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EXPLORING THE RELATIONSHIP BETWEEN TEACHERS' MINDSET AND THEIR TECHNOLOGY SELF-EFFICACY AMONG THE SECONDARY SCHOOL EFL TEACHERS

MASTER OF ARTS THESIS

PREPARED BY

SEHER ERGEN

SUPERVISOR

Assoc. Prof. Dr. FARHAD GHORBANDORDINEJAD

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This study titled "*Exploring the Relationship Between Teachers' Mindset and Their Technology Self-Efficacy among the Secondary School EFL Teachers"* prepared by Seher ERGEN is accepted as a Master Thesis by our jury.

Acceptance (exam) date:

Examining Committee Members: **Signature**

Jury Member: Assoc. Prof. Dr. Farhad GHORBANDORDINEJAD

(Baskent University)

Jury Member: Assist. Prof. Senem ÜSTÜN KAYA

(Baskent University)

Jury Member: Assist. Prof. Melike ÜNAL GEZER

(TED University)

Approval

I certify that the above signatures belong to the mentioned faculty members.

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Director of the Institude

ABSTRACT

EXPLORING THE RELATIONSHIP BETWEEN TEACHERS' MINDSET AND THEIR TECHNOLOGY SELF-EFFICACY AMONG THE SECONDARY SCHOOL EFL TEACHERS

Seher ERGEN

Master Thesis, Institute of Educational Sciences

Thesis Advisor: Assoc. Prof. Dr. Farhad GHORBANDORDINEJAD

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Technology integration plays an integral role in the English language teaching classrooms today, yet many factors other than having technical knowledge and accessing to digital devices contribute to teachers' success at technology integration in teaching. Among these are "teachers' technology self-efficacy" and "teachers' mindset"- the two variables of this study. The former is about their ability to use technology and the latter is about their understanding about where ability comes from. Research presents little reports on this topic. This quantitative study was conducted to examine the relationship between teacher's mindset and their technology self efficay among the in-service English teacher (n=146) who completed three instruments including demographic questionnaire, Dweck's Mindset Instrument (DMI) and Computer Technology Integration Survey (CTIS). As it is shown in data analysis there is a positive correlation between the variables of the research. Moreover, the mindset is a predictor of teachers' technology use self-efficacy. According to the findings, technology integration is essential for English language teachers. Regarding that, English language teachers should internalize the variables of the examination to have a better teaching atmosphere.

Keywords: Foreign language, technology, mindset, implicit theories, self-efficacy.

ÖZET

ORTAOKUL YABANCI DİL ÖĞRETMENLERİNİN BİLİŞLERİ VE TEKNOLOJİ ÖZ-YETERLİLİĞİ ARASINDAKİ İLİŞKİNİN ARAŞTIRILMASI

Seher ERGEN

Yüksek Lisans Tezi, Eğitim Bilimleri Enstitüsü

Tez Danışmanı: Doç. Dr. Farhad GHORBANDORDINEJAD

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Günümüz İngilizce öğretiminde teknoloji entegrasyonu büyük rol oynamaktadır, fakat teknik bilgi sahibi olma ve dijital aygıtlara ulaşabilmenin ötesinde birçok farklı faktör öğretmenlerin, teknoloji entegrasyonundaki başarısını etkilemektedir. Bu faktörlerden "öğretmenlerin teknoloji öz-yeterlilikleri" ve "öğretmenlerin bilişleri" bu çalışmanın iki değişkenidir. Çalışma öncelikle teknolojiyi kullanabilme becerileri üzerine daha sonra da bu becerilerin nereden geldiği hakkındadır. Çalışma, bu konula hakkında bazı raporlar sunmuştur. Bu nicel çalışma,demografik anket, Dweck's Mindset Instrument ve Computer Technology Integration Survey (CTIS)'i kapsayan 3 ölçeği cevaplayan İngilizce öğretmenlerinin (n=146) bilişleri ve teknoloji öz-yeterliliklerini incelemek için yapılmıştır. Data analizinde görüldüğü üzere çalışmanın değişkenleri arasında olumlu bir ilişki vardır. Ayrıca biliş, öğretmenlerin teknoloji kullanımı öz-yeterliliği için bir öngörücüdür. Bulgulara göre, teknoloji entegrasyonu İngilizce öğretmenleri için oldukça önemlidir. Bu sebeple İngilizce öğretmenleri daha iyi öğretme ortamı için çalışmanın değişkenlerini içselleştirmelidir.

Anahtar Kelimeler: Yabancı dil, teknoloji, biliş, örtük yöntem, öz-yeterlilik.

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Abbreviation List

ACD Adult Constructive-Developmental

CALL Computer Assisted Language Learning

CAS Computer Attitude Scale

CPSE Children's perceived Self-Efficacy Scale

CSE Computer Self-Efficacy

CTIS Computer Technology Integration Survey

DMI Dweck's Mindset Instrument

EFL English as a Foreign Language

ELT English Language Teaching

ICT Information and Computer Technology

IEA Evaluation of Educational Achievement

IoT Internet-of-Things

iTILT Interactive Technologies in Language Teaching

ITOE Instructional Technology Outcome Expectation

MLEs Managed Learning Environments

MS Microsoft

SCUTTES Student-Centred Use of Technology Teacher Efficacy Scale

SCUTTOES Student Centred Use of Technology Teacher Outcome Expectancy Scale

SEQ-C Self-Efficacy Questionnaire for Children

SES Self-Efficacy Survey

TAM Technology Acceptance Model

TPACK Technological Pedagogical Content Knowledge

TPSA Technology Proficiency Self-Assessment

TTIS Teacher Technology Integration Survey

UNESCO United Nations Educational, Scientific and Cultural Organization

1. Introduction

1.1. Overview

In the introduction part of the study, the researcher describes variables, presents the background of the variables, aim and significance of the study with research questions. Based on this information, delimitations and limitations were given.

1.2. Background of the study

Recently, modern education force educators to have skills in 21st-century classroom changes. Technology and its acceptance are somewhere in the heart of these developments. Thanks to educational technology, teachers are capable of teaching a language efficiently and fast. Educational technology allow teachers to create learning activities, tasks, and experiences that are authentic, that take place in authentic contexts, and that involve authentic language in order to increase language learning (Egbert, Hanson-Smith, & Chao, 2007). Further, this kind of activities has an importance on students' motivation as Dörnyei highlighted (2001). Nevertheless, there is a tremendous need for teacher practice to teach them how to accept innovations and integrate them into their classroom.

Technology use in today's' classroom is reasonably necessary. However, its first step starts with the teacher. If a teacher's mindset isn't ready for a change, technology use may fail. There are plenty of studies that arguments on the positive effects of technology use but the mindset theory is the base of the situation.

In 1988 Carol Dweck presented the idea of mindset. In 2006, Dr Dweck and her friends coined the term mindset and its principles. It is defined as one's world view or philosophy of life by Dweck (2006). Dweck (2007) explained mindset theory and practices in her book *Publication of Mindset: The New Psychology of Success.* Dweck studied mindset throughout years and stir much interest from other fields.

According to human features, people are born with a mindset, not a talent. People have beliefs that can be fixed or changeable. Dweck (2006) shed a light on the theory to explain the insight of individual characteristics. Dweck (2007) observed two mindsets considering champions, business people, leaders, relationships, parents and many other people to express mindset effect in the various field.

When the mindset was examined in educational practice it is a need for 21st-century education. Claro, Paunesku, and Dweck, (2016) conducted a study in Chile considering the mindset idea of all the schools and socioeconomic standards there. The research examined the link between income and mindset. As the research recorded, family income is a sufficient indicator of the mindset. When a person has a lower-income, they are likely to hold a fixed mindset. However, a person comes from a higher-income family likely to hold growth mindset. That is, the economic status may be effective on a person's mindset.

Macnamara and Ruponi (2017) determined the relationship between intelligence and mindset. The research investigates similarities and differences considering these two constructs. Also, the study examined the gender factor with adults. According to their conclusion, there is no information that proves men have more of a growth mindset than women. Moreover, there is no relationship between gender and mindset, also intelligence and mindset.

Some other studies go beyond known and examine relations between mindset and technology use. To examine teachers' mindset in using Information and Communication Technology (ICT) Thorsteinson and Niculescu (2013) conducted research. The examination presented information about Managed Learning Environments (MLEs). Regarding the requirements of a school, the survey focused on technological innovations, online education and conventional education. According to researchers' claim, these innovations linked to teachers' responsibilities and mindset. Three research questions aimed to answer for the research. Questions were about the situations that effects teachers' role, how the situations linked to their mindset and how the teachers can tackle these situations. Results show that teachers have difficulty applying ICT into their classroom. Because of the problems such as changing roles, increased workload, self-confidence teachers are not able to manage ICT.

Tek, Benli, and Deveci (2018) investigated a study regarding implicit theories and self-efficacy relation on students' performance. The researchers focused on how to enhance students' academic success. In Turkey, the data collected from a total of 100 participants for the first survey and 81 participants for the second survey. The positive correlation between implicit theories and self-efficacy was mentioned in the study. Moreover, it is presented that the two constructs can predict the students' success.

Rhew, Piro, Goolkasian, and Cosentino (2018) purposed to examine possible effects of mindset on self-efficacy and motivation. For the survey, the data were collected from comparison and a treatment group chosen from 1920 secondary school students. The examination presented that there is a difference in a person's motivation and self-efficacy as they tend to hold a growth-midset.

Tour (2015) studied on teachers' mindset, and its relationship with personal technology use. The researcher examines language teachers' roles and current problems. Because of the technology needs, its' importance and digital tools explained in the findings. The literature was presented about teachers' personal and professional use of technology. The data were collected from 3 language teachers for the survey. According to the conclusion, the researcher presented 7 items that increase the correlation between teacher mindset and technology.

The survey aims to investigate the two structures in the interest of the English Language teachers. The current study highlights information about teacher mindset and teacher technology use self-efficacy. Considering results may help educators when they face obstacles. Also, implications are sufficient for both teachers and teacher candidates.

1.3. Statement of the Problem

Fostering beliefs about intelligence and ability in a language classroom are expanding day by day. Students generally think that they are not good enough to face with grammar structures or they are not talented enough to speak English fluently. By thinking in this way, they may avoid to go further or practice more. When those students think of others, they describe others’ effort as talent or luck. A majority of language learners have

the same difficulty, failure or mistake has connected to the sense of being ineffective. Instead, failure and making a mistake are the fundamental steps of the learning stages.

Dweck (2006) emphasized some points that students' beliefs about themselves and attitudes of self-control can matter. In her book, Mindset: The New Psychology of Success, she groups people into two. According to her book, one group believe their talents are fixed and come from birth. People with this mindset think that the amount of brain is certain and there is no need to put effort. Dweck (2006), named this group as fixed mindset.

Contrary to the fixed mindset, the other group is eager to grow themselves. This group which is named growth mindset knows that intelligence is something changeable and they always try to do it. Particularly, mindset theory put forth the general features of these two groups.

Additionally, Bandura's self-efficacy belief has a direct relationship with the mindset. In the educational area, self-efficacy has been identified to have a direct correlation to learners' capacity to affect their success (Brozo&Flynn, 2008). That means both mindset and self-efficacy feeds each other during teaching/learning.

In spite of their effects on language teaching, mindset and technology self-efficacy together studied by just a few researchers. To understand the requirements at school and to prepare required education programs these two variables important for educators and school management. The problem is that a language teacher may have trouble to apply technological changes to their classroom.

1.4. Purpose of the Study

The purpose of this non-experimental explanatory research study, which depends on quantitative data, using correlational analysis, was to determine whether there is a correlation between English Language Teachers' mindset and technology self-efficacy.

To obtain the data two survey and a demographic is used. Dweck's Mindset Instrument (DMI) which has 16 statements developed by Carol Dweck. DMI was used to gather data for the mindset.

The other instrument developed by Wang, Ertmer, and Newby (2004) called Computer Technology Integration Survey (CTIS) which has 21 statements to measure participants' technology self-efficacy.

