T.C.
ISTANBUL AYDIN UNIVERSITY
INSTITUTE OF GRADUATE STUDIES

SELF-PERCEIVED TPACK (TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE) OF EFL TEACHERS IN TURKEY

MASTER'S THESIS

Mehrdad ASADI

Department of Foreign Languages Education

English Language Education Program

NOVEMBER, 2023

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(Y2012.021012)

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Thesis Advisor: Prof. Dr. Ayşe Betül TOPLU

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APPROVAL PAGE

DECLARATION

I hereby declare with respect that the study "Self-perceived TPACK (Technological Pedagogical Content Knowledge) of EFL Teachers in Turkey", which I submitted as a Master thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the project phase to the conclusion of the thesis and that the works I have benefited are from those shown in the References. (07/11/2023)

Mehrdad ASADI

FOREWORD

This research was a great opportunity for me to learn about many different things aside from the main goal of the study itself. I appreciate it all and I express my gratitude to everyone who supported me towards finishing this work.

November 2021   Mehrdad ASADI

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ABSTRACT

Although technology had been an important part of education for a long time, the pandemic of Covid-19 forced everyone through a crash course for using the available technology to its fullest potential. Since teachers are using technology into their teaching more than ever, it is important to learn more about technology integration into education. Teachers' competence for integrating technology into education is measured by a framework called TPACK (Technological Pedagogical Content Knowledge). The primary goal of this study was to investigate the influence of demographic factors including age, gender, teaching experience, education background, and holding a teaching certificate on EFL teachers' perceived TPACK. 36 EFL teachers working in schools in Turkey were examined. A questionnaire was used to find out teachers' self-reported level of knowledge in different components of TPACK. Their perceived TPACK knowledge was then compared based on their demographic characteristics in order to find out if there was a significant difference in their TPACK according to demographic factors. This study also explored the digital tools that EFL teachers use to help them improve their teaching as well as their reasons for choosing those tools. The findings of this study indicate that education background and teaching certificates do not have a significant influence on any of TPACK components. However, gender, age, and teaching experience create a significant difference among teachers but only in some components of TPACK. It was also revealed that among all sort of digital tools that EFL teachers use, language learning games were the most preferred among our participants. This study helps us to better understand the influential factors on technology integration in education. Moreover, by learning more about the digital tools that EFL teachers use, we gain valuable insight into the effectiveness of combining pedagogy and technology

TÜRKİYE'DEKİ İNGİLİZCE ÖĞRETMENLERİNİN KENDİNE YÜKLENEN TPACK (TEKNOLOJİK PEDAGOJİK İÇERİK BİLGİSİ) ALGISI

ÖZET

Teknoloji uzun bir süredir eğitimin önemli bir parçası olmasına rağmen, Covid-19 pandemisi mevcut teknolojiyi en iyi şekilde kullanmak için herkesi hızlı bir kursa tabi tuttu. Öğretmenler şimdiye kadar hiç olmadığı kadar teknolojiyi öğretimlerine dahil ediyorlar, bu nedenle eğitimde teknoloji entegrasyonunu daha iyi anlamak önemlidir. Öğretmenlerin eğitimde teknolojiyi entegre etme yeterliliği, TPACK (Teknolojik Pedagojik İçerik Bilgisi) adı verilen bir çerçeve ile ölçülmektedir. Bu çalışmanın temel amacı yaş ve cinsiyet gibi demografik faktörlerin İngilizce öğretmenlerinin algıladığı TPACK üzerindeki etkisini incelemekti. Türkiye'deki okullarda çalışan 36 İngilizce öğretmeni incelendi. Bir anket, öğretmenlerin TPACK'nın farklı bileşenleri hakkındaki bilgi düzeylerini belirlemek için kullanıldı. Demografik özelliklerine dayalı olarak TPACK bilgilerinin algılandığı farklılık tespit edilmek üzere karşılaştırıldı. Bu çalışma aynı zamanda öğretmenlerin öğretimlerini geliştirmelerine yardımcı olan dijital araçları ve bu araçları seçme nedenlerini inceledi. Bu çalışmanın sonuçları, eğitim geçmişi ve öğretmenlik sertifikalarının TPACK bileşenlerinin hiçbirini etkilemediğini göstermektedir. Bununla birlikte, cinsiyet, yaş ve öğretmenlik deneyimi öğretmenler arasında belirgin bir fark yaratmaktadır, ancak sadece TPACK'nın bazı bileşenlerinde. Ayrıca, öğretmenlerin kullandığı tüm dijital araçlar arasında, katılımcılarımız arasında en çok tercih edilenlerin dil öğrenme oyunları olduğu ortaya çıktı. Bu çalışma, eğitimde teknoloji entegrasyonu üzerinde etkileyen faktörleri daha iyi anlamamıza yardımcı olur. Ayrıca, öğretmenlerin kullandığı dijital araçlar hakkında daha fazla bilgi edinerek, pedagoji ve teknolojinin birleştirilmesinin etkililiği konusunda değerli bir anlayış kazanırız.

Anahtar Kelimeler: Teknolojik Pedagojik İçerik Bilgisi (TPACK), İngilizce

öğretimi, algılanan, teknoloji entegrasyonu, dijital araçlar

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

CELTA : Certificate in English Language Teaching to Adults

DELTA : Diploma in English Language Teaching to Adults

DVD : Digital Versatile Disk

EFL : English as a Foreign Language

ELT : English Language Teaching

ICT : Information and Communication Technology

MANOVA : Multivariate Analysis of Variance

PHD : Doctor of Philosophy

TEFL : Teaching English as a Foreign Language

TESOL : Teaching English to Speakers of Other Languages

TPACK : Technological Pedagogical Content Knowledge

LIST OF TABLES

I.   INTRODUCTION

Technology, by our modern definition, has been more or less a part of education systems in most countries during the past few decades. Different technological devices and digital tools such as printers, DVD players, computer programs, and email services have been around for a long time. They have enabled us to do tasks faster, more easily, and more efficiently. Even though each of them has been an enormous help with how we work, teach, and learn, none of them has majorly changed the overall shape of our lessons and classrooms. However, the pandemic of the corona virus changed everything for an indefinite period of time.

The pandemic forced all education to immigrate from its traditional form into an online digital form. Although online education used to be the only possible option during the peaks of the pandemic, we can now have face to face lessons again. Nevertheless, for various reasons, many schools have kept on using online lessons and various digital tools and platforms. This creates the demand for teachers who are not only knowledgeable and skilled but also familiar with necessary technologies that are inseparable parts of the post-pandemic education. Because of how much technology is being used by teachers, it is important that we consider it in our evaluation of teachers which can be a direct concern for employers, teacher educators, and most importantly, teachers themselves.

Fortunately, there has already been a framework implemented to evaluate teachers' pedagogical knowledge and content knowledge alongside with their knowledge of the technology that teachers are required to use. This study used the TPACK (Technological Pedagogical Content Knowledge) framework to figure out how much demographic characteristics (including gender, age, teaching experience, education background, and holding a teaching certificate) can influence TPACK of EFL teachers. The TPACK framework was adapted by Mishra & Koehler (2006) based on the PCK framework implemented by Shulman (1986). TPACK has seven subcomponents such as Technological Content Knowledge and Pedagogical Content Knowledge which are more closely explained in Chapter 2. Additionally, this study

also explores the correlation between the mentioned demographic factors and different components of TPACK. The TPACK levels of EFL teachers are evaluated by a method called self-reporting by using an online questionnaire adapted from a study by Zahra Hoessini in 2012. Furthermore, this study aims to explore the digital tools that EFL teachers use to improve their teaching alongside with their reasons for choosing those tools.

A. Significance of the Study

Technology is an inevitable aspect of education and teachers' jobs and it is crucial that we start to consider teachers' skills and knowledge regarding the use of necessary technological tools. It is crucial for all stakeholders to be aware of how much teachers are comfortable and confident integrating technologies that enhance and improve the quality of their own job and the learning of the learners. To filter and find appropriate teachers for a teaching position, employers have always either interviewed or examined teachers regarding their personality, behavior, knowledge, and teaching skills. Technological knowledge is another factor that affects the evaluation of teachers of today and employers can benefit from the results of studies such as this one for hiring teachers with up-to-date skills. The results of this study can help ELT teacher trainers gain clearer insight about where teachers stand in regards to using technology in education. The found results can indicate how to design more effective training programs that compensate for the skills that ELT teachers lack regarding adapting the necessary technology into their teaching practices. On an individual level, studies such as this one, can hint and help ELT teachers to evaluate their skills and competence on measures that are in demand by their jobs.

Another possibly useful aspect of this study is that it reveals how different characteristics of the participants can affect their level of TPACK and different components of it. Based on the extracted results of this and other studies, employers, and teacher educators, *etc*. can have a more educated guess on ELT teachers' strengths and weaknesses. Employers can have a clearer assumption on job candidates according to their characteristics which can lead to finding and hiring the right teachers with more ease. Teacher educators can plan and design more effective courses and programs according to ELT trainees' demographic characteristics.

In summary, the findings of this study can contribute to the improvement of the ultimate goal of education which is providing the best possible learning for learners. By exploring and conducting research on similar topics, we can help build a better future by making sure teachers are using their maximum potential and that learners are receiving the best education that there is to offer at the time.

