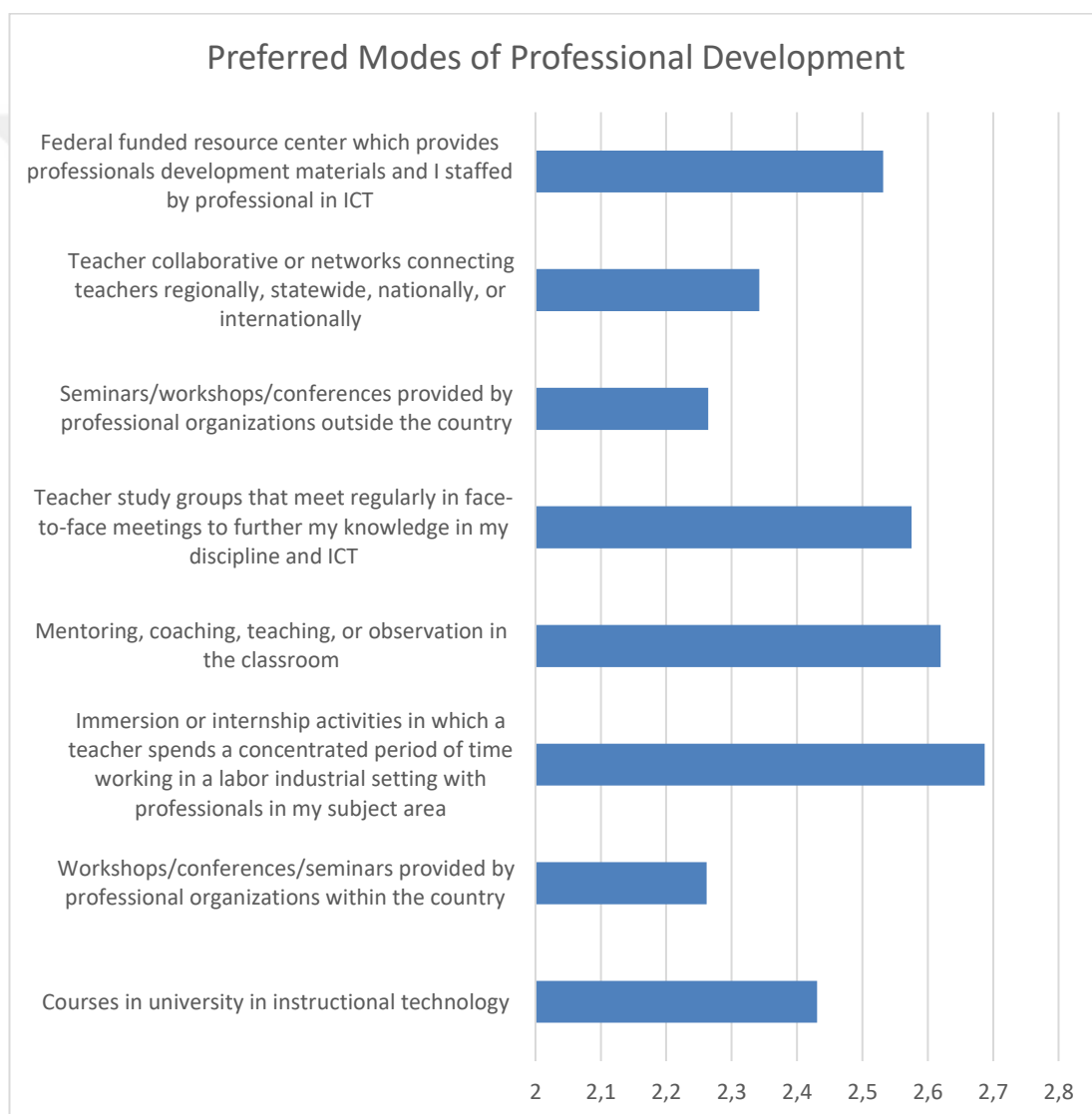


Figure 22. The preferred modes of PD of EFL instructors

It is clear from the graphic that the most preferred mode of professional development is “immersion or internship activities in which a teacher spends a concentrated period of time working in a lab or industrial setting with professionals in my subject area”; while the least preferred mode of professional development is “workshops/conferences/seminars provided by professional organizations within the country.” The second and the third most preferred modes of professional development are “receiving mentoring, coaching, lead teaching, or observation in the classroom” and “teacher study groups that meet regularly in face-to-face meetings to further my knowledge in my discipline and ICT”, respectively.



