

**ABANT IZZET BAYSAL UNIVERSITY
INSTITUTE OF EDUCATION SCIENCES
DEPARTMENT OF ENGLISH LANGUAGE TEACHING**

**IN-SERVICE EFL TEACHERS' SELF-EFFICACY BELIEFS FOR
TECHNOLOGY INTEGRATION: INSIGHTS FROM FATİH
PROJECT**

M.A. THESIS

**By
Pınar YENİ PALABIYIK**

**Thesis Supervisor
Assoc. Prof. Dr. Ayşegül Amanda YEŞİLBURSA**

JUNE-2013

EĞİTİM BİLİMLERİ ENSTİTÜSÜ MÜDÜRLÜĞÜ'NE,

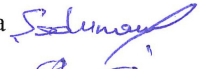
Pınar YENİ PALABIYIK'a ait "In-service EFL Teachers' Self-Efficacy Beliefs for Technology Integration: Insights From Fatih Project" adlı çalışma, jürimiz tarafından Yabancı Diller Eğitimi Anabilim Dalında YÜKSEK LİSANS TEZİ olarak kabul edilmiştir.(04.06.2013)

Akademik Unvan ve Adı Soyadı

Üye (Tez Danışmanı) : Doç. Dr.Ayşegül Amanda YEŞİLBURSA

İmza 

Üye : Doç. Dr. Şaduman KAPUSUZUOĞLU

İmza 

Üye : Yrd.Doç.Dr. Ayşe Selmin SÖYLEMEZ

İmza 

Eğitim Bilimleri Enstitüsünün Onayı

Prof. Dr. Soner DURMUŞ
Enstitü Müdürü

ABSTRACT

IN-SERVICE EFL TEACHERS' SELF-EFFICACY BELIEFS FOR TECHNOLOGY INTEGRATION: INSIGHTS FROM FATİH PROJECT

Yeni Palabıyık, Pınar

M.A., Program of English Language Teaching

Supervisor: Assoc. Prof. Dr. Ayşegül Amanda YEŞİLBURSA

June 2013, xvi + 130 Pages

The present study aimed to explore the self-efficacy beliefs of in-service English as a foreign language (EFL) teachers for technology integration. This study has also examined teachers' perceived English language proficiency, the factors influencing the integration of technology and the difference between actual practices for technology integration and perceived self-efficacy for technology integration.

This study employed an explanatory mixed method design, and the quantitative and qualitative data were collected in two phases. 114 in-service English language teachers working in the Fatih project pilot study high schools of Sakarya participated in the quantitative phase of the study. The quantitative survey data were gathered through a scale designed to measure self-efficacy for technology integration. In the qualitative phase, structured interviews were conducted with 12 volunteer teachers of English, and then classroom observations of 3 teachers' classes were implemented via semi structured observation guide.

The findings of the study revealed that the participants reported high levels of perceived self-efficacy beliefs for technology integration, and their perceived level of English proficiency was also high. Concerning demographic variables, one-way ANOVA indicated significant differences for gender and computer use in self-efficacy for technology integration. In addition, there was a strong and positive correlation

between English language proficiency and self-efficacy for technology integration. With respect to interview results, external/environmental and personal factors explored affecting teachers' technology integration practices. The last finding of the study indicated a mismatch between perceived self-efficacy beliefs for technology integration and actual classroom practices of in-service English language teachers. Several crucial implications for the implementation of Fatih project were proposed.

Keywords: Self-efficacy Beliefs, Teacher Self-efficacy, Technology Integration, Fatih Project

ÖZ

HİZMET İÇİ İNGİLİZCE ÖĞRETMENLERİNİN TEKNOLOJİ ENTEGRASYONU İLE İLGİLİ ÖZ YETERLİLİK İNANISLARI: FATİH PROJESİNDEN ALINTILAR

Yeni Palabıyık, Pınar

Yüksek Lisans Tezi, İngilizce Öğretmenliği A.B.D.

Tez Danışmanı: Doç. Dr. Ayşegül Amanda YEŞİLBURSA

Haziran 2013, xvi + 130 Sayfa

Bu çalışma hizmet içi İngilizce öğretmenlerinin teknolojiye uyum sağlamayla ilgili öz-yeterlilik inanışlarını araştırmayı amaçlamıştır. Bu çalışma ayrıca öğretmenlerin algısal İngilizce yeterliliğini, teknolojiye uyum sağlamayı etkileyen faktörleri ve teknolojiye uyum sağlamayla ilgili gerçek uygulamalarla algısal öz yeterlilik arasındaki farkı incelemiştir.

Bu çalışma açıklayıcı karma yöntem modelini kullanmıştır, bu sebeple veriler iki aşamada toplanmıştır. Çalışmanın nicel aşamasına Sakarya ili Fatih projesi pilot okullarında çalışan 114 lise İngilizce öğretmeni katılmıştır. Anket verileri teknolojiye uyum sağlama öz yeterlilik ölçeği ile toplanmıştır. Nitel aşamada ise 12 gönüllü İngilizce öğretmeni ile yapılandırılmış görüşmeler düzenlenmiş ve ardından yarı yapılandırılmış gözlem kılavuzu ile 3 öğretmenin sınıfında ders gözlemi uygulaması yapılmıştır.

Araştırma bulguları katılımcıların teknolojiye uyum sağlamayla ilgili algısal öz yeterlilik inanışlarının yüksek seviyede olduğunu ve algısal İngilizce yeterliliklerinin de yüksek olduğunu göstermiştir. Demografik değişkenlerle ilgili olarak ise, teknolojiye uyum sağlama öz yeterliliği açısından tek yönlü ANOVA cinsiyet ve bilgisayar kullanımıyla ilgili belirgin farklar ortaya koymuştur. İlâveten İngilizce yeterliliği ve

teknolojiye uyum sağlama öz yeterliliği arasında güçlü ve olumlu bir ilişki bulunmuştur. Görüşme sonuçlarıyla ilgili olarak ise öğretmenlerin teknolojiye uyum sağlama uygulamalarını etkileyen dış/çevresel ve kişisel faktörler keşfedildi. Çalışmanın son bulgusu hizmet içi İngilizce öğretmenlerinin teknolojiye uyum sağlama algısal öz yeterliliği ile sınıf içi gerçek uygulamaları arasında bir uyumsuzluk olduğunu göstermiştir. Fatih projesinin uygulamasıyla ilgili pek çok önemli olası sonuçlar ileri sürülmüştür.

Anahtar Kelimeler: Öz-yeterlilik İnanışları, Öğretmen Öz-yeterliliği, Teknolojiye Uyum Sağlama, Fatih Projesi

To my lovely father, Mehmet....

&

To my beloved husband, Mustafa....

ACKNOWLEDGEMENTS

I am heartily thankful to my supervisor, Assoc. Prof. Dr. Ayşegül Amanda YEŞİLBURSA for her guidance and support from the beginning to the end of this research. She was very generous and patient in answering my endless questions, identifying and correcting any gaps. Attending her graduate level courses and working with her during my thesis research was a pleasure for me.

I would like to thank Assoc. Prof. Dr. Şaduman KAPUSUZUOĞLU and Assist. Prof. Dr. Ayşe Selmin SÖYLEMEZ for their contribution to this study and the motivating discussions during the thesis defense. I would like to extend my sincere thanks to Assist. Prof. Dr. Derya BOZDOĞAN for her support from the very beginning of this program.

My deepest thanks to my dear husband Mustafa PALABIYIK for his sacrifice, love and care. I owe many thanks to him for encouraging and supporting me in all the assignments of my master studies with patience.

I want to thank my family who encouraged me along the way throughout this journey and believed in me. I'm grateful to my father Mehmet YENİ for holding my hand through my life. I also thank to my mother Sabiye YENİ. Words cannot adequately express my thanks for my sister Ezgi YENİ and brother Recep YENİ. You are the most wonderful brothers a person can have.

Finally, I would also like to thank all the high school teachers participated in this study. I want to extent my gratitude to my school administration and my colleagues at Cumhuriyet High School in Sakarya. This thesis would not have been completed if I had not had the encouraging support from them. I owe much to my principal Mehmet TOPALOĞLU and I also owe special thanks to my vise-principal Nedim TAŞÇI.

TABLE OF CONTENTS

ABSTRACT.....	iii
ÖZ.....	v
DEDICATION.....	vii
ACKNOWLEDGEMENTS.....	viii
TABLE OF CONTENTS.....	ix
LIST OF TABLES.....	xiv
LIST OF FIGURES.....	xv
LIST OF ABBREVIATIONS.....	xvi

CHAPTER I: INTRODUCTION

1. INTRODUCTION.....	1
1.1. Background of the Study.....	1
1.2. Statement of the Problem.....	4
1.3. Research Questions.....	5
1.4. Significance of the Study.....	6
1.5. Definition of the Terms.....	7

CHAPTER II: LITERATURE REVIEW

2. INTRODUCTION.....	8
2.1. Social Cognitive Theory.....	8
2.1.1. Self-efficacy beliefs.....	11
2.1.2. Perceived self-efficacy beliefs.....	12
2.2. Teacher Efficacy.....	15
2.2.1. The construct of teacher efficacy.....	17
2.2.2. Studies on teacher efficacy.....	19
2.2.3. Scales to measure teacher efficacy.....	20
2.3. Technology Integration.....	22
2.3.1. Teacher knowledge to integrate technology.....	22

2.3.2. Teacher efficacy for technology integration.....	24
2.3.3. Barriers for technology integration.....	25
2.4. Professional Development Practices.....	27
2.5. Research on Teacher Efficacy for Technology Integration.....	30
2.5.1. Studies on EFL context.....	30
2.5.2. Studies in Turkey.....	33
2.6. Fatih Project.....	35
2.6.1. Research on the implementation of Fatih project.....	38
2.6.2. Multidimensional perspectives on Fatih project.....	41

CHAPTER III: METHODOLOGY

3. INTRODUCTION.....	45
3.1. Research Design.....	45
3.2. The Context of the Study.....	46
3.3. Participants.....	46
3.3.1. Participants for the survey questionnaire.....	47
3.3.2. Participants for the interview.....	47
3.3.3. Participants for the classroom observation.....	48
3.4. Data Collection Procedures.....	48
3.4.1. Quantitative data collection procedures.....	48
<i>The instrument.....</i>	49
3.4.2. Validity of SETIS.....	50
<i>The original study.....</i>	50
<i>The current study.....</i>	50
<i>Exploratory factor analysis.....</i>	50
<i>Confirmatory factor analysis results.....</i>	51
3.4.3. Reliability.....	52
3.4.4. Qualitative data collection procedures	53
<i>Interview.....</i>	53
<i>Classroom observation.....</i>	53
3.5. Data Analysis Procedures.....	54
3.5.1. Quantitative data analysis procedures.....	54

<i>Data analysis for research question 1</i>	54
<i>Data analysis for research question 2</i>	54
<i>Data analysis for research question 3</i>	55
3.5.2. Qualitative data analysis procedures.....	55
<i>Interview</i>	55
<i>Classroom observation</i>	55

CHAPTER IV: RESULTS

4. INTRODUCTION	56
4.1. Results for Questionnaire.....	56
4.1.1. Results for research question 1.....	56
4.1.2. Results for research question 2.....	57
<i>Is there any significant difference between technology integration and gender?</i>	58
<i>Is there any significant difference between technology integration and computer use?</i>	59
<i>Is there any significant difference between technology integration and following technology innovations?</i>	60
<i>Is there any significant difference between technology integration and age, internet use, in-service training (INSET), year of teaching experience?</i>	61
4.1.3. Results for research question 3.....	61
4.2. Interview Results.....	62
4.2.1. Teachers' self-efficacy level for technology integration.....	63
4.2.2. Results for research question 4.....	63
<i>External /Environmental factors</i>	65
<i>Perceived student attitudes (positive)</i>	65
<i>Perceived student attitudes (negative)</i>	65
<i>Available learning opportunities (positive)</i>	66
<i>Available learning opportunities (negative)</i>	67
<i>Existing barriers (negative)</i>	68
<i>Personal factors</i>	69

<i>Attitudes toward use of instructional technology (positive).....</i>	69
<i>Attitudes toward use of instructional technology (negative).....</i>	71
<i>Practices for technology integration (actual).....</i>	73
<i>Practices for technology integration (suggested).....</i>	73
<i>Amount of time used for instructional technology.....</i>	74
4.2.3. Results for research question 5.....	75
<i>Pleasure and expectations from Fatih project.....</i>	75
<i>Teachers' Suggestions.....</i>	77
4.3. Observation Results.....	79
4.3.1. Results for research question 6.....	79
4.3.1.a. Ezgi's class.....	79
<i>Context.....</i>	79
<i>Use of technology.....</i>	80
<i>Teacher comfort level with technology.....</i>	81
<i>Instructional activities.....</i>	81
<i>Students' engagement level.....</i>	81
4.3.1.b. Fatma's class.....	82
<i>Context.....</i>	82
<i>Use of technology.....</i>	83
<i>Teacher comfort level with technology.....</i>	83
<i>Instructional activities.....</i>	84
<i>Students' engagement level.....</i>	84
4.3.1.c. Seda's class.....	84
<i>Context.....</i>	84
<i>Use of technology.....</i>	85
<i>Teacher comfort level with technology.....</i>	86
<i>Instructional activities.....</i>	86
<i>Students' engagement level.....</i>	86

CHAPTER V: DISCUSSION

5. INTRODUCTION.....	87
5.1. Discussion of the Survey Results.....	87

5.1.1. Levels of perceived English proficiency and self-efficacy for technology integration.....	87
5.1.2. Demographic variables.....	89
<i>Gender</i>	89
<i>Computer use</i>	90
<i>Technology innovations</i>	91
<i>Age, internet use, INSET, year of experience</i>	91
5.1.3. The relationship between English proficiency and self-efficacy for technology integration.....	93
5.2. Discussion of the Interview Results.....	94
5.2.1. Factors affecting teachers' technology integration practices.....	94
5.2.2. Teachers' views on the implementation of Fatih project.....	100
5.3. Discussion of the Observation Results.....	102

CHAPTER VI: CONCLUSION

6. OVERVIEW OF THE STUDY.....	105
6.1. Summary of the Findings.....	107
6.2. Implications of the Study.....	110
6.3. Limitations of the Study and Directions for Future Research.....	112

REFERENCES.....	114
------------------------	------------

APPENDIXES

Appendix 1.....	126
Appendix 2.....	127
Appendix 3.....	128
Appendix 4.....	129
Appendix 5.....	130

LIST OF TABLES

Table 3-1. Pattern matrix for SETIS.....	51
Table 4-1. Descriptive statistics for efficacy and English proficiency variables.....	57
Table 4-2. Descriptive statistics for gender.....	58
Table 4-3. ANOVA for gender differences.....	58
Table 4-4. Descriptive statistics for computer use.....	59
Table 4-5. ANOVA for use of computer differences.....	59
Table 4-6. Descriptive statistics for following technology innovations.....	60
Table 4-7. ANOVA for technology innovations.....	60
Table 4-8. Correlations among English proficiency and technology integration variables.....	62
Table 4-9. Survey results for level of self-efficacy for each factor.....	63
Table 4-10. Codes and explanations for factors influencing technology integration	64

LIST OF FIGURES

Figure 1-1. Summary of role changes in education	2
Figure 2-1. Model of triadic reciprocal interaction.....	10
Figure 2-2. Differences between teacher self-efficacy beliefs and teacher efficacy	16
Figure 2-3. Technological Pedagogical Content Knowledge	23
Figure 4-1. Factors influencing self-efficacy for technology integration	64

LIST OF ABBREVIATIONS

CALL.....	Computer Assisted Language Learning
CFA.....	Confirmatory Factor Analysis
EFA.....	Exploratory Factor Analysis
EFL.....	English as a Foreign Language
ICT.....	Information and Communication Technologies
INSET.....	In-service training
IWB.....	Interactive White Board
MoNE.....	Ministry of National Education
SETIS.....	Self-efficacy for Technology Integration Scale

ETİK İLKELERE UYULDUĐUNA İLİŐKİN METİN

Yüksek lisans tezi olarak sunduĐum “In-Service EFL Teachers’ Self-Efficacy Beliefs for Technology Integration: Insights from Fatih Project” baŐlıklı alıŐmanın yazılmasında, bilimsel ve etik kurallara uyulduĐunu, baŐkalarının eserlerinden yararlanılması durumunda atıfta bulunulduĐunu, kullanılan verilerde herhangi bir tahrifat yapılmadıĐını, tezin tamamının ya da bir kısmının bu üniversite veya baŐka bir üniversitede bir tez alıŐması olarak sunulmadıĐını beyan ederim.

04/06/2013

Pınar YENİ PALABIYIK

CHAPTER I

1. INTRODUCTION

This chapter presents the rationale of this dissertation, which aims to investigate teachers' self-efficacy beliefs for technology integration with particular reference to the Fatih Project. In this regard, background of the study, statement of the problem, significance of the study and definition of the terms will be presented in detail.

1.1. Background of the Study

The impact of technology in today's globalised world and especially its effect in education is not questioned. To put it differently, being literate used to mean knowing how to read and write; however, today's students should know not only reading and writing but also the use of technology as a basic skill. Importantly, the school is the place presenting opportunities for an individual to be educated. As long as it does not mirror the real world, a community may not have citizens who can adopt themselves to the needs of the century. Farah (2011) clearly indicates the mere influence of technology to education by stating that "having recognized that there have been shifts in the ways students learn, educators must follow suit and shift the ways in which they teach" (p.117).

Prensky (2001) formulates two terms named as *digital natives* for today's students who do not know a life without computer technologies; and *digital immigrants* for those getting to know technology later on in their life span. Therefore, the main difference between digital natives and digital immigrants originates from technology literacy, that is to say, those who acquire technology literacy skills are digital natives

whereas those who learn technology skills later on are digital immigrants.

All these realities force the change in the role of teachers which is explained by Paraskeva, Bouta, and Papagianni (2008). According to them, with the help of technology, the role of teacher transforms into a facilitator in the classroom. On a similar line, Windschitl and Sahl (2002) are of the opinion that the use of technology leads to the change in teachers' classroom practices, they also "adopt more-student-centered pedagogical approaches" (p.169). If the overall benefits of technology are considered, Sugar, Crawley and Fine (2004) postulate that technology provides the opportunity to become a facilitator as a teacher and to have an active role as a student in teaching-learning practices.

In very general terms, the introduction of technology has changed both the concept of education and teacher-student interaction. By the same token, in his paper named *beyond constructivism: exploring future learning paradigms*, Brown (2005) presumes the past, present and future of education (see Figure 1-1).

Role Changes in education			
Role Player	Past	Present	Future
	Knowledge Adoption Era	Knowledge Production Era	Knowledge Navigation Era
<i>Teacher</i>	Instruction	Learning facilitation	Coaching and mentoring
<i>Student</i>	Knowledge adoption	Knowledge production	Knowledge navigation

Figure 1-1. Summary of role changes in education (adapted from Brown, 2005)

According to Brown (2005), there are three main eras of education, the first one is based on the behaviorist approaches, the second one refers to constructivism and the latest one is social constructivism. When these schools of thought are examined one by one, it may be clearly noted that knowledge adoption era is based on behaviorist principles. Taking this as a base, the main role of teacher is instruction as he/she is the only source of knowledge; the students should gain the knowledge that is provided by the teacher. Quite the reverse, the current knowledge production era accepts the teacher as the facilitator of learning rather than being the sole source of knowledge. That is to say, students may learn the necessary information from other sources as well. To give

an example, they may use technological devices and the internet to reach a huge amount of information on any area.

What is new and interesting is the “*knowledge navigation era*” (Brown, 2005) which presents crucial assumptions on what will happen in the educational practices in the near future. Brown (2005) believes that the knowledge navigation era is based on social constructivism, which refers to learning as the result of active participation and interaction with a community. To put it differently, students need to interact with the people around them in order to gather knowledge in any subject. Students are active in the learning process, and they also collaborate and communicate with others. The teacher, on the other hand, can be named as mentor or coach (Brown, 2005).

Taken as a whole, the students do not need the teacher as the only source of knowledge due mainly to the developments in the area of technology. Put more simply, technology helps the students to reach an unlimited area of knowledge. Then, the role of teacher should also change, and the teacher should try to facilitate the knowledge that is acquired from many sources by practicing the activities based on constructivist principles.

With this said, it may be more fruitful to speak of the history of computer technology devices in schools of Turkey. First, Ministry of National Education (MNE) set up computers to secondary schools in 1984. Second, computer-assisted instruction is included in national policy in 1991. What comes next is the aim of increasing the year of compulsory education from 5 to 8 and improving the quality of education in 1998. To this end, it was aimed to train both teachers and students to become at least literate in Information and Communication Technologies (ICT). For this reason, nearly all schools have been equipped with computers and internet ever since 2003 (Akbaba-Altun, 2006).

Based on these improvements, Fatih Project which is defined as “The Movement for Increasing Opportunities and Enhancing Technology” can be regarded as a revolution in the area of Turkish education. Specifically speaking, it is aimed to

enhance the learning environments via technologically rich resources such as Interactive White Board (IWB), Tablet PC, the internet and so on.

1.2. Statement of the Problem

With the emergence of technological tools in educational areas, the importance of technology integration has been high on the agenda. In today's world, technology is no longer a choice but a must, so having low level of desire to use technology just makes the condition worse. Addressing this issue, Cowan (2008) states that the central issue of technology integration has changed. Specifically, the focus is no more on the lack of resources to provide the necessary technical support. Instead, the challenge is greater now due mainly to the fact that integrating technology is not a preference for teachers. In other words, although integration was dependent on the eagerness of the teacher in the past, it is now an obligation in our current globalized technological world.

Even so, there are many factors affecting teachers' technology integration practices. In that sense, Ertmer (1999) groups the factors limiting teachers' technology integration into two naming external (first-order) and internal (second-order) barriers. The former one refers to problems like lack of training, local support, insufficient access to technologies and so on. If there are such problems, then it is almost impossible to integrate technology into teaching.

However, when the internal barriers are concerned, issues such as teacher beliefs, teacher self-efficacy and teacher attitudes can be named. Bandura (1989) claims that "among the types of thoughts that affect action, none is more central or pervasive than people's judgments of their capabilities to exercise control over events that affect their lives" (p. 59). In this regard, it may be purely noted that self-efficacy beliefs of teachers may affect their technology integration practices more than the other issues such as attitudes, beliefs and so on.

Importantly, Bandura (1997) signifies self-efficacy beliefs as being context-

specific. To that end, many studies have been accomplished in order to examine teacher efficacy from different perspectives such as internet self-efficacy (Gürol & Aktı, 2010; Kaya & Durmuş, 2010), technology leadership self-efficacy (Bülbül & Çuhadar, 2012), computer self-efficacy (Conrad & Munro, 2008; Brinkerhoff, 2006), teacher self-efficacy (Chan, 2008; Yüksel, 2010).

A large body of research has shown that higher teacher self-efficacy has lots of positive effects on individuals such as higher achievement, increased motivation and so on (see, e.g. Kao, Wu & Tsai, 2011; Ekizoğlu & Ozcinar, 2010; Bandura, 1997). Thus, exploring the teachers' efficacy beliefs is specifically crucial. Using these conceptualizations as a basis, the current study aims to investigate teacher efficacy from technology integration viewpoint. This study also aims to explore the factors involved in teachers' self-efficacy beliefs for technology integration.

1.3. Research Questions

The following research questions were formulated in the present study;

1. What is the level of technology integration self-efficacy and perceived English proficiency in the current sample?
2. Is there any significant difference between self-efficacy beliefs for technology integration and demographic variables?
 - a. Is there any significant difference between technology integration and gender?
 - b. Is there any significant difference between technology integration and computer use?
 - c. Is there any significant difference between technology integration and following technology innovations?
 - d. Is there any significant difference between technology integration and age, internet use, in-service training (INSET), year of teaching experience?
3. What is the relationship between perceived English proficiency and self-efficacy

for technology integration?

4. What are the factors influencing teachers' technology integration practices in foreign language classroom?
5. What are the opinions of teachers about the implementation of Fatih project?
6. What are the actual practices of in-service teachers to integrate technology into their teaching?

1.4. Significance of the Study

Recently, a great number of studies have examined self-efficacy with different purposes in local context basically from a prospective teacher perspective; for instance, biology teacher candidates' levels of academic self-efficacy (Altunsoy, Çimen, Ekici, Atik & Gökmen, 2010), the relationship between self-efficacy and emotional intelligence of pre-service teachers (Gürol, Özercan & Yalçın, 2010), prospective science teachers' teaching self-efficacy (Senler & Sungur, 2010), the relation between self-efficacy and academic control focus of pre-service science teachers (Yenice, Evren, & Ozden, 2012), student teachers' self-efficacy beliefs for mathematical literacy (Arslan & Yavuz, 2012), a comparison of self-efficacy perception and social physical anxiety of physical education teacher candidates (Koparan, Şahin & Kuter, 2010), pre-service teachers' self-efficacy for developing educational software (Uzun, Özkılıç & Şentürk, 2010), the influences of mentors and classroom teachers on prospective English language teachers' self-efficacy beliefs (Pekkanlı-Egel, 2009), pre-service English teachers' self-efficacy and tendency for academic dishonesty (Eminoğlu-Küçüktepe, 2010) have been investigated.

Notably, Güneş, Gökçek, and Bacanak (2010) examine in-service teachers' self-assessment for their basic technological competencies in a primary school context. Based on the literature above, it may be suggested that there is a scarce of research both in the area of in-service teacher concept and technology integration practices. According to Tschannen-Moran and Woolfolk Hoy (2007), "teachers' self-efficacy is a little idea with big impact" (954). To this end, the significance of the present study lies essentially

in gaining a deeper understanding of self-efficacy research in local context by examining in-service English language teachers' self-efficacy beliefs for technology integration in a specific context of Fatih Project pilot study high schools in Sakarya.

1.5. Definition of the Terms

Self-efficacy: Belief in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997, p. 3).

Teachers' sense of efficacy: Teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplishing a specific teaching task in a particular context (Tschannen-Moran, Woolfolk-Hoy & Hoy, 1998, p.22).

Technology integration: The use of a certain technological device to enhance students' achievements.

Teacher self-efficacy for technology integration: A teacher's belief in his /her capability to integrate technology into his/her teaching practices.

CHAPTER II

LITERATURE REVIEW

2. INTRODUCTION

The chief purpose of this chapter is to provide a review of relevant literature with regard to self-efficacy beliefs and technology integration. Thus, the major areas which have been emphasized are social cognitive theory, teacher efficacy, technology integration, professional development practices, studies on teacher efficacy for technology integration and the Fatih Project. First, social cognitive theory clarifies the issue of efficacy in detail; that is to say, self-efficacy beliefs and perceived self-efficacy are explained. Second, teacher efficacy purely details the impact of efficacy on teachers' practices. Third, technology integration explores the relation between efficacy and technology integration. Fourth, the influence of in-service training courses on teachers' technology integration practices is discussed. Then, a vast body of research is cited with regard to teacher efficacy for technology integration both on EFL context and in Turkey. Finally, the literature on Fatih Project specifically details the aim and content of the project and focuses on studies that give examples from local context with respect to the integration of technology into teaching.