For the current study, secondary school English as a Foreign Language (EFL) teachers who teach in a secondary school in the Cankaya district of Ankara are invited to take part in the survey. The researcher intends to provide implications for educators and school managers to have an idea on the need for personal and institutional development in teacher mindset and technology use self-efficacy.

1.5. Significance of the Study

Technology is shaping our future of education. Recently, the needs of educating and teaching have been evolving. Integrating technology necessitates a whole range of precautions. Review of related literature shows that there is a gap in Turkey in the field of EFL. There are a few studies on mindset conducted in Turkey. The current study considers the mindset by examining its relation with technology use self-efficacy. On the grounds of that, the research is significant in the field of English language teaching. As the importance of technology emphasized in the paper and detailed information on teacher roles 'given, the current study has a great significance.

The survey supplies an accurate definition of mindset and its advantages and disadvantages in both mindset types. Moreover, it explains technology self-efficacy for teachers and educators. That's why the study has an impact on teachers, language teachers, teacher-student relations, teacher needs', and professional development and students achievements.

Regarding mindset and technology self – efficacy, data analysis of the current study gives a better understanding of English Language teachers, educators, and administrators. The relationship that the examination deeply looked at covers needs and teaching practices to address real problems and handicap in front of these two factors.

One of the most essential purposes of the investigation is to advance a better English Language teaching classroom setting through proper practices and strategies. With the aim of having a better classroom, the survey inspires both in-service and pre-service teachers.

The survey provides current systems and advanced ways of teaching models. Even with technology being used in everyday life frequently, there are many schools which are not able to provide needed opportunities to their teachers and students. Needless to say that, school administrators or the authorities have little or no interest to determine teachers' mindset and how they direct the students. Regarding that, the research eliminates the problematic issues and makes implications.

It is a must to have a perception about mindset if one wants to be a problem-solver in Language Teaching field. Furthermore, its connections with other components are needed to be known. To have the right teaching skills it's better to have accurate information about mindset and technology self-efficacy relation.

As a result, the researcher aims to (1) explore their use of technology frequency, (2) examine their self-efficacy on using the technology effectively, and (3) the relationship between EFL teachers' mindset and its' influence on their technology use. Therefore, the research guides essential information for both language teachers and policymakers.

1.6. Delimitations and Limitations

The current study will research the mindset of EFL teachers and its relation to technology use self-efficacy. The examination will be conducted with secondary school EFL teachers from Çankaya district in Ankara. 2 questionnaires and a demographic scale will be used to measure the relation between the variables.

The present study has a few limitations. The conclusion of the survey related to participants' cultural background and experiences. That's why their answers may be affected.

As the participant's answer' related to their individual features, it is not suitable to extend the sample analyses to the population.

On the other hand, the research questions will be answered but the causality of the situation is hard to figure out by the researcher.

1.7. Research Questions

Two questions were examined to understand the link between English Language teachers mindset and technology use self-efficacy. The research questions for the current study are as follows:

Research Question 1 (RQ1): Is there any significant relationship between teacher mindset and technology self-efficacy?

Research Question 2 (RQ2): Does teacher mindset functions as a predictor of technology self-efficacy?

1.8. Research Hypotheses

There are two research hypotheses in the examination against to two research questions:

H01: There is no significant relationship between EFL teachers' mindset and their technology use self-efficacy.

H02: EFL teachers' mindset doesn't function as a predictor of their technology use self-efficacy.

1.9. Definition of Key Terms

1.9.1. Mindset Theory

1.9.1.1. Theoretical Definition

Dweck (2009) studied the theory of mindset based on two perspectives. The mindset theory has been assessed as fixed and growth according to a person's beliefs on the malleability of their brain or fixedness of it. Regarding previous studies of Dweck, a fixed

mindset has a close meaning to entity theory while a growth mindset is closer to the incremental theory of intelligence.

1.9.1.2. Operational Definition

In the research, EFL teacher mindset will be measured by Dweck's Mindset Instrument (DMI). The questionnaire involves 16 statements and a six-point Likert scale. Based on intelligence and talent factors, the scale will determine secondary school teachers according to their mindset.

1.9.2. Technology Use Self-Efficacy

1.9.2.1. Theoretical Definition

Bandura (1977) studied on self-efficacy theory. The term self-efficacy explained as one's belief in her / him (Bandura, 1977). Regarding Bandura's theory, technology use self-efficacy deals with one's ability in technology knowledge and the ability of technological tools.

1.9.2.2 Operational Definition

In the current study, EFL teachers' technology use self-efficacy will be measured by the Computer Technology Integration Survey (CTIS), (Wang et al., 2004) The questionnaire includes 21 statements with a 5-point Likert scale. Based on technology knowledge it measures self-efficacy.

2. Review of the Literature

2.1. Overview

This section presents previous studies to explain the background of mindset theory and its influences on the EFL department. The review of literature continues with the history of self-efficacy theory and teacher technology self-efficacy.

2.2. Mindset Theory

The mindsets have importance for better teaching. It is defined as beliefs. These beliefs are about yourself and your most basic qualities (Mindset, 2010a). Teachers face different levels, grades, ages of students even the situation sometimes varies by nationalities, religions or languages. In this case, a teacher should be ready, and be able to handle every kind of situation. Teachers' role has significance both in and outside of the school. Dweck (2006) states a teacher's one word can directly touch a student's life. Teachers' attitudes affect students' cognitive evolution also social, emotional and academic. In other words, a teacher has an essential role to grow up a good citizen. Regarding that, a teacher must be aware of their needs and changing conditions. In this concern, 21th-century education is one of the4 most important changing.

2.2.1. 21th-Century Teacher Roles

Developing world standards led teachers and school systems to cover innovations and different roles. Habibi, Mukmimin, Sofyan, and Setiono (2019) conducted a study based on teacher beliefs to see requirements for 21st-century education. The investigation covers the main needs of the 21st-century education environment. The key factor as mentioned in the current study is information and communication technology (ICT). The researchers collected the data from 765 participants to have an idea about teachers' belief at this point.

On the other hand, 10 teachers were chosen for the interview session. The findings show that there is a need for teacher-student interaction, ICT knowledge and access to ICT.

Similarly, Wrahatnolo (2018) examined 21st-century features. The examination gathered data from literature and some other sources. The current study implicates competencies and plans according to 21st-century concepts. Based on the data Wrahatnolo (2018) sums the needs by common needs including digital practices, cultural issues, and teaching techniques.

More specifically, teacher as a facilitator should take a place in backstage and provide a student-centred classroom. Teacher as a team coach should integrate high-tech based upon their needs and apply self, peer and group assessment. Instead of known classroom methods, teachers should use projects, performances and media not only for fragmented curriculum also for integrated and interdisciplinary.

Recently, apart from these, in the school environment, one thing is a must for teachers: growth mindset. Professor Carol Dweck (2006) uses the term 'mindset' to describe the way people think about talent and ability. Dweck (2006) defines the mindset as a way of beliefs and attitudes beside many other senses or reactions that one performs.

In a similar way, Meier & Kropp (2010) claim that mindset is a mental attitude which modifies people actions. Depending on that idea, Dweck has highlighted the theory of mindset. Dweck dedicated her life to explain how the mindset works. In her book named *Mindset: The New Psychology of Success,* in common terms mindset is related to human motivation. Besides, the mindset is somewhere between developmental, social and personality psychology. Over the book, the theory is all about humans' reaction to challenges, obstacles, efforts, criticisms, and success of others.

According to Carol Dweck's theory, the mindset shaped through the learning experience. As time goes by, one's mindset led him/her to achievements or failures. That is, the mindset is one's frame of thinking. A person's habits, thoughts, and beliefs may affect the way they think. That's why attitude and belief are related to mindset.

A study contributed by Rattan, Savani, Chugh, and Dweck (2015), shows that students' mindset is the main factor in their educational life. The study proved that when

students promoted, their mindsets are likely to change and improve. Besides, Taylor and Gollwitzer (1995) looked for effects of mindset on positive illusions. To evaluate participants; mindset, mood, self-perceptions, perceived vulnerability to risk tasks used. The study confirmed that mindset advises the people over their decisions and actions. Moreover, Gollwitzer (2011) explains mindset as activation of cognitive procedures.

From the business sector to education in a wide variety of area, the mindset has been investigated. Over 30 years, researchers become interested in people's especially student's reaction about failure and motivation. Due to their distinctive role, they are being used to recognize the type of mindset.

2.2.2. Mindset for Students

A study presented by Diener and Dweck (1978) to interpret performance, strategy and achievement cognitions after a failure. The study explored with 5th grade helpless and mastery-oriented 130 children. The examination advises that while helpless children are considering the cause of failure, mastery-oriented children focused on the remedy.

Likewise, Dweck (1986) contributed a study on motivational processes that influence a child's learning. The researcher considered social – cognitive framework. The study noted children's reactions to failure and success. According to the results of the investigation, motivational processes play a role in children's skills and knowledge.

After two years Dweck and Leggett (1988) presented a study that related to motivation but this time the examination considered personality as well. The study answered questions about functions that underlying motivational and personality factors. To sum, the study showed that implicit theory is a type of self - concept and related to self - esteem.

In 1998 a research considered praise and its effects to figure out their impact on motivation. Mueller and Dweck (1998) collected the data for the research by evaluating 5th graders. Despite its known motivational effects, it has negative effects related to motivation and success. Fifth-grade students praised for their own effort and intelligence in two different groups. Children who were praised for their effort high ability attributions. Thanks to the results, the examination revealed great implications.

After much time and effort that researchers put into this field, Dweck coined new terms to make the circumstances clear. The terms are mindset, growth mindset and fixed mindset which are being used to explain brain plasticity, malleability and so on. Dweck (2009) has made plenty of studies and she shares her ideas via her books and works. Dweck (2009) has worked deeply on psychology to analyse human brain and its malleability. Dweck (2009) tested adolescents and students those with a growth mindset and a fixed mindset to differentiate their features.

Zeng, Hou, and Peng (2016) investigated the effect of mindset. The study determines literature and previous studies. Regarding the background of the mindset, the investigation offers positive education which covers the growth mindset for students' education. Researchers collected the data from 658 male and 602 female secondary and primary school students. As it was asserted in conclusion, to change the mindset and hold a growth mindset may support positive education.

Polirstok (2017) detailed the mindset for students from different stages. The researcher discusses students' need based on Duckworth's (2007) persistence and resilience, and Dweck's (1996, 2007) mindset idea. To have the best results, the researcher offers cognitive and behavioural strategies for different age levels.

Papi, Rios, Pelt and Ozdemir (2019) researched Dweck's (2000) mindset, Korn and Elliot's (2016) achievement goals and Ashford’s (1986) model of feedback-seeking behaviour. The researcher examined the three constructs for language learning and teaching. Data gathered from 287 students who have foreign language courses regularly. The study explained students' needs by dividing them into two as growth and fixed language mindsets.

2.2.3. Growth Mindset for Teachers

In education, teachers with a growth mindset motivate their students to face their problems, foster them for challenges, and support them to tackle issues and take risks. There are many studies have been completed to explore how mindsets can affect learning.

Cutumisu (2018) emphasized the mindset and its relations with other educational constructs. The researcher aimed to examine its relation with feed-back seeking. For the

study data were collected from 68 pre-service teachers. The pre-service teachers were supposed to respond to an online mindset for the study. As it is mentioned in the conclusion the investigation has two main results. The findings showed no relation between the growth mindset and feedback seeking. On the other hand, the study presented the differences between a growth mindset and a fixed mindset to make beneficial implications.

Ade, Schuster, Harink, and Trötschel (2018) studied on mindset-oriented education. The study focused mindset and its impacts on the effectiveness. The current study emphasized the interaction between three constructs covering collaboration, curiosity, and creativity.

Hüther (2016) indicated that because of the need for trial and error, mindsets have vital implications. As Hünter argued (2016), teachers should report their students' progress in terms of growth charts, not grades. Instead of achievement, growth should be followed by portfolios.