Chapter 5

Discussion and Conclusions

5.1 Discussion of Findings for Research Questions

The primary purpose of this study was to uncover Turkish in-service EFL instructors' professional development needs in ICT by identifying their ICT competency levels and find out the ways they prefer to take training to improve the gaps obtained. To fulfill this purpose, data were gathered by means of a questionnaire in this study. This chapter discusses the results with regard to each research question in the light of relevant literature.

5.1.1 Discussion of the findings of RQ 1: What is the level of ICT competence of EFL teachers in Turkey? The purpose of the first research question was to determine whether EFL instructors are competent in using the word processing facilities, spreadsheet facilities, database facilities, web/Internet facilities, electronic presentation skills, graphic tools, and integration skills. The mean and standard values for ICT competency areas were found and the results showed that EFL instructors assessed themselves as having low skills in the seven major skills areas. One of the reasons why they assessed themselves as having low skills in ICT areas might be failure of many educational innovations as studies around the world indicated (UNESCO, 2002A). Because of too little effort and too few sources available for professional development of teachers, teachers feel unprepared to integrate technology into the classroom. As a result, they have struggled with integration of technology into the classroom. Second reason of this finding may be bias of teachers who are used to teaching English by using traditional methods. Hence, this attitude might be a barrier against using technology-based approaches. Also, in Efaw (2005)'s study which provides an overview of a three-phase program aiming to help novice instructors in incorporating technology into the classroom, it was claimed that little has been done to prepare these reluctant teachers for the computers found in the classrooms. The similar finding was echoed in the study conducted by Aduwa-Ogiegbaen (2009) who investigated Nigerian inservice teachers' self-assessment in core technology

competences since he found that the majority of the inservice teachers have a less than satisfactory level of ICT competency and few of the inservice teachers have high and medium skills in integrating ICT into the curriculum.

This question was also analyzed regarding the gender of the instructors, their working places, their teaching experience and their having PD in ICT or not. With regard to Mann-Whitney U and Kruskal Wallis test which were conducted to find if there was a statistically significant difference between EFL instructors' demographic information and their ICT competency results, the followings were found;

1. The male EFL instructors assessed themselves more competent than female counterparts.
2. EFL instructors in both state and foundation universities do not differ in terms of ICT competency levels.
3. EFL instructors having different teaching experience do not differ in terms of their ICT competency levels.
4. The EFL instructors having personal development assess themselves more competent in ICT competency than English language instructors having no personal development.

In respect to the results of Mann-Whitney U test which was performed to test if there was a significant difference between the male and female EFL instructors in general ICT competency levels, it is obvious that there is a significant difference between the male and female EFL instructors in their general ICT proficiencies as the male EFL instructors assess themselves more competent than female counterparts. This situation was interpreted as male instructors are more inclined to use technology-based teaching methods than the female ones. Since males generally tend to study at technology related departments and are interested in following innovations compared to females in Turkey, this finding is not surprising. Moreover, according to the results of this study, it was found that there was no difference in ICT proficiency levels between EFL instructors in both state and foundation universities. However, Solmaz (2011) mentioned in his study that private school teachers' salaries are generally in line with their performance and experience, and because they are not

the case in public schools, private school teachers have used methods to search for ways to improve English and to support teaching online with material they find online.