B. Statement of the Problem

The outbreak of the corona virus pushed individuals out of their comfort zones and into a digitally demanding real. Although schools are now gone back to using physical classrooms, there is still a great demand for teachers who are familiar with all the tools and technologies that are now a part of a EFL teacher's daily job. Teachers, however, are not the only people who are supposed to cope with this change. Teacher training programs are one of the things that need to follow this trend. One of the biggest reasons that the sudden change to online education was so uncomfortable for teachers at the beginning of the pandemic was the fact that teachers had not received any sort of training on how to use the technology they were supposed to use. We also need to pay attention on how using technology affects the pedagogical knowledge that teachers have. Overall, a lot of the content that is taught in teacher training programs requires to be reviewed and reworked according to what is actually required from teachers to successfully do their job. Looking at English language teacher education programs and courses in most universities and teacher training institutions, it is evident that they are falling behind in terms of offering the courses and the training that prepares future teachers considering how much the shape of a teacher's job has changed.

Looking from a career and professional point of view, it is important for both English language teaching organizations as employers and English language teachers as employees to be aware of what a teacher's job description is in our time. Otherwise, employers and English teachers might face frustration and disappointment because of finding themselves in positions and with people that do not match their expectations. Some positions might be more technologically demanding while a different position might require teachers that are more knowledgeable about the content of the lessons. Some positions might require educators who have a specific combination of the necessary technology, pedagogy,

and the content. It is apparent that employers and teachers can negotiate the specific skills and the knowledge that is demanded for a position. However, there is not a dedicated way for any of the parties to indicate or to figure out whether or not the existing skills of a teacher matches the asked abilities of an English language teaching position.

TPACK framework and exploring its relationship with demographic factors of EFL teachers can be a decent starting point to take technology into account while evaluating EFL teachers, describing a teaching position, and planning a teacher training program.

C. Purpose of the Study

The primary purpose of this research was to investigate how variables including teachers' age, gender, years of teaching experience, educational background, and teaching certificate can influence EFL teachers' perceived level of TPACK. We also aim to figure out how those variables can affect different components of the TPACK framework. Learning about this relationship can help English teachers, employers, and teacher educators to have a more comprehensive understanding of what causes different teachers to be stronger or weaker in specific areas of their profession.

Considering the fact that TPACK includes seven sub-components such as Technological Knowledge and Technological Pedagogical Knowledge, this study also aimed to find out which of those seven components has the highest level among all the participants regardless of their age, gender, etc. Lastly, participants were asked to answer two open ended questions regarding what technological tools they use regularly and how they believe those tools improve their work and their lessons.

The overall goal of this study was to make a contribution to using the TPACK framework as a tool to describe EFL teachers' ability regarding integrating technology into their teaching. There have been many similar studies around this topic (Koh et al. 2013, Jordan 2013, etc.) which have resulted in finding valuable information. This study tries to make a contribution to the field.

D. Research Questions:

The goal of this study is to answer the following research questions:

1. Is EFL teachers' perceived level of TPACK influenced by their age, gender, years of teaching experience, education background, and holding teaching certificates?

2. What is the highest TPACK component among the EFL teachers regardless of their age, gender, *etc*.?

3. What are the most common digital tools that EFL teachers use?

4. How do they believe those tools improve their work?

This study hypothesizes the following statements:

1. Age has a significant influence on teachers' TPACK components, especially, on Technological Knowledge (TK).

2. Gender significantly affects some components of TPACK while it does not have a noticeable influence on some other components.

3. The amount of teaching experience has a direct relationship with teachers' Content Knowledge (CK) and Pedagogical Knowledge (PK) while it has a reverse relationship with Technological Knowledge (TK) and Technological Pedagogical Content Knowledge (TPACK).

4. Participants' educational background positively impacts all components of TPACK.

5. Holding a teaching certificate is an influential factor on Pedagogical Knowledge (PK) among other components of TPACK framework.

6. Content Knowledge (CK) is the highest component among all seven components of TPACK regardless of participants' demographic characteristic

II. LITERATURE REVIEW

With the emergence of computers and the internet, our lives have undergone a significant transformation on a personal, social and professional level. As students in late 1990's, when we encountered the first computers in the computer rooms of our schools, although we were told that computers were supposed to help us in our studies, it was not very clear how. However, in today's world, specially, after the pandemic of Covid-19, the impact of the digital technology on education is clear to everyone. Although we have left behind the pandemic and education can be practiced in its former ways, teachers have not stopped using digital tools. Staying on par with today's standards of a lesson requires a teacher not only to have the necessary knowledge of the content and the pedagogy, but also the required skills to combine those effectively with the technological tools of our time.

In 2006, a framework called TPACK, which stands for Technological and Pedagogical Content Knowledge, was developed by Punya Mishra and Matthew Koehler. This framework is used to evaluate and describe the skills and the knowledge that teachers need to have to effectively utilize technology with their teaching. This literature review will explore the existing literature on TPACK as well as the studies that have been conducted on various demographic factors such as age and gender that can affect teachers' level of TPACK.

A. TPACK

Shulman (1986) proposed that in order to better understand how effectively teachers can teach, it is necessary that we look at teachers' knowledge of the content alongside their pedagogical knowledge of the content. Thereby, for the first time, the concept and the framework of Pedagogical Content Knowledge (PCK) was introduced. Later, with computers becoming an integral component of education and teachers' work-life, there was a need for another framework that considers teachers' knowledge of technology alongside their knowledge of content and pedagogical knowledge. Mishra and Koehler (2006) introduced the concept of TPCK (or TPACK

which stands for Technological Pedagogical Content Knowledge) which is a framework that can be used to evaluate and describe the technological skills and knowledge that teachers need to have to effectively integrate technology in their teaching considering their content and pedagogical knowledge. The TPACK approach helps us identify important components of teacher knowledge that are relevant to the integration of technology in education (Mishra & Koehler, 2006). The same authors later wrote another article (Mishra & Koehler, 2009), focusing and elaborating on TPACK in a more practical manner. Koehler and colleagues (2013) emphasized on the importance of using technology in education effectively. Therefore, they suggested that it is essential to ensure teachers have the necessary content knowledge, pedagogical knowledge, and technological knowledge. The TPACK framework offers several possibilities for research promotion in teacher education, teacher professional development, and teachers' use of technology. Moreover, it allows teachers, researchers, and teacher educators to move beyond oversimplified methods that treat technology as an "add-on" and instead to focus again, and in a more ecological way, upon the connections among technology, content, and pedagogy as they play out in classroom contexts (Koehler et al., 2013)

Soon after the publication of the two articles by Mishra and Koehler in 2006 and 2009, TPACK started to attract the attention of many other researchers. One of the first researchers who used the TPACK framework in their study were Harris and Hofer (2011). In their study in 2011, they presented Instructional Planning Activity Types that could serve as a roadmap for teachers to develop their TPACK skills. Successful technology integration is rooted in curriculum content and students' content-related learning processes primarily, and secondarily in proficient use of educational technologies (Harris & Hofer, 2011). Another study that used TPACK was a study by Archambault & Crippen (2009). They simply examined TPACK among K-12 online distance educators in the United States. With the increasing number of virtual schools at the elementary and secondary level, the need to begin examining the role and preparation of teachers in K-12 online environments rose. In bringing teacher preparation into the 21st century, the role of the K-12 online instructor is becoming increasingly important (Archambault & Crippen, 2009). Some researchers used TPACK as an assessment tool for preservice teachers. Technological Pedagogical Content Knowledge (TPACK) has emerged as a useful

frame for describing and understanding the goals for technology use in preservice teacher education (Schmidt et al, 2009). Some researchers focused on the fact that it is not enough for our educators to have access to technological tools. As individuals we see a new technology and we can appreciate its "cool-ness", but as educators we usually wonder how these tools can practically be used for teaching. The fact that a technology is innovative and popular does not make it an educational technology (Koehler et al., 2013). TPACK (Technological Pedagogical Content Knowledge) has emerged as a clear and useful construct for researchers working to understand technology integration in learning and teaching (Baran et al., 2011). TPACK explains that teachers are able to make sensible and creative choices in their use of technology in the classrooms. In that study, Baran and colleagues (2011) described a TPACK survey as a means for measuring teachers' self-assessed TPACK. According to them, the assessment of TPACK can ultimately provide information that will help design TPACK learning experiences throughout teacher education programs (Baran et al., 2011). Hosseini and Kamal (2012) developed an instrument to measure teachers' perceived technology integration knowledge. TPCK framework was selected as the lens for examination of technology integration and a new questionnaire was built upon the work (Schmidt et all., 2009, as cited in Hosseini & Kamal, 2012). Hosseini and Kamal (2013) found strong support through their findings that indicated the TPACK questionnaire to be a reliable and valid instrument for measuring teachers' knowledge of technology integration.

TPACK, as a knowledge-based framework, can be split into three main kinds of knowledge and four combined forms of knowledge:

1. Technological Knowledge (TK): knowledge regarding standard technologies, such as books, chalk and blackboard, and more advanced technologies, such as the Internet and digitally made videos.

2. Pedagogical Knowledge (PK): deep knowledge about the processes and practices or methods of teaching and learning and how it encompasses, among other things, overall educational purposes, values, and aims.

3. Content Knowledge (CK): It is the knowledge about the very subject matter that is to be learned or taught.

The three types of knowledge: Content, Pedagogy, and Technology, overlap

to lead to four more kinds of interrelated knowledge.

4. Technological Pedagogical Knowledge (TPK): Knowledge of the existence, components, and capabilities of various technologies as they are used in teaching and learning settings, and conversely, knowing how teaching might change as the result of using particular technologies.

5. Pedagogical Content Knowledge (PCK): This knowledge includes knowing what teaching approaches fit the content, and likewise, knowing how elements of the content can be arranged for better teaching.

6. Technological Content Knowledge (TCK): It is about the manner in which technology and content are reciprocally related.