Stewart and Wolodko (2016) conducted a study based on Robert Kegan's Adult Constructive-Developmental (ACD) theory in relation to the digital teaching environment and mindset. The study conducted with higher education practitioners. The study summarized the conclusion by emphasizing the importance of challenges and innovations.

Turning now to foreign language teachers, the classroom environment must be designed to lead to students' growth in language learning. Language learning has a barrier because of our brains' function which directs students to use their mother tongue. Fixed mindset students afraid of making mistakes and they can easily quit language teachers must teach their students to believe their power. Dweck (2008) suggests making their students be sure about their potential is and the best key is to grow their intelligence by creating classroom culture focused on a growth mindset. Similarly, it demonstrated that students' academic performance directly influenced by their mindset (Burns & Isbell, 2007).

2.2.4. Mindset for EFL Teachers

Foreign language teachers can provide different opportunities. Depending on the students' best performance, teachers are able to change teaching and assessment tools. That was also studied by Mueller & Dweck (1998); their study shows that teachers need to emphasize effort and progress of students over the final outcome in the class. That is, fun and interesting challenges should give to enhancing them throughout the task.

In-depth supporting their challenge and effort helps their learning and understanding at a deeper level for students (Dweck, 2010). Instead of teachers saying things such as you are great, you are clever, you have done teachers should expose them to believe in their effort by saying you are finding really good ways, you have great effort. The encouragement will work if the teacher believes in them and make their fears a part of their achievement. Teachers' thoughts of growth mindsets do help students' motivation and halting declining academic performance (Mueller & Dweck, 1998). Mueller & Dweck (1998) say that teachers need to differentiate learners' responses by looking at their effort in a given time. Practice should be believed as a process maker.

Depending on these studies on mindset, growth mindset is emphasized through the years. That is, a growth mindset is essential for both teachers and students' success. Recently, conscious awareness of mindset is increasing at schools. Yettick, Lloyd, Harwin, Riemer, and Swanson (2016) presented that 45% of K12 educators are familiar with the growth mindset idea and they have a great focus on it. Many researchers are trying to examine the effects of a growth mindset for educators and students.

Yeager and Dweck (2012) conducted a study on the challenges that students face. The research provided that students' mindset is essential for them to tackle with resilience in terms of academic and social obstacles. Researchers first aimed to show what a mindset is and how to develop. The study showed that changing systems and certain challenges can affect students' mindset. Praising students for being smart or intelligent is not to promote success. Instead, educators and parents may praise their effort and patience.

Accordingly, Dweck (2012) the study examined the mindset and human nature. The researcher tells about human to show the person's identity. Human nature covers adoption,

changing and growing as proposed by Dweck (2012). The research claims that mindset is a part of a person which is either fixed or growth. The study offers information about how to increase intellectual achievement and conflict resolution.

In 2017, Dweck presented a similar study regarding children mindset. The study considered the motivation of animals for the sake of understanding the motivational impact. To have a clear idea about children attribution, goal, and mindset the data were collected. The researcher examined what and how effects children. The study emphasized mindset theory to explain social and personal development.

Haimovitz and Dweck (2017), in their study, examined the relationship between children mindset about their intelligence, motivation, and achievement. The investigation claims that parents or teachers with a growth mindset don't guarantee children with a growth mindset. The study presents a new path for adults to shape their practices. The study emphasized key implications, future direction, and important societal issues for parents and educators.

Supporting a pre-service English Language Teacher was examined together with mindset idea by Ager and Wyatt (2012). The researchers contributed a case study to raise awareness of pre-service English Language Teachers. The study completed under the teacher education programme to explain the interaction between cognition, emotions, and motivation. Moreover, the mentoring that they receive examined. The study confirmed that pre-service teachers self-determined development effected by their own needs. On the other hand, the current study highlighted implications which are important for English Language Teachers' motivation, mindset, and emotion.

Cook, Gas, Farley, Lineberry, Naik, Lara, and Artino (2019) surveyed the mindset idea and, the researchers showed mindset and performance. Two randomized experiments intended for secondary school participants. According to results, two hundred three students motivational interventions affected by performance and motivation. Mindset theory is guaranteed in this kind of situation.

Bostwick, Martin, Collie, and Durksen, (2019) aimed to show the constructs associated with academic growth. The study covers the growth mindset, goals, and

psychoeducational substances. The study completed by two-wave longitudinal structural survey modeling with 2949 secondary and high school students. According to results students' mindset growth was positive. Accordingly, implications were given to show the relation between given structures to improve students' academic level.

Rissanen, Kuusisto, Tuominen, and Tirri (2019) focused on growth mindset pedagogy in a Finnish elementary school. The study examined critical points for growth mindset pedagogy in the classroom. The researchers highlighted a frame including individual learning processes, promoting mastery orientation, persistence and fostering students' process-focused thinking. Accordingly, classroom observations and interviews included. The study shows that the school system and teachers pursue growth mindset pedagogy; however, they don't have growth mindset pedagogy on teachers, implications given.

Since the theory has been proved to gain success, researchers pay attention to the growth mindset in different fields of education. Researchers examine mindset theory and its possible effects on achievement. So, studies show principal features to make implications for educators, parents, and policymakers.

Clark and Sousa (2018) intended to show what the growth mindset is and what the benefits of it in education places are. The study addresses implicit theories and performance, and then makes assumptions. On the other hand, the current study examines workplace working cultures. The study claims that mindset outcomes at some critical points such as challenge, obstacle, effort, criticism, feedback and other's success. To boost mindfulness about the growth mindset in students, educators are responsible as the study mentioned. Also, other assumptions for educators and students are presented according to results.

Zander, Brouwer, Jansen, Crayen, and Hannover (2018) provided a study which relates self-efficacy and growth mindset. Researchers assessed 580 university students in 30 seminar groups. The study reviewed that when a student with academic self-efficacy sensed as a guide for other students. Academic and social integration gathered by reports for the data. Subsequently, results showed that there is a relationship between the growth mindset and self-efficacy.

Yue and Bates (2017) address the effects of mindset on their ability, school achievement grades and challenge. As mindset theory maintains students' school grades are the results of their mindset. To test the reliability of this idea, Li and Bates (2017) assessed 624 diversified students. The study determined that there is no correlation between students IQ and their mindset; however, their school success linked to their mindset as it represented. On the other hand, the study couldn't find any reason to name the fixed mindset as harmful.

Zeng, Hou, and Peng (2016) conducted a similar study. Their aim was studying mindset to attest its relation to school engagement and psychological well-being. The study tested 658 males and 602 females Chinese students chosen from primary and secondary schools randomly. Data from the current study confirms that impact of growth mindset on students' psychological well-being and school engagement is positive. Consequently, researchers made critical suggestions for ideal education.

Researches may vary due to the field that examined or the selected age group etc. To make inferences for educators Murphy and Thomas (2008) researched the dangers of a fixed mindset in the field of computer science. Their study investigated students randomly. Results from the current study showed that student with a growth mindset are eager to face challenges and put effort to learn given structures. On the other hand, students with a fixed mindset feel helpless and their self-esteem likely to decrease depending on their previous knowledge during the lesson. The study relates some information around this idea and offers implications for educators.

Regarding these researches on mindset, it is clear that growth mindset has a positive effect on students. When we move to teachers, in this study especially language teacher, their mindset sometimes fixed, and they believe that student mindset can't be developed. Additively, while some of the language teachers accept that their professional development can be improved, others don't consider it (Gero, 2013). In light of these thoughts, researchers examined the relationship between language teachers and mindset idea.

Labbas and Shoban (2013) aimed to examine teacher development within contemporary changes. The study focused on the challenges in the digital age and the teachers' attitudes toward new educational changes. The study concluded by implications

for teachers who don't believe need of digital era and also, recommends given to teachers who have a growth mindset and want to apply it in the classroom.

Another study deals more broadly with EFL. The study compares natural talent and impact of effort for language learning. Mercer and Ryan (2009) managed a study that comprises mindset to make recommendations for language teachers. The study offers information about implicit theories and mindset theory. To have results, researchers conducted interviews with volunteers from Japan and Austria. According to results, some participants show a certain mindset. Learners found to have an idea that a person born with natural talent. However, some others believe that their potential can increase with effort and practice.

Ryan and Mercer (2012) provided a similar study to figure out fundamentals to show nature of human brain malleability. There are basic concepts connected to language learning that mindset linked to such as motivation, attribution, goal, strategy, and self-concept. The research illustrates variables related to mindset for a better language teaching atmosphere. Accordingly, the study suggests language teachers; praising, giving feedback, positive modeling, providing strategies, and using materials which let students feel a sense of effort.

2.3. Computer Technology Integration

2.3.1. Language Teacher Technology Use

Recently, the importance of English Language is spreading. The founder of the Republic of Turkey, Ataturk emphasized the significance of learning a language by pointing its effect on a distinguishing feature of a citizen (Toros, 1981). In modern education, language acquisition is the first step of graduation. This means, language teaching vital for both K12 and higher institution educators. Nunan (1999) in his book indicated language teachers as the main factor for meaningful language learning. English language teaching teachers are responsible for planning, preparing, organizing and assessing their English lessons. On the other hand, today's' world pushes teachers to use technology in their teaching environment (Robin, 2008). Language laboratories, televisions, films, movies, and many other tools make language learning easier (Sallabery,

2001). To balance the revolutions in education and students' needs, English Language Teaching (ELT) teachers should have enough computer knowledge.

Bandura, Barbaranelli, Caprara & Pastorelli (1996) suggested the theory self-efficacy have valid integration of technology. Self-efficacy stands for one's ability to perform at designated levels (Bandura, 1986). Perceived self-efficacy predicts one's confidence, motivation, attitude, and behavior.

According to Bandura(1994), self- efficacy has four sources; mastery experiences from one's own experiences, vicarious experiences which is formed by observation of other people or role-models, social persuasion that comes from related to other people's thoughts and physical states which can led the person to stress, anxiety or other emotions.

Beside other factors such as parental, institutional or environmental, self-efficacy is one of the most important factors to the integration of technology to ELT lessons. Technological opportunities in schools having been increased, but teachers' ability of technology use is limited or just a few teachers are using the technology in its fullest sense.

Riel & Becker (2006) indicated the significance of the relationship between teacher technology self-efficacy and their professional development. On the other side, Apple Classrooms of Tomorrow Research (Dwyer, Ringstaff & Sandholtz, 1991) demonstrated that there is a link between technology integration to the classroom and collegial interaction.

In Europe, to support language teacher technology integration a study was reported based on Interactive Technologies in Language Teaching (iTILT) project. The project supplies different kinds of training materials and other resources for teachers to integrate technology. The project covers seven countries including Belgium, Netherlands, Germany, France, and Spain, Wales and Turkey and the language teachers from these countries in different sectors. A questionnaire adapted to teachers to measure their ICT levels and use. Despite the nature of the project, the results were generally similar. According to the study, teachers show high self-efficacy to the integration of technology. Hillier, Beachump & Whyte also highlighted some significant parts of the study for the pedagogy.

One another study focused on teacher training education faculties; Onyia and Onyia (2011) reported a study to implicate a faculty curriculum design for integration of technology in Nigeria University System. As many other faculties, Nigerian faculties are not providing adequate technology based lectures into their classroom instruction. The huge number of studies has been reported based on this issue, but the current study focused on the role of faculty perception. The mixed-method research aims to determine the level of relation between faculty perception and technology integration by considering Teacher Education faculty in Nigerian universities. Based on the self-efficacy theory of Bandura, Onyia & Onyia planned the study. To collect the data Likert-type survey and interview were designed. Ten participants selected from the Teacher Education Faculty in Nigerian universities participated in interviews. The findings indicated that there is a positive correlation between teacher self-efficacy and adoption of technology into the classroom. According to the results, the study provides significant implications for Teacher education faculties.