Besides, the results of Mann-Whitney U test which was employed to determine if there was a significant difference between EFL instructors having personal development and having no personal development in general ICT competency levels demonstrated that there was a significant difference in favor of the EFL instructors having personal development in ICT before. In the light of this finding, it was concluded that having PD in the use of computers in the past was proved to have a positive influence on their professional skills in ICT areas. This finding was also in line with the research administered by Chen (2008) who found out the teacher's expertise and experience in ICT training was a positive factor that affects ICT usage directly. The reason of the significant difference was the importance of the development of appropriate pedagogical practices in ICTs as Information Development Program (2005), in which teacher inexperience and skill deficiencies are seen as important factors inhibiting the effectiveness of ICT use in education indicated.

5.1.2 Discussion of the findings of RQ 2: What are the desired ICT training/professional development needs of EFL instructors? The purpose of the second research question was to determine the EFL instructors' training/professional development needs in ICT. Mean and standard deviation were used in order to answer this research question and the results revealed that EFL instructors need "some" training/professional development in 5 out of the 27 ICT areas and need "lots" training/professional development 22 out of the 27 ICT areas. This situation was interpreted as Turkish EFL instructors require lots of professional development in key ICT areas. The reasons of this conclusion might be unavailable or insufficient ICT, poor or nonexistent Internet connectivity, lack of technical support, little effort or too few resources available for professional development of teachers (Aduwa-Ogiegbaen, 2009). In spite of the heavy investment in ICT facilities and professional development for teachers, Silva (2008)' study shows that since the majority of teachers have not yet grasped new pedagogical practices, many teachers do not have confidence yet in exploiting ICT to support new approaches in teaching.

The findings of the inservice teachers's desire to engage in professional development in key technological skills corroborated what is claimed by Mulbolland (2006), who reported that teachers wanted to acquire more skills and experience with a variety of software programmes. This result was also in accordance with the study employed by Sang, Valcke, van Braak, Tondeur and Zhu (2010) who agreed that teachers required pedagogical and technical training in ICT to integrate ICT into their classroom practices since the results showed the use of ICT is limited to slide presentations and pictures in the classroom environment. In a similar vein, Oral (1994) suggested that teachers should be trained regarding their computer proficiency.

This question was also investigated regarding their gender, working places, teaching experience and their having PD in ICT or not. The findings of Mann-Whitney U test and one-way ANOVA which was employed to test the relationship between variables and respondents' background information were as follows;

- a) The male EFL instructors are identical to female counterparts in terms of professional development needs.
- b) EFL instructors in both state and foundation universities do not differ in terms of professional development needs.
- c) English language instructor groups having different experience do not differ in terms of professional development needs.
- d) The EFL instructors having personal development and not having personal development are identical in terms of professional development needs.

As a result, no statistically significant difference was found between participants' background information and their desired ICT training/professional development needs. This result is consistent with the results of the study carried out by Solmaz (2011). He indicated being inexperienced or qualified teacher did not affect their Internet usage to improve themselves on the personal and professional level. Different from these findings, results of the study carried out by Saklavcı (2010) showed that the longer the teaching experience the teachers had, the less frequently they used Internet. Unlike these findings, Akçaoğlu (2008) found that teaching experience was a significant factor affecting technology integration.

5.1.3 Discussion of the findings of RQ 3: What are the preferred modes of professional development of EFL instructors? The aim of the third research question was to find what EFL instructors' preferred modes of professional development are. For this research question, eight items were posed to the participants about their preferred mode(s) of professional development. The means for the eight items range from 2.26 to 2.68 and were shown by column chart.

The graphics in the chart demonstrated that the most preferred mode of professional development is “immersion or internship activities in which a teacher spends a concentrated period of time working in a lab or industrial setting with professionals in my subject area”; while the least preferred mode of professional development is “workshops/conferences/seminars provided by professional organizations within the country.” The second and the third most preferred modes of professional development are “receiving mentoring, coaching, lead teaching, or observation in the classroom” and “teacher study groups that meet regularly in face-to-face meetings to further my knowledge in my discipline and ICT”, respectively. These results clearly show that EFL instructors mostly prefer gain practical skills rather than theoretical knowledge thorough pedagogical practices focusing on subject mastery, management skills, and use of various teaching tools, including ICTs. As understood from the findings, the development of appropriate pedagogical practices is more important than technical mastery of ICTs for them.