7. Technological Pedagogical Content Knowledge (TPACK): Technological pedagogical content knowledge (TPCK) is an emergent form of knowledge that goes beyond all three components; content, pedagogy, and technology.

TPACK has demonstrated its effectiveness as a tool that facilitates our comprehension of the relationship between technology, pedagogy, and content knowledge. As the importance of using technology in education is increasing, the effectiveness of the TPACK framework has also become more visible both in a practice and in research. However, it has been criticized as well. "We are sensitive towards the fact that in a complex, multifaceted, and ill- structured domain such as integration of technology in education, there is not one single framework that tells the ''complete story''; no single framework can provide us with all the answers. The TPCK framework is no exception. However, we do believe that any framework, however impoverished, is better than no framework at all (Mishra & Koehler, 2006). Some authors pointed out to the fact that we do not exactly know what we mean by TPACK and what this concept exactly includes. The explanations of technological pedagogical content knowledge and its associated constructs that have been provided are not clear enough for researchers to agree on what is and is not an example of each construct. Mishra and Koehler and others have provided definitions of TCK, TPK, and TPACK that articulate to some degree the centers of these constructs, however the borderlines between them are still quite unclear, thus making it difficult to categorize borderline cases (Zelkowski et al., 2013).

In numerous studies, it has been revealed that demographic factors can have

an impact on different components of teachers' TPACK. It has been shown that some factors can affect different TPACK components differently. Knowledge dimensions, including technology, are dependent on demographic factors, such as age and teaching experience (Castera et al., 2020, page 3). For example, Lee and Tsai (2010) found that teachers' Web experience positively related to teachers' TPACK while age and teaching experience had a negative relationship with TPACK (as cited in Lin et al., 2013). In the following paragraphs, we will look discuss the relationship between TPACK and each demographic factor separately.

B. TPACK and Age

Various studies have reported age to have different effects on different components of TPACK. Koh and colleagues (2010) examined 1185 pre-service teachers in Singapore regarding their technological pedagogical content knowledge. Their findings suggested the correlation between age and pre-service teachers' TK is negligible. They suggested that such a relationship can be more evident for in-service teachers. In contrast, according to Luik and colleagues (2018), age has a strongly negative association with TK but a positive relationship with CK, and PK was not significantly affected by participants' age. Koh and colleagues (2013) conducted a study on demographic factors and teachers' perception of TPACK. The results of their study showed that age was related to TPACK components except for technological content knowledge (TCK). A study by Castéra and colleagues (2020) tested the validity of the TPACK framework and identified influencing factors related to TPACK perception. The participants were teachers from eight different schools coming from six different Asian and European countries. They found out that there was no difference between the scores of teachers from different age groups. In another study, it was shown that age affects teachers' TPACK differently according to the participants' gender. This study examined science teachers' perception of TPACK and found that in-service teachers' perceptions of TPACK components have a significant and negative correlation with age but only among female teachers (Lin et al., 2013).

C. TPACK and Gender

Another demographic factor that can have an influence on TPACK which has

been investigated by previous researchers is gender. Although gender creates a significant difference between male and female participants in many occasions, it is not always the case. Therefore, it is important for us to figure out whether or not and how gender can affect the TPACK level of teachers.

Jordan (2013) studied the influence of gender on 142 beginning teachers' perception of their TPACK. Jordan used a survey developed by Schmidt et al., (2009) as an instrument to collect the necessary data to conduct this research. According to the results of this study, male participants consistently rated their specific domain knowledge higher while female participants only rated their pedagogical knowledge higher than males. Gómez-Trigueros and De Aldecoa (2021) explored differences by gender regarding teachers' digital competence. They collected data over three academic years with 914 trainee teachers and 194 professors from various Spanish universities. They found that women had a significantly more negative view on their digital competence in comparison to that of men. This study also showed that a significant difference exists between male and female participants' assessments of their TPC, TPK, and TPACK. Koh and colleagues (2010) also reported that male teachers rated their technological knowledge higher than female participants. Male teachers also had a higher level of confidence, more positive attitude, and higher perception of competency regarding the use of computers. However, they found out that overall TPACK perceptions were consistent regardless of participants' age, gender, or teaching level.

D. TPACK and Teaching Experience

More experience generally has a direct relationship with age because people normally need more time to gain more experience. "Age and teaching experience are two strongly dependent factors which are difficult to clearly separate: the very large majority of experienced teachers are at the same time the oldest" (Castéra et al., 2020, p. 3). In the following paragraph, we will review what other studies have found regarding the relationship between TPACK and teaching experience.

In 2013, two researchers called Jang and Tsai explored the TPACK of Taiwanese science teachers. They used a pre-developed questionnaire to examine 1210 secondary school teachers' TPACK. The study found that teaching experience is an influential factor in participants' TPACK. More experienced teachers rated their

CK and PCK higher than novice teachers while teachers with less experience rated TK and TCK significantly higher than those with more teaching experience (Jang & Tsai, 2013). Koh and colleagues (2013) examined TPACK perception of 354 in practice teachers. They investigated various demographic factors such as age, gender, and experience against the TPACK of the participants. The results of their study confirmed what Jang and Tsai (2013) had reported in their study. Koh and colleagues (2013) argued that "those with more teaching experience tend to be less confident of their constructivist-oriented technological pedagogical content knowledge" (p.185). Ozudogru and Ozudogru, (2019) explored the TPACK level of K-12 mathematics teachers. They examined 202 math teachers using a Likert style survey including 39 items and used MANOVA to process the collected data. The results obtained from their study show that the amount of teaching experience of the participants had no significant influence on their TPACK level.

E. TPACK and Educational Background

Among variables that can affect teachers' TPACK level, academic degree and educational background are factors that have not been explored as much as gender, age, and other demographic characteristics. Also, similar to findings found about other variables in previous studies, various researchers reported different results about the effect of educational background on teachers' TPACK.

Castéra and colleagues (2020) investigated the self-reported TPACK of teacher educators in some Asian and European countries and studied affecting variables such as gender, age, and academic degree. They examined 574 teacher educators from eight schools in six different countries. They used a 26-item questionnaire with a 4-point Likert scale. After analyzing the results of their study, they found that level of academic degree does not have a strong relationship with TPACK of their participants. In another study (Wulansari et al., 2020), 71 science teachers were examined regarding their TPACK level. The findings revealed that teachers were more knowledgeable about content and pedagogy than about technology. Wulansari and colleagues also found that having professional certifications has no significant influence on the TPACK level of teachers. Another study conducted by Lavidas and colleagues (2021) showed that there is a significant relationship between teachers' academic level and their TPACK. In this study, 147

Greek preschool teachers were examined regarding their level of knowledge and skills about ICT (Information and Communication Technology) integration into their teaching practices. Preschool teachers who held a postgraduate degree had a remarkably higher level of self-efficacy towards TPACK. Moreover, participants who had received ICT training, showed higher scores of TPACK.

In general, despite the numerous studies in various fields and aspects of TPACK and the possible factors that can have an impact on TPACK, many inconsistencies are observed in the big picture of this topic. Therefore, more investigation is required towards reaching more consistent and generalizable results. This study aims to contribute to that goal by studying the relationship between variables that can impact ELT teachers' level of TPACK.

F. TPACK and English Language Teaching

English language education, being a worldwide tool for communication, has usually been associated with technology and more modern concepts. Therefore, English educators and English education organizations have always tried to provide the best education not only by using the best teaching approaches but also by pioneering in using the most technologically advanced resources for teaching. English is closely associated with the leading edge of global scientific, technological, economic and cultural developments, where it has been unrivalled in its influence in the late 20th century (Davies, 1991) Therefore, it is important for us to review the literature of the use of technology in English language teaching.

21st century is known as the age of globalization and is important to acquire proficiency in various foreign languages and English language comes first (Shyamlee et al., 2012). When exploring the boundaries of using technology in teaching, English language teaching is probably the most appropriate field to look into because of the conceptual association between English language and technology as well as the fact that more advanced methods are used in English language teaching in comparison to other fields knowledge.

Another way that ELT and English language itself are related to each other is how they have been influenced by technology. English today has been shaped by the effects of the industrial revolution. As English became the world's language of

discovery and as rapid advances were made in materials science, engineering, manufacturing and communications, new communicative functions were required of the language (Davies, 1991). Altun (2015) wrote that the use of technology has significantly changed the shape the English teaching methodology. It is difficult to imagine how today's EFL teachers would run an English lesson without using a few different digital devices and programs. From planning lessons and creating materials to test design and following learners' progress, modern technology plays a role in English teachers' jobs.

Yıldız (2017) studied perceived TPACK of pre-service and in-service ELT teachers in Turkey. Participants were English teachers working in a university as well as primary and secondary schools in a Southern Turkish city. This study compared TPACK level between in-service teachers and pre-service teachers. Their findings revealed that all seven components of TPACK, except TPACK itself, were significantly different among different groups of teachers.

III. METHODOLOGY

In this chapter, we will look at the process of how the research for this study was conducted. We will describe the participants of the study as well as our data collection tools. A mixed methodology (quantitative and qualitative) was used to collect and process the data which will be elaborated in the following paragraphs.