Some other studies have indicated teacher technology training on this base. Song, 2017 investigated a study on Technological Pedagogical Content Knowledge (TPACK) and its technical integration self-efficacy. In study 150 foreign language teachers took part. According to the findings of the investigation, foreign language teachers TPACK were low. The study implied that foreign language teachers' technical knowledge is not enough to adopt technology into their practice. However, their level of integration of self-efficacy is middle.

2.3.2. Integration of Technology

Technology is underlying in every field of our century. Computers and computer-like tools have been used since 1920 (Gary, 1991). Its journey has started in developed countries, but now approximately in everywhere it can be found. It makes life manageable and cheaper. Except for its use in other fields, in recent years it becomes the main tool of education. Although studies have reported that technology cannot supply enough sources as a live teacher does, it is clear that using technology in the classroom has positive effects throughout history.

Technology has a great number of tools to promote the teaching environment. Combining technology in the classroom simply means to have access to the computer and its tools in the teaching/learning environment (Warschauer & Ames, 2010). Starting from smart boards or electronic whiteboards is the first step. Their usage has started from the 1990s (Beeland, 2002). It makes the presentations easier and more esthetical.

To see how effective the use of interactive whiteboard in the classroom, Beeland (2002) contributed a study. The interactive whiteboard was used during the lessons to have a clear idea of whether it motivates students. Ten secondary school teachers and 197 students took part in the study. To collect data, students are given a survey and a questionnaire. At the end of the study, it reported that teachers and students prefer to use an interactive whiteboard in the classroom.

Recently, smartboards are being used. They have more function when we compare it to interactive white-boards and others. During the lesson it allows learners to engage in the lesson, moreover, it can be saved or paused during a break or even an off day. Many researchers studied smartboard use in the classroom (Mechling & Krupa, 2007). The studies were conducted to determine the effect of smartboard use in the class. Generally, observational researches were studied.

Muhanna & Nejem (2013) studied teachers' attitudes towards smartboard use by considering gender, experience, and qualification. They contributed their study with seventy-four private school mathematics teachers from Amman city in Jordan. Results showed that the teachers have positive attitudes towards smartboard use in their classrooms. For further researchers, difficulties were discussed in some other studies.

Alfaki & Khamis (2018) focused on the difficulties that teachers face while using interactive boards. The study, introduce general information about ICT and then discusses the obstacles related to interactive board use. The findings show that drawbacks related to teachers', school administrations', technical support's and students' factors.

Laptops or tablets are similar tools to use in group working or peer-working. They are also useful for individuals. They can take part in the teaching environment instead of notebooks, posters or charts. Thanks to these devices, managing and the storing are not

taking their time. Students or teachers do not have to bring their heavy encyclopaedias or dictionaries as laptops and tablets supply all these materials efficiently. Another life saver tool is projectors for teachers. Commonly they are being used in higher education or large classrooms. Even from the back desks, students are able to understand what is going on in the classroom. Not only teachers but also students can use it when they have group projects, homework or presentations.

Recently, technology enhances some surprising tools beyond all the known educational tools. Video conferencing classroom, blogging, e-learning, distance learning, virtual trips, and 3D printing are some of those high-tech tools. Their principal aim is to promote learning by integrating technology into the classroom. However, technology has a positive influence, even in technology-rich schools; the use of the internet is not sufficient (Shapley, Sheehan, Maloney & Caranikas-Walker, 2010).

Hegarty and Thompson (2019) determined trends in teaching with the help of technology. To gather the data, 15 students were observed, surveyed, and interviewed. The study offered learning applications, e-portfolios, and social media applications. The study showed that teaching in this way gives confidence to students, takes less time, and provides enjoyable options. Regarding that, the study made implications for further studies with positive effects of technology use in education.

Koraneekij and Khlaisang (2019) explored students' perceptions of using technological tools like E-portfolio. A questionnaire was used to collect the data from 360 students. As it is implied students' creativity, problem-solving skills, and some other basic skills can be enhanced thanks to technology.

A similar study conducted by Han and Yi (2019) to figure out the changes with smartphone use in the educational environment. The researchers provide literature related to technology use and its effects on academic performance. Also, the study analyzed findings to make implications for educators.

Nagy (2018) observed video use in the teaching/learning environment and Technology Acceptance Model (TAM). To get the data, the researcher conducted peer works, individual activities and also teacher-student collaborations. A questionnaire

responded by 89 students to have results. According to the findings, the study implied that video use and TAM has a pleasing impact on teaching/learning stages.

In Turkey, Yükseltürk, Altıok and Başer (2018) surveyed game based foreign language education by considering technology. The researchers gathered data from 62 university students. The two questionnaires responded by the participants. As presented in the study, there is a positive relationship between students' language self-efficacy and game-based teaching.

2.3.3. Obstacles

Teachers and educators, even students are using technology in their daily life. They have many reasons to check their mobile phones or tablets during the day such as their personal social media, weather conditions, and coming events or basically for communication. However, when it comes to technology use in the classroom, it’s not used sufficiently (Ertmer & Ottenbreit-Leftwich, 2010). Namely, it is apparent that teachers have struggled to integrate technology into their actual practices. Notwithstanding the need for technology use in schools, studies have reported that elementary school teachers may have some troubles based on their feelings in the classroom.

Rodríguez-Gomez, Castro and Meneses (2018) concentrated on the problems related to technology use. The study examines the literature and claims that there is a little study in this field. The researchers gathered the data from 1052 young students. As it found as a result of descriptive analysis, there are some problems that occur because of technology use. The study sums these problems affects the students' sphere, learning stages and relationships with their classmates.

Hart (2014) contributed a study which aims to examine teachers’ feelings of technology adoption in their classroom. The case-study contributed by interviews, observations and lesson debrief. According to the findings, five factors were emphasized which have an influence on elementary school teachers’ feelings. The factors were the participants’ level of interest, attitudes, technology experiences, student assistance and familiarity with the setting.

Clark (2013), planned to identify teachers knowledge, regarding the integration of twenty-first-century technology into their practice. The current study provided with twenty participants in North Caroline. In the study, three research questions intended to figure out based on technology management. To gather data; interviews, a focus group and a survey were used. It reported that teachers' confidence and skills, planned integration, staff development, focus, and purpose must be defined.

Bill and Melinda Gates Foundation (2012) reported a study called "Innovation in Education: Technology & Effective Teaching in the U.S.". They have categorized eight different barriers after having a study with more than 400 teachers. The most powerful obstacles in front of technology use in teaching are schools' physical opportunities and teachers' attitudes. On the other hand, the learners regardless of their life which is full of technology; they may have found technology hard to tackle during their learning stages. To have high-tech designed classroom environment, teachers need to have suitable approaches and pedagogy (Pamuk, 2012). Also, schools and management should offer potential tools for their teachers and students.

2.3.4. Teacher Technology Self-Efficacy

One of the other most relevant factors that affect teacher technology use is teacher technology self-efficacy. Bandura (1977) defined self-efficacy as an activity that one's confidence to perform at designated levels. Also, it affects one's motivation, behaviours, and thoughts.

There are some factors that increase or decrease the level of self-efficacy as Bandura (1994) mentioned. One's level of self-efficacy can be affected by their actual performances, vicarious experiences, forms of social persuasion and physiological indexes.

Based on Bandura's self-efficacy theory, Taylor & Betz (1983) reported a study. They investigate the utility of the theory by means of career indecision. Fifty tasks were applied covering 346 subjects and 154 students took place in the study. Results showed that self-efficacy was strongly related to all levels of career. Beside its relation to our achievements, self-efficacy is one of the most important components in education. Self-

efficacy directs motivation, self-regulation, and achievement. To make implications on pedagogy numerous studies have been reported related to it.

Von Suchodoletz, Jamil, Larsen & Hamre (2018) examined personal and contextual factors associated with growth in pre-school teachers' self-efficacy. The longitudinal study conducted in the USA with 341 pre-school teachers. Professional development intervention supplied for the teachers. It was reported that thanks to coaching intervention, teachers' self-efficacy beliefs increased. It also highlighted that there is a necessity for the courage to increase in-service teachers' self-efficacy beliefs.

A similar study conducted to indicate the teacher technology use correlation with other factors. Ertmer & Ottenbreit (2010) investigated a study on teacher technology use. The study considers the correlation between knowledge, confidence, beliefs, and culture. It examined technology integration to determine the necessary needs to enable teachers on this issue. Throughout the study, Ertmer & Ottenbreit (2010) searched for the significant characteristics and qualities which may help teachers to integrate technology properly. The study shed a light on the literature based on knowledge, self-efficacy, pedagogical beliefs and subject and school culture. Results implied that teachers' mindset of combining technology is one of the key factors. Respecting the findings, the study addressed the implications for teachers and their training programmes.

Yalçın, Kahraman & Yılmaz (2011) presented a study with forty-three primary school teachers in Erzincan. The study aimed to investigate primary school teachers' level of technology self-efficacy. By utilising questionnaires, data collected. The study reported that primary school teachers have enough self-efficacy to manage technology in the classroom.

Karaseva (2016) examine a similar topic with secondary school teachers. Sixteen teachers participated in interviews from different fields. According to the results, it reported that there is no relationship between self-efficacy and teachers' own strategies.

On the other hand, a study has been done by Ames (2017) with K12 teachers. The study aimed to figure out what factors have an effect on teachers' technology self-efficacy. Observations and interviews conducted with six teachers and an administrator. According

to the results, the most prominent factor was the support that supposed to give to teachers. Although it was reported that all the factors were in a relationship, colleague cooperation underlined because of its' positive influence.

Yeşilyurt, Ulaş, and Akan (2016) conducted a study to have a better understanding of the relation between teacher self-efficacy, academic self-efficacy, and computer self-efficacy. The current study has done with 323 pre-service teachers. It summarised that there is a crucial relationship between these three factors and these factors are indicators of teachers' attitudes toward technology-enhanced teaching.

2.3.5. Language Teacher Technology Self-Efficacy

Integration of technology into teaching also enhances language learning (Kesler, Nolan & Tinio, 2016). There is no doubt that language is something need to be taught socially. Language teachers want their students to speak, listen and produce the target language naturally. Here the key factors are their engagement and motivation. Technology is the hottest tool to wake their motivation and interest up. It covers every one of the English proficiency skills (Grabe & Stoller, 2002).

For young learners, there are tons of projects that can easily be utilized in the classroom such as, lullabies, songs, cartoons, interactive games or digital stories. They are entertainment, easy, and time saver. Also, for teenagers and adults technology is the most manageable tool to use in a language lesson. It presents authentic materials and access to the target culture.

Teenagers and adult learners may read articles, watch authentic videos and listen to radios, or write e-mails. Teachers may want them to have pen pals and share their experiences in the classroom. Having real-time chats maximize their use of English in real-life situations.

To have an idea about language teachers' technology self-efficacy beliefs Gilakjani (2012) managed a study. Gilakjani (2012) highlighted the significance of computers in terms of a productive world. The study investigates deeply EFL teacher beliefs and uses of computer technology. The study recommends that besides a technology-enhanced classroom environment, EFL teachers need to encourage, conducted and trained.

Another project contributed by Baker (2015) to make recommendations in higher education's English program. During the study, current classrooms and ongoing changes are taken into consideration. Baker (2015) recommends that technology develops classroom engagement as well as its exposure on students to use English in and outside of the school.

Buabeng-Andoh (2012) studied the same issue by consideration of obstacles to integrating technology in teaching a language. Buabeng-Andoh (2012) has concentrated on government strategies in the current study. The study aimed to find limitations for teachers to use ICT in the classroom and the obstacles that teachers face. According to results, it was clear that there is a connection between teachers' confidence and their ICT adaption. The researcher highlighted some other factors that limit access to ICT integration. Because of the government system and curricula access problem, teacher training and other restrictions may occur during technology adoption.

Another study with pre-service ELT teachers has been done by Topkaya (2010) in Turkey. The study examines the relationship between pre-service English language teachers' perceptions of computer self-efficacy and their general self-efficacy. From Canakkale Onsekiz Mart University, 288 pre-service ELT teachers took part in the study. The study revealed pre-service English language teachers level of computer self-efficacy. It was clear that the relationship between the two components is meaningful.