The literature related to this research question also supports this result by putting forward the idea that teachers' roles change, the factors to be considered by community leaders and public policy makers have changed and EFL instructors are increasingly in need of in-service training support programs for the pedagogical use of ICT in language teaching (Kalogiannakis, 2010).

According to the report prepared by the OECD in 2014, teacher education and related professional development should be considered as lifelong tasks and emphasized that they should be coordinated and consistently structured by high authorities. In the report, it was stated that basic teacher education is not sufficient to

enable faculty to acquire all the necessary competencies to acquire through their professional lives. Hence, in-service professional development has become a crucial factor for ICT integration for language learning or teaching, and it has been emphasized that teachers should be structured in such a way that they constantly gain expertise.

The result is also consistent with the results of the study administered by Kirschner and Davis (2003). According to them, because Internet has provided access to a large set of information that has not been used before, teachers have emphasized that they should integrate with the applications to benefit as much as possible from technology. As noted by researchers, the emergence of many options for internet use with the rise of Web 2.0 has also provided a variety of methods for teachers to use for “language education”. This means that using EFL teachers’ new technology-based teaching methods will provide a great advantage both in terms of professional development and the learning environment. Similarly, Karakaya (2010) found that the teachers did not use computer technologies as instructional tools in his study which showed that the respondents did not have professional training on integrating technology into education. He recommended teachers should be provided with in-service training on technology integration in order to realize effective use of technology in education.

5.2 Pedagogical Implications

In this study, Turkish EFL instructors’ professional development needs in ICT areas were identified, their technological skills and competencies were determined and their preferred modes of PD/training in ICT were investigated through self-assessed survey.

The survey responses revealed some pedagogical implications for EFL instructors and authorities in the field. Firstly, EFL instructors assessed themselves as being deficient in seven key ICT competency areas consisting of word processing skills, spreadsheet skills, database skills, electronic presentation skills, web/Internet navigation skills, graphic tools skills and integration skills. The statistical data showed that the male EFL instructors assessed themselves more competent than female

counterparts. Also, the analysis of the first research question illustrated that EFL instructors having professional development assessed themselves more competent in ICT competency than English language lectures having no PD. It can be understood from these findings that the difference in ICT competency levels arose between the instructors having PD and other instructors having no PD in ICT because of their CALL knowledge. To solve this problem, pedagogical training on how to use ICT for communicative purposes may be offered and good examples of effective integration of technology to language learning and teaching can be shown.

Secondly, the analysis of the second research question showed that EFL instructors needed “some” training /professional development in 5 out of the 27 ICT areas and needed “lots” of training /professional development in 22 out of the 27 ICT areas. We can understand from that result most of the EFL instructors are in need of training in order to use ICT more effectively although they generally know how to use the computer and can benefit from it in various ways. Hence, ICT training courses can be organized for the teachers of English. Thus, they can be informed about the efficient use of ICT in the class. Even if a school is equipped with technological devices such as overhead projectors, computers, labs, and smart boards, teachers should be trained for the integration of ICT to use them effectively during the lessons. Besides, there may be a lesson specifically dedicated to technology in the curriculum of undergraduate ELT programs so that pre-service teachers should be familiar with the computer technologies.

Third implication of the study is the top professional development modes preferred by EFL instructors. The data gathered from the research demonstrated that immersion or internship activities in which a teacher spends a concentrated period of time working in a lab or industrial setting with professionals in his/her subject area is the most preferred mode among EFL instructors in Turkey. That’s to say, EFL instructors need to be equipped with teachers’ ICT skills and appropriate training on when and how to use ICT tools appropriately in classroom situations. To realize it, professional development should be an ongoing effort and the focus of professional training in ICT should be on how to apply and integrate appropriate technologies into the curriculum.