2.1. Social Cognitive Theory

When social learning theory is focus of attention, it may be said that the term contextualizes the principles of behavioral and social perspective. What is notable here is that social perspective does not explain human behavior according to the stimulus-response sequences of behaviorism. In actuality, environmental and behavioral factors

are taken into account by the social learning theorists with the aim of defining the nature of human behavior (Rotter, 1966; Bandura, 1997).

Bandura (1997) and Rotter (1966) further document that observation and modeling provides learning in a social context. Specifically speaking, there are three core phases interacting with each other. Those phases are called as behavior, perception, and environment. In practical terms, when behavior, perception and environment interact with each other, human learning occurs. Over and above, social learning theory claims a reciprocal relationship between environment and behavior.

Rotter's (1966) social learning theory forms the basis of the very first studies of efficacy. The theory holds promise in that the individual's interaction with his/her environment embodies personality; henceforth, one's personality cannot be independent from the environment that s/he lives in. On the other hand, the behaviors of a person do not occur as an automatic response to environmental stimuli. Taking these as a base, one can claim that a behavior can be understood by considering individual and the environment together. Thus, Rotter is of the opinion that if the way of thinking of the person changes, then the behavior will change. Likewise, if the environment modifies, the behavior will modify as well (Rotter, 1966).

Generally speaking, Bandura's social cognitive theory (1997) and his construct of self-efficacy has formed a basis for a huge number of studies in the area of efficacy. What is outstanding in his theory is the emphasis on the importance of cognitive concepts. Thus, the theory principally clarifies the mutual relation between cognition and behavior. Simply put, it focuses on both a person's cognitive operation in a social experience and the affect of cognition on his/her behavior. In practical terms, instead of overemphasizing biological aspects, human agency and environmental factors are regarded as being equally important in understanding human change and adaptation in Bandura's social cognitive theory (1997).

Based on the literature above, it can be argued that social cognitive theory grounds on the model of causation. In Bandura's words, the term *causation* is used in

the present context to mean functional dependence between events (1997). Defined in this way, there is a triadic reciprocal causation (Bandura 1986) between the behavior, personal factors and environment (see Figure 2-1).

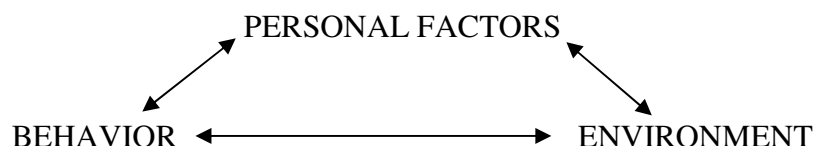


Figure 2-1. Model of triadic reciprocal interaction (Bandura, 1997, p. 6).

As is known, triadic reciprocal causation is used to explain human functioning in social cognitive theory. In this model, both personal and environmental factors not only affect but also are affected from each other. Three types of environmental structures are distinguished in social cognitive theory named as imposed, selected and constructed. These environmental structures entail practice of differing personal agencies (Bandura, 1997, 2001). In addition, Bandura (1986) maintains that “reciprocal causation does not mean that the different sources of influence are of equal strength. Some maybe stronger than others. Nor do the reciprocal influences all occur simultaneously. It takes time for a causal factor to exert its influence and activate reciprocal influences” (pp. 2-3).

Even more important, Bandura (1986) explains the interaction between personal characteristics and environmental factors. In that sense, he argues that social impacts carrying information and stimulating emotional reactions both develop and transform one’s beliefs, hopes and cognitive competencies by the help of modeling, tutoring and social persuasion. He further notes that “by their social status and observable characteristics people can affect their social environment before they say or do anything” (Bandura, 1989, p. 4). In this regard, Bandura (1986) postulates that people are not only a product but also a producer of their environment due mainly to the bidirectional impact between environment and behavior.

In a more recent study, Bandura (2001) explains the relation between personal

agency and social structure as interdependent by noting that “social structures are created by human activity, and social structural practices, in turn, impose constraints and provide enabling resources and opportunity structures for personal development and functioning” (p.15). To cite a familiar example, a teacher works hard for his/her students’ success, and when the students’ level of achievement increases, teacher’s belief on his/her teaching ability increases, in turn, as the teacher’s level of efficacy increases, his/her struggle for students’ achievement increases as well.

Close to the end, some specific differences between the Rotter tradition and the Bandura tradition are clarified by Tschannen-Moran et. al. (1998). That is, the former school of thought argues that provided a teacher believes environmental factors as being more powerful than his/her own teaching, then s/he may not teach as effectively as the one who believes the opposite. On the contrary, even though the Bandura tradition accepts the influence of environmental factors, it is noted that these factors are not the mere base of teacher efficacy. Rather, even a teacher accepts the power of environmental factors; s/he may accept himself/herself efficacious enough to overcome them.

2.1.1. Self-efficacy beliefs

Bandura (1997) argues that efficacy beliefs are the most central and pervasive mechanism of human agency. If people believe in generating desired outcomes and anticipating damaging ones by their actions, they have the motivation necessary for acting or preserving their selves from dangers (Bandura, 2001). The author gives a detailed explanation on the impact of efficacy beliefs on human’s actions by referring “it is partly on the basis of efficacy beliefs that people choose what challenges to undertake, how much effort to expend in the endeavor, how long to persevere in the face of obstacles and failures, and whether failures are motivating or demoralizing” (2001, p. 10).

The matter of efficacy simply refers to the perceptions of oneself. Woolfolk Hoy and Burke-Spero (2005) define the term as “a future-oriented judgment that has to

do with perceptions of competence rather than actual level of competence” (p.344). As already noted, Bandura’s (1997) self-efficacy theory is mainly based on triadic reciprocal causation. Dellinger, Bobbett, Oliver and Ellette (2008) explain that behavior is affected by personal factors and environment; further, behavior and personal factors affect the environment. Lastly, personal factors are also influenced by behavior and environment.

Generally speaking, Bandura (1997) postulates some points which have a specific relationship with efficacy, some of which are given as outcome expectations, efforts and feedback. First of all, Bandura (1997) notes the causal relationship between personal efficacy beliefs and outcome expectations by stating that “perceived self-efficacy is a judgment of one’s ability to organize and execute given types of performances, whereas an outcome expectation is a judgment of the likely consequence such performances will produce” (p.21). Weight loss is noted as an example for outcome expectancy because people at most try to lose weight for many outcomes such as physical health benefits, social benefits so and so forth.

Secondly, Bandura (1997) evidently indicates the impact of effort on efficacy. In this regard, if one believes that his/her ability will increase when s/he tries hard, those efforts will enhance efficacy, yet regarding ability as an inherent aptitude may cause one to interrogate his/her efficacy. Instead, if one thinks that ability can be acquired, this will by and large increase the sense of efficacy. Third, it may be clearly claimed that the quality of feedback affects one’s efficacy; put more simply, perceived efficacy gradually increases when the feedback on the quality of someone’s work is provided. In contrast, just the factual feedback on the quantity of work is provided without noting the quality, this will affect neither efficacy nor productivity (Bandura, 1997). Notably, Tschannen-Moran et. al. (1998) argue that “self-efficacy has to do with self-perception of competence rather than actual level of competence” (p.211).

2.1.2. Perceived self-efficacy beliefs

If perceived self-efficacy is taken into consideration, Bandura (1997) defines it

as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p.3). He further theorizes that the impact of perceived self-efficacy in social cognitive theory is vital due mainly to its chief contribution to the acquisition of the knowledge structures by effecting activity choice and the level of motivation. He also declares four major sources of self-efficacy information and they are named as mastery experiences, vicarious experience, verbal persuasion, and psychological and emotional arousal.

First, mastery experiences are chiefly related to the struggle for success. In this regard, Tschannen- Moran et. al. (1998) clearly explain the term in detail as follows; “efficacy beliefs are strengthened substantially when success is achieved on different tasks with little assistance or when success is achieved early in learning with few setbacks; however, not all successful experiences encourage efficacy. For example, efficacy is not enhanced when success is achieved through extensive external assistance, relatively late in learning, or on an easy and unimportant task” (p.229).

Second, vicarious experience simply refers to the matter of modeling. That is to say, it denotes the comparison of one’s performance with another. If his/her performance is superior to the chosen group norms, efficacy beliefs increase. If not, they decrease. In a similar vein, if one learns better ways of coping with things from models, his/her efficacy beliefs will be heightened (Bandura, 1997). Notably, the ultimate achievement from vicarious experiences can be possible only when the model’s characteristics like gender, race and teaching experience are similar to the observer (Tschannen-Moran & Woolfolk Hoy, 2007). In the same vein, Bandura (1989) effectively explain the mere importance of vicarious capability by noting that provided an individual obtained knowledge and skills only by direct experiences, both cognitive and social development of a person would be impeded, boring and dangerous. The author also claims that if a person only trusts in “trial and error experiences”, he/she can encounter highly dangerous outcomes (Bandura, 1989).

Considering the distinction between mastery experiences and vicarious learning, Bandura (1989) declares that “unlike learning by doing, which requires

altering the actions of each individual through repeated trial-and-error experiences, in observational learning a single model can transmit new ways of thinking and behaving simultaneously to many people in widely dispersed locales” (p. 22). “In learning by direct experience, people construct conceptions of behavior from observing the effects of their actions; in learning by modeling, they derive the conceptions from observing the structure of the behavior being modeled” (Bandura, 1989, p. 46).

Third, verbal persuasion is specifically related to the comments of others about one’s capabilities. Tschannen-Moran and Woolfolk Hoy (2007) define verbal persuasion in teaching context as the support that is provided by administrators, colleagues and parents interpersonally. In that sense, they affirm that it refers to the comments that a teacher receives from the other concerning people. Those comments may have both positive and negative effects on a person. With regard to positive ones, a person possibly makes much effort to achieve success if he/she is convinced of possessing the necessary capabilities for it. By contrast, a person’s beliefs in his/her capabilities may be damaged by unrealistic comments on his/her personal qualifications, so failures occur and that person disfavors the persuaders (Bandura, 1997).

Psychological and affective states are the last source of self-efficacy information. In simple terms, they are heavily related to the health functioning and stress. Tschannen-Moran and Woolfolk Hoy (2007) evidently explain the term as “the feelings of joy or pleasure a teacher experiences from teaching a successful lesson may increase her sense of efficacy, yet high levels of stress or anxiety associated with a fear of losing control may result in lower self-efficacy beliefs” (p.945).

By the same token, Bandura (1997) notes the relation between motivation and personal efficacy beliefs. In other words, as personal efficacy beliefs shape the goals and the outcomes, motivation is regulated by these factors. Namely, Ekizoğlu and Ozcinar (2010) mention the pure benefit of possessing perceived self-efficacy to a person. In support of this view, they argue that a person with a high perceived self-efficacy tries hard to achieve something. Additionally, Skoretz (2011) claims that “an individual with high efficacy will persist in overcoming obstacles to meet the challenge

of succeeding in mastering a difficult task” (p.34).

A study by Şahin (2007) signifies the pure value of enactive mastery experiences, vicarious experiences and social persuasion as long as novice English language teachers’ self-efficacy levels are concerned. Notably, Dellinger et. al. (2008) point out that being context-specific is the main feature of self-efficacy beliefs. That is, the context and tasks can transform the self-efficacy beliefs.

2.2. Teacher Efficacy

The vast body of research reviewed in this part of the study speaks to the issue of teacher efficacy in terms of its definition, theoretical construct and the measurement. In very general terms, teacher efficacy refers to the teacher’s beliefs about his/her talents and those beliefs effect not only the learning environment, but also the student success. Likewise, teacher self-efficacy can be described as the teacher’s belief of his or her talent on how to cause a positive change on the learning, achievement and engagement of students (see Bandura 1997; Tschannen-Moran et. al. 1998). By taking social cognitive theory into account, teacher self-efficacy might also be identified as a teacher’s beliefs in his/her capability to plan, arrange, and perform tasks which are necessary in order to achieve the educational goals (Skaalvik & Skaalvik, 2010).

With these arguments in mind, Dellinger et. al. (2008) clearly differentiate between teacher efficacy and teacher self-efficacy beliefs. The authors are of the opinion that teacher efficacy merely refers to the beliefs of the teacher in his/her capability; nonetheless, teacher self-efficacy beliefs are more specific than the previous one. That is to say, the latter beliefs contextualize the specific teaching tasks, specific school, students and classroom (see Figure 2-2).

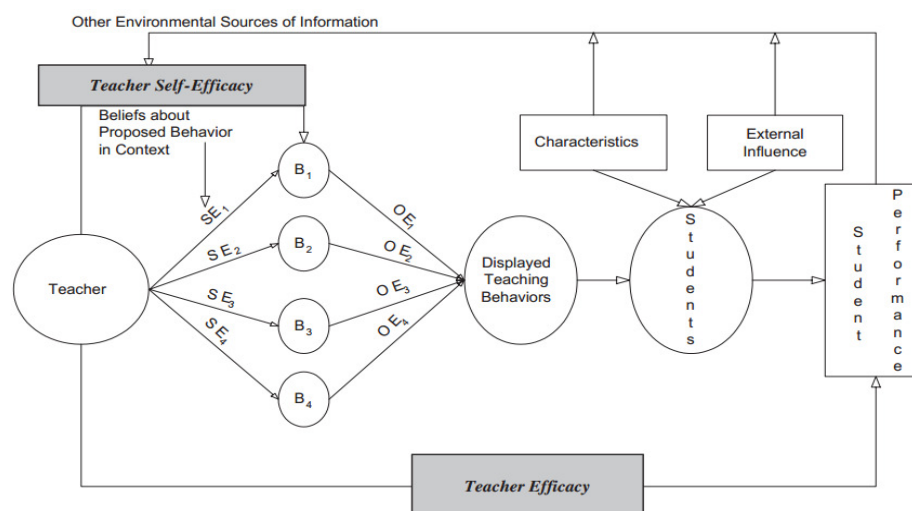


Figure 2-2. Differences between teacher self-efficacy beliefs and teacher efficacy
(Dellinger et. al., 2008, p. 753).

Bandura (1997) demystifies the significance of teacher self-efficacy in education, so he notes that the teachers' skills and self-efficacy shapes the learning environments which are suitable for developing cognitive competencies. In simple terms, teachers' beliefs in their efficacy regarding teaching affect the academic activities in their classrooms. As noted in a later section, teachers' sense of efficacy determines their way of practices in the classroom. In other words, instead of practicing authoritarian control in class; some persuasive ways are performed by the teachers who have increased sense of instructional efficacy (Bandura, 1997).

In practical terms, there are many factors that affect the teachers' perceived efficacy which may be named as teaching the subject matter, classroom management, parental influences, and so forth. What is notable here is that teachers' views on students change according to the level of efficacy. In Bandura's words, "teachers with a high sense of efficacy tend to view difficult students as reachable and teachable and regard their learning problems as surmountable by ingenuity and extra effort. Teachers of low perceived efficacy are inclined to invoke low student ability as an explanation for why their students cannot be taught" (1997, p. 242). The author further argues the mutual relation between teachers' instructional efficacy and student success; that is to say, learners' academic improvements are influenced by the teachers' beliefs regarding

their instructional efficacy and vice versa.

Based on the self-efficacy literature described above, Chan (2008) argues that verbal persuasion matches with the course work and professional development workshops that provide teachers with the necessary information about the task of teaching. Furthermore, vicarious experiences refer to observing other teachers' classroom practices. As for the enactive mastery experiences, the researcher claims this source as being more powerful than the others because of providing authentic proof of what teachers do in the classroom. In addition, Chan (2008) purely claims that pre-service teachers mostly do not have the chance to experience such a source; however, vicarious learning experiences are in need here of further attention.

2.2.1. The construct of teacher efficacy

With regard to the construct of teacher efficacy, factors such as achievement, attitudes, and beliefs so and so forth may be uttered. Notably, Yüksel (2010) argues that educational innovations will not be successful as long as developing specific skills are emphasized without considering the teachers' beliefs, attitudes and so on. In support of this view, Tschannen-Moran et. al. (1998) explain the issue in broader terms. Namely, they argue that teacher efficacy has a strong relationship with teachers' behaviors in the classroom, their acceptance of fresh ideas and their attitudes toward teaching. Along a similar vein, teacher efficacy most probably affects the student in terms of achievement, attitude and actual growth. Besides, Tschannen-Moran and Woolfolk Hoy (2001) argue the elements that are linked to the teacher's sense of efficacy, some of which are named as performance of the learner, the level of goal achievement, teacher change and so on.

Based on the literature above, it is important to keep in the forefront of one's mind that teacher efficacy is not only context but also subject matter specific. To this end, "a teacher may feel very competent in one area of study or when working with one kind of student and feel less able in other subjects or with different students" (Tschannen-Moran et. al., 1998:215). In support of this claim, Chan (2008) emphasizes the importance of studying domain-specific teacher self-efficacy rather than general

self-efficacy because teachers work in the diverse classrooms which include students with different abilities and needs.

When the relation between efficacy, effort and performance are focus of attention, it can be claimed that those terms both effect and are affected from each other. In practical terms, Tschannen-Moran et. al. (1998) clarify that “greater efficacy leads to greater effort and persistence, which leads to better performance, which in turn leads to greater efficacy” (p.234). They further argue that the reverse can be true as well. Defined in this way, lower efficacy causes less effort, so lower teaching outcomes occur, decreased efficacy is produced. In addition, Bandura (1997) denotes the risk of low teacher efficacy as “leading to low student efficacy and low academic achievement, which in turn leads to further declines in teacher efficacy” (p. 222).

As is known, beliefs are resistant to change; moreover, “changes in efficacy beliefs among in-service teachers seem to be more difficult to produce and sustain” (Tschannen-Moran et. al., 1998:236). To address this dichotomy, Woolfolk Hoy and Burke-Spero (2005) investigated the changes in teacher efficacy during the early years of teaching. The authors reached the finding that “efficacy rose during teacher preparation and student teaching, but fell with actual experience as a teacher” (p.352). From this perspective, Tschannen-Moran et. al. (1998) makes a recommendation on how to enhance efficacy of novice teachers; therefore, they suggest giving less populated classes in number and more proficient students.

What should not go unnoticed is the issue of collective teacher efficacy. Bandura (1997) defines perceived collective efficacy as “a group’s shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments” (p.477). According to Bandura (1997), perceived collective efficacy does not refer to a massive group trait, so group members’ views on their group’s collective efficacy differs according to factors like members in different positions or serving different functions in the group.

Undoubtedly, teachers are affected by their colleagues’ views and comments.

They may even change some of their beliefs by observing their colleagues. At this point, the importance of cooperation should be taken into consideration. That is, Tschannen-Moran et. al. (1998) remark that “schools where teachers work together to find ways to address the learning, motivation and behavior problems of their students are likely to enhance teachers’ feelings of efficacy” (p.221). On a similar line, Bandura (1997) claims that if the teachers of a school collectively support each other in encouraging academic achievement, this will most probably effect the school’s atmosphere in a positive way. Interestingly, in his study focusing on teacher self-efficacy from different perspectives, Chan (2008) notes the impact of teaching experience on both general and collective teacher self-efficacy.

2.2.2. Studies on teacher efficacy

There is a growing literature which argues teacher efficacy from different perspectives (Yüksel, 2010; Chan, 2008). Notably, Yüksel (2010) investigated efficacy beliefs of Turkish primary school teachers. To this end, she found considerably high level of overall efficacy regarding teaching English. More in-depth analysis revealed that even though the teachers reported high efficacy for classroom management and using instructional strategies, their efficacy for student engagement was relatively low. When the potential reasons for low efficacy for engaging students are examined, issues such as standardized tests, curricula, predetermined teaching methods, uncooperative school environment and students’ profile are noted (Yüksel, 2010). In his study titled “*general, collective and domain specific teacher self-efficacy among Chinese prospective and in-service teachers in Hong Kong*”, Chan (2008) grouped the participants into four. Group A includes prospective teachers with no teaching experience, yet other prospective teachers with 1-month supervised teaching formed Group B. Group C is gathered by novice teachers with 1-2 years of teaching experience, lastly Group D is composed of experienced teachers with 3 or more years of experience. What the researcher aimed to investigate is the possible differences in self-efficacy beliefs among those four groups of teachers. To this end, he found that “among four groups of teachers, the experienced teachers reported the highest level of global and domain-specific teacher self-efficacy” (p.1057). The conclusion of Chan (2008) is the

tendency to increase in teachers' self-efficacy beliefs while they move from teacher preparation to become novice teachers and more experienced teachers.

A small body of literature looks into the relation between teacher efficacy and language proficiency (Lee, 2009; Yüksel, 2010; Chacon, 2005, Shim, 2001. Cited in Yüksel, 2010). In Korean research, Lee (2009) notes the positive relation between teachers' current level of English proficiency and their English teaching-specific efficacy beliefs. According to Yüksel (2010), Turkish EFL teachers' teacher efficacy is significantly related to their perceived language proficiency in English. Moreover, when the skills related to English language proficiency are concerned, participants reported higher levels of perceived proficiency for speaking and reading in English.

Along a similar vein, Chacon (2005) investigates the impact of factors such as classroom management, instructional strategies and teachers' English proficiency levels on EFL teachers' self-efficacy. Echoing Yüksel's (2010) findings, teachers' efficacy was positively linked with their self-reported English proficiency. In addition, research by Shim (2001. Cited in Yüksel, 2010) has reached the conclusion that with regard to the relationship between English language proficiency and teachers' sense of efficacy, higher levels of efficacy is correlated with higher listening proficiency, yet lower levels of efficacy is linked with higher speaking proficiency.

2.2.3. Scales to measure teacher efficacy

The last concern of this part is the measurement of teacher efficacy which is a very controversial issue in literature. That is, a small body of literature looks into the difficulty of measuring teacher efficacy and those studies mainly refer to the problem of disagreement on both the conceptualization and measurement of teacher efficacy (Gürol & Aktı, 2010; Skaalvik & Skaalvik, 2010; Tschannen-Moran & Woolfolk Hoy, 2001; Tschannen-Moran et. al., 1998). Specifically speaking, Tschannen-Moran et. al. (1998) argue that finding an appropriate way of measurement of efficacy is difficult because the concept of teacher efficacy is confusing in many respects. When the examples of instruments are taken into consideration, most probably an instrument developed by

Gibson and Dembo (1984) comes to the forefront of one's mind. As is known, Teacher Efficacy Scale (TES) included two parts which are called as personal teaching efficacy (PET) reflecting self-efficacy and general teaching efficacy (GTE) mirroring outcome expectancy. Tschannen-Moran et. al. (1998) criticize their instrument because of those factors being slightly related or not at all correlated. Moreover, Dellinger et. al. (2008) disapprove of the instrument mainly because of inappropriate usage for international arena.

Interestingly, Tschannen-Moran and Woolfolk Hoy (2001) developed an instrument named Ohio State Teacher Efficacy Scale (OSTES) as a reaction to Bandura's instrument for teacher efficacy. To put it differently, the authors criticized Bandura's instrument due mainly to the lacking of items related to teachers' work life. Therefore, Bandura's instrument formed the basis of their instrument, yet they added some items measuring the aspect of teacher's work life. Gürol and Aktı (2010) used OSTES in their study because of being comprehensive, and easy to administer. However, Dellinger et. al. (2008) criticize OSTES providing that it measures self-efficacy beliefs instead of teacher efficacy. Thus, they developed an instrument called Teachers' Efficacy Beliefs System-Self (TEBS-Self) in order to assess teachers' self-efficacy beliefs.

Some studies also focused on evaluating the validity and reliability of many scales with different purposes; to give an example, Horzum and Çakır (2009) investigated both the validity and reliability of the Turkish version of the Online Technologies Self-efficacy Scale (OTSES) and they found positive results. In his dissertation *self-direction and technology use among new workforce entrants*, Holt (2011) cautions against the reliability of computer technology use scale (CTUS) of Conrad and Munro (2008). To address this dichotomy, Bandura (1997) denotes the importance of items that are as specific as possible, because general items will lead to obscure meaning for respondents which will eventually affect the validity and reliability of an instrument.

2.3. Technology Integration

This part of the study focuses on the relation between teacher efficacy and technology integration. With this in mind, what technology integration is, what constitutes teacher knowledge in 21st century, the impact of efficacy on technology integration and what are the barriers for technology integration are discussed in detail. Basically, using any kind of technological tools to enhance students' achievements may be defined as technology integration into education. Undoubtedly, using technological tools in everyday life is one of the core skills of the 21st century, so there should be a change in the area of education accordingly.

2.3.1. Teacher knowledge to integrate technology

The importance of teacher knowledge comes to mind when the technology integration is concerned. As already noted, the teachers of the 21st century should have some capabilities more than just teaching content. In their research, Mishra and Koehler (2006) describe a framework for teacher knowledge, which includes three main parts: pedagogy, content and technology. They based their framework on Schulman's pedagogical content knowledge (PCK); in other words, until Schulman (1986), pedagogical knowledge and content knowledge were treated as being separate from each other. Nevertheless, pedagogical content knowledge combines content and pedagogy instead of treating them as items which are isolated from each other.

Extending from this perspective, Mishra and Koehler (2006) assert that "though Schulman's approach still holds true, what has changed since 1980s is that technologies have come to the forefront of educational discourse" (p.1023). The authors further document that "today, knowledge of technology is often considered to be separate from knowledge of pedagogy and content" (p.1024). Therefore, they suggest technological pedagogical content knowledge (TPCK) in order to teach effectively (see Figure 2-3).

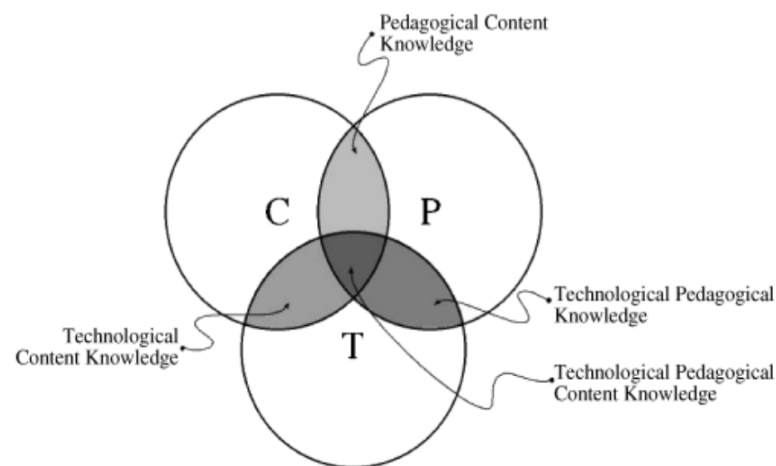


Figure 2-3. Technological Pedagogical Content Knowledge (Mishra & Koehler, 2006, p. 1025)

As is seen in the figure above, TPCK favors integrated approach to teacher training in using technology rather than teaching those technology skills separately. In support of this claim, Skoretz (2011) point out the necessity of having knowledge on the interconnection of technology, pedagogy and content, and she continues to argue that viewing technology as a separate entity will cause ineffective integration of technology into the current curriculum. TPCK is explained in detail as follows:

TPCK is the basis of good teaching with technology and requires an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students' prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge and to develop new epistemologies or strengthen old ones. (Mishra & Koehler, 2006, p. 1029)

Finally yet importantly, what makes technological content knowledge (TCK) distinct from technological knowledge (TK) is the context-specific aspect of the previous one whereas, the latter one refers to programs like Microsoft Word or PowerPoint as a content free software. Alternately, the distinction between TCK and technological pedagogical knowledge (TPK) regards to the pedagogical usage of

technology; so to say, TCK is not concerned with teaching, yet TPK centers on knowledge regarding pedagogical use of technological devices (Chai, Ng, Li, Hong, & Koh, 2013).