Similarly, Rigi (2015) investigated self-efficacy beliefs of Iranian in-service English as a Foreign Language Teachers' technology adoption of practices. The study discussed the correlation between teachers' efficacy beliefs and their technology adaption. Rigi (2015) studied with thirty in-service EFL teachers from a high school. Questionnaires and interviews applied for the data. The results indicated that there was no relation between EFL teachers' technology self-efficacy and their technology practices in the classroom.

2.3.6. Preparing Pre-service Teachers

As mentioned in many studies, there are some obstacles that teachers face. One of the greatest barriers that effects technology integration is teacher training. English language teaching department students have different branches of subjects in education

faculties. Their curriculum covers some elective lectures such as material development, lexicology, methodology, literature, linguistics, measurement, assessment, pedagogy, teacher training, and others. These are the base of English language teaching and essential for a language teacher. Under the name of ICT, computer skills or technology, some lessons are given to pre-service teachers selectively or restrictively.

Hiğde, Uçar, and Demir (2014) examined pre-service teachers' attitudes towards pedagogical content knowledge regarding internet use habits. In total, 150 pre-service teachers from Dicle University took part in the study. The chosen instruments for data collection measure pre-service teachers' knowledge of web-general, web-communicative, web-content knowledge, web-pedagogical-content knowledge and their attitudes toward web-based instruction. The results revealed that their pedagogical content knowledge depends on their field of teaching.

Başöz & Çubukçu (2014) contributed the study to EFL teachers. The current study focused on Computer Assisted Language Learning (CALL) and its importance in education. The study aimed to reveal EFL teacher candidates' attitudes toward CALL. The participants were 112 pre-service EFL teachers studying at Dokuz Eylül University. It was determined that EFL teachers' candidates have a high efficacy towards CALL. As can be understood by studies, some factors are effective and determinative on technology integration efficacy.

Uzun (2010) presented a study considering teacher candidates' self-efficacy. The study focused on teacher candidates' gender and their academic success. Twenty-nine teacher candidates took part in the study. According to the results, there is no notable link between self-efficacy and gender. Moreover, there is an insignificant relationship between teacher candidates' academic success and their self-efficacy.

Gürol (2010) seeks to conduct a similar study with pre-service teachers. The study examined the relationship between pre-service teachers' self-efficacy and their internet self-efficacy beliefs. 248 pre-service teachers from the Faculty of education at Fırat University selected for the study. To gather the data, a questionnaire and a scale used. The data confirmed that there is a meaningful correlation between pre-service teachers' internet self-efficacy and their self-efficacy.

2.3.7. How to Increase Teacher Technology Self-Efficacy

Recently, many researchers dealing with the technology self-efficacy and how to increase teachers' level of self-efficacy related to technology use (e.g. Ertmer, Evenback, Cennamo & Lehman, 1994; Holden & Rada, 2011; Lee & Tsai, 2010; Schunk & Pajares, 2002) In the book titled *The Development of Academic Self-Efficacy* classified the sources of self-efficacy which may lead pre-service teachers' technology self-efficacy (Schunk & Pajares, 2002).

Schunk & Pajares (2002) proved that familial influence, peer influence, the role of schooling, transitional influences and developmental changes in self-appraisal skill are the components which can maximize or minimize the efficacy. Some other studies also highlighted the rank of other factors such as familiarization with technology in everyday life (Kennedy & Levy, 2009), setting rules and so on.

Based on the enhancing teacher technology self-efficacy issue, Lee & Lee (2014) conducted a study with two hundred and eighty pre-service teachers at Midwestern University. Pre- and post-surveys adopted for the data. Results revealed that vicarious experiences and goal setting have an effect on technology integration.

In a similar way, Watson (2006) presented a project with in-service teachers called The West Virginia K-12 Rural Net Project that integrates technology into the current curriculum. The project offered teacher training, summer workshops, and online courses to in-service teachers to improve teachers' technology self-efficacy. At the end of the project, the conclusion showed that workshops, professional development courses, online courses, and certain external factors enhance teacher technology self-efficacy over the long-term.

Besides, Ertmer & Ottenbreit-Leftwich (2010) aimed to study on increasing teacher technology self-efficacy. The research proposed principal factors that may influence efficacy and conducted to find ways to solve their problem related to the integration of technology. The current study discussed knowledge, self-efficacy, pedagogical beliefs and subject and school culture. According to the findings, teachers' mindset on ICT is the most substantial factor which changes the level of technology self-efficacy.

2.3.8. Measurement

There are a wide variety of scales that measure self-efficacy. Bandura (2006) presented self-efficacy scales in such topics like eating habits, problem-solving, pain management, and so on. Likewise, Bandura (2006) designed a scale for children. The instrument rates self-efficacy in terms of social, academic, self-regulated learning, extracurricular activities, self-regulatory efficacy, other's expectations, parental and community support issues.

Moreover, Bandura (2006) create a scale to understand teachers in different situations. The scale measures perceived self-efficacy in decision making, discipline, parental involvement, creating a positive school climate, and instructional issues. By putting an accurate number to each part between 0-100 points the questionnaire presents self-efficacy levels. The scale is valid and reliable to identify self-efficacy level.

Muris (2001) created a scale by integrating scales by Bandura, Pastorelli, Barbaronelli and Caprara (1999). The instrument developed with 24 statements and 5 points Likert scale. Self-Efficacy Questionnaire for Children (SEQ-C) covers; student-teacher relations, peer relations, homework and studying issues and their anxiety about school and exams.

Pastorelli, Caprara, Barbaronelli, Rola, Rozsa, and Bandura (2001) reconsider Children's perceived Self-Efficacy Scale (CPSE; Bandura, 1990). The scale investigated children's social and academic efficacy. At the ages of 10-15, 1180 students involved in the study from Italy, Hungary and Poland. According to results, there wasn't any difference in terms of gender for social self-efficacy. However, the results change depending on the country where they live. Girls have higher self-efficacy than boys just for academic concerns.

Fertman and Primack (2009) aimed to present a scale for elementary school students. 392 students participated in the study from 4 - 5th grades. The scale evaluated students' learning, peer interactions and pressure to use drugs. The study proved its validity and reliability. Implications are given for educators and practitioners.

When it comes to adults, self-efficacy components change. Researchers developed their scales considering adult needs' and interests'. Panc, Mihalcea and Panc (2012) presented self-efficacy as an important factor against psychological stress. The scale considers factors such as intellectual, family, educational, life standards matters. 246 undergraduate students participated in the data collection. Self-Efficacy Survey (SES) presented pleasant results in terms of validity and reliability. It allows researchers to understand human personality and according to correlations between construct validity and reliability the tool was accurate.

General Self-Efficacy Scale prepared by Chen, Gully and Eden (2001). The scale measures personal goals with its eight items. For its respond format, 5 points Likert Scale presented. The scale provided to Europe countries to compare factors in front of social status. Chen et al. (2006) suggested the New General Self Efficacy Scale to have more reliable and valid results.

As many studies indicated that the world is changing day by day. As the technology evolves pedagogy, the way how to measure teachers' technology use need change as well (Bebel, Eder, Kocilia, Morzy & Wrembel, 2004). In the history of technology integration measurement, scales indicate the frequency of technology use instead of measuring the certain ways teachers need to use it. In the same way, the tool should measure how teachers apply new technology based on their classroom features, how they modify it suitable for their curriculum, also how they are utilizing students' practices by using technology efficiently.

Based on these components, Nickell & Pinto (1986) studied for a scale called ' The Computer Attitude Scale (CAS). The main intention of the scale is to test perceptions related to computer use and technology. 5 point Likert scale was integrated into the scale to examine positive and negative perceptions of the participants. Researchers focused on positive statements with eight statements and negatives with 12 statements out of 20 items. Testing and retesting stages showed that the scale is valid and reliable to measure attitudes toward computer technology. Implementations presented for further studies about population.

To evaluate teacher skills related to computer technologies Computer Self-Efficacy (CSE) developed. The scale has three subscales considering the factors about beginner and advanced level computer skills and also mainframe computer skills. With 32 items, Computer Self-Efficacy instrument covering educational and psychological factors on technology. Implications presented for educators and further researches.

A study conducted by Miltiadou & Yu (2000) aimed to measure densely online environment. The instrument measures computer-mediated communication, computer-based programs and other virtual platforms. With a 4-point Likert scale, the instrument identified four subscales considering internet competencies, synchronous interaction, asynchronous interaction I and II. Validity and reliability of the scale showed, and implications presented for teachers.

The technology Proficiency Self-Assessment (TPSA) survey integrated teacher confidence level and technology adaptation level. With 20 items, Likert scale measures technology use, World Wide Web use, their applications, and adaptations to the teaching environment. The scale found to be highly valid due to its constructions (Morales, Knezek and Christensen 2008). According to the results of studies, it verified that TPSA is an important tool to measure technology use level.

Development of a valid and reliable measurement scale is sufficient as much as teacher technology itself. With the basis of this statement, Vannatta and Baristar (2009) examined the Teacher Technology Integration Survey (TTIS). Usually, instruments measure teacher technology use, self-efficacy, and attitudes as it mentioned in the study. The aim of TTIS is to development of a scale which focuses on benefits of technology use, technology use and access, communication and management and purposes. The instrument administered online to K12 teachers. 279 teachers participated in the study. As mentioned by researchers, the scale and its results adequate enough to help educators and school managers.

Niederhauser & Perkmen (2010) determined the influence of measurement on enhancing the integration of technology by considering concurrent and construct validity for the Instructional Technology Outcome Expectation (ITOE) scale. As findings confirm

ITOE scale is a valid tool. Niederhauser & Perkmen (2010) emphasized its pedagogical implications and showed a positive effect on teacher technology integration.

Ferreira (2013) conducted research in terms of managing changes. The study focused to measure teacher self-efficacy related to their technology-enhanced teaching environment. The current study contributed via two scales. The scales were Student-Centred Use of Technology Teacher Efficacy Scale (SCUTTES) and Student Centred Use of Technology Teacher Outcome Expectancy Scale (SCUTTOES) for development. The researcher compared these two scales in terms of the initial stages of development. Participants were the teachers who are working in the Lower Mainland region of British Columbia. According to the study, scales were indicated to be valid.

Banoğlu, Vanderlinde, and Yildiz (2015) highlighted Turkish framework and its integration to scale development. With the purpose of developing a valid and reliable instrument, researchers compared current scales and their deficiencies for teachers working in Turkey. 190 participants responded 43 statements related to MS office programs, web-based materials, national contents, and curriculum. Limitations, recommendations, and implications stated in the study.

Musharraf, Bauman, Anis-ul-Haque and Malik (2018) aimed to present a valid and reliable scale for ICT self-efficacy assessing. The difference in ICT self-efficacy scale is its' stress on cyberbullying. The scale includes statements related to technological activities, skills and networking. 436 people participated in the study. The participants responded 21 statements with a 5-point Likert scale. Limitations and future directions mentioned for further studies.

Şendurur and Yıldırım (2019) purposed to develop up to date computer self-efficacy scale for teachers. 244 pre-service and in-service teachers took part in the study. 36 items considering internet use, technical knowledge, office programs, and their management, classroom integration, and advanced computer use. For the studies on self-efficacy related to computer and technology use, the scale found to be valid and reliable.

2.3.9. Instrumentation

Teachers may integrate technology to their teaching environment at different levels. As students and schools have different needs and processes to apply, it may be a changing situation by teachers to integrate. There are various scales and surveys to measure how the teachers apply technology, how often do they use new tools, what are their motivation to integrate technology and so on. International Association for the Evaluation of Educational Achievement (IEA) has three bases to categorizing the level of measurement for educators; (1) macro-level, (2) meso-level, (3) micro-level (Khalid and Buss, 2014).