5.3 Conclusions

The present study contributes to the literature by investigating Turkish in-service EFL instructors' professional development requirements in ICT by means of assessing their competence in using ICT tools and determining their preferred modes of professional development in areas where they are deficient. This study compiled data from 193 EFL instructors from English preparatory programs at state and foundation universities in Turkey and found that, generally speaking, EFL instructors in Turkey are not competent in professional skills in key ICT areas. This may be the reason why they need "lots" training /professional development in 22 out of the 27 ICT areas. At the same time, the results of the analyses showed that the male EFL instructors assessed themselves more competent than female counterparts and the EFL instructors having personal development assessed themselves more competent in ICT competency than English language lectures having no personal development.

The findings also seem to indicate that immersion or internship activities in which a teacher spends a concentrated period of time working in a lab or industrial setting with professionals in his/her subject area was the most preferred mode of professional development of instructors. Regular attendance at these activities can provide improved teacher skills in the classroom, which in turn can promote enhanced student performance (Aduwa-Ogiegbaen, 2009).

Overall, there is no doubt that the skills and experience of the teacher are crucial elements in the effectiveness of technology integration into the curriculum. Baskin and Williams (2006) claimed teachers can begin to find ways to integrate technology into their curriculum and demonstrate its use to others when they improve ICT skills.

The Turkish in-service EFL instructors leave no doubt that they are eager and ready to acquire ICT skills. When willing teachers are provided the opportunity to learn new technology skills and techniques, their competence in ICT will certainly will increase. Hence, teachers should be provided with the necessary incentives to acquire knowledge and skills in ICT. Such incentives may be sponsorship of teachers to training abroad or higher degree programmes in university. Scholarships should also be

granted to teacher to acquire technology skills which can allow change in pedagogical practices.

5.4 Recommendations for Further Research

The present study has several recommendations for further research. Firstly, this study investigated professional development needs in ICT of EFL instructors working at foundation and state universities in Turkey, similar studies may be conducted with primary, secondary and high school EFL teachers or teachers of other branches in other countries. In that sense, it would be helpful to make comparisons between ICT requirements of EFL teachers not only in Turkey but also in different cultures.

In addition, this study can be replicated in higher education institutes with pre-service teachers in order to investigate the ICT use of pre-service teachers. As they are candidate teachers, their expectations from the ELT departments of the universities and Ministry of National Education are needed. Thus, it can be possible to design a course where pre-service teachers are exposed to more practice with the new technological ideas and given the chance to apply their teaching with technology in their practicum schools with students.

Additionally, as well as a questionnaire, interview and observations can be administered in order to increase the validity and credibility of the study. Hence, for further research by using a semi structured interview, their beliefs and attitudes of EFL writing teachers toward the use of computer technologies in Turkey may be explored. Since teachers are the direct facilitators of ICTs in their classes, their attitudes, skills and knowledge in ICT have great importance.

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APPENDICES

A. SURVEY OF ICT COMPETENCIES AND PROFESSIONAL DEVELOPMENT NEEDS OF TEACHERS

You, _____, have been asked to be in this research study, which has been explained to you by Özdenur Ardıç, a MA student from Bahçeşehir University. This study is being conducted by Özdenur Ardıç in the Department of English Language Education at Bahçeşehir University.

This research is being conducted to fulfill the degree requirements for Master of Arts at Bahçeşehir University, under the supervision of Assist Prof. Hatime ÇİFTÇİ. The purpose of this study is to learn more about Turkish in-service EFL teachers' professional development needs in information and communication technology (ICT).

Description of Procedures

You will be asked to fill out a questionnaire regarding Turkish in-service EFL teachers' professional development needs in ICT. This will take approximately ten minutes to complete the questionnaire. You do not have to answer all the questions. You will have the opportunity to see the questionnaire before signing this consent form.

Risks and Discomforts

There are no known or expected risks for participating in this study, except for the mild frustration associated with answering the questions. You may decide at any time to quit the study.

Benefits

You may not receive any direct benefit from this study. The knowledge gained from this study may eventually benefit others.