2.3.2. Teacher efficacy for technology integration

Research suggests that teacher efficacy affects the use of instructional technologies in classroom, so Bandura (1997) evidently notes the impact of teachers' efficacy beliefs on the implementation of educational technologies. Notably, Skoretz (2011) defines efficacy for technology integration as "the belief in one's capability to integrate technology effectively in teaching and learning" (p.10). In what follows, Kim, Kim, Spector and DeMeester (2013) signify the value of efficacy beliefs for technology integration by putting out that in the absence of self-efficacy beliefs for using any technological tool, a teacher will most probably not integrate that technology successfully into his/her teaching practices. Specifically speaking, a study by Hall (2008) investigates the relationship between computer self-efficacy and the perceived technology integration for high school mathematics and science teachers. The main findings of the study indicate a significant relation between perceived self-efficacy for computers and technology integration.

It is important to keep in the forefront of one's mind that efficacy for technology integration requires technology fluency as a first step. Plair (2008) identifies the term as knowing when and how to use technology tools such as digital cameras, digital voice readers in order to enhance learning. Or, put another way, a technologically fluent teacher has got an experience with tools like computers and knows how to use that tools in the classroom. In this regard, Paraskeva et. al. (2008) reached the conclusion that "the level of experience in using technology influences, to a considerable extent, an individual's attitude to computers and, consequently their computer self-efficacy" (p.1089). Likewise, Kemp (2002) emphasizes that as the year of computer experience increases, so does the self-efficacy practices of teachers. When the factors that affect the teachers' instructional decisions about technology are high on the agenda, Windschitl and Sahl (2002) emphasize three agencies named as teachers'

unified beliefs about their learners, their perception of good teaching in their institution and the role of technology in students' life.

Close to the end, Wang F:\ABANT TERM V\PAPERS\LITERATURE REVIEW PHASE 2.docx - _msocom_4, Ertmer and Newby (2004) investigate the influence of vicarious learning experiences on prospective teachers' self-efficacy for technology integration. The authors present vicarious experiences to students by using VisionQuest which includes beliefs of six K-12 teachers and technology practices. An expected implication is that the use of vicarious learning experiences may increase those teachers' confidence.

As is known, affective factors like confidence and the desire of the teacher to use technology obviously affect both the fluency and efficacy for integrating instructional technologies in classroom. In a study by Monoi, O'Hanlon, and Diaz (2005), it is pointed out that as the self-efficacy of a person increases, so does the possibility of using an information resource. That is, the evident relation between confidence and performance is supported in their study. According to Mishra and Koehler (2006), unless teachers actively participate in solving the problems with technology, they cannot integrate technology in a meaningful way.

2.3.3. Barriers for technology integration

It may be more fruitful to speak of the challenges that teachers encounter when they want to integrate technology. Initially, lack of technical support, slow connection, personality factors, training and experience, lack of administrative support, and curriculum integration difficulties are some of the barriers that are broadly reviewed in relevant literature (Al-Ruz & Khasawneh, 2011; Cachia, Ferrari, Ala-Mutka & Punie, 2010; Akça-Saklavacı, 2010; Bingimlas, 2009; Keengwe & Onchwari, 2009; Smarkola, 2008; Brinkerhoff, 2006; Akbaba-Altun, 2006).

Like the other data referred so far, Johnson (2006) notes many deficiencies such as lack of computer technology resources, technology experts, and varied ways of

presenting technology training methods as possible barriers to technology integration. In what follows, Smarkola (2008) examines both prospective and in-service teachers' beliefs regarding their computer use. The analysis of the interview data indicates limitations for teachers' computer applications some of which are equipment resources and personal support from school administrators.

Extending from this perspective, Akça-Saklavacı (2010) argues that even though the teachers have positive attitudes toward the use of the internet for instructional purposes, they do not use internet in their actual classroom practices. With regard to the reasons for not using internet, teachers mentioned problems such as lack of time, lack of technical resources and support from directors, lack of knowledge and skills on how to integrate internet into their courses. Taken as a whole, it is the teacher who can make it possible for technology to be used in classroom practices.

In Jordan, Al-Ruz and Khasawneh (2011) studied factors influencing prospective teachers' technology integration. The authors formulated two main factors relating to the university and school environment respectively. As regards to university-based factors, they named technology self-efficacy, technology proficiency and perceived usefulness of technology; besides, overall support and technology availability were the school-related variables. Taking these as a base, the researchers confirmed that the modelling of technology positively impacts the prospective teachers' self-efficacy, proficiency and perception for usefulness enhancing technology integration. Additionally, as the support mechanisms and available technology facilities increase in a school, prospective teachers struggle for technology integration raises as well.

Akbaba-Altun (2006) aimed to identify issues concerning computer technology integration into the education system of Turkey. In this respect, she used both qualitative and quantitative methods to collect data from school principals, computer coordinators and supervisors. The findings confirmed multiple factors regarding computer technology integration into education which are grouped as infrastructure, personnel, curriculum, administration and supervision. Namely, the problems such as lack of technical support, lack of training of teachers, materials and assessment matters

regarding curriculum were stressed.

According to Gunga and Rickets (2008), the sole introduction of technology in education cannot transform education in itself; however, when the teachers adopt this technology, the potential to change education can occur. From this perspective, if a teacher conceptualizes a technological tool as nothing different from a pen or pencil, this may cause the teacher to put aside the effective integration of technology into instruction. However, if a teacher accepts those tools as the indispensable instruments of teaching and learning, the successful integration of technology will be highly possible.

2.4. Professional Development Practices

To the best of the researcher's knowledge, those challenges that are mentioned above can best be solved by the help of effective professional development. Hence, a small body of literature emphasizes the importance of teacher education in many respects (Skoretz, 2011; Akça-Saklavacı, 2010; Cachia et. al., 2010; Bingimlas, 2009; Keengwe & Onchwari, 2009; Overbaugh & Lu, 2008; Paraskeva et. al. 2008; Plair, 2008; Lawless & Pellegrino, 2007; Brinkerhoff, 2006; Kemp, 2002; Torkzadeh & Van Dyke, 2002; Windschitl & Sahl, 2002; Warschauer, 2000).

Skoretz (2011) aimed to determine the effect of a professional development program on teacher efficacy for technology integration. What is notable here is that even though the teachers participated in the professional development program, there was no statistically significant change in their levels of technology integration. By the same token, Brinkerhoff (2006) examined the impact of long-duration professional development program on teachers' technology integration beliefs and efficacy. The researcher concluded that the teachers' technology integration beliefs and practices did not indicate any change. Quite the reverse, in their research Overbaugh and Lu (2008) investigated the possible impact of short-term instructional technology courses. Interestingly, the picture that emerged from the findings is that professional development program increases the teachers' both confidence and competence in

technology integration.

As is discussed in the construct of teacher efficacy part of this paper, efficacy beliefs are resistant to change, and in Skoretz's words, although a teacher may feel confident regarding content knowledge, teaching the content and use of technology, he or she may not translate this efficacy to technology integration. To this end, the author further argues that what is difficult is to adapt the instructional technologies into daily practice of teachers rather than gaining knowledge in 21st century teaching and learning.

In their report explaining the positive consequences of teacher training in ICT, Cachia et. al. (2010) found that "there is a strong need for pedagogic training which empowers teachers with the required ICT skills to help their students become digitally competent on the one hand, and for guiding students towards more exploratory and creative interaction with ICT tools on the other hand" (p.11). Windschitl and Sahl (2002) put emphasis on the significance of professional development opportunities as one of the ways to develop technology use of teachers. In the same vein, Akça-Saklavacı (2010) underlines the necessity of training for more complicated computer and internet applications for EFL teachers. Additionally, Bingimlas (2009) proposes that training courses for teachers should be offered by schools with the aim of gaining experience with new devices and pedagogical approaches. Furthermore, Kemp (2002) investigated the effect of professional development on the attitudes and self-efficacy beliefs of teachers, the researcher reached the conclusion that training on technology professional development is likely to enhance positive attitudes toward technologies and higher levels of self-efficacy.

Interestingly, Torkzadeh and Van Dyke (2002) investigated the effects of training on internet self-efficacy and computer user attitudes. The authors specifically noted that even though the training improved internet self-efficacy of the participants, no influence on the attitudes toward computer usage was observed. In passing, Lawless and Pellegrino (2007) criticize the studies that are conducted in the area of professional development due mainly to the fact that they generally concern what the teachers think about the professional development activities rather than focusing on what teachers

learn and how it affects their pedagogical practices.

As discussed in detail in the previous section, affective factors like confidence and attitudes evidently affect the efficacy. On a similar line, Paraskeva et. al. (2008) postulate that if the teachers are trained in order to use technology as an educational tool, both their attitude and confidence can transform into a positive one, they can also develop some new skills for teaching. On the other hand, in his paper providing recommendations on how to improve ICT integration in classrooms, Bingimlas (2009) cites that “many teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they do not have enough time” (p.239).

Notably, Kayaduman, Sirakaya and Seferoğlu (2011) emphasize the importance of the content of in-service courses. In other words, when the authors examined the content of many in-service courses, they realized that topics like how to use internet, e-mail issues, and basic word skills were included. Then, they concluded that unless the teachers are not trained on how to integrate technology into their courses, they will not effectively use those technologies in their classrooms. Skoretz (2011) supported the notion by stating that when the core point of any professional development program is related to technology integration, this will positively affect the classroom practice. In response to this suggestion, Keengwe and Onchwari (2009) remark that the participant teachers in their study complained about the content of professional development workshops; that is, those workshops do not directly relate to their classroom teaching. As a response to this condition, the authors emphasize the necessity of assessing the teachers’ technological needs before deciding on the content of those workshops.

In a study by Plair (2008), it is stated that despite changing the format of professional development, many teachers do not transmit the knowledge and skills that they learnt in the training into their actual classroom practices. Besides, Plair (2008) holds promise in that a knowledge broker or mentor may provide support for teachers in order to integrate technology to pedagogy and content after the professional

development training ends. Furthermore, Kemp (2002) puts forward ongoing training and assistance for teachers while they are using new pedagogic methods that necessitates considerable use of technologies.

In their meta-analysis on professional development programs concerning technology integration, Lawless and Pellegrino (2007) identifies three effective components of an effective professional development program. First, learning how to use the technology in a specific context is necessary. If this element is included in a professional development program, it will most probably result in an increase in both the teachers' confidence in using technology tools and their beliefs in the positive impact of these tools on student learning. The second component is reflection which provides ongoing technology integration practices after the professional development courses end. Mentoring and coaching models are termed as the last component. When the mentor or coach focuses on the teacher's needs, it provides increased proficiency in the use of technology.

2.5. Research on Teacher Efficacy for Technology Integration

The aim of this section is to review the relevant studies which are conducted both on EFL context and in Turkey, it is hoped that drawing a general framework for the issue will be possible by comparing those studies. Therefore, investigations conducted on EFL context are discussed first, then follows the studies of local context.

2.5.1. Studies on EFL context

A survey of the field reveals that most of the studies have examined the relation between efficacy beliefs and some other factors such as motivation, job satisfaction, attitudes and competence (Kao et. al. 2011; Skoretz, 2011; Farah, 2011; Skaalvik & Skaalvik, 2010; Conrad & Munro, 2008; Overbaugh & Lu, 2008; Kemp, 2002; Torkzadeh and Van Dyke, 2002; Gobbo & Girardi, 2001) due mainly to the fact that teacher efficacy is conceptualized as a multidimensional construct (Skaalvik &

Skaalvik, 2010).

First, in Taiwanese research Kao et. al. (2011) primarily investigated the correlation between internet self-efficacy and belief about web-based learning. The picture that emerged from their findings is the positive relation between internet self-efficacy and motivation. To put it differently, teachers who have increased self-efficacy and stronger beliefs on the positive results of web-based learning have a tendency to display higher motivation toward web-based professional development. Second, Skaalvik and Skaalvik (2010) found a positive relation between job satisfaction and teacher self-efficacy.

From their analysis of the questionnaires, Conrad and Munro (2008) found that whereas there is a positive correlation between computer efficacy and positive attitudes, computer efficacy is negatively related to other factors such as anxiety. In a similar fashion, Torkzadeh, Chang and Demirhan (2006) reported that positive attitudes and low level of computer anxiety significantly improved both computer and internet self-efficacy of undergraduate business students. Conversely, Farah (2011) found negative results regarding the relation between efficacy and attitude. In other words, her study revealed that even though the teachers may have positive attitudes toward instructional technologies, their level of efficacy was not high.

In Italian research, Gobbo and Girardi (2001) interviewed with twenty-four teachers who were grouped as 'low competent' and 'high competent' with respect to ICT. From their analysis of the interview data, the authors found that rather than the low competent teachers, those who were competent attained a higher level of ICT integration into their teaching. More in-depth analysis revealed that high competent teachers had an intrinsic motivation to use ICT whereas low competent teachers tended to have a more extrinsic motivation. In the same vein as Gobbo and Girardi's study, a recent research by Torkzadeh and Van Dyke (2002) evidenced the positive relation between attitudes and self-efficacy. That is to say, higher self-efficacy scores were obtained from the respondents with high attitude toward computers, yet those with low attitude provided lower self-efficacy scores. Given the above considerations, the authors

came to the conclusion that training courses possibly do not transform the user attitudes toward computers.

With respect to demographic factors in efficacy studies, it may be emerged that the results are clearly controversial. To illustrate, Kao et. al. (2011) found no difference in relation to gender, age and internet experience in his study focusing on the internet self-efficacy beliefs of elementary school teachers, yet Skoretz (2011) reached a conclusion that factors like grade level, and subject area of teaching causes a variation with respect to technology integration. That is to say, the researcher claim that “teachers who taught in a middle school or who taught a single subject may have more focused opportunities to integrate technology in their classroom” (p.120).

In the same vein as Skoretz’s study, Bandura (1997) spells out the differentiation of collective efficacy of teachers according to grade level and subjects. In support of Kao et. al. (2011)’s findings, Overbaugh and Lu (2008) have reached the conclusion that factors like age, gender and school location do not have any effect on the participants’ self-efficacy, yet the number of previous courses taken and educational level have a relation to the self-efficacy of those teachers. Arguably, Torkzadeh and Van Dyke (2002) found significant gender differences with respect to internet self-efficacy in pre- and post-test scores, the males scored more than females. Notably, Lee (2009) puts forward that age and teaching experience negatively correlate with levels of English proficiency. That is, as the age and teaching experience of a participant increase, his/her level of English proficiency decreases.

The relevant literature illustrates that there is a positive correlation between general efficacy and technology related efficacy. Paraskeva et. al. (2008) researched the relationship between general self-efficacy and computer self-efficacy in Greek context. They reached the conclusion that as the general self-efficacy increases, so does the computer self-efficacy. Specifically speaking, Kim et. al. (2013) examined the relation between teacher beliefs and their technology integration, and they basically found that teachers’ beliefs regarding knowledge and learning both affect and are affected from their beliefs’ about effective ways of teaching; further, those beliefs about teaching

significantly correlate with technology integration practices.

Specifically, in his dissertation examining urban school teachers' self-efficacy beliefs and practices in integrating technology, Kemp (2002) postulates that the years of teaching experience is controversially correlated with efficacy for technology integration. In practical terms, less experienced teachers were found to be more efficacious in terms of technology integration. Similarly, Akça-Saklavacı (2010) has reached the conclusion that the level of internet use is higher for young EFL teachers with less teaching experience rather than those old teachers with more years of teaching experience. By contrast, a more recent study by Skoretz (2011) argued that years of full-time teaching experience does not cause any significant difference in teachers' efficacy for technology integration.

2.5.2. Studies in Turkey

As was pointed out in the previous section, many studies have also been carried out in local context (Bülbül & Çuhadar, 2012; Altun-Yalçın, Kahraman & Abidin-Yılmaz, 2011; Akça-Saklavacı, 2010; Ekizoğlu & Ozcinar, 2010; Kaya & Durmuş, 2010; Gürol & Aktı, 2010; Horzum & Çakır, 2009). First, Altun-Yalçın et. al. (2011) examined the primary school teachers' self-efficacy levels for instructional technologies in Erzurum. In very general terms, they argue that the level of self-efficacy beliefs is higher for instructional technologies. However, the study lacked the method of observation, so whereas the teachers claim to believe so, their actual practices should be evaluated in order to reach such a conclusion in a comprehensive way.

Second, Ekizoğlu and Ozcinar (2010) investigated the correlation between computer and internet based anxiety and perceived self-efficacy. The authors further document that perceived self-efficacy for computer and internet are positively related. In support of this view, they suggest that "instead of measuring internet self-efficacy with another scale, it will be enough to include it as a factor in the computer self-efficacy scale" (2010:5890). Third, pre-service teachers' perceived internet self-efficacy and levels of internet use for research are studied by Kaya and Durmuş (2010).

Extending from this perspective, they concluded that as the rate of internet use for research increases, perceived internet self-efficacy increases as well.

Along those lines, Akça-Saklavacı (2010) mainly investigated high school EFL teachers' level of internet use for instructional purposes. The participants were EFL teachers who work at state high schools of Eskişehir. The results of the study indicated high levels of internet use for mainstream internet application, yet the levels of internet use for more specialized applications were low. When the personal, professional and instructional purposes to use internet are taken into account, it has been found that the internet usage for personal and professional purposes were more frequent than the instructional purposes.

The focus of the study which is done by Gürol and Aktı (2010) is situated in the prospective teachers' context; simply put, they examined pre-service teachers' self-efficacy and internet self-efficacy relation. To this end, they proposed that "enhancing pre-service teachers' self-efficacy tends to have a positive influence on their sense of internet self-efficacy" (p.3256). As indicated earlier, Horzum and Çakır (2009) adopted OTSES to Turkish and the results were positive. Notably, Bülbül and Çuhadar (2012) examined the technology related efficacy from school administrators' perspective. By this framework, they point out that if the school administrator's level of perceived self-efficacy increases; this will most probably affect the opportunity of technology integration in schools.

With respect to studies concerning self-efficacy concept in general, issues such as efficacy for measurement and evaluation, the influence of in-service teacher education on efficacy and level of teaching efficacy are noted (Ceylandağ, 2009; Şahin, 2007; Ortaçtepe, 2006). Initially, Ceylandağ (2009) studied self-efficacy beliefs of teachers concerning measurement and evaluation practices; accordingly, the author came to the conclusion that "developing teacher self-efficacy toward measurement and evaluation practices has an influence on increasing the frequency of using alternative measurement and evaluation tools" (p. 79).

As a longitudinal study, Şahin (2007) examined level of teaching efficacy of English teachers in comparison with student teaching and induction year. In this regard, data from 27 participants collected via quantitative and qualitative methods in three periods named as before student teaching, after student teaching and end of induction year. The findings indicated a contradictory finding; that is, even though there was a significant increase concerning onset and offset of student teaching, a significant decline was revealed after student teaching and induction year were compared. Lastly, in her research, Ortaçtepe (2006) examined the impact of in-service teacher education program on teachers' level of efficacy. With this purpose in mind, a specific teacher training program was organized for the participants of the study. The results revealed enhanced teacher efficacy after participation in the training.

Finally, it may be easily summarized that teacher efficacy is a construct which contextualize many dimensions such as affective factors, demographic characteristics and so on. Available evidence suggests that the importance of technologically enhanced language learning cannot be underestimated, but it is the teacher who can make it possible. Provided the teacher has increased efficacy for using technological tools in his/her class, the chance of technology integration into learning may be enhanced. As aforementioned, the best way to help teachers in this contrastive issue is professional development programs and sustained training for technology.

2.6. Fatih Project

Fatih Project which is described as “The Movement for Increasing Opportunities and Enhancing Technology” can be accepted as a revolution in the area of education. The project mainly aims to enhance the learning environments with the help of technological devices such as IWB, and Tablet PC. Additionally, the project also strives for providing equal opportunities in education. Bandura (1997) notes the significance of equal opportunity by stating that “unless the poor are provided with home computers and access to on-line services, the knowledge gap between rich and poor nations and between advantaged and disadvantaged sectors within nations will

widen” (p.214). In brief, each class of state schools will be equipped with the current technological devices thanks to Fatih project.

By means of Fatih Project, computer technology devices will be effectively used in the classes by addressing more sense organs in the process of teaching and learning. Therefore, this project will provide laptop computers, projection apparatus and internet infrastructure in 620,000 classes that are available in all levels of schools in compulsory education (<http://www.fatihprojesi.com/>). Currently, there are nearly one hundred schools in seventeen cities that are chosen for the pilot study of the project.

Notably, in-service training will be provided for the teachers; furthermore, pedagogical e-content will be developed by forming a curriculum that is consistent with computer assisted teaching. Extending from this perspective, Fatih Project is formed by five main components named as 1) providing infrastructure for hardware and software, 2) providing and managing pedagogical e-content, 3) effective use of computer technologies in curriculum, 4) in-service training for teachers, 5) providing conscious, safe, manageable and measurable computer technology usage. With this framework, the project is aimed to be fulfilled in three years time, so the facilities like computer technology hardware and software, e-content, updating teachers’ books, in-service training for teachers so and so forth will be provided in high schools as a first step, next in secondary schools and all those facilities will be provided in primary and kindergarten in the last year of the project; so to speak, the project will be completed until the end of 2013 according to the authorities (<http://www.fatihprojesi.com/>).

It may be more fruitful to examine the detailed explanation of components that are mentioned above. First, improving hardware and infrastructure purely refers to providing a laptop computer and projection apparatus in all classrooms (620,000 classes). In addition, at least one smart classroom including multi-purpose copier, smart board, document camera and microscope camera will be formed in each school. A total of 110 distanced in service training centers will be founded in each city as well.

Second, providing and managing e-content emphasizes consisting of learning

objects supported by multimedia tools like audio, video, animation, presentation, and internet e-books. In this sense, teachers and students will easily access those e-contents both online and offline in web-based environments. Effective computer technology use is the third component; in this regard, refreshing teacher books by including hardware and infrastructure that is provided in classes and effective use of pedagogical e-content has been planned (<http://www.fatihprojesi.com/>).

With respect to in-service training for teachers, both face-to-face and distance in-service training activities has been planned in order to develop the skills of teachers for using hardware, infrastructure, pedagogical e-content and teacher books coherent with the computer technologies. Lastly, broadband internet access for each class will be provided with cable internet connection. In order to provide conscious and safe usage of internet, not only necessary hardware and software infrastructure will be installed but also principles will be edited with respect to the final component of the project (<http://www.fatihprojesi.com/>).

Without any doubt, internet is the core of today's technology due to the outnumbered benefits such as reaching a great amount of information in a few seconds. Specifically speaking, internet can be accepted as an invaluable instruction tool especially in EFL environment due mainly to presenting authentic learning materials. Furthermore, internet provides the opportunity for collaboration not only in local and national perspectives but also in global areas (Akça-Saklavacı, 2010). Similarly, Lee (2000) stresses the benefits of network-based technology as the chance to learn by doing, increasing students' motivation, enhancing student achievement, availability of authentic materials for study, varied sources of information, enhancing interaction, and global perception. In actuality, it is aimed that each student in compulsory education will benefit from those opportunities by means of the Fatih Project.

Based on the remarks above, Fatih Project has aimed to educate today's students according to the needs of the globalized world. As may be anticipated, many authorities are responsible for the success of the project. As a first step, Telli-Yamamoto (2012) reports the suggestions that are made by the academicians in the workshop

named “*Fatih Project education of the future*”.

The recommendations for the project chiefly focus on what are the responsibilities of authorities like teachers, students, parents and MoNE. Initially, students should actively participate in the project; parents should control their children’s use of technology especially the internet. As for the MoNE, it has been criticized for not being in cooperation with universities. It is basically suggested that teachers’ career development is provided by MoNE (Telli-Yamamoto, 2012).

The chief issue of the report is about the teacher role. With respect to teachers, the importance of ongoing in-service training is emphasized. Further, a construction which provides peer to peer interaction and cooperation among teachers should be developed. On a similar line, Cachia et. al. (2010) recommend a more general framework by citing “the need for a European online resource and sharing platform was highlighted, where European teachers can share learning resources in different languages” (p.39). The significant role of the teacher is also emphasized by Kayaduman et. al. (2011), the authors examined Fatih Project from the perspective of teacher efficacy. They stressed the crucial need for in-service training about the use of technology as well.

2.6.1. Research on the implementation of Fatih project

As already noted, the significance of using computer technologies in education is indispensable. In this sense, Fatih Project chiefly aims to provide the essential technology tools in each class of the state schools. Doubtless, a pilot study should be done in each project in order to recognize the problems and limitations that occur in the implementation process. With all these considerations in mind, a few investigations were conducted in three pilot study schools of the project, two of which are in Ankara and one is in Antalya. And, those in Ankara are secondary school and vocational high school, the one in Antalya is a secondary school as well(<http://www.fatihprojesi.com/>). In all these schools data is collected via quantitative and qualitative methods; that is to say, questionnaires are conducted to the teachers, and interviews are practiced with

teachers, students and parents. Henceforth, by using different data collection methods and different authorities (e.g. students, school principals, teachers, and parents), a detailed evaluation of the project was tried to be assigned.

When the studies conducted with the teachers are taken into account, how teachers evaluate Fatih Project in education and how they can assist to the development of the project can be noted as the main purposes. Notably, there are four studies with different participants and in two schools of Ankara. As a first step, an interview is conducted with 28 teachers in vocational high school. The findings indicate that most of the teachers cannot use projection apparatus and laptop computers; on the contrary, 59 teachers are interviewed in a secondary school in Ankara, and most of them report to use the projection apparatus, laptop computers and internet. Secondly, both of the interviews chiefly signify that teachers cannot use IWB because there is not any IWB in their schools. Even so, most of the teachers in secondary school believe the necessity of IWB in classroom activities (<http://www.fatihprojesi.com/>).

With respect to the problems regarding technology tools, insufficient internet access, lack of sufficient virus protection, and dangerous content-filtering are reported in all the studies. More than that, problems related to e-content are emphasized in all the studies. That is to say, teachers complained about not reaching sufficient e-content related to their courses, and lack of adequate e-content in ministry's www.egitim.gov.tr portal. Arguably, a huge number of the teachers criticize themselves for not having enough knowledge and skills in order to prepare their own e-contents. In this sense, they require in-service training for preparing their e-content and how to use computer technologies in teaching activities. Interestingly, most of the teachers in secondary school prefer face-to-face training to distance education; they also would like to attend the courses in summer time in a long period. Specifically speaking, teachers in secondary school suggest that e-content prepared in line with the curriculum can be presented to the teachers; also e-content prepared by teachers can be gathered in a pool (<http://www.fatihprojesi.com/>).