Teachers' ICT knowledge level depends on their training and students' needs. Based on this, United Nations Educational, Scientific and Cultural Organization (UNESCO), (2009) prepared a framework that highlights policy goals and information requirements. The framework can be used as a map to use technology properly. As UNESCO (2009) categorized, there are main components which can be used to determine teachers or schools technology integration aims or reasons. Based on the given known needs and aims, the instrument can be chosen or modified.

In progress of time, researchers have changed the way how they measure the integration of technology in terms of teacher self-efficacy. Knezek & Christensen (1998) prepared an instrument titled Internal Consistency Reliability for the Teachers Attitudes. The instrument aimed to measure teachers' attitudes toward computers by individual statements that cover the use of multimedia, electronic mails etc.

Ropp (1999) aimed to assess teachers' proficiency and studied on Technology Proficiency Self-Assessment (TPSA). TPSA has 20 components covering e-mail use, internet use, creating World Wide Web page, the ability of office program use, and planning technology according to classroom needs.

Wang, Ertmer, Newby (2004) focused on assessing the relationship between teachers' pedagogy and content. The Computer Technology Integration Survey has main statements to measure effective technology use in the classroom. Similarly, Technology Usage Attitude Scale (Rosen, Whaling, Carrier, Cheever & Rakkum, 2013) and Teachers'

Sense of Self-Efficacy Scale (Moran & Hoy, 2011) aimed to measure the use of up-to-date technology use covering social media, online friendship, phone calling and so on.

From another aspect, Ying-chen & Kinzie (2000) conducted a scale that measures the relationship between anxiety and self-efficacy. The Attitudes toward Computer Technology instrument measures anxiety as well as the usefulness of the technology by teachers.

Language teachers' technology self-efficacy frequently is being studied. It is clear that technology is in a developing process. While the world was using computers just at offices or their houses a couple of years ago, today technology supplies many tools even can be used in an underground or a plane.

Evolution of technology leads teachers to technology use in their teaching environment. Instead of chalk and board now teachers have e-learning systems, interactive charts, international programs, blogs, wikis, and many other different tools. By using these kinds of innovative tools, EFL teachers may vary their techniques. Based on different applications, technology helps EFL teachers to help at least one of the language skills of their students.

Due to the significance of technology, it's vital for EFL teachers to understand how to integrate. With the awareness of self-efficacy, pre-service and in-service teachers' perceived level of confidence must be maximized. Therefore, education faculties and institutes need to offer technology training of essential skills. Teachers' increased training will help them to boost their confidence that will increase technology use in language education.

3. Methodology

3.1. Overview

In this section, the researcher aimed to examine the relationship between secondary school EFL teacher's mindset, and technology use self-efficacy in Cankaya district. Section three presents information about the participants, the instruments, research design and data analysis.

3.2. Participants

146 secondary school EFL teachers who work in the Çankaya district and who met criteria for the study participated in the current study. The participants consist of 58 males and 88 females as it shown in the table 3.1 below.

Table 3.1

Gender Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	58	39,7	39,7	39,7
	Female	88	60,3	60,3	100,0
	Total	146	100,0	100,0	

146 secondary school EFL teachers were the convenience sample of the study. The convenience sample of the investigation included 146 EFL teachers from different age groups. As given in table 3.2, 5, 5 % of teachers participated from 18-24 ages 30, 8 % of teachers from 25-34, and 28, 8 % who is over 45 ages.

Table 3.2.

Age Group Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	8	5,5	5,5	5,5
	25-34	45	30,8	30,8	36,3
	35-44	51	34,9	34,9	71,2
	Over 45	42	28,8	28,8	100,0
	Total	146	100,0	100,0	

As it is clear according to results of the current study, the majority group depending on the educational background status is EFL teachers with bachelor's degree (61%). It is followed by master's degree (21, 9%), doctorate (4%), professional degree (4%), high school diploma (2, 7), and some college but not a degree (1, 4).

Table 3.3.

Educational Background Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School Diploma	4	2,7	2,7	2,7
	Some College not Degree	2	1,4	1,4	4,1

Associates Degree	11	7,5	7,5	11,6
Bachelor's Degree	89	61,0	61,0	72,6
Master's Degree	32	21,9	21,9	94,5
Professional Degree	4	2,7	2,7	97,3
Doctorate	4	2,7	2,7	100,0
Total				

The largest group of participants are teachers who are working 15 years or more (43, 8 %). As it is given in table 3.4 EFL teachers with different experience level took part in the research.

Table 3.4.

Teaching Years Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	5	3,4	3,4	3,4
	1-3 years	20	13,7	13,7	17,1
	4-6 years	14	9,6	9,6	26,7
	7-9 years	13	8,9	8,9	35,6
	10-14 years	30	20,5	20,5	56,2
	15 years or more	64	43,8	43,8	100,0
	Total	146	100,0	100,0	

For their demographic background the participants answer about their technology daily use as well. As it can be predicted, secondary school EFL teachers use technology and technological devices frequently during a day.

Table 3.5.

Computer Technology Use Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	80	54,8	54,8	54,8
	Often	47	32,2	32,2	87,0
	Sometimes	18	12,3	12,3	99,3
	Never	1	,7	,7	100,0
	Total	146	100,0	100,0	

The data collection conducted with the teachers during the 2018-2019 academic years. All of the participants completed both the 16-item Dweck Mindset Instrument (DMI) and the 21-item Computer Technology Integration Survey (CTIS).

3.3 Instruments

For the data collection, two questionnaires including Dweck's Mindset Instrument (Dweck, 2000) and Computer Technology Integration Survey (Wang et al., 2004) were responded by 146 EFL teachers. On the other hand, a demographic questionnaire was used.

DMI measures participants' beliefs about their talent and intelligence. The 16-item scale has a six-point Likert scale to evaluate participants' fixedness and malleability of

intelligence and talent. The first 8 statements of the scale measure intelligence and 9 - 16 measures perspectives about talent. The statements of the scale numbered 1, 2, 4, 6, 9, 10, 12, and 14 focused on the fixed mindset idea, and 3, 5, 7, 8, 11, 13, 15, and 16 are incremental item statements which are reversed. Its Likert scale has 6 points which include 1=strongly agree, 2= disagree, 3= barely disagree, 4= barely agree, 5= agree and 6= strongly agree. Dweck, Chiu and Hong (1995) examined that the scale is strong to measure mindset (α =.82 to .97) and its retest results are quite high (α =.80 to .82). The study confirmed that the Cronbach alpha for the study is calculated as .91. In the current study it was found that the Cronbach alpha of DMI is .715 and for the CTIS the Cronbach alpha calculated as .938. That is to say, both of the variables are valid and reliable to measure the variables.

3.3. Instruments

3.3.1. Demographic Questionnaire

A demographic questionnaire gathered during the data collection. The researcher intended to collect personal information by utilising the demographic questionnaire. The questionnaire has 5 questions including information about gender, age, educational background, number of the years that they have worked, and technology use frequency used.

3.3.2. Dweck's Mindset Instrument (DMI)

Dweck's Mindset Instrument (Dweck, 2000) used to examine EFL teachers' mindset in talent and intelligence. 16-item measured with six-point Likert scales including options "1= strongly disagree, 2= disagree, 3= barely disagree, 4= barely agree, 5= agree, and 6= strongly agree". EFL teachers directed to read the 16-item scale, and choose accurate item for each statement. The scale has two factors consists of talent and intelligence. The statements measure growth and fixed mindset regarding the two constructs. The scale items 1, 2, 4, 6, 9, 10, 12, 14 are fixed while 3, 5, 7, 8, 11, 13, 15 and 16 are growth. Also, items of the instrument reversed. (e.g. 1 becomes 6)

It is significant that items 1-8 focus on intelligence factor and 9-16 are focus on talent factor. That's why they have similar contents with each other.

3.3.3. Computer Technology Integration Survey (CTIS)

The second scale of the study was the Computer Technology Integration Survey (CTIS) which was developed by Wang et al. (2004). For the purpose of measuring EFL teachers' self-efficacy level on integrating technology into their classroom, Wang et al. (2004) created the scale. The scale has 21 statements and 5-point Likert scale including options as 1= strongly agree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree.

21 statements represent feelings about confidence which are related to instruction skills, computer capabilities, appropriate use of technology, software knowledge, computer technologies, project development, educational technology, individual feedback, appropriate technology based on the current curriculum, assigning, grading, online assessing tools and mentoring.

These two scales used to examine EFL teachers' attitudes toward mindset and their technology self-efficacy. After the evaluation, the relationship between the two constructs calculated.

3.4. Procedure

The researcher intended to show the relationship between EFL teacher mindset and their technology use self-efficacy. The research methodology part utilized with the questionnaire technique.

The current study employed by a demographic questionnaire and two scales in Cankaya district. The instruments were explained in the instrumentation part and given in appendices.

Before the data collection, approval was taken from the Dean of the Faculty of Education at Baskent University, and for the participants approval received from Çankaya, Ankara provincial directorate for national education.

3.5. Research Design

The researcher explained and presented the questionnaires to the secondary school EFL teachers both online and on paper. A survey website was used to collect the data and each questionnaire was instructed to the participants. On the other hand, the detailed information is given to the EFL teachers to respond to all the statements carefully on the paper. From Çankaya district, 58 male and 88 female secondary school EFL teachers participated data collection session voluntarily. The scales administered to the secondary schools during the 2019 academic year between February and March.

3.6. Data Analyses

Data were analyzed by the researcher and the advisor utilizing SPSS version 25. Dweck's Mindset instrument (DMI) and Computer Technology Integration Survey (CTIS) were analyzed. Also, the correlation between DMI and CTIS was calculated by using Pearson correlation.

4. Results

4.1. Overview

The researcher intended to examine the relationship between secondary school teacher mindset and their technology use self-efficacy. Regarding that, data were collected and analysed. Results part includes information about data analysis and their tables.

4.2. Descriptive Statistics

Descriptive statistics is presented considering means and standard deviations.

4.2.1. Mindset and Technology Self Efficacy

Table 4.1 indicates that 146 values calculated for the data and it does not include missing values in this calculation for descriptive statistics. The scores ranged from 25 to 74 for total DMI statistics and 29 to 103 for total CTIS statistics. According to the results, the standard deviation is 9 and a mean is 45 for the total number of DMI and for the total number of CTIS, the standard deviation is 11, and mean statistic is 83. The total numbers of both of the questionnaires on a Likert type scale shows that teachers' mindset and technology use self-efficacy high enough.

Table 4.1.
Descriptions

	Mean	Std. Deviation	N
TOTALCTIS	83.69	11.64	146
Mindsettotal	45.82	9.02	146

The table indicates that teachers' mindset and technology use self-efficacy found to be normal as it is illustrated in the curve (total DMI skewness = 742, total CTIS skewness = 1,64). The table illustrates also kurtosis for both of the total statistics.

