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**ÇAĞ UNIVERSITY**  
**INSTITUTE OF SOCIAL SCIENCES**  
**DEPARTMENT OF ENGLISH LANGUAGE EDUCATION**

**TECHNO PEDAGOGY IN ELT: A STUDY ON EFL INSTRUCTORS' TECHNO  
PEDAGOGY EFFICACY AND PERSPECTIVES IN HIGHER EDUCATION**

**THESIS BY**

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We certify that thesis under the title of “**TECHNO-PEDAGOGY IN ELT: A STUDY ON EFL INSTRUCTORS’ TECHNO PEDAGOGY EFFICACY AND PERSPECTIVES IN HIGHER EDUCATION**” which was prepared by our student **Mehmet Serkan BALTA** with number **2021008019** satisfactory **consensus** for the award of the degree of **Master of Arts** in the Department of **English Language Education**.

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**DEDICATION**

To my beloved daughters, ADEN and BEREN,

**ETHICS DECLARATION**

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techno pedagogy efficacy and perspectives in higher education.

I hereby declare that;

I prepared this master thesis in accordance with Çağ University Institute of Social Sciences Thesis Writing Directive,

I prepared this thesis within the framework of academic and ethics rules,

I presented all information, documents, evaluations and findings in accordance with scientific ethical and moral principles,

I cited all sources to which I made reference in my thesis,

The work of art in this thesis is original,

I hereby acknowledge all possible loss of rights in case of a contrary circumstance. (in case of any circumstance contradicting with my declaration)

25.01.2024

Mehmet Serkan BALTA

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**ABSTRACT****TECHNO PEDAGOGY IN ELT:  
A STUDY ON EFL INSTRUCTORS' TECHNO PEDAGOGY EFFICACY AND  
PERSPECTIVES IN HIGHER EDUCATION****Mehmet Serkan BALTA****Master Thesis, Department of English Language Education****Supervisor: Dr. Öğr. Üyesi Gürcan DEMİROGLARI****January 2024, 109 pages**

The use of technology in EFL classrooms has become more common., although instructors' readiness is still an obstacle to its efficient implementation. This study examines the significant relationship between the effectiveness of technology in teaching and the views of EFL instructors in higher education. This study utilized a mixed-method approach to examine the self-efficacy and perspectives of instructors in utilizing technology for language teaching. It also considered the distinction between data and the instructors' personal experiences. Quantitative data collected from 54 instructors using a validated TPACK scale demonstrated moderate to high efficacy levels, with excellent content and pedagogical competence. However, a gap in Technological Pedagogical Content Knowledge (TPACK) emerged, emphasizing the challenge of integrating technology, pedagogy, and content. Surprisingly, no major differences in efficacy were seen between gender, educational background, or age. However, teaching experience had a statistically significant impact, with instructors in their first five years exhibiting the highest levels. In-depth interviews with six instructors provided qualitative results that provided an extensive overview of their personal experiences and opinions. While accepting technology's potential to improve engagement, interactivity, and varied learning styles, different degrees of competency and confidence emerged. The study found factors that promote or prevent successful integration, such as the use of gamification, integration of authentic materials, integration of apps, and an ongoing demand for support in addressing issues and adapting to new technology. The results establish an outline for tailored professional development programs, questioning traditional perspectives on the integration of technology and highlighting the significance of personal use, continuous learning, and adaptability. In essence, by bridging the gap between theory and practice, increasing confidence and

competence in technology integration, and eventually improving the learning environment for EFL students, this study supports both instructors and institutions.

**Keywords:** EFL instructors, techno-pedagogy, TPACK, efficacy, views, technology integration, mixed-method research, professional development, higher education.