When the pedagogical usage of these equipments is concerned, most of the

participants in secondary school remarked the lack of sufficient orientation in the curriculum. At a broader level, the participants in both of the studies denoted the need to update teacher books and activities in the course book in order to provide the effective use of computer technology devices in teaching practices. Broadly speaking, teachers in secondary school emphasize the positive contribution of computer technology devices to their professional development. With regard to the benefits for students, a huge number of the teachers in both schools expressed positive views. To this end, advantages like, more effective and fruitful courses, acquiring the complex subjects in easier way, enriching teaching and learning, making learning permanent by addressing more sense organs, supporting different intelligence types so and so forth are noted by the participants (<http://www.fatihprojesi.com/>).

Importantly, secondary school teachers express their views on students and parents, many of them complained about the students' insufficient use of computer technology devices; moreover, they noted some negative comments related to parents' knowledge on these equipments. In their opinion, parents do not have enough information on the efficient use of these equipments and they also do not have any information about the benefits of those devices (<http://www.fatihprojesi.com/>).

At this point, it may be more fruitful to speak of the results that concern the students' and parents' viewpoints on the project. Therefore, a different study conducted with students and parents in school of Antalya. An interview was performed with parents and students, and quantitative data was collected from 400 students. The findings of the study indicated positive views of the students; that is to say, they noted to learn the topics easily via ICT devices, increasing their interest to courses, making lessons more enjoyable. What is notable is that more than half of the respondents (60%) required a training about the use of ICT devices. On the other hand, the participants of this study were primary school students whose age is in between 8 and 11, so they were very young learners (<http://www.fatihprojesi.com/>). However, it may be claimed that their age is not sufficient to remark comprehensible ideas on the use of technology. Instead, high school students might have been participated in such a study; or put it another way, an interview with high school students may elaborate more interesting and

acceptable results.

Finally, interview with parents emerged positive attitudes toward the use of technology. They noted positive contribution of the project as providing equal opportunity, using technology in conscious way, and safe internet usage instead of getting students away from the internet (<http://www.fatihprojesi.com/>).

2.6.2. Multidimensional perspectives on Fatih project

It should bear into mind that Fatih Project has multidimensional perspectives. Varank, Çifçili and Yıldırım (2012) supported the notion by stating that the project has both technological and political aspects. With regard to political sides, the authors argue that this project will affect the countries in Middle East, yet the important thing is the educational perspective of the project (Varank et. al., 2012).

In their presentation on evaluating the report for the results of Fatih Project pilot study, Varank et. al. (2012) examine the emergent results of the project from an educational perspective. The evaluation focused on four main parts named as the aim and frequency of using technological materials, the affect of those materials to the process of teaching, the problems that occur while using them, and the sociological effects of using those materials. As a first step, it has been observed that most of the teachers use IWBs like a projector, they either watch animations or present some problems related to course; furthermore, teachers continue to use the blackboard for writing. Similarly, in their report which is conducted in European context, Cachia et. al. (2010) has also reached the same findings, they conclude that “IWBs are often used as a replacement for blackboards and PowerPoint presentations to replicate what is written in a text book” (p.37). Although the picture of Fatih Project is very similar to the European context, IWBs are positively accepted by students, teachers and principals.

Based on the literature above, it can be easily claimed that Fatih project will enrich the learning experiences taken place in classrooms thanks to the technological devices such as IWBs, Tablet PC. In support of this view, Windschitl and Sahl (2002)’s

research purely indicates an evidence for the priority of laptop technology rather than the desktop because it helps the students to share more information and collaborate more with each other.

If the problems are taken into account, the matter of classroom management comes first. The problem is basically related to the teachers' lack of knowledge on how to manage the classroom with respect to technological tools; that is, even though there are some programs to lock the usage of Tablet PCs, the teachers do not know them, so they cannot take the attention of the students. In addition, e-contents are problematic, and they are insufficient, so this situation decreases the motivation and expectation of the students (Varank et. al., 2012). Notably, in their research on the teachers' use of laptop computers to support instruction, Windschitl and Sahl (2002) remark on the complex issues that computers introduce into a school community. That is to say, they emphasize the matter of teacher adaptation to a classroom environment which is surrounded by students with their own technological tools and their access to internet.

Lee (2000) classifies the limits for the practice of technology in four groups named as financial barriers, availability of computer and hardware, technical and theoretical knowledge, and acceptance of the technology. The study by Akbaba-Altun (2006) revealed a few factors decreasing technology integration two of which are a small number of computers and slow internet connection. In this regard, Fatih Project aims to solve the financial matters and problems related to hardware and software by providing all the necessary devices (e.g. IWB, internet infrastructure, Tablet PC) in each class for each student. In addition, in-service training courses are organized in order to solve the problem of teachers' lack of knowledge on technical, theoretical and pedagogical areas. With the help of all these practices, it is hoped that both teachers and students will admit the use of technology in instruction.

The problem of internet connection is in need here of further attention, so the study by Akça-Saklavacı (2010) indicated that teachers underline the slowness of internet connection as one of the reasons why they cannot use internet in their instruction. Therefore, Akça-Saklavacı (2010) came to the conclusion that “despite all

the efforts of Ministry of Education to spread and promote computer and internet infrastructures in all schools, they did not seem to meet the growing needs of EFL teachers” (p.56). In response to this situation, the author suggests the availability of computers not only in places like directors’ rooms, teachers’ rooms and computer labs but also in the classrooms. As is known, Fatih Project will provide IWBs in each classroom (620.000 classes) of state schools, so all the considerations above will be solved in a practical way.

When the sociological effects are concerned, many results occurred. First, it has been observed that students are very pleased to have those tools, second, attitudes toward school is very positive, yet communication between students is very weak. As for the parents, they believe that Fatih Project provides equal opportunity in education (Varank et. al., 2012).

As noted earlier, the importance of pedagogical training is undeniable. In line with this, Varank et. al. (2012) claims that the teachers demand in-service training which is not theoretical but practical, they also would like to have ongoing training for technology integration. Clearly, theory in the area of professional development supports the importance of continuous training (Farah, 2011; Lawless & Pellegrino, 2007; Brinkerhoff, 2006). In her study examining factors influencing teachers’ technology self-efficacy, Farah (2011) explains the negative impact of lack of follow-up trainings in professional development opportunities by noting that “knowing there would be no follow-up training further discouraged teachers from going out on their own to learn and use instructional technology more because they may have felt the efforts to train them were short-lived and sporadic at best” (p.114).

Additionally, Lawless and Pellegrino (2007) theorize that “...the best professional development activities are spread out over time with opportunities for follow-up learning and feedback” (p.594). Research by Brinkerhoff (2006) examined the impact of long-duration professional development academy on teachers’ technology skills, computer technology self-efficacy, technology integration beliefs and practices. The results regarding technology skills indicated positive increase based on two factors

named as extended professional development and volunteer participation of the respondents. Interestingly, Varank et. al. (2012) argues that whereas the teachers desire for ongoing and practical training, most of them are resistant to the use of technology in class.

Taken as a whole, Fatih Project aims to enrich the learning environments via up to date technological devices. Even though the results of the initial studies confirm controversial findings, the Project will have positive impacts in the long run. With respect to the multidimensional perspective, the project will have not only educational and technological influences but also political and sociological.

CHAPTER III

METHODOLOGY

3. INTRODUCTION

This chapter presents the methodology of the present study. First, the overall research design is explained. Second, the context of the study is detailed. Third, details are given regarding the participants, data collection procedures and data analysis procedures.

3.1. Research Design

This study implemented “explanatory mixed methods design” (Creswell, Fetters & Ivankova, 2004). Defined in this way, quantitative data is collected to get numerical results, and this is followed by collection of qualitative data to enrich the quantitative data (Hanson, Creswell, Plano Clark, Petska & Creswell, 2005). More specifically, the present study conducted a survey questionnaire to answer the research questions; then, interviews and observations served as additional data in order to explain and broaden the survey results in detail.

In the quantitative phase of the current research, Turkish state high school EFL teachers responded to a questionnaire. The quantitative data was followed by structured interviews and classroom observations as a last resort. The participants of the interview were teachers who voluntarily responded to the survey questionnaire beforehand. As a final point, the quantitative and qualitative data were analyzed separately, and the latter data were used to give additional basis to the former data.

In practical terms, the present study is conducted to examine the in-service EFL teachers' self-efficacy beliefs for technology integration in state high schools context of Sakarya. Specifically speaking, the factors affecting teachers' technology integration self-efficacy and their actual practices are also researched.

3.2. The Context of the Study

Fatih Project which is described as "The Movement for Increasing Opportunities and Enhancing Technology" aims to enhance the learning environments with the help of technological devices such as IWB and Tablet PC. To this end, this study is conducted in Fatih project pilot study schools of the province of Sakarya in the western part of Turkey. There are 44 high schools chosen from the different towns of Sakarya.

Turkish education system offers 4 years of secondary education for teenagers between the ages of 14 and 18. There are both state and private high schools in Sakarya. However, only state high schools are chosen as the setting because Fatih project comprises the state schools only. EFL courses are introduced in each grade through secondary education. However, the course load changes according to the type of schools. Specifically speaking, there are five main types of high schools in Sakarya named as General High School, Vocational High School, Anatolian High School, Science High School and Teacher Training High School.

3.3. Participants

In this section, participants of the study are detailed. In this regard, the participants of the survey questionnaire are explained by giving the demographic information of the whole respondents participated in the study. Second, participants for the interview are reported. Last, participants of the classroom observation are noted.

3.3.1. Participants for the survey questionnaire

The participants (N= 114) of this study were in-service EFL teachers all of whom work at a high school of MoNE in Sakarya, Turkey. There were 44 schools and a total of 125 EFL teachers worked at these schools at the time of data collection. 114 (almost 91%) of the teachers voluntarily participated in the study. 69 (60.5%) of the participants were female and 45 (39.5%) of them were male. With respect to the age of the participants, 50 (43.9%) of them were at the age of 25-30, 47 (41.2%) of them were between 31 and 40 years old. 12 (10.5%) of the respondents were between 41 to 50 years old, and only 5 (4.4%) of them were more than 51 years old.

All the participants work in a high school, so there was no secondary school or primary school teacher among the participants. 70 (nearly 61%) of the participants work in Anatolian High School, 17 (almost 15%) work in a General High School. 27 of them (almost 24%) work in other schools such as Science High School, Teacher Training High School, Religious Vocational High School and so on.

When the level of education was examined, a great number of the respondents (98 of them) had BA degree, 14 of them had MA degree from different departments such as educational sciences, history, English language teaching. Only 2 of the participants had PhD degree. Five of the participants were working as paid teachers; two of them had BA from different departments, namely History and Physics.

3.3.2. Participants for the interview

Of the 114 participants, a total of 12 participants volunteered to take part in the interview. Seven teachers out of twelve were female, five of them were male. Besides, year of teaching experience ranged from six to thirteen meaning that all the respondents were experienced teachers of English. There were three types of school called as General High School, Anatolian High School and Teacher Training High School. Related to number of the students, two teachers were from General High School, four instructors were from Teacher Training High School and half of them were from

different Anatolian High Schools of Sakarya. Last, teachers' education level was in two groups termed as BA and MA. Only three of the participants had MA degree and the rest of them had BA. Last, the participation was voluntary.

3.3.3. Participants for the classroom observation

There were three participants for the observation, and they were chosen among the interview group. It should be noted here that only three teachers accepted to be observed, so the data was collected on voluntary basis. All the participants were female and all of them work at two different Anatolian High Schools of Sakarya. Their teaching experience was six, nine and twelve respectively and all of them had BA degree.

3.4. Data Collection Procedures

Data collection procedures for the present study were conducted in three phase. First, quantitative data was collected via survey questionnaire, and then interviews were conducted with volunteer teachers from the survey questionnaire group. Third, classroom observation was practiced as a last resort.

3.4.1. Quantitative data collection procedures

The data collection for this study was conducted in 44 Fatih project pilot study high schools of Sakarya. SETIS was administered to the participants in the fall term of the 2012-2013 school year. The data of this study were gathered from the participants in one month period (December, 2012). The official permission was granted from MoNE office of Sakarya in the fall term of 2012-2013 school year (see Appendix 1). 81 questionnaires were completed in the presence of the researcher, twenty of them were completed in the absence of the researcher, and thirteen of them were completed via e-mail. Participation in the study was voluntary, and it was confirmed that the responses for the survey would remain anonymous.

The instrument

The questionnaire consisted of three sections which were demographic information, Self-efficacy for Technology Integration Scale (SETIS) adapted from Wang et. al. (2004) and English Proficiency Scale (Chacon, 2005). The main data collection instrument used for this study was SETIS which was originally developed by Wang et. al. (2004) mainly because structured questionnaires are generally more suitable to elicit information from a large number of respondents simultaneously. The permission which was necessary to use the inventory had been taken via e-mail from the authors of SETIS (see Appendix 2). Skoretz (2011) added the utterance “I feel confident that” and statements with “can” in order to clarify the items in the instrument. Those changes were also found to be convenient for the current study. Additionally, the items were adapted to the context of English Language Teaching in a foreign country by making a few changes in the utterances (e.g. I can consistently use educational technology related to English language teaching in effective ways.). In addition, the permission for using English Proficiency Scale developed by Chacon (2005) was also obtained by e-mail (see Appendix 3). Last, demographic information section was developed by the researcher.

As a quantitative self-report questionnaire, SETIS originally consisted of 21 items to examine self-efficacy beliefs for technology integration in two logical areas which were named as computer technology capabilities and strategies, and external influences of computer technology uses. As described next, the validity study for SETIS was conducted; as a result, three items were omitted in the original instrument and the current instrument was named as “Self-Efficacy for Technology Integration Scale” (SETIS) with a total of 18 items. Also, SETIS was translated into Turkish before it was administered (see Appendix 4). The instrument was translated from English into Turkish, then back-translated into English with the help of Turkish language and English language experts to ensure the linguistic validity of the final instrument. The items were 5-point Likert-type ranging from “strongly agree” (5) to “strongly disagree” (1). In that sense, the participants were asked to read a statement and decide if they (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, (5) strongly

agree with each statement. Moreover, English proficiency scale contained a total of 16 items for reading, writing, listening and speaking skills. The items were 6-point Likert-type ranging from “strongly agree” (6) to “strongly disagree” (1).

3.4.2. Validity of SETIS

The original study

Wang et al (2004) state that the evidence of the construct validity of SETIS was largely empirical in nature rather than determined by theoretical predictions. They conducted exploratory factor analysis (EFA) to determine any meaningful constructs that the instrument might measure in their data set. The results suggested that a two-factor solution explained 55.36% of the variance. The first factor, ‘computer technology capabilities and strategies’, consisted of 16 items (1-16); while the second factor, ‘external influences of computer technology uses’, consisted of 5 items (17, 19, 15, 20, 21).

The current study

In parallel with the original study, an exploratory approach was taken initially to determine the factor structure of the current data set. However, unlike the original study, confirmatory factor analysis (CFA) was conducted to assess the goodness of fit of the emerging model to the data set in the current study.

Exploratory factor analysis

The current data set was shown to be factorable (Kaiser-Meyer-Olkin Measure of Sampling Adequacy =.92, Bartlett’s Test of Sphericity $p=.000$). EFA (Maximum Likelihood Factor Extraction with promax rotation, cut off .04) revealed two factors which explained 55.17% of the variance ($\chi^2=316,293(169)$, $p=.000$). The pattern matrix for the factors is given in Table 3-1. Items 6, 8 and 20 failed to load on either of the factors, and were thus omitted from further analyses. The factors were then named

according to the items which loaded on them. Factor 1 was given the label “*Addressing Students’ Technological Needs*”, because it largely included items such as “*I feel confident that I can mentor students in appropriate uses of technology*” (item 9), and “*I feel confident that I can effectively monitor students’ computer use for project development in my classroom*” (item 7). Factor 2 was labelled “*Technology Integration in Teaching*”, because the items loading on this factor included ones which were more directed towards the use of technology in instruction such as “*I feel confident that I can successfully teach relevant subject content in English with appropriate use of technology*” (item 3), and “*I feel confident about selecting appropriate technology for English language instruction based on curriculum standards*” (item 13).

Table 3-1. Pattern matrix for SETIS

Item	Factor	
	1	2
5	.82	
7	.82	
9	.81	
18	.80	
2	.63	
1	.60	
17	.52	
11	.51	
19	.50	
4	.44	
13		.92
15		.75
14		.70
16		.62
12		.50
10		.49
21		.40
3		.40

(MLFE, promax rotation, cutoff .40)

Confirmatory factor analysis results

CFA was run on the 2-factor model which emerged from the EFA. The fit

indices were $\chi^2=292.37(104)$ ($p=.000$), RMSEA=.14, NFI=.93, CFI=.94, IFI=.94. The RMSEA value was above the preferable .08 level; however, this index is sensitive to sample size and can give insignificant results with small samples (Hu & Bentler, 1999). Given that the other indices indicate a good fit to the model (Byrne, 2001), the 2-factor model was considered an appropriate representation of the current data set.

3.4.3. Reliability

Dörnyei (2007) notes the ‘internal consistency reliability’ as “the psychometric prerequisite for any multi-item scale in a questionnaire that is to be used as a research instrument” (p.206). Extending from this perspective, Cronbach alpha values were calculated not only for the whole scale but also for the factors. In this sense, Alpha coefficient of .94 confirmed that the instrument was highly reliable ($0.80 < \alpha < 1.00$). Even more important, two factors named as Addressing Students’ Technological Needs and Technology Integration in Teaching emerged as a result of Exploratory Factor Analysis. Alpha coefficients for the factors named “Addressing Students’ Technological Needs” and “Technology Integration in Teaching ”were .92 and .87 respectively, then both of the factors were highly reliable ($.80 < \alpha < 1.00$).

In the original study, Wang et. al. (2004) reported a Cronbach alpha value of .94 for the first factor, but they did not report the reliability of the second factor, because it was not used in the subsequent analyses. Some other studies also focused on evaluating the reliability of SETIS with different purposes. To give an example, Abbitt and Klett (2007) calculated the internal consistency of the instrument and found the same results of Cronbach alpha coefficients of the original study; that is, .94 for pre-test and .96 for post-test successively. In line with the original study, Abbitt (2011) only used the 16 items of SETIS. Additionally, the author found the internal consistency of 16 item SETIS as Cronbach alpha value for .95 for the pre-test and .96 for the post-test. All in all, it can be specifically noticed that the reliability study of SETIS for whole scale has been conducted in many studies with different samples, and all these studies proved SETIS as a highly reliable instrument that can be used in different settings with different samples.

As a final point, a reliability analysis for the English proficiency scale was also conducted. The reliability was calculated as .93 for Cronbach's alpha indicating that the instrument was highly reliable ($.80 < \alpha < 1.00$) as well. Similarly, Chacon (2005) reported Cronbach's alpha value of .92 for English proficiency scale.

3.4.4. Qualitative data collection procedures

Interview

Interview data was collected after the quantitative data analysis mainly because volunteer teachers were chosen according to their level of self-efficacy for technology integration. Thus, the interviews were done following the collection of the quantitative data in the spring semester of the 2012-2013 school year. The informed consent was applied before the interviews in order to achieve anonymity. The interviews were conducted during school hours at lunch intervals. There was no focused group interview, so the interviews were conducted individually. Interviews were conducted face-to-face and audio recorded, the data was later transcribed for analysis and coding purposes. Structured questions some of which adapted from Farah (2011) were used in the interview (see Appendix 5), the questions and answers were addressed in Turkish.

Classroom observation

As soon as the qualitative data of interviews were collected, the classroom observations were done in the spring semester of 2012-2013 school year. Three volunteer teachers were permitted the researcher to observe their classes. These teachers were also attended in the interview phase of the research. Two teachers were observed in the same day as they work in the same school, but the other teacher was observed later. Semi-structured observation guide developed by Johnson (2006) was used for the observation. Additionally, a few parts were added by the researcher such as level of language use. The teachers introduced the researcher and explained the reason why she was in the classroom. The researcher sat in the back of the classroom, observed the course and took notes through the lesson.

3.5. Data Analysis Procedures

The analysis of the data was conducted in three phase. First, research questions related to quantitative data were analyzed by using SPSS version 13.0, and LISREL. Second, interview data were analyzed by forming themes and categories. Third, classroom observation data were analyzed as a last resort.

3.5.1. Quantitative data analysis procedures

Data analysis for research question 1

The first research question was formulated to investigate in-service EFL teachers' level of self-efficacy for technology integration and their perceived level of English proficiency in the present study. With the aim of answering this question, the descriptive statistics were calculated for the whole scale of SETIS and English proficiency scale. Additionally, the descriptive statistics for each factor emerging from the CFA for the total sample were also computed.

Data analysis for research question 2

The second research question aimed to investigate the differences between self-efficacy beliefs for technology integration and demographic variables. Those demographic variables were gender, age, year of teaching experience, computer use, following technology innovations, internet use, and attending in-service trainings. In the first sense, descriptive statistics were calculated for each variable. As a result, one-way ANOVA was conducted for each variable considering each factor in SETIS. Specifically speaking, a post hoc Scheffe test was conducted for the computer use variable as the ANOVA results were significant for the factor named Technology Integration in Teaching. In this regard, use of computer variables was examined.

Data analysis for research question 3

The third research question was posed in order to determine whether or not there was a relationship between self-efficacy for technology integration and perceived English proficiency in general. To that end, the correlation between each factors of SETIS were examined. Further, the correlation between perceived English proficiency and factor 1, then the correlation between perceived English proficiency and factor 2 were analyzed.

3.5.2. Qualitative data analysis procedures

Interview

In the analysis phase of the interview data, the answer for the each question of transcribed data was read in order to determine if the answer was positive or negative in general. After deciding the positive or negative nature of the answers, the reason why it was positive or negative was examined by reading the answers once more. In the third phase, the key words obtained from the analysis were grouped into categories according to the self-efficacy literature. Therefore, the categories and sub categories were formulated. Last, another researcher analyzed one of the random selected interviewees' data by using these categories in order to check the reliability of the categories.

Classroom observation

The data obtained by semi-structured observation guide was transcribed as soon as the course finished. As the guide included sections such as technology use and student engagement level, it was easy to group the observation results according to these sections.

CHAPTER IV

RESULTS

4. Introduction

This section of the study aims to introduce the results of the present study. As a mixed-method study, the results of the questionnaire, interview and observation will be examined in accordance with the research questions. To this aim, the research questions will be noted as a first step, and then the results of each question will be discussed in detail. There will be three sections named as results for questionnaire, interview results and observation results.

4.1. Results for Questionnaire

As aforementioned, the findings of the study will be reported one by one by focusing on the answers of each research question. Based on the questionnaire data, level of self-efficacy beliefs for technology integration, differences in technology integration levels regarding demographic variables, and correlations between English proficiency and self-efficacy beliefs for technology integration were examined respectively.

4.1.1. Results for research question 1

“What is the level of technology integration self-efficacy and perceived English proficiency in the current sample?”

To answer the first research question, Table 4-1. reports the means and standard deviations for each scale in the questionnaire named as Technology Integration Scale and English Proficiency Scale. Mean and standard deviations for two factors of technology integration scale are also presented. As mentioned previously, the participants were 114 in-service English language teachers working at Fatih project pilot study schools.

Table 4-1. Descriptive statistics for efficacy and English proficiency variables (N=114)

	n	Min.	Max.	Mean	St. Dev
Whole Scale Mean for Technology Integration Scale	114	2.50	5.00	4.19	.50
Addressing Students' Technological Needs	114	3.93	4.25	4.15	.052
Technology Integration in Teaching	114	3.98	4.25	4.17	.056
Whole Scale Mean for English Proficiency Scale	114	5.00	5.59	5.46	.12

When the means are examined, it can be seen that the highest mean is for English Proficiency Scale ($M= 5.46$) indicating that teachers' level of perceived English Proficiency was higher than their level of self-efficacy for technology integration in general ($M=4.19$). Interestingly, when the subscales of technology integration are examined, it can be seen that teachers' level of efficacy for Addressing Students' Technological Needs ($M=4.15$) was lower than their efficacy for Technology Integration in Teaching ($M=4.17$). All in all, the participants had high efficacy for both technology integration and English proficiency.

4.1.2. Results for research question 2

“Is there any significant difference between self-efficacy for technology integration and demographic variables?”

The second research question specifically aims to examine the relation between self-efficacy for technology integration and demographic variables such as gender, age, and year of teaching experience. In this sense, the following sub-questions were formulated.

Is there any significant difference between technology integration and gender?

Table 4-2. Descriptive statistics for gender (N=114)

		N	Mean	St. Dev
Addressing Students' Technological Needs	Male	45	4.15	.06
	Female	69	4.16	.04
	Total	114	4.15	.05
Technology Integration in Teaching	Male	45	4.16	.06
	Female	69	4.18	.04
	Total	114	4.17	.05

It was confirmed that even though the mean score for Technology Integration in Teaching was 4.16 regarding males, it was 4.18 for females. Thus, females' level of efficacy for Technology Integration in Teaching was slightly higher than that of males.

Table 4-3. ANOVA for gender differences (N=114)

	Source	(SS)	(df)	(MS)	F	Sig.
Addressing Students' Technological Needs	Between Groups	.004	1	.004	1.332	.251
	Within Groups	.302	112	.003		
	Total	.306	113			
Technology Integration in Teaching	Between Groups	.019	1	.019	6.248	.014
	Within Groups	.339	112	.003		
	Total	.358	113			

*p < .01

Table 4-3. reports the results of one-way ANOVA for gender differences referring two factors of Technology Integration Scale named Addressing Students' Technological Needs as Factor 1, and Technology Integration in Teaching as Factor 2. The analysis confirmed that there was no significant difference regarding gender for Addressing Students' Technological Needs, yet there was a significant difference concerning Technology Integration in Teaching ($p < .05$).

Is there any significant difference between technology integration and computer use?

Table 4-4. Descriptive statistics for computer use (N=114)

		N	Mean	St. Dev
Addressing Students' Technological Needs	1-5 years	6	4.15	.03
	6-10 years	43	4.17	.02
	More than 10 years	65	4.15	.06
	Total	114	4.16	.05
Technology Integration in Teaching	1-5 years	6	4.17	.01
	6-10 years	43	4.19	.03
	More than 10 years	65	4.16	.06
	Total	114	4.17	.05

Descriptive statistics for computer use verified that the mean score for Addressing Students' Technological Needs was 4.16, whereas it was 4.17 for Technology Integration in Teaching. Therefore, level of efficacy for Technology Integration in Teaching was slightly higher than that of Addressing Students' Technological Needs with regard to computer experience.

Table 4-5. ANOVA for use of computer differences (N=114)

	Source	(SS)	(df)	(MS)	F	Sig.
Addressing Students' Technological Needs	Between Groups	.012	2	.006	2.251	.110
	Within Groups	.294	111	.003		
	Total	.306	113			
Technology Integration in Teaching	Between Groups	.023	2	.012	3.841	.024
	Within Groups	.335	111	.003		
	Total	.358	113			

*p < .01

Table 4-5. presents the findings for computer usage differences; that is to say, although there was not any significant difference concerning computer use for Addressing Students' Technological Needs, there was a significant difference for Technology Integration in Teaching ($p < .05$). To that end, a post-hoc Scheffe test was conducted in order to examine use of computer variables; it was found that there was a significant difference between those having 6-10 years and more than 10 years computer experience ($p < .05$). This finding suggests that the participants with more years of computer experience reported themselves to have higher efficacy for

technology integration in teaching.