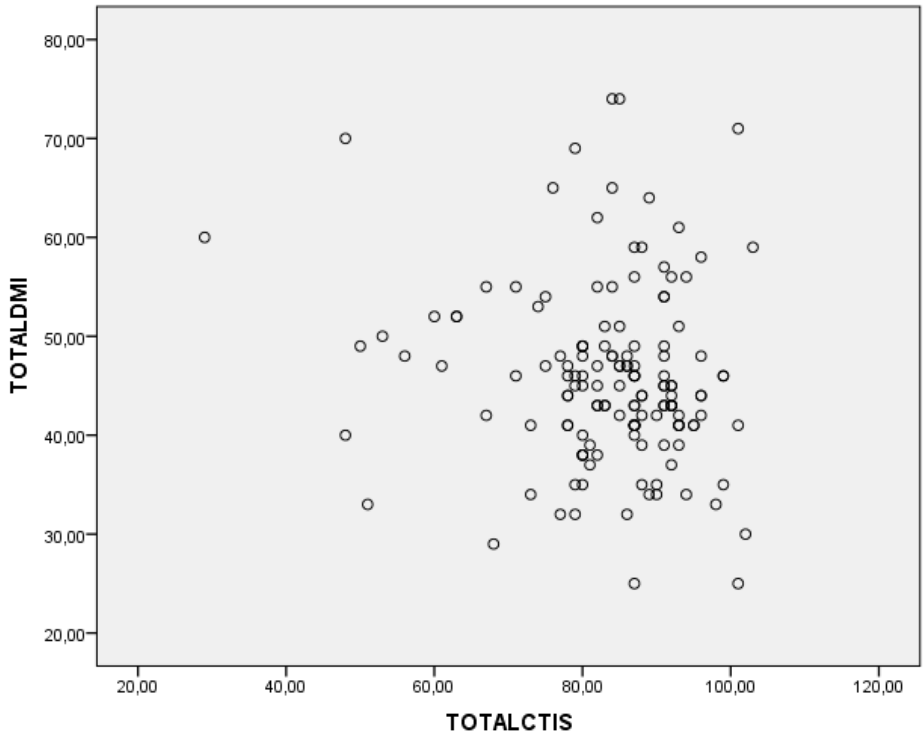

Figure 4.1. Scatter Plots of Mindset and Technology Use Self-Efficacy

Description of the two variables is given with the scatter-plot graph in the figure 4.1 above. The mindset goes on the x-axis and technology use self-efficacy goes y-axis. When the overall pattern and striking deviations analyzed it is clear that there is a strong, positive, linear association between mindset and technology self-efficacy with a few potential outliers. Two variables positively associated as average values tend to accompany. As there is a strong association between two variables, it can be understood that one variable helps to predict the other one. Blackwell Trzesniewski, and Dweck (2007) claim that mindset can predict other abilities based on technology, as it illustrated in the graph.

The result of the study in relation to research question 1 is in line with reported by (Blair, 2012; Ehlerding, 2011; Lensing & Friedhoff. 2018, and Pate, 2016).

Lensing & Friedhoff (2018) presented their idea by suggesting a new curriculum design that covers internet use, creativity and mindset. The study examines possible challenges and competencies unless the teachers' mindset changes. Researchers emphasized industry 4.0 requirements, and analyses. The study implies that there should be

a focus to change teachers' perspective to adopt industry 4.0 and Internet-of-Things (IoT) approaches.

Pate (2016) studied on technology and its influences. On the perspective of teaching the study noted negative processes related to teaching. Regarding the technological evolutions the study presents information from literature. The findings show that there is a gap between being aware of technological tools and adopting them into teaching. To catch the appropriateness teachers should renew their way of thinking and mindset.

Blair (2012) examined 21st-century teacher roles and technology integration. The study that the researcher presented shows the development of the teacher roles'. Using social media, blogging, internet and other applications change a teacher's duties. The current study shows the significance of critical thinking, creativity, communication skills, and collaboration depending on the teachers' mindset.

In a similar way, Ehlerding (2011) conducted a study to analyse changing norms in ELT department. From grammar teaching to milestones of English has changed due to new generation features. To have a better understanding of the evaluation of English language teaching on the basis of technology and other tools the researcher suggests EFL teachers have a growth mindset. The researcher makes implications on mindset theory to be able to tackle with awareness and new dimensions.

4.2.2. Research Question 1

With the aim of researching EFL teachers' the mindset and technology use self-efficacy, the data were collected from secondary school EFL teachers and calculated by utilizing SPSS version 25.

In order to answer the relationship that is mentioned in research question 1, the researcher applied Pearson correlation coefficients. According to findings based on Pearson correlation coefficients, the relationship between the two constructs given in the table 4.2.

Table 4.2.

Correlation

		fixedtotal	Growthtotal	mindsettotal	TOTALCTIS
Fixedtotal	Pearson Correlation	1	.41**	.84**	-.08
	Sig. (2-tailed)		.00	.00	.30
	N	146	146	146	146
Growthtotal	Pearson Correlation	.41**	1	.84**	-.15
	Sig. (2-tailed)	.00		.00	.05
	N	146	146	146	146
Mindsettotal	Pearson Correlation	.84**	.84**	1	-.14
	Sig. (2-tailed)	.00	.00		.08
	N	146	146	146	146
TOTALCTIS	Pearson Correlation	-.08	-.15	-.14	1
	Sig. (2-tailed)	.30	.05	.08	
	N	146	146	146	146

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

The current study has two research questions, to answer the first research question the data were collected from EFL teachers. The data were analysed by utilizing SPSS version 25.

The relationship between English Language Teacher mindset and technology self-efficacy was investigated using Pearson product-moment correlation coefficient preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a positive correlation between the two variables, r= (0.81), n= (146), p<.0005, with high levels of English Language Teacher

mindset with higher levels of English Language Teacher technology use self-efficacy. In table 4.4 the correlation between EFL teacher mindset and technology use self-efficacy illustrated considering Pearson product moment correlation coefficients.

As the result of the correlation is positive which proves that teachers' technology use self-efficacy is correlated to their mindset. It can be inferred from the table that EFL teachers with growth mindset tend to have higher scores in technology use self-efficacy.

4.2.3. Research Question 2

The second question of the study was "does teacher mindset functions as a significant predictor of technology self-efficacy?". To respond to the second research question regression analysis were conducted and its results are given in tables 4.3. and 4.4.

Table 4.3.

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	mindsettotal[b]	.	Enter

a. Dependent Variable: TOTALCTIS

b. All requested variables entered.

Table 4.4.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.145[a]	.021	.014	11.56510

a. Predictors: (Constant), mindsettotal

b. Dependent Variable: TOTALCTIS

As it is shown in this table, around 2% percent of the EFL teachers' technology use self-efficacy can be explained by the EFL teachers' mindsets. Model summary was calculated by entering the variable total mindset. To calculate the data, enter method was used. As the model summary presented according to Pearson R, ß =.145.

Table 4.5.

the Result of ANOVA (Test Statistics)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	412.53	1	412.53	3.08	.081[b]
	Residual	19260.20	144	133.75		
	Total	19672.74	145			

a. Dependent Variable: TOTALCTIS

b. Predictors: (Constant), mindsettotal

As it is shown in the table 4.5, the results of ANOVA confirms that the value is positive to say that EFL teachers' mindset is the facilitator of their technology use self-efficacy.

The findings of the ANOVA disagree with the study of Hickson (2016). In the study, Hickson (2016) determined the relationship between teachers' self-efficacy and their technology integration with 120 teachers. TSES and MTUAS were used to gather the data. The study couldn't find any correlation between the variables. Therefore, the current study is not in line with Hickson(2016).

Table 4.6.

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	78.4312	87.5910	83.6986	1.68673	146

Std. Predicted Value	-3.123	2.308	.000	1.000	146
Standard Error of Predicted Value	.957	3.148	1.276	.453	146
Adjusted Predicted Value	77.5735	87.6179	83.6944	1.72544	146
Residual	-52.04825	22.00803	.00000	11.52515	146
Std. Residual	-4.500	1.903	.000	.997	146
Stud. Residual	-4.555	1.963	.000	1.006	146
Deleted Residual	-53.32141	23.42646	.00420	11.73867	146
Stud. Deleted Residual	-4.907	1.983	-.006	1.027	146
Mahal. Distance	.000	9.752	.993	1.758	146
Cook's Distance	.000	.254	.009	.031	146
Centered Leverage Value	.000	.067	.007	.012	146

a. Dependent Variable: TOTALCTIS

In the figure 4.2 below, the relationship was measured to show how much a regression line vertically misses the data point. The line symbolizes the average and points symbolize EFL teachers. The residual plot has the residual values on the vertical axis, the horizontal axis display the independent variable.

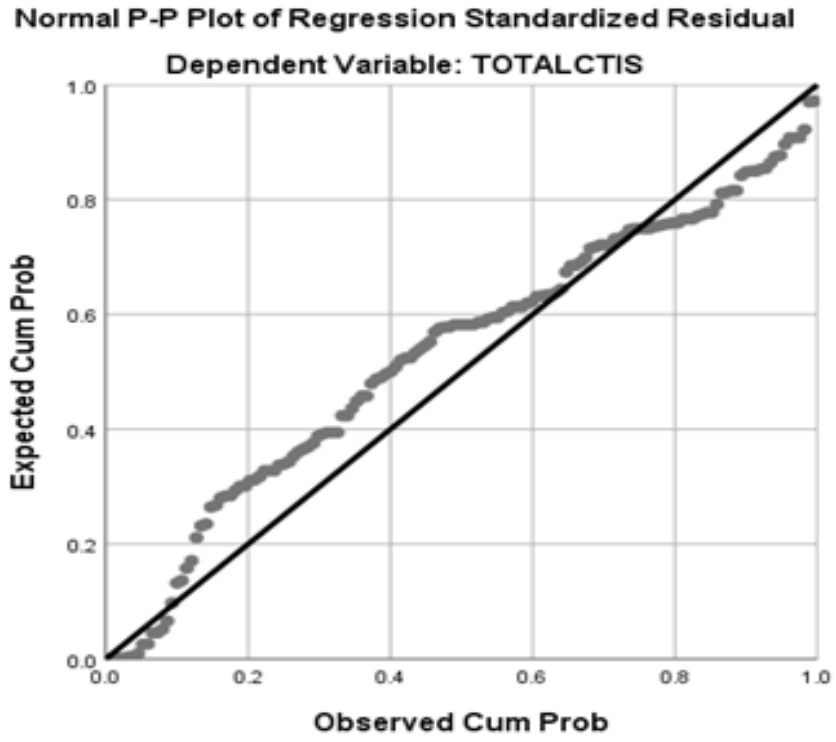

Figure 4.2. Regression Standardized Residual

In the figure 4.3 given below, scatter plots display the regression between EFL teachers' mindset and technology self-efficacy. As it can be found acceptable in the scatter plots, how much an EFL teacher feel teachnology self-efficacy is related to their mindset. As the data points make a line from the origin from low x and y values to high x and y values the data points are positively correlated.

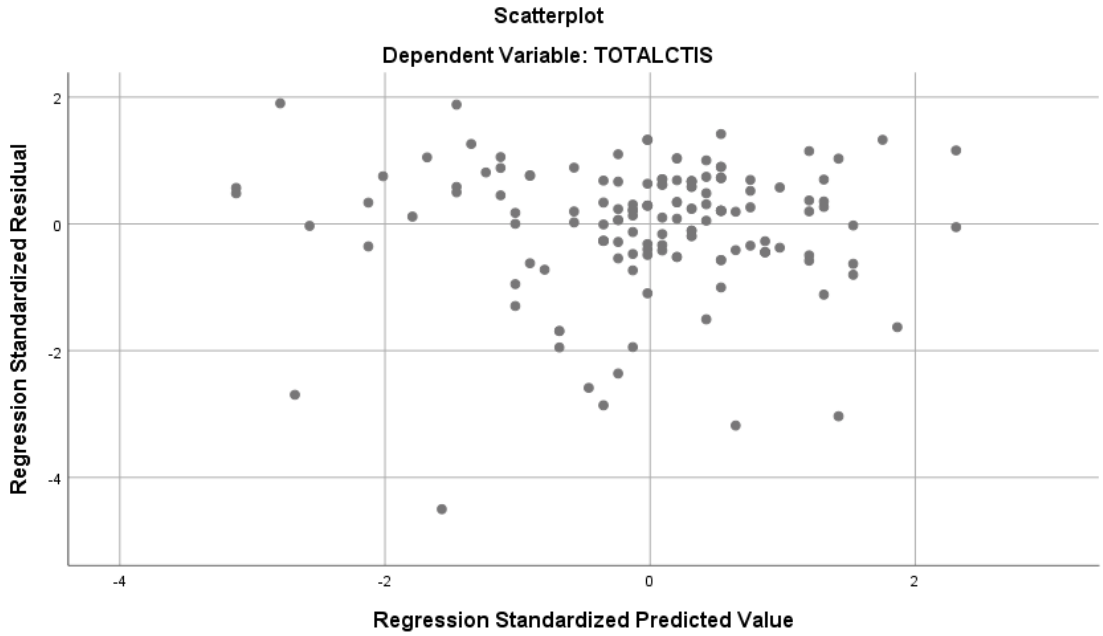

Figure 4.3. Scatter Plots of Regression

The second question of the study aimed to investigate EFL teacher mindset function to determine whether it's significant predictor of technology self-efficacy. The data were analyzed to present the regression between the two variables. The results were shown in the tables and the figures. As it is understood from the tables, the EFL teacher mindset may function as a predictor to measure technology self-efficacy.