Financial Considerations

No payments will be made for participating in this study.

Confidentiality

Any information about you that is obtained as a result of your participating in this

research will be kept as confidential as legally possible. In any publications that result from this research, neither your name nor any information from which you might be identified will be published without your consent.

Voluntary Participation

Participating in this study is voluntary. You are free to withdraw your consent to participate in this study at any time.

Refusal to participate or withdrawal will not affect [your class standing, grades, etc. as appropriate] and will involve no penalty to you.

You have been given the opportunity to ask questions about the research, and you have received answers concerning areas you did not understand.

I willingly consent to participate in this research.

_____ Signature of Subject

_____ Printed Name

Date _____ Time _____

_____ Signature of Investigator

_____ Printed Name

Date _____ Time _____

Contact Person

Please feel free to ask questions regarding this study. You may contact the researcher at ozdenurardic@gmail.com if you have any questions or concerns about the research.

This questionnaire is designed to assess your competence in using information and communication technology (ICT) tools and to determine your professional development needs/requirements. It is also designed to determine your preferred mode of professional development in areas where you are deficient. It is not a test, but information provided by you will be treated with utmost confidentiality. Thank you for sparing time to fill out this questionnaire.

SECTION A

Sex: Male Female

Place of Work: State University
Foundation Univer

Teaching Experience: 1-3 years
4-6 years
7-9 years
10-12 years
More than 12 years

Have you received any professional development (training) in the use of computers in the past three years?

Yes
No

SECTION B

What level of professional skill do you have in the following ICT areas?

Circle the correct numeric response to each statement	Level of Skill				
I can:	Scale: 1=None 2=Low 3=Medium 4=High 5=Very High				
1. create a document on a word processor.	1	2	3	4	5
2. use word processor tools such as font, spell check, grammar check to edit my work.	1	2	3	4	5
3. plan, create, and edit documents with a word processor.	1	2	3	4	5
4. correctly use the four types of tab settings, margin settings, and page alignments.	1	2	3	4	5
5. print selected information from database.	1	2	3	4	5
6. create a database.	1	2	3	4	5
7. search database for specific information.	1	2	3	4	5
8. copy and delete files.	1	2	3	4	5
9. move, copy, and organize files in folder.	1	2	3	4	5
10. assess information in CD-ROM.	1	2	3	4	5
11. create a document on a word processor.	1	2	3	4	5
12. use word processor tools such as font, spell check, grammar check to edit my work.	1	2	3	4	5
13. plan, create, and edit documents with a word processor.	1	2	3	4	5
14. correctly use the four types of tab settings, margin settings, and page alignments.	1	2	3	4	5
15. print selected information from database.	1	2	3	4	5
16. create a database.	1	2	3	4	5
17. search database for specific information.	1	2	3	4	5
18. copy and delete files.	1	2	3	4	5
19. move, copy, and organize files in folder.	1	2	3	4	5
20. assess information in CD-ROM.	1	2	3	4	5
21. use computer to maintain students' records.	1	2	3	4	5
22. perform basic software application such as creating, modifying, printing, and saving files.	1	2	3	4	5
23. use computers to create visual displays of data/information (e.g. graphs, charts, drawings).	1	2	3	4	5
24. enter data in spreadsheets and create data displays to explain information.	1	2	3	4	5
25. use scanner to import graphics, photos, and /or text.	1	2	3	4	5

SECTION C

Identify the quantity of training you feel you need in each of the following areas.