A. Participants

The participants of this study included 36 in-service EFL teachers working in private schools in Turkey. The majority of the participants were teachers who were working with primary and secondary school students and only a few worked at high school level. Although the population of this study is not very large, we have received a wide variety regarding demographic features. 22 participants were female and the number of male participants was 14. There were 19 participants between the age of 21 and 30, 12 participants were between 31 and 40, three were between 41 to 50, and two were between 51 and 60 years old. Regarding the years of teaching experience of the participants, 19 of them had more than five years of experience, 11 of them had between 2 and 5 years of experience, and 6 of them had less than 2 years of teaching experience. Regarding the participants' highest educational degree, 26 of them had a bachelor's degree, 8 of them had a master's degree, and only 2 of them had a PHD. Looking at the numbers of teachers' teaching certificates, about 60% of the participants held teaching certificates such as CELTA, DELTA, or TESOL and the rest did not have any teaching certificate.

B. Data Collection Instruments

The necessary data for conducting this research was collected by a questionnaire that included three parts (Appendix A, B, C). The first part asked about teachers' demographic characteristics such as their age, gender, educational background, etc. The second and the main part of the questionnaire included 50

close-ended Likert scale statements with five responses which aimed to gather information about teachers' confidence in TPACK and different components of it. This part of the survey (the Likert scale statements) was adapted from a questionnaire that was developed by Zahra Hosseini (2012). This questionnaire was originally developed as an instrument to aid researchers in measuring technology integration in teaching (Hosseini, 2012). Each statement contained five options from which the participants could choose based on how much they agreed or disagreed with the statement. The responses included Strongly agree, Agree, Undecided, Disagree, Strongly Disagree. The statements were categorized into 7 different groups based on which component of TPACK they aimed to measure. The statements targeting each certain component have been included in separate tables (Appendix B). The table below (Table 1) briefly indicates the statements which target each component of TPACK.

Table 1. Questionnaire Statements targeting each TPACK component.

TPACK Component	Related Statements
Technological Knowledge	1 to 11
Pedagogical Knowledge	12 to 18
Content Knowledge	19 to 23
Technological Content Knowledge	24 to 28
Pedagogical Content Knowledge	29 to 35
Technological Pedagogical Knowledge	36 to 44
Technological Pedagogical Content Knowledge	45 to 50

Hosseini (2012) assessed and confirmed the validity and the reliability of the data collection instrument in three steps. They first secured content validity and face validity with the help of two technology integration experts. For measuring the reliability, the coefficient of alpha was calculated for each item of the questionnaire. Finally, they analyzed the correlation matrix in order to find out whether or not seven components of TPACK in the questionnaire were related.

The third and the last part of the survey included two open-ended questions that aimed to gather data about the digital tools that the participants use to teach English. The questions were "What digital tools do you use to teach English?" and "How do you believe the tools that you mentioned improve your teaching?" The goal of asking these questions was to simply find out the most commonly used digital tools by the participants and the rationale behind using those tools.

Table 2. Data Collection Tools and Their Related Research Questions.

Research Question	Data Collection Tool(s)
Is EFL teachers' perceived TPACK influenced by their age, gender, years of teaching experience, education background, and holding teaching certificates?	Demographic questions (Appendix A) TPACK measurement questionnaire (Appendix B)
What is the highest TPACK component among the EFL teachers regardless of their age, gender, *etc.*?	TPACK measurement questionnaire (Appendix B)
How do they believe those tools improve their work?	Open-ended question 1 (Appendix C)
How do they believe those tools improve their work?	Open-ended question 2 (Appendix C)

C. Procedure

The main goal of this study was to find a relationship between participants' demographic characteristics and their self-reported TPACK. Therefore, it was necessary to collect data on both areas. Therefore, a quantitative method was used to collect and to analyze the data. Another goal of this research was to explore the digital tools that EFL teachers use and their reasons for using them. In order to collect the necessary data for this part, we used open-ended questions and a qualitative method of analysis.

To collect the necessary data, it was required to collect three different types of data. Teachers' demographic characteristics, their level of TPACK (and its components), and data about the digital tools that teachers use. For the first and the third part, we designed the questions by ourselves, but in order to measure our participants' level of TPACK, we adapted a questionnaire developed by Hosseini (2012) with her permission.

To reach potential participants (EFL teachers working in private schools in Turkey), the survey was digitally distributed through organizational or personal emails to reach in-service teachers working in schools in Turkey. The survey was sent to over 100 eligible participants who matched the required profile. However, only 36 responded to the questionnaire. Regarding the storage of the collected data, with the help of Google Forms, the responds were already illustrated into graphs and charts and were ready to be analyzed in order to find the answers to our research questions.

D. Data Analysis

The collected data could be categorized into three types. Teachers' demographic characteristics, teachers' self-reported TPACK measurement results, and the digital tools they use and why they choose to use those tools. The first two groups of data (demographics and TPACK levels) were quantitative data and therefore, analyzed by using the SPSS software, while participants' responses to the last two questions of the survey (digital tools and their reasons for using them) were manually processed by using qualitative thematic analysis.

To analyze the quantitative data, we first tested whether or not the scores for TPACK measurements were reliable by using Cronbach Alpha. Then, the mean ranks of all TPACK components were tested against each demographic factor in order to find out if TPACK components were affected by demographic characteristics. To test the results, Mann-Whitney U, Kruskal, and Friedman tests were used. The results are illustrated and explained through tables and descriptions in the results chapter.

Regarding teachers' responses to the open-ended questions (the qualitative data), we processed the data manually. The digital tools were divided into five categories. Then, we counted how many times each digital tool was mentioned in total. Moreover, participants' reasons as to why they preferred to use the mentioned digital tools were categorized into 10 themes; as none of the reasons were exactly the same, we considered similar ones as one theme. The analyzed data is shown in tables and described accordingly.

IV. RESULTS

This chapter presents and describes the collected data of this research. As previously mentioned, this study aimed to explore the variables that influence EFL teachers' level of self-reported TPACK. Therefore, as the first step, the reliability of our dependent variables (components of TPACK) was measured. Then, the collected data was illustrated using tables and described through explanations. Finally, after analyzing the collected data, our research questions were answered accordingly. For the first three research questions, Mann-Whitney U, Kruskal-Wallis, and Friedman tests were used. For the last two open-ended questions, participants' responses were analyzed by using qualitative thematic analysis to find out how frequently each digital tool was used and their reasons for using them.

A. Measuring the Reliability of TPACK Components

In order to measure the reliability of teachers' TPACK components, Cronbach's Alpha was used. As presented in Table 3, the reliability for all seven components is higher than 0.7 which is acceptable.

Table 3. Alpha values of research variables

Variable	Alpha
Technological Knowledge	0.91
Pedagogical Knowledge	0.92
Content Knowledge	0.9
Technological Content Knowledge	0.9
Pedagogical Content Knowledge	0.94
Technological Pedagogical Knowledge	0.92
Technological Pedagogical Content Knowledge	0.87

A. Frequency Distribution of Teachers' Demographic Characteristics

As shown in Table 4, it can be seen that out of our 36 participants, 14 (38.9%) are men and 22 (61.1%) are women. Regarding the age of the participants, it is observed that there are 19 (52.8%) participants between the age of 21 and 30 years old. 12 (33.3%) participants are between 31 and 40 years old, 3 (8.3%) participants are between 41 and 50, and 2 participants are older than 50. Moreover, looking at teachers' highest education degree, 26 (72.2%) of the participants hold a bachelor's degree, 8 (22.2%) participants hold a master's degree, and 2 (5.6%) participants have a PHD. If we look at participants' teaching experience, it can be observed that 6 (16.7%) teachers have less than 2 years of experience, 11 (30.6%) of them have between 2 and 5 years of experience, and 19 (52.8%) teachers have more than 5 years of experience. Finally, looking at the teaching certificates that teachers hold, we can observe that 15 (41.7%) of the participants do not own any sort of teaching certificate. From the other 21 (58.3%) who do own a teaching certificate, 3 (8.3%) of them hold CELTA, 2 (5.6%) teachers hold TEFL, 3 (8.3%) hold TESOL, 8 (22.2%) teachers have other teaching certificates that were not included in the questionnaire, 1 (2.8%) of the participants holds CELTA, TESOL, Others, 1 (2.8%) holds CELTA, TEFL, Others, 1 (2.8%) holds CELTA, DELTA, Others, 1 (2.8%) participant holds CELTA and others, and 1 (2.8%) participant holds TESOL and Others.

Table 4. Frequency distribution of teachers' demographic characteristics

Variable		Frequency	Percent
Gender	Male	14	38.9
	Female	22	61.1
Total		36	100
Age	21-30 years old	19	52.8
	31-40 years old	12	33.3
	41-50 years old	3	8.3
	Above 50 years old	2	5.6
Total		36	100
Highest Education	Bachelor`s Degree	26	72.2
Degree	Master`s Degree	8	22.2
	PHD	2	5.6
Total		36	100
Teaching Experience	Less than 2 Years	6	16.7
	2-5 Years	11	30.6
	More than 5 years	19	52.8
Total		36	100
Teaching	No	15	41.7
Certifications	CELTA	3	8.3
	TEFL	2	5.6
	TESOL	3	8.3
	Others	8	22.2
	CELTA, TESOL, Others	1	2.8
	CELTA, TEFL, TESOL	1	2.8
	CELTA, DELTA, Others	1	2.8
	CELTA, Others	1	2.8
	TESOL, Others	1	2.8
	Total	36	100

B. The Level of TPACK Components Among Teachers

Based on the information presented in Table 5, it can be seen that the mean for teachers' Technological Knowledge is 43.8 with a standard deviation of 6.69 and skewness of -0.34, minimum score of 26 and maximum score of 55. The level of Technological Knowledge among the participants is at 80%. Regarding Pedagogical Knowledge, the mean is 30.41 with standard deviation of 3.28, skewness of -0.44, minimum score of 20, and maximum score of 35. Teachers' level of Pedagogical Knowledge is at 87%. The mean for teachers' Content Knowledge is 22.27 with standard deviation of 2.09, skewness of -0.13, minimum score of 19, and maximum score of 25. It can be observed that the level of Content Knowledge among participants is at 89%. Regarding Technological Content Knowledge, the mean is 21.66 with standard deviation of 2.68, skewness of -0.14, the minimum score is 15,

and the maximum score is 25. Technological Content Knowledge level of teachers is at 87%. The mean for Pedagogical Content Knowledge is 29.83 with standard deviation of 3.5 and skewness of -0.26, with minimum score of 20 and maximum score of 35. The level of participants' Pedagogical Content Knowledge is at 85%. Looking at teachers' Technological Pedagogical Knowledge, it can be seen that the mean is 36.75 with standard deviation of 4.78 and skewness of 0.11, minimum score is 26 and maximum score is 45, and the teachers' level of Technological pedagogical Knowledge is at 82%. Finally, looking at teacher's Technological Pedagogical Content Knowledge, it is observed that the mean is 24.5 with standard deviation of 3.24 and skewness of -0.005, minimum score of 16 and maximum score of 30. Technological Pedagogical Content Knowledge level of teachers is at 82%.