The result of the study is in line with the investigation of Tour (2015). As presented in the related literature, Tour (2015) study on teachers' mindset on their technology use. With a similar aim, the researcher collected the data from language teachers. The data which is collected by questionnaires showed that there is a relationship between mindset and technology use self-efficacy. EFL teachers' mindset may be seen as a predictor to technology use self-efficacy.

5. Conclusion

5.1. Overview

The researcher aimed to investigate the relation between EFL teachers' mindset and technology use self-efficacy. In this chapter, an overview of the research is given. Based on the findings, the discussion addressed. In the light of the study, pedagogical implications and suggestions for further studies presented.

5.2. Conclusion and Discussion

The study aimed to explore the relationship between EFL teachers' mindset and technology use self-efficacy. The researcher reported a large body of work in the review of related literature. This section discusses the findings and in light of them, and the researcher relates the conclusion.

Based on the literature, generally, students tend to use technology in their daily life. That is the reason for teachers to integrate technology and renew classroom activities. To catch the innovations, teachers try to adopt technology properly. Their mindset type is one of the critical determinants that may affect EFL teachers' way of use technology and its integration to the teaching environment.

Concerning the language teaching field, the current study examined with 146 EFL teachers. To collect the data, DMI and CTIS were used. The researcher aimed to calculate the two items to see whether there is an association that may affect teacher’s technology use.

The study aimed to examine two research questions and two null hypotheses. The questions and null hypothesis are given as follows:

RQ1: Is there any significant relationship between teacher mindset and technology self-efficacy?

H01: There is no significant relationship between EFL teachers’ mindset and their technology use self-efficacy, $\beta = 0$.

As it is mentioned in chapter 4, there is a relationship between EFL teachers' mindset and their self-efficacy of technology use. Therefore, the null hypotheses of the current study of the first research question is rejected and EFL teachers' mindset in a correlation between their technology use self-efficacy.

Results of the first question indicate that the EFL teachers who have the growth mindset have higher self-efficacy levels of technology use ($r=0.81$, $p<.01$). Regarding the calculations, there is a relationship between the two variables of the study. The correlation between the variables aligned with the studies (Glos, 2018; Tour, 2015).

RQ2: Does teacher mindset functions as a significant predicator of technology self-efficacy?

H02: EFL teachers' mindset doesn't function as a predictor of their technology use self-efficacy, $\beta = 0$.

The findings of the study based on the data demonstrated that EFL teachers' mindset is a predictor to EFL teacher' technology use self-efficacy. That is to say, the null hypothesis of the second research question is also rejected.

The second aim of the researcher was to identify whether mindset has a role as a predictor of technology use self-efficacy. A Pearson correlation used to obtain the results. The correlational results were appropriate to say the mindset is a predictor of technology use self-efficacy. The findings of the research agree with (Glos, 2018) and disagree with (Hickson, 2016).

As it is claimed according to results of the study, technology use and its integration are essential for English language teaching. Teachers may face some obstacles; however, they may achieve their best by changing their mindset about challenging situations. The present study suggests that for the proper technology integration in the EFL teaching, educators and administrators need to provide personal requirements including mindset.

5.3. Pedagogical Implications

Technology has taken place everywhere day by day. The situation makes a way for technology use in language teaching. As the teachers internalize the need for technology, they search for how to integrate technology. Concerning the technology need, the study provides pedagogical implications for language teaching field.

- EFL teachers may seek to have a better understanding of the mindset idea. They need to be aware of the significance of mindset and change their way of looking at problematic situations.
- On the other hand, teachers are responsible for students' mindset. It is clear that mindset is an individual idea, however by using appropriate classroom activities, approaches and applications EFL teachers may change the students' way of thinking. To help students, EFL teachers should pay more attention to how to interact with their students to decrease their fears.
- For educators and administrators, the researcher recommends that there is a need to regulate pre-service teacher education plans and curriculums. Without being aware of what the mindset is or how to promote self-efficacy, teachers won't be able to internalize and interrelate for technology integration. To have effective teachers in the classroom, it is better to train EFL teacher by taking into consideration the changes in this field.
- Another suggestion is for policymakers and district officials. They should assess their current teachers' mindset using proper instruments. Their results are remarkable while shaping their actions. When the results are low, the may look for the reasons to how to handle.

5.4. Suggestions for Further Research

- The first recommendation for further research is to provide a similar study with a larger group. To have a better understanding, researchers may conduct a study with more diverse and larger samples.
- The data for the present study gathered only by questionnaires. However, researchers may investigate their researches with different instruments such as interviews or observations. Also, to have more detailed information a qualitative study may be

conducted to investigate whether EFL teachers' mindset and technology use self-efficacy is related.

- A final suggestion is to cover other predictors that may affect technology use self-efficacy of teachers. The researcher contributed to the study with the mindset. Though, there are other contextual factors that may influence EFL teachers' technology use self-efficacy.

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APPENDICES

1. Demographics

Please answer each question as accurately as possible by putting a tick to the one which suits you best.

1. What is your gender?

- Male
- Female

2. Which age group do you belong to?

- 18- 24
- 25-34
- 35-44
- Over 45

3. What is your educational background?

- Less than high school diploma
- High School diploma
- Some college not Degree
- Associates Degree
- Bachelor's Degree
- Master's Degree
- Professional Degree
- Doctorate

4. How long have you been teaching?

- Less than 1 year
- 1 – 3 years
- 4 – 6 years
- 7 – 9 years

□ 10-14 years

□ 15 years or more

Please specify the number of years: ____

5. How often do you use computer technology in your everyday life?

□ Always

□ Often

□ Sometimes

□ Never

6. How important to you is using computer technology in your teaching?

□ Very important

□ Fairly important

□ Not very important

□ Not important at all

2. Questionnaire 1

	Dweck Mindset Instrument	Strongly Disagree	Disagree	Barely Disagree	Barely Agree	Agree	Strongly Agree
1	You have a certain amount of intelligence, and you can't really do much to change it.	( )	( )	( )	( )	( )	( )
2	Your intelligence is something about you that you can't change very much	( )	( )	( )	( )	( )	( )
3	No matter who you are, you can significantly change your intelligence level.	( )	( )	( )	( )	( )	( )
4	To be honest, you can't really change how intelligent you are.	( )	( )	( )	( )	( )	( )
5	You can always substantially change how intelligent you are.	( )	( )	( )	( )	( )	( )
6	You can learn new things, but you can't really change your basic intelligence.	( )	( )	( )	( )	( )	( )
7	No matter how much intelligence you have, you can always change it quite a bit.	( )	( )	( )	( )	( )	( )
8	You can change even your basic intelligence level considerably.	( )	( )	( )	( )	( )	( )
9	No matter who you are you can change your intelligence a lot.	( )	( )	( )	( )	( )	( )
10	Your talent in an area is something about you that you can't change very much.	( )	( )	( )	( )	( )	( )
11	No matter who you are, you can significantly change your level of talent.	( )	( )	( )	( )	( )	( )
12	To be honest, you can't really change how much talent you have.	( )	( )	( )	( )	( )	( )
13	You can always substantially change how much talent you have.	( )	( )	( )	( )	( )	( )

14	You can learn new things, but you can't really change your basic level of talent.	( )	( )	( )	( )	( )	( )
15	No matter how much talent you have, you can always change it quite a bit.	( )	( )	( )	( )	( )	( )
16	You can change even your basic level of talent considerably.	( )	( )	( )	( )	( )	( )

3. Questionnaire 2

	Computer Technology Integration Survey	Strongly Disagree	Disagree	Agree nor Disagree	Agree	Strongly Agree
1	I feel confident that I understand computer capabilities well enough to maximize them in my classroom.	( )	( )	( )	( )	( )
2	I feel confident that I have the skills necessary to use the computer for instruction.	( )	( )	( )	( )	( )
3	I feel confident that I can successfully teach relevant subject content with appropriate use of technology.	( )	( )	( )	( )	( )
4	I feel confident in my ability to evaluate software for teaching and learning.	( )	( )	( )	( )	( )
5	I feel confident that I can use correct computer terminology when directing students' computer use.	( )	( )	( )	( )	( )
6	I feel confident I can help students when they have difficulty with the computer.	( )	( )	( )	( )	( )
7	I feel confident I can effectively monitor students' computer use for project development in my classroom.	( )	( )	( )	( )	( )
8	I feel confident that I can motivate my students to participate in technology-based projects.	( )	( )	( )	( )	( )
9	I feel confident I can mentor students in appropriate uses of technology.	( )	( )	( )	( )	( )
10	I feel confident I can consistently use educational technology in effective ways.	( )	( )	( )	( )	( )
11	I feel confident I can provide individual feedback to students during technology use.	( )	( )	( )	( )	( )
12	I feel confident I can regularly incorporate technology into my lessons, when appropriate to student learning.	( )	( )	( )	( )	( )
13	I feel confident about selecting appropriate technology for instruction based on curriculum standards.	( )	( )	( )	( )	( )

14	I feel confident about assigning and grading technology-based projects.	( )	( )	( )	( )	( )
15	I feel confident about keeping curricular goals and technology uses in mind when selecting an ideal way to assess student learning.	( )	( )	( )	( )	( )
16	I feel confident about using technology resources (such as spreadsheets, electronic portfolios, etc.) to collect and analyze data from student tests and products to improve instructional practices.	( )	( )	( )	( )	( )
17	I feel confident that I will be comfortable using technology in my teaching.	( )	( )	( )	( )	( )
18	I feel confident I can be responsive to students' needs during computer use.	( )	( )	( )	( )	( )
19	I feel confident that, as time goes by, my ability to address my students' technology needs will continue to improve.	( )	( )	( )	( )	( )
20	I feel confident that I can develop creative ways to cope with system constraints (such as budget cuts on technology facilities) and continue to teach effectively with technology.	( )	( )	( )	( )	( )
21	I feel confident that I can carry out technology-based projects even when I am opposed by skeptical colleagues.	( )	( )	( )	( )	( )

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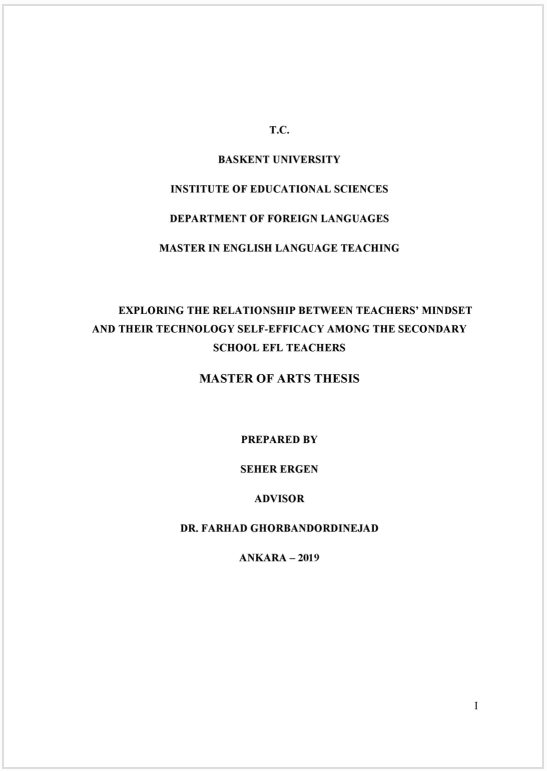

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MASTER IN ENGLISH LANGUAGE TEACHING

EXPLORING THE RELATIONSHIP BETWEEN TEACHERS' MINDSET AND THEIR TECHNOLOGY SELF-EFFICACY AMONG THE SECONDARY SCHOOL EFL TEACHERS

MASTER OF ARTS THESIS

PREPARED BY

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