**ÖZET****ELT'DE TEKNO PEDAGOJİ:  
YÜKSEKÖĞRETİMDE YABANCI DİL EĞİTMENLERİNİN TEKNO  
PEDAGOJİ YETERLİLİĞİ VE PERSPEKTİFLERİ ÜZERİNE BİR ÇALIŞMA****Mehmet Serkan BALTA****Yüksek Lisans Tezi, İngiliz Dili Eğitimi Anabilim Dalı  
Tez Danışmanı: Dr. Öğr. Üyesi Gürcan DEMİROGLARI  
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Teknolojinin İngilizce öğretimi sınıflarında kullanımı giderek yaygınlaşmakta olup, öğretmenlerin hazır bulunurluğu hala etkili uygulamaya yönelik bir engel teşkil etmektedir. Bu çalışma, teknolojinin öğretimdeki etkinliği ile Yabancı Dil (İngilizce) öğretmenlerinin yükseköğretimdeki görüşleri arasındaki önemli ilişkiyi incelemektedir. Karma bir yöntem kullanarak, bu çalışma dil eğitimi için teknolojiyi kullanma konusundaki öğretmenlerin öz-yeterlilik ve görüşlerini araştırmayı amaçlamış, veri ile kendi deneyimleri arasındaki farkı dikkate almıştır. Doğrulanmış bir TPACK ölçeği kullanılarak toplanan 54 öğretmenden elde edilen nicel veriler, mükemmel içerik ve pedagojik yetkinlikle birlikte orta ila yüksek düzeyde etkinlik düzeylerini göstermiştir. Ancak, Teknolojik Pedagojik İçerik Bilgisi (TPACK) alanında bir boşluk ortaya çıkmış ve teknoloji, pedagoji ve içerik entegrasyonunun zorluğunu vurgulamıştır. Şaşırtıcı bir şekilde, cinsiyet, eğitim arka planı veya yaşa bağlı olarak etkinlikte anlamlı farklılıklar bulunmamıştır. Ancak, öğretim deneyiminin istatistiksel olarak önemli bir etkisi olmuş ve ilk beş yıl içindeki öğretmenler en yüksek düzeyleri sergilemiştir. Altı öğretmenle yapılan derinlemesine görüşmeler, kişisel deneyimleri ve görüşleri hakkında kapsamlı bir genel bakış sunan nitel sonuçlar ortaya koymuştur. Teknolojinin katılımı, etkileşim ve çeşitli öğrenme tarzlarını geliştirme potansiyelini kabul ederken, farklı düzeylerde yetkinlik ve güven ortaya çıkmıştır. Çalışma, başarılı entegrasyonu teşvik eden veya engelleyen faktörleri belirlemiş; bunlar arasında oyunlaştırma kullanımı, gerçek materyallerin entegrasyonu, uygulamaların entegrasyonu ve sorunları ele alma ve yeni teknolojiye uyum sağlama konusundaki sürekli talep gibi unsurları bulmuştur. Sonuçlar, özel gelişim programları için bir çerçeve oluşturarak, teknoloji entegrasyonu konusundaki geleneksel bakış açılarını sorgulayarak ve kişisel kullanımın, sürekli öğrenmenin ve uyarlanabilirliğin önemini



vurgulayarak özelleştirilmiş profesyonel gelişim programları için bir çerçeve oluşturur. Bu çalışma, teknoloji entegrasyonunu destekleyerek, teori ile pratiği birleştirerek, özgüveni ve yetkinliği artırarak ve sonuçta İngilizce öğrencileri için öğrenme ortamını iyileştirerek, hem öğretmenlere hem de kurumlara destek sağlamaktadır.

**Anahtar Kelimeler:** Yabancı dil eğitmenleri, tekno-pedagoji, TPAB, yeterlik, görüşler, teknoloji entegrasyonu, karma yöntem araştırması, mesleki gelişim, yüksek öğrenim.