Is there any significant difference between technology integration and following technology innovations?

Table 4-6. Descriptive statistics for following technology innovations (N=114)

		N	Mean	St. Dev
Addressing Students' Technological Needs	Rarely	2	4.12	.03
	Sometimes	22	4.16	.05
	Often	21	4.14	.05
	Usually	41	4.15	.05
	Almost always	28	4.18	.03
	Total	114	4.16	.05
Technology Integration in Teaching	Rarely	2	4.16	.02
	Sometimes	22	4.19	.05
	Often	21	4.16	.06
	Usually	41	4.16	.06
	Almost always	28	4.19	.02
	Total	114	4.17	.05

It was corroborated that although the mean score for Addressing Students' Technological Needs was 4.16, it was 4.17 for Technology Integration in Teaching. To that end, level of efficacy for Technology Integration in Teaching was slightly higher than that of Addressing Students' Technological Needs in terms of following technological innovations.

Table 4-7. ANOVA for technology innovations (N=114)

	Source	(SS)	df	(MS)	F	Sig.
Addressing Students' Technological Needs	Between Groups	.024	4	.006	2.366	.057
	Within Groups	.281	109	.003		
	Total	.306	113			
Technology Integration in Teaching	Between Groups	.016	4	.004	1.288	.279
	Within Groups	.342	109	.003		
	Total	.358	113			

*p < .01

ANOVA results for following technology innovations indicates that there was no significant difference for Technology Integration in Teaching, however the p value

approached significance ($p=.057$) for Addressing Students' Technological Needs. Because statistical significance is a function of sample size (Tabachnick & Fidell, 2007), it is possible that significance would be attained with a larger sample.

Is there any significant difference between technology integration and age, internet use, in-service training (INSET), year of teaching experience?

With regard to age, ANOVA results indicated that there was no significant difference between the means of both Addressing Students' Technological Needs and Technology Integration in Teaching. Likewise, ANOVA results regarding use of internet differences indicated that there was also no significant difference between the means of Addressing Students' Technological Needs and for Technology Integration in Teaching as far as internet usage is concerned.

Although nearly 89% of the participants reported attending in-service trainings, almost 11% of them reported the opposite, so the distribution of sample size was not balanced. However, ANOVA results suggested there was no significant difference regarding INSET for Addressing Students' Technological Needs and for Technology Integration in Teaching. Finally, ANOVA results for year of teaching experience indicated nonsignificant for both Addressing Students' Technological Needs and for Technology Integration in Teaching.

4.1.3. Results for research question 3

“What is the relationship between perceived English proficiency and self-efficacy for technology integration?”

Table 4-8. Correlations among English proficiency and technology integration variables
(N=114)

	1	2	3
1 Addressing Students' Technological Needs	-1		
2 Technology Integration in Teaching	.811**	-1	
3 English Proficiency	.554**	.631**	-1

**Correlation is significant at the 0.01 level (2-tailed)

Table 4-8. indicates that there was a strong, positive and significant relation between Addressing Students' Technological Needs and Technology Integration in Teaching. That is to say, the correlation for Factor 1 and Factor 2 was calculated as ($r=.811$) which means that as the efficacy for Addressing Students' Technological Needs increases, so does the efficacy for Technology Integration in Teaching. Additionally, there was a strong, positive and significant relation between Addressing Students' Technological Needs and English proficiency ($r=.554$). With regard to Technology Integration in Teaching, a strong, positive and significant relation was calculated for English proficiency ($r=.631$). Taken as a whole, it can be said that as the level of English proficiency increases, the efficacy for technology integration increases accordingly.

4.2. Interview Results

The chief purpose of examining interview data was to identify the factors influencing teachers' self-efficacy beliefs for technology integration. To that end, three main aspects were formulated as a result of interview questions named as external/environmental factors, personal factors and general evaluations for Fatih project. Pseudonyms were provided for each participant in order to retain confidentiality. In accordance with qualitative data, each participant's current level of self-efficacy for technology integration was quantified as a result of their quantitative data, and then interviews were conducted to deeply explore the factors affecting their self-efficacy beliefs for technology integration.

This part starts with the level of participants' self-efficacy for technology integration; second common themes regarding teachers' self-efficacy for technology integration are identified with examples from interview data. Teachers' general evaluations for Fatih project are addressed as a last resort.

4.2.1. Teachers' self-efficacy level for technology integration

As mentioned previously, a total of 114 high school teachers completed the survey, and twelve volunteer participants were chosen for interviewing. To quantify the survey results, each of the 18 survey items had five-point Likert scale, assigned point values arraying from 1 to 5. Consequently, twelve respondents' survey results were quantified according to those assigned point values: point range of 1.0 to 2.49 was accepted as low self-efficacy for technology integration, from 2.50 to 3.49 acknowledged as medium level of self-efficacy for technology integration, and from 3.50 to 5.00 ranges notified as high level of self-efficacy for technology integration. Table 4-9 indicates the overall survey results of all interviewers in regards to the means they scored for each factors of self-efficacy and English proficiency.

Table 4-9. Survey results for level of self-efficacy for each factor

Participants	Mean for Factor 1	Mean for Factor 2	Mean for English Proficiency
Seda	4.17	4.22	5.47
Orhan	4.17	4.18	5.57
Melda	4.17	4.22	5.48
İlhan	4.14	4.18	5.44
Ezgi	4.17	4.22	5.47
Deniz	4.21	4.22	5.50
Serkan	4.15	4.16	5.53
Mehmet	4.13	4.19	5.43
Kemal	4.18	4.22	5.46
Fatma	4.14	4.18	4.42
Emel	4.14	4.17	5.51
Aslı	4.14	4.19	5.44

4.2.2. Results for research question 4

“What are the factors influencing teachers' technology integration practices in foreign language classroom?”

As a result of analyzing interview data, the participants' responses were grouped into two main categories named as external/ environmental factors and personal factors. With respect to external/ environmental factors, three main sub categories were identified as perceived student attitudes, available learning

opportunities and existing barriers. For personal factors, attitudes toward use of instructional technology, practices for technology integration and amount of time used for instructional technology were the sub categories (see Figure 4-1).

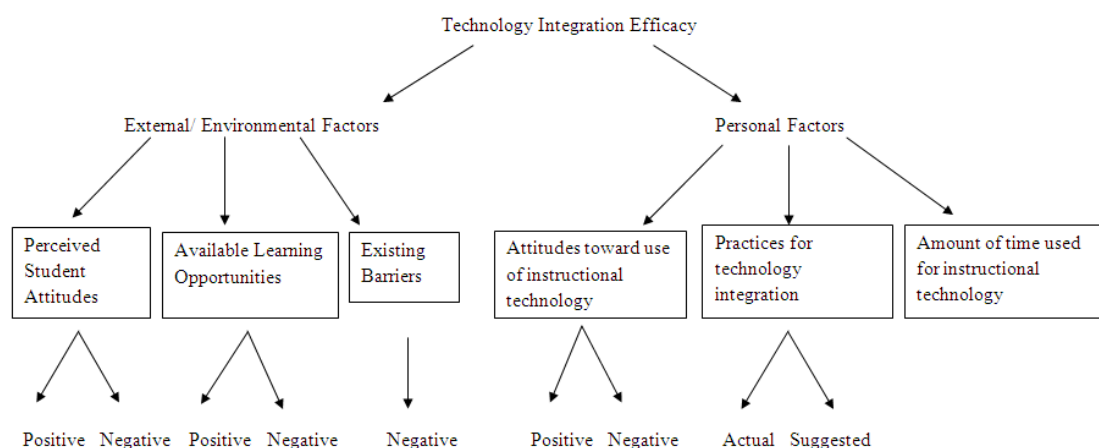


Figure 4-1. Factors influencing self-efficacy for technology integration

Table 4-10. Codes and explanations for factors influencing technology integration

Code	Explanation
Perceived student attitudes <i>Example</i>	It refers to teachers' perceptions and observations for students' attitudes and interest for instructional technologies <i>"I observe that they are happy and as every student cannot reach that technology currently, they see it as a privilege" (Fatma)</i>
Available learning opportunities <i>Example</i>	It refers to in-service courses, time spent for learning technology tools, help from experts and school administration <i>"We attend courses intensively from morning until evening and we have 5 minutes break just for coffee or tea" (Serkan)</i>
Existing barriers <i>Example</i>	It refers to technical problems, infrastructure, and limitations from the authorities, students and problems with the technology device. <i>"As the classes are crowded, managing both the students and technology is difficult" (İlhan)</i>
Attitudes toward use of instructional technology <i>Example</i>	It refers to teachers' personal desire, curiosity for using technology, the perceived ease and convenience of technology, perceived benefits for students, content area focus, and time perception. <i>"For me it gets the courses more active, it is enjoyable and paying students' attention is fast" (Melda)</i>
Practices for technology integration <i>Example</i>	It refers to teachers actual practices and their suggestions for technology integration <i>"In the past listening was very time consuming and it was not enjoyable but we can do it now" (Seda)</i>
Amount of time used for instructional technology <i>Example</i>	It refers to teachers' frequency of using technology in their classes <i>"I use the smart board in every lesson for 9th grades, but I pay attention to 20-25 minutes reality" (Seda)</i>

External /Environmental factors: External/environmental factors mainly refer to the outer issues that affect teachers' self-efficacy beliefs for technology integration; the sources of these issues may be the students, the administration, parents and so on. Thus, factors presented in this section stand for external or environmental factors identified by the respondents. These factors were grouped into three naming as perceived student attitudes, available learning opportunities, and existing barriers to integrate technology.

Perceived student attitudes (positive): It refers to teachers' perceptions and observations for students' positive attitudes and interest for instructional technologies. Most of the participants noted factors like the students' increased attention, interest, curiosity, eagerness, motivation and participation. A few respondents also reported the students to be happy and regard technological devices as superiority.

To illustrate, one teacher put it that way: "I observe that they are happy and as every student cannot reach that technology currently, they see it as a privilege" (Fatma). Another said, "Technology is nothing new for students, they use technological tools as a computer or a mobile phone, their attitudes are positive, they eagerly participate in the lesson and try to use IWB" (Deniz). Serkan noted that "students can comprehend the courses in a better way, we can address almost every learning type by using those different tools, so the courses become more prolific, the students can understand what we teach, what they see and hear in a better way, in that sense technology is very beneficial for us". Melda said "if technology is used when the students lose their attention, they can pay attention to the course again".

Perceived student attitudes (negative): It stands for teachers' perceptions and observations for students' negative attitudes and interest for instructional technologies. A number of respondents commented that instructional technologies sometimes cause the students to lose their attention, to get bored and to become lazy. Some teachers also implied the lack of interaction.

To give an example, one teacher said "when you assign the students to search a

subject from the internet, they find easier way of doing their homework; I mean they present a ready-made English original material as if they wrote it. In that sense, I believe they have problems regarding doing research, synthesize information or this is just being lazy, it is necessary to guide and manipulate students” (Emel). Another stated, “when the technological device is used for a long time, the students get bored, yet when different things are used at intervals, the device takes their attention a lot” (Seda). Additionally, İlhan affirmed that “I can state that the students unfortunately use internet not for educational purposes but for surfing on the net. I mean they use the internet for entertaining”. He further noted that “I have observed that students become uninterested to such kind of technologies as the time passes. Their interest especially for IWB decreases in the time being”. Last of all, Kemal noted an interesting issue by stating that “as the grade level of students increase, the level of technology use in instruction will decrease due to university entrance exam preparation”.

Available learning opportunities (positive): It mainly embodies the sufficiency of in-service courses, time spent for learning technology tools, positive support from colleagues and school administration. First, advantages of INSET were reported.

When the benefits of in-service courses were considered, factors like learning how to prepare a lesson with starboard, increasing awareness and presenting technological devices were denoted. In addition, topics such as prior knowledge on how to use technological devices, personal belief in the benefits of technological device and appropriate course load were connoted as positive influences increasing teachers’ available time to learn instructional technologies. Last, no problem regarding school leaders and colleagues were mentioned.

In terms of in-service trainings, Seda put it that way “I believe the latest training for IWB that we attended in previous semester was very beneficial for me because I knew nothing about starboard program, now I do not know much but I learnt at least to prepare something in that program”. As for the amount of time spent for learning technological tools, İlhan said that “I have adequate time to learn educational technologies during regular work day because I have 21 hours of courses in a week, but

when I have 30 hours in a week, I have neither time nor energy for it, I mean the most crucial factor is the course load in this issue”. Further, Ezgi noted that “if you do not have any knowledge on technology, then you certainly do not have enough time, yet as I have basic skills for using technological devices like computers, I can learn IWB”.

Concerning the support provided from others for using instructional technologies, none of the participants made any negative comment; in other words, they believed that neither colleagues nor school administration cause them not to use technological devices. In that sense, Fatma notified that “my school administration has always supported my technology use. Even when there was not any IWB, we used projectors and computers in very difficult situations. There was not enough projector or computer, so the administration scheduled the courses in accordance with this issue so that every teacher could use them; they recommended us to use those devices frequently”.

Available learning opportunities (negative): This factor specifically notes teachers’ negative comments concerning in-service training and available time for learning instructional technology. Notably, the participants’ views were negative at most.

First, teachers mentioned many problems with respect to in-service trainings such as lack of expert support, lack of guidance, lack of practice, lack of content especially for technology, and less time. To cite a common comment, one teacher remarked that “I believe in-service trainings for technology are not satisfying. The theoretical part of the trainings lasts long, we get bored a lot in that part; as usual everybody gets bored with theory. But I think the educators also have insufficient knowledge regarding practice; that is, they do not know what and how to implement in practice, the implementation should be longer” (Melda).

In addition, Mehmet said that “in fact it would have positive impact but I could not satisfy myself from these trainings because they are a bit out of date for me as I know more than they could teach me”. Serkan put it that way “unfortunately both our

perception as a teacher and the educators' perceptions are different when the in-service trainings are taken into account. For example, there may be a training that lasts for 20 courses but we organize it to finish just in 5 or 6 courses". In the last instance for in-service trainings, Aslı remarked that "I think especially the latest training for IWB was insufficient. I mean it was not enough for me concerning the time because I did not have any chance to practice what I learn. The course was after the school day, so we were already tired. If we had a special time for that trainings and chance for practice in detail, it could be better".

In regard to available time for learning instructional technology almost all the teachers remarked insufficient break time and intensive course loads. Deniz stated that "I certainly do not have any time because I have 8 courses in a day, in break times I'm concerned with my students' other problems, sometimes I meet with parents, so I believe we don't have time not only for using technology but also for anything else". Likewise, Serkan said that "I don't have time to learn instructional technology at school because I have courses from morning to evening and our break time is just five minutes, we can only drink a cup of coffee or tea, we can go to restroom, that's all we can do in the break time. We can learn something only when we do not have a course".

Existing barriers (negative): It refers to technical problems, insufficient infrastructure, lack of help from experts, student related difficulties and problems with the technology device. Specifically, the respondents signified matters such as lack of and/or insufficient internet access, problematic system of speakers, lack of computer programs in IWB (e.g. Microsoft word), low running speed, inefficacy of students to use technology, electricity cut off, classroom management, lack of virus protection, lack of expert, radiation and unable to realize uninterested students.

In relation to technical problems and insufficient infrastructure, one teacher said that "I don't think of the IWB has good quality because the one in my class always has problems. Its memory has been transformed just a week ago, now even our computer teacher cannot upload any content as he is not allowed for it. I suppose different hardware was uploaded, so we cannot use it. In addition, there is not any

internet connection in my class even though there is wireless in our school, so I cannot use internet” (Serkan). Moreover, Fatma said that “in general I do not have any serious problem, yet there may be electricity cut off when the weather conditions are bad in winter”.

Second, Deniz made comment on lack of help from experts by noting that “in some schools computer teachers are put in charge, but there is nobody in our school who can help me when I have a problem with technology; therefore, I sometimes feel myself hopeless”. Third, İlhan noted student related problems by stating that “as the classes are crowded, managing both the students and technology are difficult”. Last, the most common comments were made for problems originating from the device such as calibration, speed and programs. In this regard, Ash put it that way “there are problems regarding the speed and running of IWB and there is calibration problem; further, some programs are not uploaded, so I cannot open some files. Apart from these, we cannot upload and save anything to the board, so we always have to use a memory stick; it is a problem as well.”

Personal factors: Personal factors specifically correspond to the inner mechanisms that cause teacher either to use or not to use technology in their instructional practices. These factors may originate from teachers’ own views and beliefs about technology, their performance with technology and so on. Henceforth, the factors were grouped into three sub categories called as attitudes toward use of instructional technology, practices for technology integration, and amount of time used for instructional technology.

Attitudes toward use of instructional technology (positive): Basically it means teachers’ personal desire, curiosity for using technology, the perceived ease and convenience of technology and perceived level of comfort with technology. To this end, personal desire and curiosity was reported as a first step.

When teachers’ personal desire and curiosity were considered, one teacher remarked that “I don’t like only lecturing, I also like visuals. I think those visuals attract

students' attention as well. Besides, audio-visuals are crucial for our teaching branch". (Melda). Moreover, Orhan spelt out that "the main reason why I use technological devices in my classroom is related to the fact that new and current things attract more attention. This is true both for me and my students". Importantly, Fatma shared her feelings clearly by uttering that "IWB has already been my dream since it was first introduced, yet I have never believed that it could be possible. Therefore, I can say that my dream became true in this year because the projector was really difficult. Even if you settled it, its usage was also difficult, but since we had IWB I feel myself more happy and free in lessons. I mean there are times that I do not use the book; I walk around the classroom among students more comfortably. I can interact with a student individually; IWB provided more freedom to me".

Concerning the perceived ease and convenience of technology, all the respondents made positive comments generally by noting that it provides the presentation of rich materials, exercise of four skills especially listening. In this regard, Mehmet said that "technology means making life easier. I mean people used to cultivate the crops with animals but now they use tractors, so this is technology. It also makes my job easier; for instance, if I want to improve my student's pronunciation, I don't say every word, I just let my students to listen an original text". Besides, İlhan remarked that "I can let my students do listening exercises and watch something visual; I mean it adds variability to the course".

When perceived level of comfort with technology was examined as a last resort, teachers stated many factors helping them to feel comfortable such as ready-made materials, personal interest in technology, rich resources, preparation before the course, making students busy and so forth. Crucially, the most significant factor that teachers mentioned was their prior knowledge about technology.

To that end, Mehmet clearly spelt out that "As I have been interested in technology even before IWB, this provides more advantage to me than my colleagues". Besides, İlhan said that "I have been using computers since university, I mean almost fifteen years. As I was intensively trained in that area at university, I feel comfortable. I

believe this is the factor that comforts me; that is, as I did many presentations from computers at university, I do not have any problems”. Interestingly, Orhan put it that way “actually I can have time to rest, when the students are interested in the audio-visual materials on IWB, I can rest myself”. Ezgi remarked that “previous knowledge, proficiency in technology and especially preparation before the course cause me to feel relax in the lesson”. Last of all, Deniz said that “we can find many resources related to our content, so these enjoyable contents make us feel relax with technology”.

Apart from these factors, participants were specifically asked to evaluate the impact of English knowledge and year of experience to their level of comfort with technology. First, most of the teachers accepted the positive influence of English knowledge, whereas many of them viewed year of experience as neutral. In this sense, Fatma stated that “as the language of technology is English, my knowledge of English has always helped me to use any kind of technology easily; this may be a photocopy machine, a mobile phone or anything else. I have always experienced the advantage of English”. Likewise, Asli uttered that “I can come across English when I opened a program, I can understand better in guidance of the programs”. In addition, Serkan said that “as some specific programs are only English, uploading these programs understanding and using them are of course a big advantage for us”.

As for the year of experience, Mehmet remarked that “year of experience may have an effect to some extent, yet the crucial point is my interest in technology”. Orhan said “I think year of experience has no effect on my use of technology”. Lastly, Ezgi spelt out that “actually my level of comfort is not related to year of experience and my knowledge about English, it is related to technology. I mean it is necessary to know the language of technology. Four years ago, my knowledge about computer and technology was limited, as it improves, my comfort level also increases. I don’t believe in the influence of teaching experience”.

Attitudes toward use of instructional technology (negative): Chiefly, it refers to teachers’ worries and negative views on using instructional technology and perceived dangers for students. Regarding worries, participants noted many points such as

personal inadequacy, feeling anxious on usage, radiation from the device, making students' place ineffective, classroom management and instant technical problems.

In this regard, Ezgi put it that way “what if I cannot do, what if I touch a wrong thing, because this is technology. You cannot know what to see on the internet especially on websites. As long as it is not limited or protected, it is difficult. I’ m sure there is a protection program like antivirus system, perhaps I don’t know. As there are many ads in every website, I don’t know how to use internet”. Emel said “actually I’m not so comfortable with technology; I think this is related to my character, unfortunately it is related to character. I think being prepared is beneficial. If you are anxious, then you can think of the risks, so you will get prepared before the lesson”. Aslı drew attention to instant technical problems by stating that “not opening the document is an instant problem during the course”.

In terms of classroom management, Fatma complained about Tablet PC stating that “since these Tablet PCs came to our school, my dignity has been damaged in the classroom because students can surf on the internet. You cannot control thirty students at the same time; they may even play games while you are teaching. IWBs are very effective, but I don’t believe in the effectiveness of Tablet PCs”. Interestingly, İlhan remarked that “the radiation causes me to be worried, but I don’t have any anxiety for using technological devices. Even if I’m inefficacious, there is always a student who can solve the problem”. Last, Kemal said that “the students believe that technology can provide the process of learning on its own, and this makes the importance of students in learning process ineffective”.

With respect to perceived dangers for students, respondents point out issues like laziness, lack of interaction, lack of time to rest and insufficient learning outcomes. Seda spelt out that “I’m thinking of whether the technology can make the students lazier because even if we have only IWB now, students do not take notes a lot. When they have Tablet PC, they will not have the books in the lesson. Actually, such a lot of information technologies cause the students to be lazy, this is my anxiety”. İlhan complained about the internet “as there is internet, students do not have a break during

the 10 minutes break time. As they do not have a break, they cannot rest; then they get bored in the lesson”. Kemal said that “these technologies are time saving, they help us to teach and finish the subjects fast, yet I have some worries about its impact on learning. I’m not sure about the effectiveness of learning”.

Practices for technology integration (actual): It refers to teachers actual practices for technology integration. The respondents mostly notified visuals especially for reading exercises, listening practices, songs, videos, games, power point presentations specifically for grammar exercises and pre-made resources.

To illustrate, Serkan said that “I prepare and use the power point presentations; especially I use pre-made materials as I do not have enough time to prepare materials”. Likewise, Orhan remarked that “I use short videos and pdf resources. When I realize that my students get bored and after I complete my tasks in the syllabus, I let my students to watch short films just for motivation and relaxation”. Mehmet stated that “I sometimes prepare listening materials and use them, but this is the only thing I do now”.

Melda detailed her practices by uttering that “we play English games, and I prepare power point presentations specifically for grammar subjects, we both save time and draw students’ attention as they like writing on IWB. Additionally, I use videos and give a text about the video. Sometimes we do exercises similar to karaoke by using song lyrics and videos”. Ezgi drew attention to the use of mobile phones; she said that “when you think of technology, mobile phones are also included, so I let my students to use their mobile phones as a dictionary during the lesson. They forget dictionaries, but they don’t forget their mobile phones. I’m not sure if this is beneficial, yet I permit them for this because I believe that they use it in right way, of course I control them”.

Practices for technology integration (suggested): It refers to teachers’ suggestions for technology integration to language teaching. The common issue that the participants recommended was the presentation of rich content and materials like pronunciation practices, videos, listening materials, music, games and power point presentations.

For instance, Kemal proposed that “a teacher can present the countries where that language is used as a mother tongue. He/she helps the students to listen and observe the original form of the language”. Emel put forward that “if it is necessary to search something related to the subject during the lesson, you can verify any topic. For instance, you can check the typing of a word”. İlhan said that “students can watch a cartoon in English or they can watch a section from a movie. There used to be flashcards as visual, but now a teacher can use power point for presenting visuals”.

Amount of time used for instructional technology: It refers to teachers’ frequency of using technology during their instruction, perceived benefits or dangers of technological devices regarding time. With respect to the frequency of using technology during instruction, respondents signified many differences.

In this regard, some of them used the devices through the course, some others used rarely just for additional activities, and a few of them made use of the devices half of their courses in a week; in other words, even though they used in one course, they did not use in the other one. However, most of them used the devices every lesson but in some parts. In this sense, Seda said that “I use the smart board in every lesson for 9th grades, but I pay attention to 20-25 minutes reality”. Aslı put it that way “if I have two courses in a week, I use the smart board at least in one course”. Eda remarked that “I have 21 courses in a week, I use the technology just few of my courses; I mean 2-3 courses or 5 courses at most. And it is just for additional activities like videos or listening activities”. Fatma spelt out that “I use IWB during the lesson in 9th grades. I turn on IWB; we use it until the break time”.

With respect to perceived benefits or dangers regarding time, respondents made contrasting comments, and they specifically drew attention to the importance of preparation for saving time. For example, Orhan said that “it depends, it is sometimes time saving, but sometimes time consuming because you don’t know the length of the resource that you use. Therefore, you should plan and check the timing of videos and audios before the lesson. Or else, you can have problems in the lesson”. Likewise, Aslı remarked that “it changes according to the subject. For example, I save time for

grammar. Instead of writing one by one, I just present the written examples, so I save time. However, the lesson sometimes gets longer when we use it for some materials”. Last, İlhan put it that way “it can be both time saving and time consuming. For instance, when you have a problem with a program, it can take 5-10 minutes of a lesson; however, for writing it really saves time”.

All in all, the respondents had positive views about the use of instructional technologies in language teaching. They had some anxieties especially for the students; they specifically had some concerns for internet use and Tablet PCs. All the participants clearly supported IWBs, but most of them were opposed to Tablet PCs. Almost all the respondents wanted the internet to be under the control of teachers or school administration. Finally, even though all the teachers rated themselves highly efficacious for using instructional technologies, their actual practices did not match with their perception.

4.2.3. Results for research question 5

“What are the opinions of teachers about the implementation of Fatih project?”

In this part of qualitative data results, respondents’ pleasure and expectations in terms of Fatih Project were examined in general. In this respect, the participants were first asked to evaluate the project in all sense, and then they were required to particularly evaluate issues such as e-content, course books, in-service courses and so on. The participants’ suggestions to solve the problems that they notified were also reported in particular.

Pleasure and expectations from Fatih project

Concerning pleasure, respondents made both positive and negative comments on the efficiency of the devices, internet access, in-service courses and so forth. First, respondents laid specific stress on the issue of controlling students’ internet usage. In that sense, Melda said “internet is good if it is controlled, but how can we control is

controversial because students can easily find a way to surf on the prohibited websites as they are better than us for using technology in general”. Deniz put it that way “to my view, the courses are practiced in a more effective, enjoyable and motivated way as anticipated”. Ezgi said “I’m really pleased with IWB, but I have some concerns regarding Tablet PCs”. Mehmet remarked that “in my opinion, such a project is a bit early when you consider the other physical deficient of schools”. Serkan spelt out “the infrastructure is not sufficient both for IWB and internet access. The usage of IWB is wrong because there are two parts, one for board marker, and the other for chalk. And the authorities (the manufacturer) warned us not to use the one with chalk as the dirt would damage the smart board”.