Circle the correct numeric response to each statement					
Training/Professional Development Needs in ICT	Scale: 1=None 2=Minimal 3=Some 4=Lots 5=Extensive				
1.Create a document on a word processor	1	2	3	4	5
2.Operate computers and use basic software for word processing	1	2	3	4	5
3.Create effective computer-based presentations	1	2	3	4	5
4.Access information on CD-ROM	1	2	3	4	5
5.Search the Internet for resources	1	2	3	4	5
6.Integrate ICT tools into student learning activities in my teaching subject	1	2	3	4	5
7.Evaluate educational software	1	2	3	4	5
8.Advanced input/output devices-scanner, digital camera	1	2	3	4	5
9.ICT for school management grading, attendance, student records.	1	2	3	4	5
10.Electronic research using Internet and other online resources to enhance my research	1	2	3	4	5
11.Create multimedia documents to support instruction	1	2	3	4	5
12.Accessing and sending e-mail	1	2	3	4	5
13.PowerPoint presentation	1	2	3	4	5
14.Using computers for grading and producing assignments for my students	1	2	3	4	5
15.Evaluate and use computers and related ICT tools for instruction	1	2	3	4	5
16.Desktop publishing	1	2	3	4	5
17.Drill/practice programs/tutorials	1	2	3	4	5
18.Use of spreadsheet for several instructional applications	1	2	3	4	5
19.Use of word processor for my written professional works (memos, tests, worksheets, and home communication)	1	2	3	4	5
20.Use of graphics in my word processing or presentations	1	2	3	4	5
21.Set up my computer and peripheral devices, load software, print and use operating system tools	1	2	3	4	5
22.To organize my files, locate files quickly, and back up my files to floppy disk or other storage devices	1	2	3	4	5
23.To manipulate/analyze/interpret data and perform calculations	1	2	3	4	5
24.To create models or simulations	1	2	3	4	5
25.To use metasearch tools and subject directories (Google, Internet, public library, Yahoo) to locate materials in my subject area	1	2	3	4	5
26. Use presentation devices (video data projector, scan converter/monitor, document camera) for classroom presentation	1	2	3	4	5
27. To demonstrate ethical usage of ICT materials (e.g., software)	1	2	3	4	5

SECTION D

What is (are) your preferred mode(s) of professional development? Rate them as to whether they are very high, high, medium, low or none in your scale of preference.

Circle the correct numeric response to each statement					
Preferred Professional Development Mode	Scale: 1=None 2=Low 3=Medium 4=High 5=Very High				
1. Courses in university in instructional technology	1	2	3	4	5
2. Workshops/conferences/seminars provided by professional organizations within the country	1	2	3	4	5
3. Immersion or internship activities in which a teacher spends a concentrated period of time working in a labor industrial setting with professionals in my subject area	1	2	3	4	5
4. Receiving mentoring, coaching, lead teaching, or observation in the classroom	1	2	3	4	5
5. Teacher study groups that meet regularly in face-to-face meetings to further my knowledge in my discipline and ICT	1	2	3	4	5
6. Seminars/workshops/conferences provided by professional organizations outside the country	1	2	3	4	5
7. Teacher collaborative or networks connecting teachers regionally, statewide, nationally, or internationally	1	2	3	4	5
8. Federal funded resource center which provides professionals development materials and I staffed by professional in ICT	1	2	3	4	5

B. CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Ardiç, Özdenur

Nationality: Turkish (T.C.)

Date and Place of Birth: 20 May 1993, Balıkesir

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EDUCATION

Degree	Institution	Year of Graduation
MA	Bahçeşehir University	2018
BA	Dokuz Eylül University	2015
High School	Karşıyaka Anatolian High School	2011

WORK EXPERIENCE

Year	Place	Enrollment
2015-2016	Turkish Naval Academy	Research Assistant
2016-2017	Turkish Naval Training and Education Command	Course Coordinator Officer
2017-...	Turkish Naval Academy	English Language Instructor

FOREIGN LANGUAGES

English (Advanced), German (Intermediate), French (Elementary), Danish (Elementary), Chinese (Intermediate)

CERTIFICATES

DAS Akademie (German Course: B2 Level) İzmir/TURKEY

PUBLICATIONS

Akyüz, A., Tanış, A., Khalil, E., Ardıç, Ö., & Mede, E. (2017). Effects of videos on students' knowledge of the target language culture, *Inonu University Journal of the Faculty of Education*, 18(3), 162-174.

HOBBIES

Travelling, Music, Movies, Zumba Fitness