Table 5. Distribution of teachers' level of TPACK components

Variable	N	Mean	Std. Deviation	Skewness	Range	Min	Max	Percent
Technological Knowledge	36	43.8	6.69	-0.34	29	26	55	80
Pedagogical Knowledge	36	30.41	3.28	-0.44	15	20	35	87
Content Knowledge	36	22.27	2.09	-0.13	6	19	25	89
Technological Content Knowledge	36	21.66	2.68	-0.14	10	15	25	87
Pedagogical Content Knowledge	36	29.83	3.5	-0.26	15	20	35	85
Technological Pedagogical Knowledge	36	36.75	4.78	0.11	19	26	45	82
Technological Pedagogical Content Knowledge	36	24.5	3.24	-0.005	14	16	30	82

C. Shapiro-Wilk test to control the normal distribution of variables

Based on the results of the Shapiro-Wilk test shown in Table 6, it can be seen that the statistical significance of the test for all seven components of TPACK are lower than 0.05 which is not normal. Therefore, in order to test the normality of the research questions, Mann-Whitney, Kruskal, and Friedman tests will be used.

Table 6. Shapiro-Wilk test to control whether or not variables values have been distributed normally

Variable	N	Z	Sig
Technological Knowledge	36	0.97	0.04
Pedagogical Knowledge	36	0.87	0.001
Content Knowledge	36	0.88	0.001
Technological Content Knowledge	36	0.87	0.001
Pedagogical Content Knowledge	36	0.92	0.013
Technological Pedagogical Knowledge	36	0.93	0.02
Technological Pedagogical Content Knowledge	36	0.94	0.04

D. Research Questions

1. Does Gender Have a Significant Influence on Teachers' TPACK?

According to the information presented in Table 8 and the results of Mann-Whitney U, it can be seen that the significance of Content Knowledge of female and male teachers is 0.04 ($p=0.04$) and the Z-score is 2.03 ($Z=2.03$), the numbers for Pedagogical Content Knowledge are $p=0.04$ and $Z=1.99$, and for Technological Pedagogical Knowledge, the numbers are $p=0.005$ and $Z=2.78$. Based on the mentioned data, it is evident that gender has a significant influence on teachers' CK, PCK, and TPK ($p<0.05$). Moreover, based on the results of the test, shown in Table 7, it can be observed that the mean rank of male teachers' CK is 22.89 which is higher than the number for female teachers which is 15.6. Regarding PCK the mean rank for male teachers (22.82) is higher than that of female teachers (15.75). Looking at TPK, the mean rank for male teachers (24.57) is higher than the mean rank for female teachers (14.64). However, regarding Technological Knowledge, Pedagogical Knowledge, Technological Content Knowledge, and Technological Pedagogical Content Knowledge, no significant distinction between male and female teachers is found ($p>0.05$).

Table 7. Mean rank of teachers' TPACK components according to their gender

Variable	Gender	N	Mean Rank
Technological Knowledge	Male	14	22.75
	Female	22	15.8
Pedagogical Knowledge	Male	14	22
	Female	22	16.27
Content Knowledge	Male	14	22.89
	Female	22	15.7
Technological Content Knowledge	Male	14	21.36
	Female	22	16.68
Pedagogical Content Knowledge	Male	14	22.82
	Female	22	15.75
Technological Pedagogical Knowledge	Male	14	24.57
	Female	22	14.64
Technological Pedagogical Content Knowledge	Male	14	22.57
	Female	22	15.91

Table 8. Comparison of the mean ranks of teachers' TPACK components according to gender

Variable	Mann- Whitney U	Z	p
Technological Knowledge	94.5	1.93	0.053
Pedagogical Knowledge	105	1.62	0.11
Content Knowledge	92.5	2.03	0.04
Technological Content Knowledge	114	1.33	0.2
Pedagogical Content Knowledge	93.5	1.99	0.04
Technological Pedagogical Knowledge	69	2.78	0.005
Technological Pedagogical Content Knowledge	97	1.87	0.06

2. Does Age Have a Significant Influence on Teachers' Level of TPACK?

Based on the presented results of the Kruskal-Wallis Test (Table 10), it can be observed that age has a significant influence on teachers' Technological Knowledge (p=0.006 and X^2 = 12.56) and on their Technological Pedagogical Knowledge (p=0.03 and X^2 = 8.58), because in both occasions p is lower than 0.05. Moreover, the data from Table 9 indicates that Technological Knowledge of teachers who are between 31 and 40 years old (Mean rank=25.13) is significantly higher than the TK of the rest of the teachers. Also, Technological Pedagogical Knowledge of teachers between 31 and 40 years old (Mean rank=24.75) is higher than that of the rest of the participants. However, regarding PK, CK, TCK, PCK, and TPCK, no significant difference was observed according to their age (p>0.05).

Table 9. Mean rank for teachers' TPACK components according to their age

Variable	Age	N	Mean Rank
Technological Knowledge	21-30 years old	19	17.66
	31-40 years old	12	25.13
	41-50 years old	3	8.17
	Above 50 years old	2	2.25
Pedagogical Knowledge	21-30 years old	19	15.55
	31-40 years old	12	22.29
	41-50 years old	3	27.5
	Above 50 years old	2	10.25
Content Knowledge	21-30 years old	19	15.45
	31-40 years old	12	20.63
	41-50 years old	3	28.5
	Above 50 years old	2	19.75
Technological Content Knowledge	21-30 years old	19	16.42
	31-40 years old	12	24.08
	41-50 years old	3	17
	Above 50 years old	2	7
Pedagogical Content Knowledge	21-30 years old	19	15.24
	31-40 years old	12	22.75
	41-50 years old	3	22.17
	Above 50 years old	2	18.5
Technological Pedagogical Knowledge	21-30 years old	19	16.95
	31-40 years old	12	24.75
	41-50 years old	3	10.33
	Above 50 years old	2	8
Technological Pedagogical Content Knowledge	21-30 years old	19	16.08
	31-40 years old	12	23.38
	41-50 years old	3	20.17
	Above 50 years old	2	9.75

Table 10. Comparison of the mean ranks of teachers' TPACK components according to their age

Variable	χ^2	df	p
Technological Knowledge	12.56	3	0.006
Pedagogical Knowledge	6.72	3	0.08
Content Knowledge	4.98	3	0.17
Technological Content Knowledge	6.89	3	0.07
Pedagogical Content Knowledge	4.26	3	0.23
Technological Pedagogical Knowledge	8.58	3	0.03
Technological Pedagogical Content Knowledge	5.18	3	0.15

3. Does Education Background Have a Significant Influence on Teachers' Level of TPACK?

Based on the data presented in Table 12 and the results of Kruskal-Wallis test, it can be seen that educational background does not cause any significant difference between teachers in any of the seven components of TPACK ($p>0.05$).

Table 11. Mean rank of education background with seven components of TPACK

Variable	Highest Degree	N	Mean Rank
Technological Knowledge	Bachelor`s Degree	26	17.98
	Master`s Degree	8	20.94
	PHD	2	15.5
Pedagogical Knowledge	Bachelor`s Degree	26	16.9
	Master`s Degree	8	25.75
	PHD	2	10.25
Content Knowledge	Bachelor`s Degree	26	17.21
	Master`s Degree	8	23.81
	PHD	2	14
Technological Content Knowledge	Bachelor`s Degree	26	18
	Master`s Degree	8	21.5
	PHD	2	13
Pedagogical Content Knowledge	Bachelor`s Degree	26	17.73
	Master`s Degree	8	21
	PHD	2	18.5
Technological Pedagogical Knowledge	Bachelor`s Degree	26	18.08
	Master`s Degree	8	20
	PHD	2	18
Technological Pedagogical Content Knowledge	Bachelor`s Degree	26	18.1
	Master`s Degree	8	19.81
	PHD	2	18.5

Table 12. The results of comparing the mean ranks of teachers' TPACK components according to their education background

Variable	χ^2	df	p
Technological Knowledge	0.65	2	0.72
Pedagogical Knowledge	5.84	2	0.054
Content Knowledge	2.88	2	0.23
Technological Content Knowledge	1.31	2	0.51
Pedagogical Content Knowledge	0.6	2	0.73
Technological Pedagogical Knowledge	0.21	2	0.89
Technological Pedagogical Content Knowledge	0.16	2	0.92

4. Does Teaching Experience Have a Significant Influence on Teachers' TPACK?

According to Table 14 and the Kruskal-Wallis test, it can be seen that teaching experience creates a significant difference (p<0.05) between teachers regarding their Pedagogical Knowledge (p=0.03 and $X^2 = 6.49$) and their Pedagogical Content Knowledge (p=0.01 and $X^2 = 7.88$). Moreover, the data presented in Table 13 indicates that teachers with more than 5 years of teaching experience (Mean rank = 22.47) scored significantly higher than other teachers in Pedagogical Knowledge. The same group of participants, who had more than 5 years of teaching experience (Mean rank=22.08), scored higher than the rest of the participants regarding PCK. However, regarding teachers' TK, CK, TCK, TPK, and TPCK, no significant difference was observed based on their teaching experience (p>0.05).