When the expectations of the participants were taken into account, the general concerns were freedom for material selection, effective in-service trainings, enriched course books and so forth. For instance, Seda stated that “different materials and contents should be provided for foreign language teaching. We have IWB, but the course books uploaded in it are the ones that are not used anymore. I would like the authorities to upload current books, activities and hardware”. Mehmet uttered that “MoNE should either present qualified materials to me or not give prohibition for using different materials in my teaching practices”. Ezgi remarked that “we should have support from an expert when we have a problem, and the problems should also be solved immediately. Further, there should be limitation for internet access”.

The participants’ views about the sufficiency of e-content presented by MoNE suggested they were not satisfied. In other words, almost all the respondents complained about the lack of e-content. For example, Melda spelt out “I cannot find any materials or content related to English from the MoNE’s portal or websites, instead I search other English websites in order to find resources”. Likewise, Aslı said “those websites are insufficient for English, I have searched a bit, but I couldn’t find anything specific for high school English”. Ezgi uttered that “I don’t know anything about the ministry’s sources, I search the websites on my own, and I can find many materials after spending a lot of time for searching as I follow many websites”.

Additionally, all the respondents clearly complained about the course books. Particularly, they complained about insufficient content, lack of books and materials in some grades, indifferent topic for age and so on. In this regard, İlhan put it that way “the course books do not match with technology for sure. They are also awful regarding content. We still do not have listening audio of the course books”. Besides, Seda said “I have got many problems with the course books; we do not have the course books for 9th, 11th, and 12th grades. We only have the books for 10th grades, but we cannot do the listening exercises as we cannot reach the audios. I checked the websites until the beginning of second semester but the links were not active”. Melda remarked “the activities in the course books do not match with the age and proficiency level of the students, so the students do not like the activities and materials”. Ezgi stated that “there is no choice, they give a certain book, and we have to use that book, but the book does not useful for students’ proficiency level”.

With respect to in-service courses, most of the participants complained about lack of practice, insufficient content and insufficient knowledge of expert teachers, and time. To illustrate, Aslı said “the in-service courses are insufficient in terms of time and number of participants. I mean it seems that the time is long but as we have the courses after school, we are tired, so we try to limit the time”. Seda spelt out “the sufficiency of the trainings depends on the discipline of an expert teacher. I mean if the expert teachers are serious and focus on teaching, the courses are really beneficial. For instance, I learnt many things in computer and IWB trainings but the other courses were in vain. The experts generally read their notes in the power points, so this was not effective”. Fatma uttered that “I could not have enough support from the expert teachers. I mean when I asked something different, they couldn’t help me. However, I could solve my problem by chance later on. Their knowledge was not sufficient to help in specific points.”

Teachers’ Suggestions

The participants’ suggestions for course books, in-service trainings and e-content were examined as a last resort. First, almost all the participants put forward the use of ready-made course books from foreign publishers. Ezgi said “teachers should

select their course book among the choices. I mean ministry should send a few books before the semester and teachers should choose one according to their students' level, age and interest. Additionally, teachers should have a voice in course book decisions. MoNE may organize a questionnaire in its website; they can publish some books there and ask the teachers to rate the best one". İlhan stated "MoNE should work with foreign publishers like Oxford, so they can prepare the course books that are qualified". Fatma remarked "teachers should not be forced to use a certain book or material, they should be free in choosing and using materials".

One last aspect of in-service courses that deserved to be mentioned was the crucial recommendations of teachers such as the desire to get a course, grouping the teachers according to their level and teaching branch, less number of participants, volunteering in attendance, ongoing trainings. In this instance, Serkan put it that way "teachers should be grouped according to their proficiency level of technology skills. They should also be grouped according to their teaching branch. I do not want to learn how to draw rectangular in starboard as I do not practice any mathematics in my classes". Aslı said "I should practice what I learn actively and the number of participants should be less". Deniz remarked "the length of the courses should be longer, I mean continuous professional development chances should be provided. Also, volunteer teachers should attend the courses. I mean teachers should not be forced to attend the courses". Likewise, İlhan uttered "teachers should be persuaded for the benefits of the in-service courses". Additionally, Fatma said "teachers should require the courses instead of forcing them to attend the courses". Last of all, respondents made a few suggestions for developing e-content. For instance, Aslı put it that way "teachers can prepare materials and upload them to the websites of MoNE so that many people can use". Emel said "there should be foreign resources in those websites".

Taken as a whole, teachers were pleased with Fatih Project in general, and especially they were satisfied with the presence of IWB in their classes. They had many expectations; for instance, they wanted to be free in using extra materials. On the other hand, they had negative comments particularly for course books and in-service courses. In response to these complains, they made a few suggestions such as selecting their

course books, instructing teachers based on their level of technology usage and so on.

4.3. Observation Results

English classroom observations were performed three out of 12 interview participants. Thus, I observed three teachers' English classes (45 minutes period for each teacher). As noted in the methods section, a semi-structured observation guide list adapted from Johnson (2006) was used. As a result, the three teachers' English courses were analyzed by focusing on the context, use of technology, comfort level with technology, instructional activities and students' engagement level.

4.3.1. Results for research question 6

“What are the actual practices of in-service teachers to integrate technology into their teaching?”

4.3.1.a. Ezgi's class

Context

I observed a lesson related to “be going to” for grade 9. The number of students was 30 and the lesson was 45 minutes length. The teacher greeted the students by saying “hi boys, hi girls”, then she turn on IWB. After managing the classroom in a few seconds, she started the lesson with a video about be going to.

They started to watch the video and after watching a few seconds the teacher stopped the video and asked some prediction questions about what will happen next. As the topic was “be going to”, it was both a grammar and a speaking activity. The students put their hands up to answer the question (e.g. what is she going to do?). They should also remember the words that they learnt before and they learnt new words while answering the questions.

They were permitted to look up the necessary word from their phones. Teacher used body language, gestures and mimics to help the students understand the new words and predict their meanings. Some of the words that were covered were “*laundry, repair, move, answer the door and fall asleep*”.

As regards to the educational climate for learning, it can be claimed that all the students were highly interested and enthusiastic thanks to video; the teacher was also very active she always asked questions to the students. The general atmosphere of the classroom was engaging and participative. It was a warm relaxing classroom atmosphere. The video was very interesting and enjoyable, so the students laughed a lot while they were watching the video. Most of the students put their hands up to answer the questions. Yet some students were silent and the teacher never asked them to answer any question. She just asked the ones who put their hands up.

Last, teacher’s language use was English at most. Nearly all the instructions were English, and the greeting was also English. She used Turkish for classroom management. She also used Turkish for joking. Additionally, she explained the meaning of some words in Turkish, but it was not so much.

Use of technology

The video was the core of the lesson and it was the most appropriate technology material for the classroom. There was no technological device except from IWB and the students’ mobile phones. IWB was used from the beginning of the lesson until the end. Students own mobile phones were used to look up new words; it was the only technology except from IWB. As the video was at the center of the lesson, no other subject specific software was observed. Also, video can be accepted as the use of general software.

The level of teacher-student interaction with the technology was satisfactory. The teacher could easily use IWB and students could use their mobile phone, yet none of the students performed anything with IWB because they only watched the video. All

in all, the level of interaction can be accepted as satisfactory. There was no internet access because there was no fiber cable in the school. As was mentioned by the teacher, it will come soon.

Teacher comfort level with technology

The teacher appeared highly comfortable with technology. She searched the internet before coming to the lesson and got the video to the class. She could easily manage IWB; that is, she knew how to pause and how to move on. However, no concepts were demonstrated with the technology by the teacher.

Instructional activities

The core of the activities was question and answer. The teacher asked questions and students put their hands up to answer. Prediction was also used both for speaking and for learning vocabulary. Teacher stopped the video and asked what will happen next, and she mostly required the students to predict the new words. There was no explicit grammar instruction, she only made a short explanation why “be going to” is used (e.g. it is like will, it is used for future).

Students' engagement level

Video was at the center of the lesson and students focused on watching the video from the beginning of the lesson. Interestingly, most of the students did not have any course book and even notebook. Yet, they were engaged in the lesson; they could easily understand the questions and tried to answer it. They were curious and they enjoyed the video. They generally laughed what they see in the video. However, through the end of the lesson (nearly 5 minutes left) some of the students were bored because the video was monotonous. Everything was the same, some people (in the video) asked questions and they (students) tried to answer those questions. All in all, all the students were active, they were in the classroom. Even if some of them did not raise their hand, they were watching the video attentively.

4.3.1.b. Fatma's class

Context

I observed a lesson for grade 9. The number of students was 28 out of 30 and the lesson was 45 minutes length. The content of the lesson was about geography, the climate (hot desert climate and tundra climate). The teacher started the lesson by greeting the students in English. IWB was ready for the lesson; the teacher immediately started the lesson as soon as she greeted the class.

They started the lesson with speaking, teacher asked questions about Sakarya's climate after informing the students about what they will do in that lesson. IWB was used from the beginning of the lesson until the last 10 minutes. They had an extra material whose software was well enough for using IWB. They started the lesson after speaking about the climate of Sakarya, they read the texts in the book, then they listened to the text, they studied the new words.

The words were written to the blackboard with their meanings in English, and the teacher required the students to write them to their notebooks (nearly half of the students did not write anything to their notebook). After all these finished, they went on the lesson with the blackboard. The teacher formulated some comprehension questions and required the students to answer them. Then she asked the students to formulate similar questions for the other text (Tundra climate). They both formulated and answered the questions. Then they compared the two climates by focusing on the key words and make sentences with these key words as a speaking activity. The lesson was completed with this activity.

With respect to the educational climate for learning, it can be claimed that the level of student interest and enthusiasm through the course was not satisfactory; only one student put his hand up through the lesson. There were also a few girls who tried to participate. Yet, most of the students were not interested in the lesson. They generally talked with their peer. One of the boys was using his Tablet PC through the lesson. The

teacher was very active through the lesson; she asked questions and walked in the classroom. But she never warned the students who talked with their peer. Therefore, student interest and enthusiasm was not observed well.

As a final point, the use of English was more than Turkish. That is, teacher used English nearly 45 minutes. She used Turkish only for explaining meaning of some words (e.g. almost, characterized, all year round). Both the greeting and instructions were in English. The teacher's classroom language was also English, and students could understand what she said. Even if they understood, they were not interested in the lesson. Teacher could easily use English in the classroom, she could speak very fluently. New words were explained first in English then in Turkish.

Use of technology

As there was an extra material with software, it can be said that the course had got appropriate technology material. There was no computer, yet all the students had Tablet PC. However, they did not use their tablets through the lesson. There was no other technology device except from IWB and Tablet PC. IWB was effectively used, yet Tablet PC was not used at all. Use of subject specific software was satisfactory; however, use of general software was not observed.

With respect to teacher-student interaction with technology, more emphasis was needed because even though the teacher's interaction with technology was satisfactory, almost none of the students interacted with technology. Only one girl came and underlined the new words in the text on IWB. That was all for student interaction with technology. The school had internet access, yet use of internet through the lesson was not observed. There was no visible technology related project.

Teacher comfort level with technology

Teacher's comfort level with technology was satisfactory; she knew how to use IWB. Yet, she did not demonstrate any concepts with technology. She could easily

command the technology.

Instructional activities

Question-answer was at the center of instructional activities. It was used during the lesson. There was no group work, no pair work. Speaking, listening and reading were covered, yet there was no writing. New words were also studied and noted down to students' note book as a vocabulary activity. As was mentioned above, comprehension questions were studied and comparing the two climates as a speaking activity was also done.

Students' engagement level

Students' engagement level was very low, it was not satisfactory, and they were disinterested through the course. The teacher never warned them, so classroom management was problematic. Only one student could easily answer the questions and he was very active. However, after 10 minutes passed, he also got bored and he started to read his book. Yet he was in the lesson, when the teacher asked a question he tried to answer in an active way. None of the students put their hands up, but they tried to answer the questions when the teacher wanted them to do so.

4.3.1.c. Seda's class

Context

I observed a lesson for grade 9. The number of students was 25 out of 30 and the lesson was 45 minutes length. They were doing the exercises in the workbook. The teacher did not greet the students because the previous lesson was also English. They started to practice the exercises in the workbook, so they moved on with the exercises in this lesson as well. The teacher tried to manage the classroom nearly five minutes by warning them in Turkish. IWB was ready and they continued with the exercise in the workbook.

Concerning the educational climate for learning, the students and teachers were by and large interested and enthusiastic. Yet more emphasis was needed to help the students focus on the lesson. They could not easily pay attention to the course, because it was not different from a traditional lesson without technology. The only difference was that they could see the book on IWB and they could come to board to write their answers on IWB. Therefore, most students lost their attention through the end of the lesson. Interestingly, their level of interest was also not stable. They sometimes lost their interest, and started to talk with their pair. But when the teacher warned them in Turkish, they started to focus on the activity.

There was no warm up, no exercise or activity except from the book. However, atmosphere of the classroom can be accepted as participative because most of the students put their hands up to answer the questions. Last, the atmosphere of the classroom was relaxing.

Teacher's language use was Turkish mostly; she used Turkish more than English, because she had classroom management problems. Even though most of the students had the course book, they lost their attention most of the time and get bored while the exercises were done. Yet when they were warned they could easily focus on what was happening at that moment. Turkish and English were used together. The instructions were generally English (e.g. write it quickly please), yet when students asked questions in Turkish, teacher answered their questions in Turkish.

Use of technology

With respect to use of appropriate technology materials, it can be said that the teacher did not use any other technology materials apart from the course book. The only technology device was IWB, so there was no computer, TV and so on. IWB was used from the beginning to the end of the lesson. Any other technology was not used. Apart from the educational software, nothing was used, so there was not any use of general software.

When teacher-student interaction with technology was concerned, it can be accepted more or less satisfactory. The students came to the board and wrote their answers on IWB. The teacher also sometimes wrote some answers and notes on IWB. There was no internet access as there was not any fiber cable at school, yet it will come soon. There was no visible technology related project.

Teacher comfort level with technology

Teacher appeared comfortable with technology; it was fine but not very accomplished. No concepts with technology were demonstrated by the teacher. As for the teacher's command of technology, it can be accepted as satisfactory, but it cannot be observed specifically because only IWB was used. It seemed that the teacher knew how to use it by heart as she used it in general.

Instructional activities

There was no group work, no pair work. They just put their hand up to do the exercise in their workbook. So, question-answer was used at most. Individual answers were elicited from the students. Listening exercise was also performed by a script. There was just a little speaking activity. Teacher asked questions about the picture, the students talked about the picture before reading the text. It was a kind of warm up. The passage was read both by the teacher and the students and new words were underlined. Their meanings were elicited in Turkish, that was all for the new words.

Students' engagement level

In the first minutes of the lesson, students couldn't concentrate. After 5 minutes left, most of the students engaged in the lesson; they put their hands up and tried to participate the lesson actively. However, as the teacher only used the exercise in the book, the students could easily lose their attention through the lesson.

CHAPTER V

DISCUSSION

5. INTRODUCTION

In this chapter, discussion of the study findings are presented by comparing the current study with the results of other studies conducted both in the local and global context. First, the survey findings will be discussed combined with the related interview and observation data. Second, the factors affecting teachers' technology implementation will be discussed based on the interview results in particular. Third, teachers' perceived self-efficacy beliefs and their actual practices will be compared using the observation data.

5.1. Discussion of the Survey Results

Discussion of the survey results include the level of self-efficacy for technology integration, perceived English proficiency, differences regarding demographic variables such as gender and age. Last, the relationship between technology integration and perceived English proficiency will be examined by reporting similar studies conducted in the area.

5.1.1. Levels of perceived English proficiency and self-efficacy for technology integration

As stated earlier in the results section, self-efficacy for English proficiency ($M= 5.46$) was higher than the efficacy for technology integration in general ($M=4.19$).

However, when the efficacy for technology integration was analyzed in detail, it was obtained that teachers' self-efficacy for Technology Integration in Teaching ($M=4.17$) was higher than their level of efficacy for Addressing Students' Technological Needs ($M=4.15$). In brief, teachers had high levels of English proficiency and their self-efficacy for technology integration was also above the average.

In a similar fashion, Lee (2009) denoted the crucial relation between English proficiency and self-efficacy for English teaching by noting that "improving one's English language proficiency can enhance English teaching-specific teacher efficacy or confidence" (p.404). That is, it can be said that high levels of English proficiency may have a positive impact on teaching-specific efficacy such as technology integration. In support of the present study, Altun et. al. (2011) investigated in-service teachers' level of self-efficacy for instructional technologies in primary school context. The findings indicated high levels of self-efficacy for instructional technologies.

As aforementioned, high school EFL teachers' internet use for instructional purposes was researched by Akça-Saklavacı (2010). The author specifically examined the personal, professional and instructional use of internet; the results signified higher levels of personal and professional use of internet than the instructional use. Interestingly, it can be denoted that the present study tried to examine the instructional purposes of technology usage in detail.

As is stated above, teachers had high levels of efficacy for Technology Integration in Teaching than Addressing Students' Technology Needs which might mean that even though the teachers felt confident in using technology on their own, they might have some problems when the students need them. Observation data shed further light on this finding, even though all the teachers could successfully used IWB through the lesson, they did not present any technology related project. Also, only one teacher tried to provide technology-student interaction by using mobile phones.

5.1.2. Demographic variables

With respect to demographic variables, gender, computer use, following technology innovations, age, year of experience, INSET, internet use were conferred in detail based on the relevant literature. First, gender related differences were discussed.

Gender

The mean score for Technology Integration in Teaching was 4.16 regarding males, yet it was 4.18 for females. Hence, females' level of efficacy for Technology Integration in Teaching was slightly but significantly higher than that of males. When the factors were examined with respect to gender differences, it was confirmed that there was no significant difference for Addressing Students' Technological Needs, but a significant difference occurred regarding the second factor named Technology Integration in Teaching.

When the relevant studies examining gender related differences for technology integration are examined, controversial findings may occur. For instance, in her dissertation, Farah (2011) investigated factors influencing in-service teachers' self-efficacy for technology. The study revealed that males tend to have higher technology self-efficacy than females. In Chinese context, Sang, Valcke, Braak and Tondur (2009) investigated combined impact of prospective teachers' gender, constructivist beliefs, teaching and computer efficacy, and computer attitudes on their future use of ICT. The authors found that participants' prospective ICT integration significantly correlates with all variables except for gender. They further noted that gender only affects constructivist teaching beliefs directly, yet it has no direct impact on the participants' future ICT integration.

In slight contrast, Beck, Czerniak, and Lumpe (2000) found a positive relation between female participants and constructivist beliefs, in that sense, Kalaian and Freeman (1994) suggest that the main reason for females possessing higher level of efficacy for teaching may be the common notion that teaching activity is mostly a

female business. This claim may be true for the current study due mainly to the fact that females' level of efficacy was higher in teaching related technology integration.

When gender is focus of attention, Butt, Khan and Jehan (2012) investigated the influence of teacher efficacy on students' performance in Pakistan context. The study reached results favouring females; put more simply, female teachers' level of efficacy was higher than the males. Also, female students' academic achievement test results were higher than the male students. In response to this finding, female teachers' high sense of efficacy purely affects their students' level of achievement indicating that the higher the teachers' sense of efficacy the better their students' level of success (Butt et. al., 2012).

Computer use

As reported in results section, no significant difference concerning computer use for Addressing Students' Technological Needs, but a significant difference for Technology Integration in Teaching was noted. A post-hoc Scheffe test indicated that there was a significant difference between those having 6-10 years and more than 10 years computer experience which means that as the year of computer experience increases so does the efficacy for Technology Integration in Teaching.

Clearly, similar findings occurred in different studies. Pan (2008) examined the impact of demographic factors on prospective teachers' self-efficacy and the study found out that pre-service teachers' self-efficacy was positively affected by their prior experience with the computer. That is to say, those with more than six years of computer experience scored higher than the ones with less than six years of experience. Notably, computer experience positively influenced the primary school teachers' beliefs about classroom use of computers (Hermans, Tondur, van Braak & Valcke, 2008).

Specifically speaking, Johnson (2006) aimed to investigate the impact of Georgia Framework for Integrating TEChnology (InTech) training program on teachers' computer self-efficacy, technology integration, current instructional practices

and personal computer use. Namely, InTech was a 50 hour training program providing teachers to help their students. The study approved of the positive contribution of personal computer use to the teachers' overall computer self-efficacy.

Technology innovations

As aforementioned, there was no significant difference for Technology Integration in Teaching with respect to following technology related innovations, however the p value approached significance ($p=.057$) for Addressing Students' Technological Needs. Interestingly, even though computer use influenced the self-efficacy for Technology Integration in Teaching, following technology innovations may have an impact on Addressing Students' Technological Needs. Put another way, self-efficacy for the former issue necessitates personal capacity, yet the latter one entails professional capability. Therefore, following innovations related to instructional technologies may provide the teachers with the necessary knowledge and skills to guide their students' use of technology. Ely (1999) listed eight conditions to facilitate implementation of technology innovations some of which called as dissatisfaction with the status quo, existence of knowledge and skills, availability of resources and time.

Age, internet use, INSET, year of experience

The analysis of the demographic variables named age, internet use, INSET and year of teaching experience reported insignificant difference for both Addressing Students' Technological Needs and Technology Integration in Teaching. In a similar fashion, Kao et. al. (2011) examined the internet self-efficacy beliefs of elementary school teachers and the findings reported no difference concerning age and internet experience. Along similar lines, Overbaugh and Lu (2008) claimed that factors such as age and gender do not have any significant impact on the self-efficacy in general. Additionally, Pan (2008) denoted insignificant differences relating internet access and prospective teachers' self-efficacy for technology integration.

Interview data supported the insignificant findings related to year of experience

and INSET. In other words, most of the interview participants accepted year of teaching experience as being neutral or ineffective in their technology integration practices. Further, nearly all the interviewees noted the in-service training courses as useless, more theoretical and less practical. In this regard, it may be claimed that the survey results for teaching experience and INSET were in line with the teachers' views in the interview data. On a similar line, Skoretz (2011) noted insignificant results concerning teachers' efficacy levels for technology integration and their teaching experience. In addition, another study by Ceylandağ (2009) had also confirmed the experience year as non-significant factor in teachers' efficacy for measurement and evaluation.

However, Tschannen-Moran and Woolfolk Hoy (2007) compared the self-efficacy beliefs of novice and experienced teachers. The findings indicated that career teachers' overall efficacy was higher than the novice teachers. In support of this result, it may be claimed that year of teaching experience positively influenced the self-efficacy in general sense. Even though the year of experience was found to be a significant factor in overall self-efficacy beliefs of teachers, Tschannen-Moran and Woolfolk Hoy (2007) purely noted that when the self-efficacy beliefs are stable, those beliefs may not increase as the year of teaching experience increase. In support of this view, teaching experience was not a significant factor concerning the self-efficacy for technology integration at the present study.

In line with the findings of the present study, Walker and Shepard (2011) found that Georgian teachers also demanded hands-on minds-on professional development opportunities in order to integrate technology effectively. Likewise, in-service training courses were confirmed as being inadequate specifically in content areas. As a matter of fact, unqualified trainers and lack of hands-on activities were noted (Akbaba-Altun, 2006). To summarize, Tschannen-Moran and Woolfolk Hoy (2007) further documented that demographic features might not strongly anticipate the self-efficacy beliefs of teachers mainly because they are the control variables. They even claim the absence of any theoretical reason to accept demographic variables as being related to self-efficacy beliefs.

5.1.3. The relationship between English proficiency and self-efficacy for technology integration

There was a strong, positive and significant relation between Addressing Students' Technological Needs and Technology Integration in Teaching ($r=.811$) which means that as the efficacy for Addressing Students' Technological Needs increases, so does the efficacy for Technology Integration in Teaching. Additionally, there was a strong, positive and significant relation between Addressing Students' Technological Needs and English Proficiency ($r=.554$). With regard to Technology Integration in Teaching, a strong, positive and significant relation was calculated for English Proficiency ($r=.631$).

Taken as a whole, it can be said that as the level of English proficiency increases, the efficacy for technology integration increases accordingly. Likewise, a great number of the interviewees accepted the positive influence of English knowledge on their comfort level of technology. Interestingly, observation data provided that the teachers could easily use English in instruction, but any specific technology related issue entailing English knowledge was not observed. In brief, even though the teachers accept the positive influence of English knowledge in their technology integration practices; this might be related to personal or professional use such as software literacy and knowing how to use any kind of technology.

The positive influence of English proficiency on teacher self-efficacy in general was also noted in different studies. Yüksel (2010) investigated teacher efficacy beliefs of Turkish EFL teachers working at state primary schools. The results indicated a meaningful relationship between teacher efficacy and perceived English proficiency. In what follows, Lee (2009) revealed that there was a positive correlation between English proficiency for four skills and English teaching efficacy. In other words, as the teachers' level of English proficiency increases so does their perceived capability for teaching English.

5.2. Discussion of the Interview Results

In the second part of this chapter, factors affecting teachers' technology integration practices and their views on the implementation of Fatih project will be discussed based on the interview results. The results of similar studies in the relevant literature will also be specifically noted.

5.2.1. Factors affecting teachers' technology integration practices

As noted earlier, factors affecting teachers' technology integration practices were grouped into two named as external/environmental and personal. With respect to external/environmental factors, perceived student attitudes, available learning opportunities and existing barriers were denoted.

Concerning the perceived student attitudes both positive and negative comments were made. In the first sense, most of the participants noted factors like the students' increased attention, interest, curiosity, eagerness, motivation and participation. A few respondents reported the students to be happy and regard technological devices as superiority.

A research by Smarkola (2008) underlined the main reason why teachers use computers in the classroom; it was the benefits for the students again. Put differently, both candidate and experienced teachers use computers in order to prepare students for real world experiences. In a similar vein, Sugar et. al. (2004) revealed the student benefit as the main reason why teachers adopt technology. In this sense, five main beliefs both positive and negative were identified: preparation for future career, explosion to new technologies, holding interest, gaining additional skills and being too dependent on technology.

By contrast, a huge number of respondents also commented that instructional technologies sometimes led the students to lose their attention, to get bored and to become lazy. Observation data had also supported the view that students get bored even

if instructional technologies were used through the lesson. Possibly, there was not any varied activities presented in the course, so IWB was the same as the course book, there was almost no student interaction with any kind of technology. Some teachers implied the lack of interaction among students as well. In a very recent study, Kim et. al. (2013) notified the importance of using technological tools in a pedagogical sense by stating that if a teacher makes use of IWB only for presenting information with the absence of interaction; IWB will not have any difference from a traditional whiteboard in a pedagogical sense.

Using internet not for educational purposes but for entertaining was also signified. Likewise, students' entertainment expectation and being too dependent on technology were noted as negative beliefs of teachers concerning technology adoption by Sugar et. al. (2004). Last, the possible decrease in usage due to exam preparation was also signified. In an American study, standardized testing was noted as one of the factors limiting teachers' use of technology (Sugar et. al., 2004).