Table 13. Mean ranks for teacher's TPACK components according to their teaching experience

Variable	Teaching Experience	N	Mean Rank
Technological Knowledge	Less than 2 years	6	17.5
	2-5 years	11	19.45
	More than 5 years	19	18.26
Pedagogical Knowledge	Less than 2 years	6	11.58
	2-5 years	11	15.41
	More than 5 years	19	22.47
Content Knowledge	Less than 2 years	6	13.33
	2-5 years	11	14.45
	More than 5 years	19	22.47
Technological Content Knowledge	Less than 2 years	6	13
	2-5 years	11	16.91
	More than 5 years	19	21.16
Pedagogical Content Knowledge	Less than 2 years	6	8.5
	2-5 years	11	17.77
	More than 5 years	19	22.08
Technological Pedagogical Knowledge	Less than 2 years	6	15.17
	2-5 years	11	17.55
	More than 5 years	19	20.11
Technological Pedagogical Content Knowledge	Less than 2 years	6	15
	2-5 years	11	17.18
	More than 5 years	19	20.37

Table 14. The test results of comparing the mean ranks of TPACK components with teachers' teaching experience

Variable	χ2	df	p
Technological Knowledge	0.15	2	0.92
Pedagogical Knowledge	6.49	2	0.03
Content Knowledge	5.96	2	0.051
Technological Content Knowledge	3.25	2	0.19
Pedagogical Content Knowledge	7.88	2	0.01
Technological Pedagogical Knowledge	1.15	2	0.56
Technological Pedagogical Content Knowledge	1.47	2	0.47

5. Does Having a Teaching Certificate Have a Significant Influence on Teachers' TPACK Level?

According to the data presented in Table 16 and the Mann-Whitney U test results, no significant difference was seen between teachers' level of TPACK components based on holding English teaching certificates (p>0.05).

Table 15. Mean ranks for teacher's TPACK components according to having a teaching certificate.

Variable	Teaching Certificate	N	Mean Rank
Technological Knowledge	No	15	17.97
	Yes	21	18.88
Pedagogical Knowledge	No	15	16.4
	Yes	21	20
Content Knowledge	No	15	15.93
	Yes	21	20.33
Technological Content Knowledge	No	15	16.33
	Yes	21	20.05
Pedagogical Content Knowledge	No	15	15.1
	Yes	21	20.93
Technological Pedagogical Knowledge	No	15	18.07
	Yes	21	18.81
Technological Pedagogical Content Knowledge	No	15	15.57
	Yes	21	20.6

Table 16. The test results of comparing the mean ranks of TPACK components with teachers' teaching certificates

Variable	Mann- Whitney U	Z	p
Technological Knowledge	149.5	0.25	0.8
Pedagogical Knowledge	126	1.03	0.32
Content Knowledge	119	1.25	0.22
Technological Content Knowledge	125	1.07	0.3
Pedagogical Content Knowledge	106.5	1.66	0.1
Technological Pedagogical Knowledge	151	0.21	0.84
Technological Pedagogical Content Knowledge	113.5	1.43	0.16

6. Which of the Seven Components of TPACK Has the Highest Level Among Teachers?

Based on the results of Friedman test for ranking TPACK components, it can be seen that Technological Knowledge is in first place with mean rank of 6.92, TPK is second with mean rank of 5.92, PK with mean rank of 4.71 is at third place, PCK with mean rank of 4.38 is fourth, TPCK is fifth with mean rank of 2.79, CK is sixth with mean rank of 1.78, TCK is in last place with mean rank of 1.51. Additionally, looking at Table 18, the value of X^2 is 200.12 which makes this ranking valid ($p<0.05$). Therefore, Technological Knowledge and subsequently, TPK have the highest level among teachers while TCK and CK have the lowest level among our participants.

Table 17. ranking teachers' TPACK components

Components	Mean Rank
Technological Knowledge	6.92
Pedagogical Knowledge	4.71
Content Knowledge	1.78
Technological Content Knowledge	1.51
Pedagogical Content Knowledge	4.38
Technological Pedagogical Knowledge	5.92
Technological Pedagogical Content Knowledge	2.79

Table 18. Friedman test results for ranking teachers' scores

N	36
$\chi2$	200.12
df	6
P	0.000

7. What Digital or Online Tools Do EFL Teachers Prefer to Use?

According to Table 19, it can be observed that 15 teachers prefer to use language learning websites or applications including Textbook Software (1 teacher), Raz-Plus (1 teacher), Storybird (1 teacher), Archive 3000 (1 teacher), ISLcollective (2 teachers), YouTube (3 teachers), Pearson (1 teacher), Online Bookshelves (1 teacher), and other websites (4 teachers). 30 teachers said that they prefer to use language learning games or interactive applications including Kahoot (16 teachers), Lyrics Training (1 teacher), Wordwall (7 teachers), Rosetta Stone (1 teacher), Blooket (1 teacher), Bamboozle (1 teacher), other games (3 teachers). Moving to the next category, 6 teachers mentioned that they prefer to use material development and

presentation tools including Canva (1 teacher), Educplay (1 teacher), Prezi (1 teacher), Excel and Word (2 teachers), EdPuzzle (1 teacher). Moreover, online meeting platforms is another category of tools that teachers said they prefer to use. 18 teachers prefer to use such tools including Zoom (12 teachers), Google Meet (2 teachers), Microsoft Teams (2 teachers), Adobe Connect (1 teacher), Skype (1 teacher). Finally, 7 teachers mentioned that they prefer to use classroom management platforms including Classdojo (2 teachers) and Google Classroom (5 teachers).

Table 19. Teachers' preference in using digital or online tools

Items		Frequency
Language Learning Websites or Applications	Textbook Software	1
	Raz-Plus	1
	Storybird	1
	Archive 3000	1
	ISLcollective	2
	YouTube	3
	Pearson	1
	Online Bookshelves	1
	Other Websites	4
	Total	15
Language Learning Games or Interactive Applications	Kahoot	16
	Lyrics Training	1
	Wordwall	7
	Rosetta Stone	1
	Blooket	1
	Bamboozle	1
	Various Games	3
	Total	30
Material Development and Presentation Tools	Canva	1
	Educplay	1
	Prezi	1
	Excel and Word	2
	EdPuzzle	1
	Total	6
Online Meeting Platforms	Zoom	12
	Google Meet	2
	Microsoft Teams	2
	Adobe Connect	1
	Skype	1
	Total	18
Classroom Management Platforms	Classdojo	
	Google Classroom	2
		5
	Total	7

8. How Do EFL Teachers' Preferred Digital Tools Improve Their Teaching?

According to Table 20, it can be observed that 10 teachers believe that using their preferred digital tool improves their teaching by decreasing learners' stress (1st item on the Table). 6 teachers believe that the digital tools that they prefer to use helps their teaching by providing easy access to lesson resources and to teachers (2nd item), 4 teachers believe that using such tools helps them by creating an authentic learning environment (3rd item), 4 teachers believed that by using digital tools they are developing learner autonomy (4th item), 3 teachers claim that digital tools help them promote class discipline by lengthening their concentration (5th item), 3 teachers said that by using their preferred digital tools, they can improve learners attention span (6th item), 2 teachers believed that digital tools help them achieve better formative assessment (7th item), 2 teachers believed those tools can help their teaching by improving learners' attendance and peer and teachers' interactions (8th item), 2 teachers said that using digital tools improves learners' comprehension (9th item), and finally, 1 teacher mentioned that using digital tools provides an easier access to teaching materials by sharing them over online platforms (10th item). As a result, it can be inferred that most teachers believe that they benefit from using their preferred digital tools by decreasing learners' stress.

Table 20. How teachers believe using digital tools improves their teaching

Items	Frequency
1. Decreasing learners` stress by creating a motivated and interesting learning environment through playing games and different teaching methods, in order to make them real language users.	10
2. Providing easy access to the resources and teachers for present and absent learners, through enhancing their engagement and structuring lessons in the process of language learning.	6
3. Creating an authentic learning environment through presenting and making specific materials by the usage of music, power point, etc.	4
4. Developing learner autonomy by providing collaboration and peer feedbacks in order to achieve teaching objectives.	4
5. Promoting learners` class discipline by increasing their creativity and concentration for longer period of time through application of visual features (pictures and diagrams) and records (music, sound effects)	3
6. Improving learners` attention span by transferring an easier and deeper knowledge and having a successful learning process.	3
7. Achieving better formative assessment through online practices.	2
8. Improving learners` attendance and peer and teacher interaction.	2
9. Improving learners` comprehension through variety of quizzes, handouts and activities.	2
10. Providing an easier access to teaching materials and exam sample questions, information, etc. through sharing them on class group or channel on social media or email.	1

V.   DISCUSSION

The goal of this study was to explore two main topics; "the influence of variables such as age, gender, and teaching experience on EFL teachers' level of self-reported TPACK" and "the digital tools that EFL teachers use to teach English". We used a mixed methodology to collect and process the necessary data in order to provide an answer our research questions. Each demographic variable was tested against seven components of TPACK to find out whether or not it causes a significant difference among our participants' level of TPACK. We also studied the digital tools that EFL teachers preferred to use alongside their reasons for utilizing those tools.

A. Demographic Factors and TPACK

Looking at the participants, about two-thirds of them are female teachers which is usually normal in the sector of education, especially, considering the fact that our participants are mostly teachers working in elementary and secondary schools. Younger and less experienced teachers noticeably outnumber the more experienced ones, which is potentially a natural feature of any job market in any developing country. Most teachers have a bachelor's degree as their highest earned degree which is typical for school teachers. In fact, it can be considered surprising that 5 percent of participants hold a PHD, which is usually not very common among foreign language teachers.

Regarding teachers' TPACK level, the average score for all components is between 80% and 89%. Not only this shows that EFL teachers have great confidence in all components of TPACK, it also indicates that their set of skills in various aspects of teaching is quite well-balanced. It is fairly promising for English education in Turkey to have EFL teachers with such a high level of confidence in all components of the TPACK framework. Considering the fact that most teachers were introduced to using technology more regularly and more broadly with the occurrence of the pandemic, the results might have been slightly different regarding technology

related components. We will look further into the level of TPACK components when we discuss the ranking of its components later in this chapter.

Regarding the influence of gender on teachers' level of TPACK components, it was revealed that CK, PCK, and TPK are significantly influenced by the gender of participants. However, the rest of the components of TPACK are not affected by gender. Male teachers had a higher level in CK, PCK, and TPK. We had hypothesized that gender causes a significant difference among teachers regarding some TPACK components while it does not affect some other components, and our findings support this hypothesis. It is worth digging deeper into this to figure out how gender causes this difference among teachers between men and women. Long and colleagues (2022) discovered that gender creates a division among teachers' TK and TPK while it does not have any significant impact on other components of TPACK. This supports our hypothesis but with different components being affected by gender. Gómez-Trigueros and colleagues (2021) concluded that recent studies show that the first digital gender gap is gradually disappearing. This clearly contradicts our findings because our results indicate that the only two domains of knowledge influenced by gender are TK and TPK both of which are directly related to digital competence. Considering the fact that technology is forcing its way into lives by proving to be more effective and more user-friendly, it is only natural that the gap between users of technology becomes narrower in the future.

Looking at the factor of age and its influence on components of TPACK, it was found that TK and TPK were influenced by participants' age. Therefore, another one of our hypotheses is confirmed because we had predicted that there would be a significant difference among teachers according to their age. The fact that TPK is another component of TPACK which is influenced by age further supports our hypothesis. These findings also support the results of a study on the same topic by Lin and colleagues (2013). They found that age has a significant but negative correlation with TK, TPK, TCK, and TPCK. It is quite understandable that younger teachers are more technologically capable because younger people are usually more technologically skilled. However, although it could be expected that age positively impacts CK and PK, it did not turn out to be the case. Another piece of data that is worth mentioning here is that teachers between 31 and 40 years old had a significantly higher level of Technological Knowledge than that of the rest of the

participants. This is not completely unusual if we compare them with older teachers. However, it is quite unexpected that this age group has surpassed their younger peers regarding their knowledge of technology.

Moving to the next demographic factor, education background, it was shown that none of the components of TPACK is influenced by it. Our hypothesis regarding education background was that it could have a positive correlation on all seven components of TPACK. However, our findings completely contradict our hypothesis. This is possibly due the relatively low number of the participants of this study. Because it is very unlikely that having higher educational degree does not impact any of the domains of TPACK among EFL teachers. Another study by Long and colleagues (2022) could not find a consistent influence of education background on any components of TPACK, either. They discovered that teachers with a bachelor's degree scored significantly higher in PK than those with an associate degree. However, participants with a master's degree did not have a higher PK comparing to teachers who held an associate degree. This is very unlikely to be the case in a practical performance evaluation because, essentially, the main goal of achieving higher educational degrees is to acquire more knowledge in the field which should naturally lead to knowing more at least, about content and pedagogy.

Looking at English teaching experience, data shows that it creates a significant difference between teachers regarding their PK and PCK. This is quite an anticipated result due to the fact that the longer someone is in a profession their knowledge of the content of that field and their skills of execution increase. Another highlight of our findings regarding teaching experience is that teachers with more than 5 years of experience significantly outscored the remaining participants in PK and PCK. This can further support the fact that more experienced teachers become better and learn more about their job and the content of their work. Koh and colleagues (2013) found that teaching experience was not strongly correlated with TPACK. This does not contradict our findings completely because our results showed that teaching experience only affects two TPACK components out of all seven. Hosseini and Kamal (2013) conducted a study on a similar topic and discovered that teaching experience was correlated with teachers' PK and PCK. Considering the fact that technology has now become an inseparable part of every teacher's job, it can be expected that teaching experience starts to have a more direct

and positive relationship with technology related components of TPACK. Placing the findings side to side to our hypothesis regarding teaching experience, we can see that it confirms our assumption that teaching experience influences CK. However, we had predicted that teaching experience would have a positive relationship with PK and a negative relationship with TK and TPACK. But our results rejected the influence of teaching experience on those components.

Regarding teaching certificates, our results showed that having or lacking a teaching certificate does not create a significant difference among teachers. We had predicted that teachers who have English teaching certificates would score higher in Pedagogical Knowledge which contradicts the findings. This can be due to the fact that all decent teacher training courses aim to provide a balanced program during which teachers can improve in all aspects of teaching. We also observed that more than half of our participants hold one or more than one English teaching certificate which can be a reason for having such high scores in all components of TPACK. Unfortunately, there is not enough data around this specific topic in the related literature. Therefore, we are unable to compare our findings against the results of previous studies. Regardless of our results, based on the growing amount of technology that teachers have to deal with in their careers, it is a clear necessity for teacher training programs to make the necessary adjustments to their curriculum in order to provide and introduce the demanded skills for teachers to integrate technology into their teaching. Hulya and Ay (2015) argued that TPACK could help teacher educators to identify the gaps in their teacher training programs and help them plan how to support the development of TPACK among their trainees.

Another goal of the study was to find out the TPACK component in which EFL teachers have the highest level regardless of their demographic characteristics. The results of this study reveal that Technological Knowledge has the highest level among EFL teachers. This completely contradicts our hypothesis which predicted that Content Knowledge would be the highest component among EFL teachers. Not only CK is not at the top of the ranking, but it landed in the second last position. This is quite surprising because our participants were mostly primary and secondary teachers which means the content of their lessons is not very challenging for most teachers. However, it is possible that participants responded to the statements regardless of the content of what they teach at their current jobs at primary and

secondary level. Another unexpected aspect of this ranking is that teachers scored highest in Technological Knowledge. The types and the amount of technology that we use in our jobs as teachers is, for the most part, nothing like what we were used to working with before the pandemic. And, although this study was conducted a few years after the pandemic, it is still quite unforeseen for teachers to have the highest confidence in their technological knowledge in comparison to other types of knowledge. Looking at the literature, Hosseini and Kamal (2013) reported PK and PCK to be the highest components of TPACK among their participants. One potential reason for this difference can be the time gap between the two studies and it is natural that technology had an incredibly smaller role in education in the year 2013.

B. Digital Tools

Moving on to our first open-ended question, we categorized the digital tools mentioned by participants into five different categories. Language Learning Games and Interactive Applications was the most frequently mentioned type of digital tools. This alone is a huge hint to how much technology is being used by EFL teachers of our time. Results would not have been the same a decade or even a few years ago. Although we can argue that a lot of the mentioned items of this category already existed before the pandemic of Covid-19, it is undeniable that the pandemic caused a huge step forward to technology integration in education and other professions. Another interesting fact is that Online Meeting Platforms that once literally replaced physical classrooms used to be disliked by many teachers. However, according to our findings, it can be seen that about half of the participants mentioned such applications among their favorite digital tools to work with.

We also asked teachers to explain how their favorite digital tools help them improve their teaching. Here is again another interesting fact about the positioning of technology in education and classrooms. Most teachers believe that by using technology, they can keep the level of motivation and interest of students at a high level. They explained that technology helps them achieve this by allowing them to play games and hiring different teaching methods that help keep things interesting in the classroom. Regarding educational games, although some of the mentioned games cannot be really categorized as video games, they still have a lot of the characteristic

of a video game, and although traditionally, video games are often disapproved by parents and teachers, there have been numerous studies that proves video games can have positive effects on the way children learn various things, especially, if they are designed around educational goals or improving certain skills. In one of those studies, it was concluded that "Videogames have great positive potential in addition to their entertainment value and there has been considerable success when games are designed to address a specific problem or to teach a certain skill" (Griffiths, 2002, p 50). Another noteworthy piece of data is that some teachers mentioned that using technology provides students with an easy way to reach their teachers and resources. They said in case a student is unable to join the class, there is always a way for him or her to catch up on the missed lessons thanks to digital tools. All in all, teachers' responses to our two open-ended questions show that using technology is not considered to be a problem anymore but a solution to a lot of problems that have always existed in our education systems.

VI. CONCLUSION

This paper studied the influence of various factors such as age, gender, and teaching experience on components of TPACK among EFL teachers working in private schools in Turkey. With a quick glance at the findings, it was shown that education background and having teaching certificates do not have a significant influence on any of TPACK components. The factor that was shown to influence the highest number of TPACK components was gender, influencing three components out of all seven. In general, we can observe that most of the variables that we studied did not have any significant impact on the self-reported level of TPACK of EFL teachers. We measured and ranked the level of teachers' knowledge in different domains of TPACK and we found that EFL teachers were the most confident in TK and had the least confidence in their knowledge in TCK.