If the available learning opportunities were taken into account, both positive and negative remarks were noted once more. First, when the benefits of in-service courses were considered, factors like learning how to prepare a lesson with starboard, increasing awareness and presenting technological devices were denoted. In addition, topics such as prior knowledge on how to use technological devices, personal belief in the benefits of technological device and appropriate course load were connoted as positive influences increasing teachers' available time to learn instructional technologies. In a similar vein, Walker and Shepard (2011) researched the elementary school teachers' strategies for successful technology integration practices in Georgia. The data showed that factors named as "sustained student attentiveness", saving time and "different way of presenting lessons" positively affects the teachers' beliefs and attitudes for technology integration practices.

Edwards (2005) examined the early childhood teachers' experiences in integrating computers into classroom and she noted the knowledge of computer components and use as one of the key factors in technology integration. Regarding

personal beliefs, Ertmer, Ottenbreit-Leftwich and York (2006) notified the importance of intrinsic factors on technology integration. To that end, the authors argued that “even when resources and time are limited, exemplary teachers achieve effective use, quite possibly because of their strong beliefs, personal visions, and commitment to using technology” (p.57). Interestingly, Al-Alwani (2005) noted the negative influence of intensive course load on teachers’ technology integration practices in Saudi Arabia context.

Concerning the support provided from others for using instructional technologies, none of the participants made any negative comment; in other words, they believed that neither colleagues nor school administration cause them not to use technological devices. Likewise, Tschannen-Moran and Woolfolk Hoy (2007) signified the noteworthy influence of administrators and school atmosphere by noting that “schools where the principal was able to inspire a common sense of purpose among teachers and where student disorder was kept to a minimum were schools in which teachers felt a greater sense of efficacy” (p.947). In a similar line with the results of the present study, Sugar et. al. (2004) recognized five key individuals who were school administrators, principals, parents, employers and students affecting teachers’ decisions to adopt new technology, and most of the respondents remarked the approval of these individuals with respect to technology adoption.

With respect to negative comments, teachers mentioned many problems regarding in-service trainings such as lack of expert support, lack of guidance, lack of practice, lack of content especially for technology, and less time. The precise importance of mentoring by qualified teachers in the area of online teaching strategies was emphasized by the participants in a study investigating technology integration practices of in-service and prospective teachers (Moore-Hayes, 2011). Furthermore, the study by Smarkola (2008) had also laid stress on the need to have “knowledgeable support personnel” as a recommendation to increase practice. Importantly, Farah (2011) noted the presence and the positive influence of local school support specialists on teachers' self-efficacy for technology.

Considering the practice rather than theory, Walker and Shepard (2011) argue that in-service training sessions focusing on observations and hands-on experiences helps teachers more than the “sit-and-get” sessions. As a final point, the importance of time in teachers' technology use was also addressed by Johnson (2006).

In regard to available time for learning instructional technology almost all the teachers remarked insufficient break time and intensive course loads. On a similar line, Farah (2011) specifically noted that lack of time to learn instructional technology at school was stressed by all the respondents in the study. As a matter of fact, they were busy with issues such as contacting parents and, managing paperwork. What she suggested was for the school administrators to plan the work hours creatively in order to provide teachers time to learn instructional technology at school. As noted above, the study by Al-Alwani (2005) signified busy schedules of teachers as a barrier to their technology integration practices.

Considering the existing barriers, the respondents signified matters like lack of and/or insufficient internet access, problematic system of speakers, lack of computer programs in IWB (e.g. Microsoft word), low running speed, inefficacy of students to use technology, classroom management, electricity cut off, lack of virus protection, lack of expert, radiation and unable to realize uninterested students. When the internet related problems were concerned, similar results were obtained in a few local studies. For instance, Akbaba-Altun (2006) claimed slow internet connection as one of the factors decreasing technology integration. Besides, Akça-Saklavacı (2010) indicated that slowness of the internet connection was underlined as one of the reasons why teachers were not able to use internet in their instruction.

If the inefficacy of students were considered as a barrier to integrate technology, Bandura (1997) postulated that “teachers with a high sense of efficacy tend to view difficult students as reachable and teachable and regard their learning problems as surmountable by ingenuity and extra effort. Teachers of low perceived efficacy are inclined to invoke low student ability as an explanation for why their students cannot be taught” (p. 242). Thus, viewing students as having low level of ability indicates low

level of teacher efficacy.

Interestingly Varank et. al. (2012) had also noted the problem of classroom management regarding use of technology in class. In this sense, the authors claimed that teachers did not know how to manage or control the Tablet PC even if there was a program for that. Likewise, the observation data indicated that teachers did not perform any program to control the students' use of Tablet PC possibly because lack of knowledge. Close to the end, as a solution to the problems emerging from technology such as electricity cut off, Walker and Shepard (2011) suggested the flexibility in lesson plan. In other words, teachers should always have another plan that can be implemented without technology at times when the devices do not work at all.

When attitudes toward use of instructional technology were taken into agenda, teachers' personal desire and curiosity, perceived ease and convenience of technology and perceived level of comfort with technology were notified as factors increasing positive attitudes toward technology. Mumtaz (2000) signified the importance of teacher beliefs about teaching and learning with ICT as central factor to the integration of technology. In this regard, Pinner (2012) investigated teachers' attitudes and motivations for using computer assisted language learning (CALL). The findings indicated that teachers used CALL due to being intrinsically motivated to use it. That is to say, teachers had a personal desire to use CALL.

Concerning the perceived ease and convenience of technology, all the respondents made positive comments generally by noting that it provides the presentation of rich materials, exercise of four skills especially listening. When perceived level of comfort with technology was examined, teachers stated many factors helping them to feel comfortable such as ready-made materials, personal interest in technology, rich resources, preparation before the course, making students busy and so forth. Crucially, the most significant factor that teachers mentioned was their prior knowledge about technology. A few researchers noted the positive influence of factors called as perceived usefulness and ease of technology use on pre-service teachers' level of computer technology usage (Smarkola, 2007; Ma, Anderson, Streith, 2005).

Similarly, Al-Ruz and Khasawneh (2011) signified the positive influence of factors named technology self-efficacy, technology proficiency, and perceived usefulness for technology, overall support and technology availability to prospective teachers' technology integration. The authors further noted the importance of modelling of technology in order to increase prospective teachers' self-efficacy, proficiency and perception for usefulness of technology.

It may be more fruitful to speak of the negative attitudes as well. Regarding worries, participants noted many points such as personal inadequacy, feeling anxious on usage, radiation from the device, making students' place ineffective, classroom management and instant technical problems. With respect to perceived dangers for students, respondents pointed out issues like laziness, lack of interaction, lack of time to rest and insufficient learning outcomes.

When the personal inadequacy was focus of attention, Wang et. al. (2004) equated low level of self-efficacy for technology integration with a teacher's low level of self-confidence with respect to his/ her ability and eagerness to use computers in teaching. As a solution, Moore-Hayes (2011) advocated "providing additional opportunities for pre-service and in-service teachers to observe and practice exemplary examples of effective technology integration paradigms" (p. 11).

As was pointed in the literature review, Tschannen-Moran and Woolfolk Hoy (2007) postulated that "the feelings of joy or pleasure a teacher experiences from teaching a successful lesson may increase her sense of efficacy, yet high levels of stress or anxiety associated with a fear of losing control may result in lower self-efficacy beliefs" (p.945). In a similar fashion, Torkzadeh et. al. (2006) denoted low level of computer anxiety as improving both computer and internet self-efficacy of undergraduate business students. With respect to perceived benefits or dangers regarding time, respondents stated controversial comments, and they specifically drew attention to the importance of preparation for saving time.

5.2.2. Teachers' views on the implementation of Fatih project

As is known, the study aimed to present insights from Fatih project. In this sense, interviewees required to evaluate Fatih project in detail. Findings indicated two main groups named as pleasure and expectations from Fatih project, and suggestions for future implementation of the project in general.

Concerning the pleasure, respondents made both positive and negative comments on the efficiency of the devices, internet access, in-service courses and so forth. First, respondents laid specific stress on the issue of controlling students' internet usage. In this regard, Windschitl and Sahl (2002) emphasized the matter of teacher adaptation to a classroom environment which is surrounded by students with their own technological tools and their access to internet.

When the expectations of the participants were taken into account, the general concerns were freedom for material selection, effective in-service trainings, enriched course books and so forth. The participants' views about the sufficiency of e-content presented by MoNE were not satisfying; in other words, almost all the respondents complained about the lack of e-content. Similarly, the study conducted in Fatih project pilot schools were also confirmed the teachers' complain about lack of e-content (<http://www.fatihprojesi.com/>). Alternately, Tschannen-Moran and Woolfolk Hoy (2007) postulated that when the teachers take part in the judgments influencing their work lives, their sense of efficacy is affected positively. In the present study, teachers specifically noted their desire to choose their materials and course book.

With respect to in-service courses, most of the participants complained about lack of practice, insufficient content and insufficient knowledge of expert teachers, and time. Similar issues were also noted in the literature. Professional development opportunities were criticized due mainly to offering basics in the area of instructional technologies (Hall, 2008). Notably, Walker and Shepard (2011) denoted the positive influence of "strong technological support" which is provided for the teachers in their integration practices. That is to say, the researchers mentioned the existence of media

specialists in schools of Georgia. Those people usually manage school's library and technical equipments in that school. Therefore, the teachers do not need to wait for technologists because they have immediate help from those specialists. Specifically speaking, Johnson's study revealed the problem of time and place regarding technology training. In response, the author suggested varying "the delivery of training through multimedia and internet technologies and the development and support of online e-learning environments" (2006:100).

Close to the end, teachers made valuable suggestions in regard to the implementation of the project. First, almost all the participants put forward the use of ready-made course books from foreign publishers. Second, the desire to get a course, grouping the teachers according to their technology proficiency level and teaching branch, less number of participants, volunteering in attendance, ongoing trainings were proposed concerning the in-service courses.

Along a similar vein, professional development practices were criticized mainly because focusing on basic knowledge regarding instructional technology, so lack of specific professional development opportunities caused the teachers not to use instructional technologies effectively. In response to teacher's criticism for basic focus of professional development opportunities, Farah (2011) suggested beginner, intermediate and advanced classes on instructional technology which would provide the teachers to obtain information and skills necessary for using instructional technologies.

Additionally, in her dissertation study, Lee (2009) criticized the content of in-service trainings as being too general concerning the level of English proficiency necessary for teaching English. In addition, these programs were also criticized for not grouping teachers according to different levels of English ability. In brief, focusing on specific areas and grouping teachers based on their English proficiency levels were emphasized by Lee (2009). Concerning ongoing training, a study by Brinkerhoff (2006) reported the positive influence of long-duration professional development on teachers' computer self-efficacy because the training courses extended across two academic years. In what follows, even though there was not any significant increase between

onset and offset of first summer session, a significant increase occurred between the end of first summer session and the end of the academy.

Taken as a whole, Sugar et. al. (2004) postulated that “technology adoption is a personal decision, uninfluenced by other people and the presence of resources or impediments in the local school/district” (p.211). Smarkola (2008) concurred with this statement when he noted that “educational technology issues should not be viewed as a classroom technology integration process but as a human process regarding beliefs and behaviors in computer usage for teaching and learning” (p. 1212). As a matter of fact, authorities should persuade and train the teachers effectively in using instructional technologies, and then should come the implementation of technical infrastructure.

5.3. Discussion of the Observation Results

In the last part of the discussion, the results of observation data will be discussed in particular. In this regard, teachers’ perceived level of self-efficacy for technology integration in general will be compared with their actual practices in classroom.

As was noted in the survey results, the participants of the current study had high levels of self-efficacy for technology integration ($M=4.19$). On the other hand, interview data related to actual practices for technology integration and amount of time used for instructional technologies showed that most of the teachers did not prefer to use instructional technologies in every lesson. Rather, they either prefer to use it one lesson and not use it in the other one or they just use it for additional activities. With respect to the activities that were covered, visuals, songs, videos, power point, pre-made resources and so forth were noted.

When the classroom practices were observed, it was seen that even though teachers had a basic level of knowledge to use technology, they did not successfully integrate technology in their instructional practices. That is to say, there was no visible

technology related projects, almost no student-technology interaction, and almost no usage of other technology except from IWB or mobile phones in one class. Interview data regarding the activities also supported the observation data referring the absence of subject specific software in general sense. That is to say, even though teachers had some level of technology use, they did not practice any specific software in their presentation of subject.

According to Bandura (1986), an individual's level of self-confidence should be equal to his/her actual ability in a certain area; otherwise, it may damage to his/her self-efficacy. In this sense, the array of research indicated that teachers do not always act on their beliefs as long as technology integration is concerned (Chen, 2008; Windshitl, 2002). Namely, Chen (2008) investigated Taiwanese high school teachers' beliefs and actual practices regarding technology integration. In support of the present study, the results indicated inconsistency between the teachers' beliefs and their actual practices. In his mixed-method research design, Johnson (2006) found that although teachers had high level of computer self-efficacy, their actual level of technology integration to curriculum was low.

On a similar line, Hall (2008) revealed controversial results with respect to teachers' perceptions for technology integration and their actual practices. Put another way, a teacher who rated highest for technology integration, became the second lowest on observation and the interview data presented the least information for technology integration; on the contrary, another teacher got the highest score from observation and made many comments for technology integration in the interview, but scored the second lowest on technology integration instrument.

Hall (2008) tried to explain this controversy by arguing that "teachers who integrate technology to a great extent in their classrooms may perceive that they are not doing as much as they could with improved access or availability of technology"(p.96). The opposing circumstance may well be possible for the current study; simply put, teachers perceiving high level of efficacy for technology integration may not integrate the technology to a great extent in their actual practices. Another reason may be the

nature of instrument because a few participants criticized items of the instrument about focusing on the ability to do but not the actual practices. That is, the items might have caused them to think of what they can do instead of what they are doing.

Finally yet importantly, Dörnyei (2007) explained one of the weaknesses of questionnaires with a term “*social desirability bias*” meaning that “the participants of a study are often provided with cues to the anticipated results of the project, and as a result they may begin to exhibit performance that they believe is expected of them” (p.54). In that sense, the high levels of perceived self-efficacy for technology integration may be the result of social desirability bias in the current sample.

CHAPTER VI

CONCLUSION

6. OVERVIEW OF THE STUDY

In-service EFL teachers' self-efficacy beliefs for technology integration were investigated in the context of Fatih project pilot study state schools of Sakarya. Furthermore, the vast body of research on self-efficacy beliefs was reviewed and answers to the research questions were provided. Notably, this study sought to answer the following research questions:

1. What is the level of technology integration self-efficacy and perceived English proficiency in the current sample?
2. Is there any significant difference between self-efficacy for technology integration and demographic variables?
 - a. Is there any significant difference between technology integration and gender?
 - b. Is there any significant difference between technology integration and computer use?
 - c. Is there any significant difference between technology integration and following technology innovations?
 - d. Is there any significant difference between technology integration and age, internet use, in-service training (INSET), year of teaching experience?
3. What is the relationship between perceived English proficiency and self-efficacy for technology integration?
4. What are the factors influencing teachers' technology integration practices in foreign language classroom?

5. What are the opinions of teachers about the implementation of Fatih project?
6. What are the actual practices of in-service teachers to integrate technology into their teaching?

As was stated in the methodology chapter, SETIS was administered to 114 in-service EFL teachers working at state high schools of Sakarya. SPSS 13.0 and LISREL were used to analyze the questionnaires. Therefore, EFA and CFA were obtained in order to determine the factor loadings in the current sample. Based on EFA and CFA, 3 items were omitted from the original scale and the factor loadings were varied in this sample, and the validity of SETIS was enabled. Besides, Cronbach alpha values for the whole scale and each factor in it were obtained in order to enable reliability of the current scale. Last, reliability for English proficiency scale (Chacon, 2005) was also provided.

After determining the validity and reliability of the current scale, the descriptive data (means and standard deviations) were revealed as a first step. Second, one-way ANOVA was used to analyze the influence of individual differences on self-efficacy for technology integration. Third, the relationship between perceived English proficiency and self-efficacy for technology integration was examined by calculating Pearson's rho.

As a mixed method study in design, interviews and classroom observations were achieved in order to examine the quantitative data in detail. In this regard, interviews with 12 volunteer teachers among a total of 114 were chosen. The interviews were conducted face-to-face and individually. The data were transcribed for analysis. The coding and categories were formulated as a result of analysis. The reliability of the categories was obtained by the analysis of another researcher. With respect to classroom observations, three volunteer teachers were observed for one course by using semi-structured observation guide. The data was transcribed in accordance with the sections of the observation guide. The summary of the findings are noted in the following sections.

6.1. Summary of the Findings

The first research question aimed to investigate the level of self-efficacy for technology integration and perceived level of English proficiency; moreover, self-efficacy level for each factor in SETIS was obtained. The results indicated that the participants had high level of self-efficacy for technology integration in general ($M=4.19$), and perceived level of English proficiency was also high ($M= 5.46$). Regarding the means for the factors named Addressing Students' Technological Needs and Technology Integration in Teaching; high levels of perceived self-efficacy were achieved once more ($M=4.15$ for factor 1 and $M=4.17$ for factor 2).

The second research question addressed the influence of demographic variables on perceived self-efficacy for technology integration. In that sense, the possible impact of gender, age, year of teaching experience, computer use, following technology innovations, INSET and internet use were examined. Even though there was no significant difference concerning teaching experience, age, internet use and INSET, significant differences occurred with respect to gender and computer use. Simply put, although there was no significant difference with respect to Addressing Students' Technological Needs, there was a significant difference for Technology Integration in Teaching favoring females ($p= .014 <.05$). Considering the computer use, a significant difference regarding Technology Integration in Teaching was obtained ($p= .024 <.05$). To that end, post hoc Scheffe test was conducted, and the results portrayed a significant difference between those having 6 to 10 years of computer experience and the ones having more than 10 years of experience. Finally yet importantly, the p value approached significant for Addressing Students' Technological Needs concerning the possible differences for following technology innovations ($p= .057 > .05$).

The third research question posed the relationship between perceived English proficiency and self-efficacy for technology integration. In simple terms, there was a strong and positive relationship among all the three variables named as Addressing Students' Technological Needs, Technology Integration in Teaching and perceived English proficiency. Based on this issue, a strong and positive correlation was found

between Addressing Students' Technological Needs and Technology Integration in Teaching (.811); likewise, a strong and positive correlation was reported between Addressing Students' Technological Needs and perceived English proficiency (.554). Last of all, a strong and positive correlation was calculated between Technology Integration in Teaching and perceived English proficiency (.631). To put it concisely, as the self-efficacy for Addressing Students' Technological Needs increases, so does the self-efficacy for Technology Integration in Teaching. Moreover, the increase in perceived English proficiency maintains an increase in both Addressing Students' Technological Needs and Technology Integration in Teaching.

The answers for research questions four and five were achieved via interview data. With respect to factors affecting teachers' self-efficacy beliefs for technology integration, two main themes termed as external/environmental and personal emerged. When the external/environmental factors were considered, perceived student attitudes, available learning opportunities, and existing barriers to integrate technology were reported.

Concerning perceived student attitudes, positive factors such as the students' increased attention, interest, curiosity, eagerness, motivation and participation were noted, yet a few negative issues such as losing attention, getting bored and being lazy were also signified. Besides, using internet for entertainment was underlined. With regard to available learning opportunities, in-service courses and time for learning new technologies were evaluated. In that sense, learning how to prepare a lesson with starboard, increasing awareness and presenting technological devices were denoted as the benefits of INSET as an available learning opportunity. Additionally, prior knowledge on how to use technological devices, personal belief in the benefits of technological device and appropriate course load were also noted. There was no negative comment regarding the support provided from the school authorities. By contrast, lack of expert support, lack of guidance, lack of practice, lack of content especially for technology, and less time were stressed as the drawbacks of INSET. In what follows, almost all the teachers remarked insufficient break time and intensive course loads concerning the available time for learning instructional technology. Finally

yet importantly, lack of and/or insufficient internet access, problematic system of speakers, lack of computer programs in IWB (e.g. Microsoft word), low running speed, inefficacy of students to use technology, classroom management, electricity cut off, lack of virus protection, lack of expert, radiation and unable to realize uninterested students were reported as the existing barriers for technology integration.

Regarding personal factors, attitudes toward use of instructional technology, practices for technology integration, and amount of time used for instructional technology were noted. In the first sense, teachers' personal desire and curiosity, perceived ease and convenience of technology and perceived level of comfort with technology were notified as factors increasing positive attitudes toward technology. Concerning the perceived ease and convenience of technology, the presentation of rich materials (e.g. video, audio, and pdf resources) and exercise of four skills especially listening were emphasized. Further, ready-made materials, personal interest in technology, rich resources, preparation before the course and making students busy were stated in regard to perceived level of comfort with technology. Notably, the most significant factor was the prior knowledge about technology for perceived level of comfort with technology. Quite the reverse, personal inadequacy, feeling anxious on usage, radiation from the device, making students' place ineffective, classroom management and instant technical problems were reported as negative attitudes. Also, laziness, lack of interaction, lack of time to rest and insufficient learning outcomes were noted as perceived dangers for students.

When the actual practices for technology integration and amount of time used for instructional technologies were examined, it was seen that most of the teachers did not prefer to use instructional technologies in every lesson. Rather, they either prefer to use it one lesson and not use it in the other one or they just use it for additional activities. Yet, using technology at intervals through the lesson was also signified meaning that almost 20-25 minutes of a course is practiced with instructional technologies. With respect to the activities that were covered, visuals, songs, videos, power point, pre-made resources and so forth were noted.

Notably, research question five addressed the teachers' views on the implementation of Fatih project. In this respect, teachers' pleasure and expectations from the project, and their suggestions for the implementation of the project were notified. Basically, it can be claimed that all the teachers were pleased with IWB, yet they had some concerns with respect to Tablet PC. Notably, the control of internet access for students was required. The main expectations were freedom for material selection, effective in-service trainings, enriched course books and varied e-content. With respect to in-service courses, most of the participants complained about lack of practice, insufficient content and insufficient knowledge of expert teachers, and time.

Close to the end, valuable suggestions were noted for the implementation of the project. In that sense, the use of ready-made course books from foreign publishers and the desire to get a course, grouping the teachers according to their level and teaching branch, less number of participants, volunteering in attendance, ongoing trainings were proposed concerning the in-service courses.

Last of all, research question six investigated the actual practices of teachers with respect to technology integration. As was noted in the survey results, the participants of the current study had high levels of self-efficacy for technology integration ($M=4.19$). On the other hand, interview data related to actual practices for technology integration and amount of time used for instructional technologies showed that most of the teachers did not prefer to use instructional technologies in every lesson. When the classroom practices were observed, it was seen that even though teachers had a basic level of knowledge to use technology, they did not successfully and fully integrate technology in their instructional practices.

6.2. Implications of the Study

In this part of the study, the implications of the current research will be discussed. To that end, suggestions concerning the impact of teacher self-efficacy in EFL technology integration will be elaborated. In addition, a few recommendations will

be stated with respect to implementation of Fatih project.

The intensive course load was noted as a barrier to learn current technologies during school day and to prepare materials for using instructional technologies. Therefore, there should not be heavy course loads (e.g. 30 hours in a week), instead a maximum of 21-24 hours of course load was noted as suitable to have a time for preparation purposes in the interview. Furthermore, teachers' course schedules should be organized in a way to create time for learning instructional technologies at school as they do not have sufficient break time to learn any kind of technological device.

Even more important, not only the teachers but also the students should be trained in order to use the technologies in effective ways. That is, MoNE should introduce some educational training for the students in order to help them to learn how to use current technologies for educational purposes (e.g. learning how to research an assignment).

Specifically speaking, many valuable suggestions were made for INSET; to give an example, INSET courses should be more practical rather than being theoretically based. Besides, the courses should not be organized after the work hours as it is not effective for the teachers. The content of the courses especially the technology related ones should be current. Crucially, the courses should be organized according to the technology knowledge level of teachers and they should be grouped with respect to their teaching branch. In that sense, a needs analysis study should be conducted before forming the groups. There should be continuous professional development opportunities especially in the technology integration area. As a final point, the attendance to the trainings should be voluntary, and the teachers should be persuaded regarding the benefits of the courses.

Concerning the Fatih project in particular, there should be a technical help provider in every school in order to help teachers in urgent situations. Besides, current and mostly favored programs (e.g. Microsoft) should be uploaded to IWBs in order to ease teachers' use of IWB in instruction. There should be chargers in every school

which will provide electricity when it is cut off. Effective subject-specific e-content should be developed and presented to the teachers from the portal of MoNE. The course books should be designed in a way to be used with IWB, so they should have specific software and additional enriched materials should be provided related to the themes in the course book.

What should not go unnoticed is the controversy between EFL teachers' perceived self-efficacy for technology integration and their actual practices. In this respect, Kim et. al. (2013) suggest many ways to change teacher beliefs such as positive experiences, observation, collaboration and so on. With respect to positive experiences, the authors argue that teachers should have opportunities to have experiences that challenge their existing beliefs and cause them to change their beliefs positively. Thanks to observing other teachers, teachers can reflect on their practices, so they may make some changes in their instruction. Furthermore, collaboration provides teachers to discuss complex conditions, share information and so forth. Possibly, all these practices will help the teachers to reflect more and compare their beliefs and practices in a deeper sense.

6.3. Limitations of the Study and Directions for Future Research

It is necessary to note the limitations regarding the current study, by this way new research ideas may be revealed. To begin with, this study only examined technology integration self-efficacy levels of high school teachers. As a matter of fact, future studies may focus on the impact of teaching context on efficacy by comparing other types of contexts such as middle school and primary school with high school environment. In addition, the context of the present study was very limited as it only included Sakarya province of Turkey, so these results invite further exploration into other EFL teachers' self-efficacy for technology integration in local context.

Notably, Lawless and Pellegrino (2007) criticize the studies in the relevant literature mainly because they do not focus on student outcomes as it is the core of the

teaching issue. Hence, teachers should create learning practices that will increase their students' achievement in the related course. As this study is not longitudinal, it is not possible to determine the impact of teachers' self-efficacy beliefs for technology integration on their students' achievements. In this regard, a further longitudinal investigation may well center on the influence of teachers' self-efficacy beliefs for technology integration on their students' level of success.

The present study merely reported the impact of personal computer use on teacher efficacy for technology integration. According to Tondur, Hermans, van Braak, and Valcke (2008), "different types of computer use refer to different beliefs about learning and instruction" (p. 2543). In that sense, a further study may specifically focus on types of computer use for educational purposes in order to examine teachers' beliefs in a deep sense. As was pointed out in the results section, the difference regarding following technology innovations approached significance, so a further study with more samples may elaborate significant results in different contexts.

Finally yet importantly, SETIS was utilized in the current study, so both local and global studies are necessary to obtain the validity of the scale in different contexts. To summarize, all those above mentioned studies may elaborate the influence of self-efficacy on technology integration practices in different contexts. Moreover, new insights can be obtained in the light of the research.

REFERENCES

- Abbitt, J. T., & Klett, M. D. (2007). Identifying influences on attitudes and self-efficacy beliefs towards technology integration among pre-service educators. *Electronic Journal for the Integration of Technology in Education*, 6, 28-42.
- Abbitt, J. T. (2011). An investigation of the relationship between self-efficacy beliefs about technology integration and technological pedagogical content knowledge (TPACK) among preservice teachers. *Journal of Digital Learning in Teacher Education*, 27(4), 134-143.
- Akça-Saklavacı, A. (2010). *The use of the internet among EFL teachers at high schools in Eskişehir*. Unpublished Master's Thesis, Eskişehir: Anadolu University Graduate School of Educational Sciences.
- Al-Alwani, A. E. S. (2005). *Barriers to integrating information technology in Saudi Arabia Science Education*. Unpublished Doctoral Dissertation, Kansas: The University of Kansas Graduate School of Education.
- Al-Ruz, J. A., & Khasawneh, S. (2011). Jordanian Pre-Service Teachers' and Technology Integration: A Human Resource Development Approach. *Educational Technology & Society*, 14(4), 77–87.
- Altun-Yalçın, S., Kahraman, S. & Abidin-Yılmaz, Z. (2011). Primary school teachers of instructional technologies self-efficacy levels. *Procedia-Social and Behavioral Sciences*, 28, 499-502.
- Altunsoy, S., Çimen, O., Ekici, G., Atik, A. D. & Gökmen, A. (2010). An assessment of the factors that influence biology teacher candidates' levels of academic self-efficacy. *Procedia Social and Behavioral Sciences*, 2, 2377–2382.

- Akbaba-Altun, S. (2006). Complexity of integrating computer technologies into education in Turkey. *Educational Technology & Society*, 9(1), 176-187.
- Arslan, C. & Yavuz, G. (2012). A study on mathematical literacy self-efficacy beliefs of prospective teachers. *Procedia-Social and Behavioral Sciences*, 46, 5622-5625.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of child development. Vol. 6. Six theories of child development* (pp. 1-60). Greenwich, CT: JAI Press. (Retrieved February 8, 2013 from <http://www.uky.edu/~eushe2/Bandura/Bandura1989ACD.pdf>)
- Bandura, A. (1997). *Self-Efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
- Beck, J., Czerniak, C. H. & Lumpe, A. (2000). An exploratory study of teachers' beliefs regarding the implementation of constructivism in their classrooms. *Journal of Science Teacher Education*, 11(4), 323-343.
- Bingimlas K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, Science & Technology Education*, 5(3), 235-245.
- Brinkerhoff, J. (2006). Effects of a long-duration, professional development academy on technology skills, computer self-efficacy, and technology integration beliefs and practices. *Journal of Research on Technology in Education*, 39(1), 22-40.
- Brown, T. H. (2005). Beyond constructivism: Exploring future learning paradigms. *Education Today*, 2, 1-11.

- Butt, M. N., Khan, H. & Jehan, S. (2012). Impact of English teachers' self-efficacy beliefs on students' performance. *World Applied Sciences Journal*, 20(7), 1031-1035.
- Bülbül, T. & Çuhadar, C. (2012). Analysis of the relationship between school administrators' perceptions of technology leadership self-efficacy and their acceptance of ICT. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, 23, 474-499.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Cachia, R., Ferrari, A., Ala-Mutka, K. & Punie, Y. (2010). *Creative learning and innovative teaching: Final report on the study on creativity and innovation in education in the EU membership states* (Report No. EUR 24675 EN). Luxembourg: Publications Office of the European Union.
- Ceylandağ, F. R. (2009). *Teacher self-efficacy beliefs toward measurement and evaluation practices*. Unpublished Master's Thesis, Ankara: Middle East Technical University Graduate School of Social Sciences.
- Chacon, T. C. (2005). Teacher perceived efficacy among EFL teachers in middle schools in Venezuela. *Teaching and Teacher Education*, 21(3), 257-272.
- Chai, C. S., Ng, E. M. W., Li, W., Hong, H.-Y. & Koh, J. H. L. (2013). Validating and modelling technological pedagogical content knowledge framework among Asian preservice teachers. *Australasian Journal of Educational Technology*, 29(1), 41-53.
- Chan, D. W. (2008). General, collective and domain-specific teacher self-efficacy among Chinese prospective and in-service teachers in Hong Kong. *Teaching and Teacher Education*, 24, 1057-1069.
- Chen, C. (2008). Why do teachers not practice what they believe regarding technology integration? *Journal of Educational Research*, 102(1), 65-75.

- Conrad, A. M. & Munro, D. (2008). Relationships between computer self-efficacy, technology, attitudes and anxiety: Development of the computer technology use scale (CTUS). *Journal of Educational Computing Research*, 39(1), 51-73.
- Cowan, J. E. (2008). Strategies for planning technology-enhanced learning experiences. *The Clearing House*, 82(2), 55-59.
- Creswell, J. W., Fetters, M. D., & Ivankova, N. V. (2004). Designing a mixed method study in primary care. *Annals of Family Medicine*, 2(1), 7- 12.
- Dellinger, A. B., Bobbett, J.J., Oliver, D.F. & Ellette, C. D. (2008). Measuring teachers' self-efficacy beliefs: Development and use of the TEBS-Self. *Teaching and Teacher Education*, 24, 751-766.
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford: Oxford University Press.
- Edwards, S. (2005). Identifying the factors that influence computer use in the early childhood classroom. *Australasian Journal of Educational Technology*, 21(2), 192-210. (Retrieved May 2, 2013 from <http://www.ascilite.org.au/ajet/ajet21/edwards.html>)
- Ekizoğlu, N. & Ozcinar, Z. (2010). The relationship between the teacher candidates' computer and internet based anxiety and perceived self-efficacy. *Procedia Social and Behavioral Sciences*, 2, 5881-5890.
- Ely, D. P. (1999). *New perspectives on the implementation of educational technology innovations* (Report No. ED 427775). Maryland: ERIC Processing and Reference Facility.
- Eminoğlu-Küçüktepe, S. (2010). A study on preservice English teachers' self-efficacy perceptions and tendency towards academic dishonesty. *Procedia Social and Behavioral Sciences*, 2, 4985-4990.

- Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, 47(4), 47–61.
- Ertmer, P. A., Ottenbreit-Leftwich, A. & York, C. S. (2006). Exemplary technology-using teachers: Perceptions of factors influencing success. *Journal of Computing in Teacher Education*, 23(2), 55-61.
- Farah, A. C. (2011). *Factors influencing teachers' technology self-efficacy: A case study*. Unpublished Doctoral Dissertation, Lynchburg, VA: Liberty University.
- Gibson, S., & Dembo, M. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology*, 76(4), 569-582.
- Gobbo, C. & Girardi, M. (2001). Teachers' beliefs and integration of information and communication technology in Italian schools. *Journal of Information Technology for Teacher Education*, 10(1&2), 63-86.
- Gunga, S. O. & Ricketts, I. W. (2008). The prospects for e-learning revolution in education: A philosophical analysis. *Educational Philosophy and Theory*, 40(2), 294-314.
- Güneş, G., Gökçek, T. & Bacanak, A. (2010). How do teachers evaluate themselves in terms of technological competencies?. *Procedia Social and Behavioral Sciences*, 9, 1266-1271.
- Gürol, A. & Aktı, S. (2010). The relationship between pre-service teachers' self-efficacy and their internet self-efficacy. *Procedia Social and Behavioral Sciences*, 2, 3252-3257.
- Gürol, A., Özercan, M. G. & Yalçın, H. (2010). A comparative analysis of pre-service teachers' perceptions of self efficacy and emotional intelligence. *Procedia Social and Behavioral Sciences*, 2, 3246-3251.

- Hall, B. C. (2008). *Investigating the relationships among computer self-efficacy, professional development, teaching experience, and technology integration of teachers*. Unpublished Doctoral Dissertation, Cincinnati, Ohio: University of Cincinnati the College of Education, Criminal Justice, and Human Services.
- Hanson, W. E., Creswell, J. W., Plano Clark, V. L., Petska, K. S. & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, 52(2), 224-235 doi 10.1037/0022-0167.52.2.224
- Hermans, R., Tondur, J., van Braak, J. & Valcke, M. (2008). The impact of primary school teachers' educational beliefs on the classroom use of computers. *Computers & Education*, 51, 1499-1509.
- Holt, L. L. (2011). *Self-direction and technology use among new workforce entrants*. Unpublished Doctoral Dissertation, Knoxville: The University of Tennessee.
- Horzum, M. B. & Çakır, Ö. (2009). The validity and reliability study of the Turkish version of the online technologies self-efficacy scale. *Educational Sciences: Theory & Practice*, 9(3), 1343-1356.
- Hu, L. T. & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <http://dx.doi.org/10.1080/10705519909540118>
- Johnson, I. (2006). *An investigation of the effects of the Georgia Framework for Integrating TECHNOLOGY (InTech) training program on teachers' computer self-efficacy and computer utilization*. Unpublished Doctoral Dissertation, Florida: Nova Southeastern University Graduate School of Computer and Information Sciences.
- Kalaian, H. & Freeman, D. (1994). Gender differences in self-confidence and educational beliefs among secondary teacher candidates. *Teaching and Teacher Education*, 10(6), 647-658.

- Kao, C-P., Wu, Y-T.& Tsai, C-C. (2011). Elementary school teachers' motivation toward web-based professional development, and the relationship with internet self-efficacy and belief about web-based learning. *Teaching and Teacher Education*, 27, 406-415.
- Kaya, S. & Durmuş, A. (2010).Pre-service teachers' perceived internet self-efficacy and levels of internet use for research. *Procedia Social and Behavioral Sciences*, 2, 4370-4376.
- Kayaduman, H., Sırakaya, M. & Seferoğlu, S. S. (2011). *Eğitimde Fatih projesinin öğretmenlerin yeterlilik durumları açısından incelenmesi*. (Retrieved February 13, 2013 from http://yunus.hacettepe.edu.tr/~sadi/yayin/AB11_Kayaduman-Sirakaya-Seferoglu_Fatih-OgretYeter.pps)
- Keengwe, J. & Onchwari, G. (2009). Technology and early childhood education: A technology integration professional development model for practicing teachers. *Early Childhood Education Journal*, 37, 209-218.
- Kemp, C. R. (2002). *Urban school teachers' self-efficacy beliefs and practices, innovation practices, and related factors in integrating technology*. Unpublished Doctoral Dissertation, Boston: University of Massachusetts (Retrieved November 28, 2012 from www.iup.edu/WorkArea/linkit.aspx?...id.)
- Kim, C., Kim, M. K., Lee, C., Spector, J. M. & DeMeester, K. (2013).Teacher beliefs and technology integration. *Teaching and Teacher Education*, 29, 76-85.
- Koparan, Ş., Şahin, E. & Kuter, F. (2010). A comparison on of self-efficacy perception and social physical anxiety levels of teacher candidates at Physical Education Department. *Procedia Social and Behavioral Sciences*, 2, 3932-3937.
- Lawless, K. A. & Pellegrino, J. W. (2007). Professional development in integrating technology into teaching and learning: Knowns, unknowns and ways to pursue better questions and answers. *Review of Educational Research*, 77(4),575-614.

- Lee, K., (2000), English Teachers' Barriers to the Use of Computer-assisted Language Learning. *The Internet TESL Journal*, 6(12) (Retrieved February 8, 2013 from <http://iteslj.org/Articles/Lee-CALLbarriers.html>).
- Lee, J-A. (2009). *Teachers' sense of efficacy in teaching English, perceived English language proficiency, and attitudes toward the English language: A case of Korean public elementary school teachers*. Unpublished Doctoral Dissertation, Columbus: Graduate School of the Ohio State University.
- Ma, W.W., Andersson, R. & Streith, K.O. (2005). Examining user acceptance of computer technology: An empirical study of student teachers. *Journal of Computer Assisted Learning*, 21(6), 387–395.
- Mishra, P. & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017- 1054.
- Monoi, S., O'Hanlon, N. & Diaz, K. R. (2005). Online searching skills: Development of an inventory to assess self-efficacy. *The Journal of Academic Librarianship*, 31(2), 98-105.
- Moore-Hayes, C. (2011). Technology integration practices and its influences on teacher efficacy. *CJLT*, 37(3), 1-12.
- Mumtaz, S. (2000). Factors affecting teachers' use of information and communications technology: A review of the literature. *Journal of Information Technology for Teacher Education*, 9(3), 319-342 <http://dx.doi.org/10.1080/14759390000200096>
- Ortaçtepe, D. (2006). *The relationship between teacher efficacy and professional development within the scope of an in-service teacher education program*. Unpublished Master's Thesis, Istanbul: Boğaziçi University Institute of Social Sciences.
- Overbaugh, R. & Lu, R. (2008). The impact of a NCLB-EETT funded professional development program on teacher self-efficacy and resultant implementation. *Journal of Research on Technology in Education* 41(1), 43-61.

- Pan, C. (2008). A year-long investigation of self-efficacy for technology integration and behavior pattern in a pre-service technology course using Hispanic student population. *International Journal of Technology in Teaching and Learning*, 4(1), 34–44.
- Paraskeva, F., Bouta, H. & Papagianni, A. (2008). Individual characteristics and computer self-efficacy in secondary education teachers to integrate technology in educational practice. *Computers & Education*, 50, 1084-1091.
- Pekkanlı-Egel, I. (2009). The prospective English language teacher's reflections of self efficacy. *Procedia Social and Behavioral Sciences*, 1, 1561-1567.
- Pinner, R. S. (2012). Teachers' attitudes and motivations for using CALL in and around the language classroom. *Procedia, Social and Behavioral Sciences*, 34, 188-192.
- Plair, S. (2008). Revamping professional development for technology integration and fluency. *The Clearing House*, 82(2), 70-74.
- Prensky, M. (2001). Digital natives, digital immigrants. *On The Horizon*, 9(5), 1-6.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80, 1-28.
- Sang, G., Valcke, M., van Braak, J. & Tondur, J. (2009). Student teachers' thinking processes and ICT integration: Predictors of prospective teaching behaviors with educational technology. *Computers & Education*, doi:10.1016/j.compedu.2009.07.010
- Senler, B. & Sungur, S. (2010). Pre-service science teachers' teaching self-efficacy: a case from Turkey. *Procedia Social and Behavioral Sciences*, 9, 771-775.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4–14.
- Skaalvik, E. M. & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education*, 26, 1059-1069.

- Skoretz, Y. M. (2011). *A study of the impact of a school-based job-embedded professional development program on elementary and middle school teacher efficacy for technology integration*. Unpublished Doctoral Dissertation, West Virginia: Marshall University Graduate School of Education and Professional Development.
- Smarkola, C. (2007). Technology acceptance predictors among student teachers and experienced classroom teachers. *Journal of Educational Computing Research*, 37(1), 65–82.
- Smarkola, C. (2008). Efficacy of planned behavior model: Beliefs that contribute to computer usage intentions of student teachers and experienced teachers. *Computers in Human Behavior*, 24, 1196-1215.
- Sugar, W., Crawley, F., & Fine, B. (2004). Examining teachers' decisions to adopt new technology. *Educational Technology and Society*, 7(4), 201-213.
- Şahin, F. E. (2007). *A comparison of the teaching efficacy levels of English teachers from student teaching to the induction year*. Unpublished Master's Thesis, Istanbul: Marmara University Institute of Educational Sciences.
- Tabachnick, B.G., & Fidell, L. (2007). *Using multivariate statistics*. 5th edition. Boston, MA: Pearson Education, Inc.
- Telli-Yamamoto (2012). *Fatih projesi geleceğin eğitimi çalıştayı*. (Retrieved November 16, 2012 from http://www.okan.edu.tr/media/b4/515be7c9aa69275f380006b4/Fatih_Projesi_Calistay_Raporu12112012.pdf)
- Tondur, J., Hermans, R., van Braak, J. & Valcke, M. (2008). Exploring the link between teachers' educational belief profiles and different types of computer use in the classroom. *Computers in Human Behavior*, 24, 2541-2553.
- Torkzadeh, G. & Van Dyke, T. P. (2002). Effects of training on internet self-efficacy and computer user attitudes. *Computers in Human Behavior*, 18, 479-494.

- Torkzadeh, G., Chang, J. C-J., & Demirhan, D. (2006). A contingency model of computer and internet self-efficacy. *Information and Management*, 43, 541-550.
- Tschannen-Moran, M., Woolfolk-Hoy, A. & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202-248.
- Tschannen-Moran, M. & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive concept. *Teaching and Teacher Education*, 17, 783-805.
- Tschannen-Moran, M. & Woolfolk Hoy, A. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education*, 23, 944-956.
- Uzun, A., Özkılıç, R. & Şentürk, A. (2010). A case study: Self-efficacy beliefs of teacher candidates regarding developing educational software. *Procedia Social and Behavioral Sciences*, 2, 5001-5005.
- Varank, İ., Çifçili, V. & Yıldırım, S. (November, 2012). *Fatih project: Sociologic and pedagogic aspects*. Paper presented at the meeting of Future Learning Conference, İstanbul.
- Walker, L. R., & Shepard, M. (2011). Phenomenological investigation of elementary school teachers who successfully integrated instructional technology into the curriculum. *Journal of Educational Research and Practice*, 1(1), 23-35.
- Wang, L., Ertmer, P. A., & Newby, T. J. (2004). Increasing pre-service teachers' self-efficacy beliefs for technology integration. *Journal of Research on Technology in Education*, 36(3), 231-250.
- Warschauer, M. (2000). Changing global economy and the future of English teaching. *TESOL Quarterly*, 34(3), 511-535.
- Windschitl, M. (2002). Framing constructivism in practice as the negotiation of dilemmas: an analysis of the conceptual, pedagogical, cultural, and political challenges facing teachers. *Review of Educational Research*, 72(2), 131-175.

- Windschitl, M. & Sahl, K. (2002). Tracing teachers' use of technology in a laptop computer school: The interplay of teacher beliefs, social dynamics, and institutional dynamics. *American Educational Research Journal*, 39(1), 165-205.
- Woolfolk Hoy, A. & Burke-Spero, R. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education*, 21, 343-356.
- Yenice, N., Evren, B. & Ozden, B. (2012). Relationship between self-efficacy perceptions of science teacher candidates and academic control focus. *Procedia-Social and Behavioral Sciences*, 46, 4044-4049.
- Yüksel, B. T. (2010). *Teacher efficacy beliefs of Turkish EFL teachers: A study with Turkish EFL teachers working at state primary schools*. Unpublished Master's Thesis, Eskişehir: Anadolu University Institute of Educational Sciences.
- <http://www.fatihprojesi.com/> (18th December, 2012)
- www.egitim.gov.tr (18th December 2012)

APPENDIXES

Appendix 1.Permission from Ministry of National Education

T.C.
SAKARYA VALİLİĞİ
İl Millî Eğitim Müdürlüğü

Sayı :B.08.4.MEM.0.54.05.02-605.99.0000-23723
Konu :Araştırma İzinleri

03 -12- 2012

VALİLİK MAKAMINA

Abant İzzet Baysal Üniversitesi, Eğitim Bilimler Enstitüsü, Yabancı Diller Eğitimi Anabilim Dalı İngilizce Öğretmenliği Bilim Dalı Yüksek Lisans öğrencisi Pınar YENİ PALABIYIK'ın "İngilizce Öğretmenlerinin Teknoloji Kullanımıyla İlgili Öz Yeterlilikleri" konulu anket uygulamasını, Fatih Projesi Kapsamında Sakarya İlindeki Pilot Okullarda görev yapan İngilizce öğretmenlerine uygulamak istediği, Abant İzzet Baysal Üniversitesi Rektörlüğünün 20/11/2012 tarih ve 961 sayılı yazıları ile bildirilmiştir.

"İngilizce Öğretmenlerinin Teknoloji Kullanımıyla İlgili Öz Yeterlilikleri" konulu anket uygulamasını" Fatih Projesi Kapsamında Sakarya İlindeki Pilot Okullarda görev yapan İngilizce öğretmenlerine uygulanması, yasal gerekliliğin ilgili Okul Müdürlüğünce yerine getirilmesi kaydıyla Müdürlüğümüzce uygun mütalaa edilmektedir.

Makamınızca da uygun görüldüğü takdirde olurlarınızı arz ederim.

İrfan SARIK
Millî Eğitim Müdür V.

OLUR.

22/11/2012

Faruk BEKARLAR
Vali a.
Vali Yardımcısı



Resmî Daireler Kampüsü
B Blok, 53290 Adapazarı - SAKARYA
Tel : 0 264 251 36 14-15-16
Fax : 0 264 251 36 04



Appendix 2. Permission to use Self-efficacy for Technology Integration Scale

- RE: Permission for SETIS

Ling Wang (lingwang@nova.edu)

[Kişilere ekle](#)

02.11.2012

Kime: Pınar YENİ



Yes, please use the survey in your thesis as you see fit. Good luck!

Ling

Ling Wang, Ph.D.

Professor of Graduate School of Computer and Information Sciences

Nova Southeastern University

954-262-2020

From: Pınar YENİ [pnr_yeni09@windowslive.com]

Sent: Monday, November 01, 2012 10:52 AM

To: Ling Wang

Subject: Permission for SETIS

Dear Professor Wang,

I'm MA student in English Language Teaching Department of Abant İzzet Baysal University, Bolu-TURKEY. I would like to use the instrument that you developed with Peggy A. Ertmer and Timothy J. Newby, so could you please accept my request to use your instrument (Computer Technology Integration Scale)?

Thank you in advance,

With my best wishes,

Pınar YENİ PALABIYIK

Appendix 3. Permission to use English Proficiency Scale

Re: Permission for English Proficiency Scale



Carmen Chacon (cchacon15@gmail.com) [Kişilere ekle](#) 21.05.2013
Kime: Pinar YENİ ✉

Hello Yeni,

As long as you quote the source I do not mind you using the scale in your thesis.

Regards,

Carmen Chacón

2013/5/20 Pinar YENİ <pnr_yeni09@windowslive.com>

Dear Chacon

I'm MA student at English Language Department of Abant İzzet Baysal University in Bolu /TURKEY. I would like to use your English proficiency scale in order to collect data for my thesis. Would you mind if I use your instrument?

Thanks in advance

With my best wishes

Pinar YENİ

--

"While we may not be able to control all that happens to us, we can control what happens inside us." --**Benjamin Franklin**

Dr. Carmen T. Chacon
Modern Language Department
University of Los Andes "Pedro Rincon Gutierrez"
San Cristobal, Tachira
Venezuela

Appendix 4. Turkish version of Self-efficacy for Technology Integration Scale

Bilgisayar Teknolojilerine Uyum Sağlama Anketi

Öğrenciler özgün, anlamlı ödevler sayesinde kendi bilgilerini oluşturdıklarından bilgisayar teknolojilerini öğrencileri desteklemek için kullanmak teknolojiye uyum sağlama olarak tanımlanır. Bu anketin amacı teknolojiyi İngilizce öğretimine uyarlamada kendinizi ne kadar emin hissettiğinizi belirlemektir. Tablodaki her cümle için lütfen bir cevap işaretleyiniz.

Eminim ki ben	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katlıyorum	Kesinlikle Katlıyorum
1.sınıfımda faydalanmak için bilgisayar olanaklarını yeterince iyi anlıyorum.	1	2	3	4	5
2. bilgisayarı ders öğretiminde kullanmak için gerekli yeteneklere sahibim.	1	2	3	4	5
3. İngilizcede bir konuyu teknolojiyi doğru şekilde kullanarak başarılı bir şekilde öğretebilirim.	1	2	3	4	5
4. İngilizce öğretmek ve öğrenmek hususunda bir yazılımı değerlendirebilirim.	1	2	3	4	5
5. öğrencilerin bilgisayar kullanımını yönetirken doğru bilgisayar terminolojisi kullanabilirim.	1	2	3	4	5
6. sınıfımda öğrencilerin proje gelişimi için bilgisayar kullanımını etkili bir şekilde yönetebilirim.	1	2	3	4	5
7. öğrencilere teknolojiyi doğru şekilde kullanmaları için danışmanlık yapabilirim.	1	2	3	4	5
8. İngilizce öğretimiyle ilgili eğitsel teknolojiyi sürekli ve etkili bir şekilde kullanabilirim.	1	2	3	4	5
9. teknoloji kullanımı esnasında öğrencilere bireysel dönüt verebilirim.	1	2	3	4	5
10. öğrencinin öğrenmesine uygun olduğunda teknolojiyi İngilizce derslerime düzenli olarak dâhil edebilirim.	1	2	3	4	5
11. müfredat standartlarına bağlı kalarak İngilizce öğretimi için doğru teknolojiyi seçebilirim.	1	2	3	4	5
12. teknoloji tabanlı İngilizce proje ödevleri verebilir ve bunları değerlendirebilirim.	1	2	3	4	5
13. öğrenci bilgisini değerlendirmede uygun bir yöntem seçerken müfredat amaçlarını ve teknoloji kullanımını göz önüne alabilirim.	1	2	3	4	5
14. İngilizceyle ilgili eğitici uygulamaları arttıran öğrenci testleri ve ürünlerindeki bilgiyi toplamak ve analiz etmek için teknoloji kaynaklarını kullanabilirim.	1	2	3	4	5
15. İngilizce öğretimimde teknolojiyi kullanmada rahatım.	1	2	3	4	5
16. bilgisayar kullanımı sırasında öğrencilerin ihtiyaçlarına cevap verebilirim.	1	2	3	4	5
17. öğrencilerimin teknoloji ihtiyaçlarına cevap vermek için yeteneklerimi geliştirmeye devam edebilirim.	1	2	3	4	5
18. teknoloji kullanımının faydalarına inanmayan iş arkadaşlarım tarafından itiraz edilmesine rağmen teknoloji tabanlı projeler düzenleyebilirim.	1	2	3	4	5

Appendix 5. Structured interview questions

1. Okullara Bilişim Teknoloji araçlarının (Akıllı Tahta, bilgisayar, internet vb) takdimi hakkında ne düşünüyorsunuz?
2. Sizce bir yabancı dil öğretmeni Bilişim Teknolojilerini İngilizce öğretimine nasıl entegre edebilir?
3. Öğrencilerin derslerde Bilişim Teknolojileri kullanımına yönelik tutumları hakkında ne düşünüyorsunuz?
4. Eğitim Teknolojilerinin öğrencilerin dikkatini derse diğer öğretim yöntemlerinden daha fazla çektiğini düşünüyor musunuz? Eğer evet ise, niçin?
5. Teknoloji uygulamalarınızda teknolojiyle alakalı hizmet içi eğitimlerin olumlu etkisi olduğuna inanıyor musunuz?
6. Çalışma günü boyunca teknolojiyi eğitim-öğretim amacıyla ne sıklıkta kullanıyorsunuz?
7. Okul günü boyunca (mesai saatleri içerisinde) derslerinizde kullanmak için teknoloji öğrenmeye yetecek zamanınız olduğunu düşünüyor musunuz?
8. Sınıfta teknoloji kullanmanızı zorlaştıran, şayet varsa, nedir?
9. Sınıfta teknoloji kullanımı konusunda ilginizi çeken nedir?
10. Öğretimde teknoloji kullanımıyla ilgili ne tür endişeler taşıyorsunuz?
11. Eğitimde teknoloji kullanımıyla ilgili rahat olmanızda (rahatlık seviyenizde) ne tür faktörlerden bahsedebilirsiniz? İngilizce yeterliliğinizin ve mesleki deneyiminizin herhangi bir etkisi olduğunu düşünüyor musunuz?
12. Fatih Projesinin uygulamalarıyla ilgili memnuniyetiniz ve beklentileriniz hakkında bir şey söyleyebilir misiniz?