We also explored the technological tools that teachers use alongside with their explanation on how they believe those tools enhance their teaching. Our analysis revealed that language education games and interactive computer programs are the most favorite digital tools among teachers. Online teaching platforms and language learning websites were the second most frequently mentioned type of digital tools used by our participants. As for how they believe those tools boost their teaching, they mostly pointed out that using technology has provided them and their students with various kinds of games and activities that make the classroom and the lessons more fun and more engaging. Another frequent explanation was in relation to how technology makes it more convenient for students and teachers to reach out to each other and to resources.

A. Implications

The goal of this study, beyond answering the research questions, was to highlight the importance of the growing role that technology has to play in this digital era in English language teaching. Computers have been around for a few decades, and although many of us used to be confused about what they can actually

do for us, the pandemic forced us through a crash course to use the real potential of the available technologies of our time. We also aimed to contribute to how English teachers' knowledge for integration of technology into education can be measured as well as to explore the potential factors that can have an impact on this type of knowledge (TPACK). The measurement tools and the results of studies such as this one can be used in order to pinpoint where our educators in the field of ELT stand regarding their teaching skills. This is important because it is not possible to offer solutions if we do not clearly know what is lacking. An obvious instant of how and why this is important is that we need to be aware of our ELT teachers' weaknesses and strengths in order to design and provide appropriate teacher training programs. Learning about influential factors on teachers' TPACK is also crucial because those factors can be a hint towards finding the reason behind teachers' strengths and weaknesses regarding the skills and the knowledge for integration of technology into their profession. Investigating English language teachers' preferred digital tools can be essential for other researchers, software developers, and teachers. Such findings can serve as feedback for developers on which programs are being used and how those programs benefit English language teachers and learners. It can also serve as a road map towards developing more effective educational games, websites, programs, *etc*. Looking at the big picture, exploring and learning about the mentioned topics is a vital step towards providing the best possible education.

B. Research Limitations

Our data collection tool was sent to over 100 potential participants. However, unfortunately, only 36 of them provided a response. Although the number of our participants is sufficient for the purpose of conducting this study, it is quite possible that we would have reached different results in some areas if the population had been larger. Moreover, the majority of the participants are from two private schools in Istanbul. Considering the fact that Istanbul is the most modern city in Turkey and the fact that private schools (at least in primary and secondary level) have access to more modern resources on campus, there is a chance that our results are not an accurate representation for the whole country of Turkey.

C. Suggestions for Future Research

According to the mentioned limitations of this study, it is recommended that future studies on this topic incorporate a larger number of participants. Because we predict that the reason that Education Background and Teaching Certificate did not have a significant influence on any components of TPACK is the small size of our participants. One possible twist to this study would be to consider variables other than demographic factors. It could be cultural factors or perhaps comparing the level of TPACK between teachers of different fields other than language education. Moreover, in order to learn about teachers' level of TPACK in performance, in comparison to their own perception of it, it is necessary to develop a different kind of measurement instrument that enables researchers to measure participants' level of TPACK in practice.

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APPENDICES

Appendix 1: Questionnaire-Part 1 (Demographic characteristics)

Appendix 2: Ethıcs Commıtee Approval

Appendix 1: Questionnaire-Part 1 (Demographic characteristics)

1. Name (If you don't want to share your name, please provide your initials or a nick name):

2. Age: _____

3. Gender: _____

4. Teaching Experience:

   - Less than 2 years

   - 2 to 5 years

   - More than five years

5. Your highest degree:

   - High school

   - Associate Degree

   - Bachelor's Degree

   - Master's Degree

   - PHD

6. Teaching Certificates

   - CELTA

   - DELTA

   - TEFL

   - TESOL

   - OTHER

   - I don't have any English teaching certificates

Questionnaire-Part 2 (TPACK Measurement)

Instructions: Select a level of agreement for each of the following statements based on how much you agree with each of them.

*SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

Item for measuring Technological Knowledge	SA	A	U	D	SD
I know how to solve my own technological problems.					
I can learn how to use technology easily.					
I keep up with important new technologies.					
I frequently play around with technology.					
I know about a lot of different technologies.					
I have the technical skills to use technology.					
I have had sufficient opportunities to work with different technologies.					
I can use technological tools to process data and report results.					
I can use technology in the development of strategies for solving real life problems.					
I have ability to create digital lesson materials using technology.					
I understand the legal, ethical, cultural, and social issues related to technology.					

Items for measuring pedagogical knowledge	SA	A	U	D	SD
I know how to assess students' performance in a classroom.					
I can adapt my teaching according to students' existing knowledge.					
I can use a wide range of teaching approaches in a classroom setting (collaborative learning, direct instruction, problem/project-based learning etc.).					
I am familiar with common student understandings and misconceptions.					
I know how to organize and maintain classroom management.					
I can assess students' learning in multiple ways.					
I can adapt my teaching style to different learners.					

Item for measuring Technological Content Knowledge	SA	A	U	D	SD
I know about the technologies I can use for understanding the content I teach.					

Items for measuring content knowledge	SA	A	U	D	SD
I have sufficient knowledge about the content that I teach.					
I have various ways and strategies of developing my understanding of the content I teach.					
I have sufficient knowledge about structure of the content that I teach.					
I know concepts, facts, theories about the content that I teach.					
I believe in the validity and reliability of the content that I teach.					
I know how to use specific applications and websites about the content I teach.					
I can find and evaluate the resources that I need for the content I teach.					
I can use technology for presenting the content that I teach.					
I can use the necessary technological tools to manage and communicate the content that I teach.					

Item for measuring Pedagogical Content Knowledge	SA	A	U	D	SD
I know how to select effective teaching approaches for the content that I teach in order to guide students' thinking and learning.					
I know the purposes and objectives of the content I teach.					
I can manage my students' learning of specific content.					
I have the curricular knowledge of the content that I teach.					
I know instructional strategies that are suitable for the content that I teach.					
I am aware of students' prior knowledge of the content that I teach.					
I know what content to choose for assessments and how to assess them.					

Item for measuring Technological Pedagogical Knowledge	SA	A	U	D	SD
I can choose technologies that enhance the teaching approaches for a lesson.					
I can choose technologies that enhance students' learning.					
I think critically about using technology for my lessons.					
I can adapt the use of the technologies according to different teaching methods.					
My teaching education has enabled me to think more deeply about how using technology could influence my teaching approaches in the classroom.					
I can use technological resources to facilitate higher order					

	SA	A	U	D	SD
thinking skills, including problem solving, critical thinking, decision-making, knowledge and creative thinking.					
I can use technological tools and information resources to increase productivity.					
I can combine technology and teaching strategies.					
I can use technology for more collaboration and communication among students and with myself.					

Item for measuring Technological Pedagogical Content Knowledge	SA	A	U	D	SD
I can teach lessons that appropriately combine the particular content, technology and teaching approaches.					
I can select technologies to use in my classroom that enhance what I teach, how I teach and what students learn.					
I can provide leadership in helping others to coordinate the use of content, technologies and teaching approaches at my school.					
I can choose technologies that enhance the learning of the particular content I teach.					
I can evaluate and select new information resources and technological innovations based on their appropriateness to specific tasks and content.					
I can use content-specific technological tools to support learning and research.					

Questionnaire-Part 3 (Digital Tools)

Question 1: As a teacher, what online or digital tool(s) do you prefer to use?

Question 2: How do the tools that you mentioned help you to improve your teaching?

Appendix 2: Ethıcs Commıtee Approval

T.C.
İSTANBUL AYDIN ÜNİVERSİTESİ REKTÖRLÜĞÜ
Lisansüstü Eğitim Enstitüsü Müdürlüğü

Sayı : E-88083623-020-104887   14.12.2023
Konu : Etik Onayı Hk.

Sayın Mehrdad ASADI

Tez çalışmanızda kullanmak üzere yapmayı talep ettiğiniz anketiniz İstanbul Aydın Üniversitesi Eğitim Bilimleri Etik Kurul Komisyonu'nun 12.12.2023 tarihli ve 2023/12 sayılı kararıyla uygun bulunmuştur.
Bilgilerinize rica ederim

Dr.Öğr.Üyesi Mehmet Sencer GİRGİN
Müdür Yardımcısı

RESUME

Name and Surname: Mehrdad Asadi

Education:

Master's Degree_ English Language Teaching at Istanbul Aydin University_ 2023 Turkey

Bachelor's Degree_ Civil Engineering at IAU_ 2013 Iran

Certificates:

- DELTA_ 2019, Turkey
- CELTA_ 2017, Turkey
- Teaching Young Learners_2016, Iran
- Teacher Training Certificate from Safir Language School_ 2014, Iran

Work Experience:

- March 2023_Present
  EFL teacher working with elementary students at Bahçeşehir Koleji in Istanbul

- September 2021_March 2023
  EFL teacher working with elementary and secondary students at MBA Okulları in Istanbul

- September 2018_February 2021
  EFL Instructor working with pre-college and pre-university students at Istanbul Aydin University in Istanbul

- September 2017_September 2018

EFL teacher working at a few different language schools including Just English and Dilko in Istanbul

- December 2014_September 2017
  EFL teacher working with adults and young learners at Go Safir Language School in Tehran

- June 2011_November 2013
  EFL teacher working with young learners at Maryam Language School in Ardakan, Iran