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## **1. INTRODUCTION**

Education as a field has experienced significant changes in recent years. The impact of technology on language instruction and learning has become quite significant. Teachers are becoming increasingly interested in techno-pedagogy, which involves utilizing technology in the classroom. This is because technology plays a significant role in our everyday lives. The growing usage of technology in EFL instruction is quite noticeable. This trend has both advantages and disadvantages for language teachers who are looking to enhance their students' learning experiences. Even though there are plenty of digital materials and technologies available, EFL instructors often struggle to integrate them into their teaching because they do not fully understand the principles behind these practices. Therefore, the implementation of technology in education for EFL speakers necessitates ongoing effort and growth. The discussed procedure is intricate and continually in flux. To completely utilize its benefits in enhancing the language-learning experience of students, it requires careful study and comprehension.

### **Background of the study**

In recent years, there has been a significant increase in the adoption of technology in English Language Teaching, and it has therefore become a crucial element in acquiring language (Warschauer, 2010). It is crucial to gain an understanding of how instructors of English as a foreign language see and use technology for teaching, as well as how adept they are at integrating it into their techniques (Tsurusawa & Tsurusawa, 2013). It is also absolutely necessary to do an in-depth study of the possible variations in the efficacy of using technology in education. Considerations that should be made include the educational level of EFL teachers as well as the bachelor's degree program that they have successfully completed. Studying the perspectives and technological teaching skills of EFL teachers is important for various reasons (Liu & Pelgrum, 2010).

Since technology greatly enhances language acquisition, this study examines the integration of technological tools into lessons by EFL teachers. (Warschauer, 2010). Thanks to this instruments, students can study and practice the target language with real-world materials and in a natural setting. Second, while designing teacher training and professional development programs, it's important to include EFL teachers' unique views and current levels of competence in the areas of technological integration and pedagogical strategy (Tsurusawa &

Tsurusawa, 2013). This data is crucial for identifying issues and creating novel approaches to utilizing technology in language classrooms.

The integration of technology into ELT also has the potential to increase students' enthusiasm and participation in the learning process (Lee, 2014). Students are able to engage in interactive and dynamic language learning activities thanks to the availability of technology. Some examples of these activities are online language exchanges and virtual simulations. Additionally, it helps solve the shortcomings of traditional education methods, such as restricted access to authentic language resources and restricted opportunities to practice oral communication (Lee, 2014; Warschauer, 2010).

The integration of technology into English Language Teaching (ELT), while it has many benefits, is not without its share of obstacles. One of the obstacles that prevents people from actively participating in activities that are designed to help them learn a language with the assistance of technology is the digital divide, which refers to the unequal access to technology that exists between different socioeconomic groups (Liu & Pelgrum, 2010). This can also slow down the process of language acquisition.

Teachers need to have appropriate technological abilities and a comprehensive awareness of efficient approaches for utilizing technology in English Language Teaching (ELT) in order to successfully integrate technology into language teaching methodologies (Tsurusawa & Tsurusawa, 2013). Nevertheless, there is a possibility that some EFL teachers will struggle with it, particularly if they have little to no experience working with technology and have not gotten adequate training and assistance (Liu & Pelgrum, 2010).

The integration of technology into English Language Teaching (ELT) is essential for the acquisition of the language and provides a variety of benefits, such as greater student motivation and access to authentic language materials. Still, it's important to fully understand the challenges at present, like the technological gap and the necessary technology skills for instructors. It is critical to understand the diverse perspectives held by EFL educators, as well as the varying levels of efficacy in the use of technology in the classroom. The use of technology in English language teaching (ELT) can bring useful insights that can be used to enhance teacher training and professional development programs, hence making these programs more effective in integrating technology into language teaching approaches.

## **Statement of the problem**

EFL classrooms are increasingly utilizing technology as a teaching strategy for teaching foreign languages. However, the frequency of technology usage can impact the level of technological and educational knowledge provided to teachers, affecting their overall teaching approach.

According to research conducted by Warschauer and Matuchniak (2010), nearly all of EFL teacher lack the knowledge and experience to integrate technology into their classrooms. Some instructors of EFL avoid using technology in their classes because of its potential negative effects on their students. Chen (2012) conducted a study which revealed that many EFL instructors are reluctant to implement technology in the classroom. Another study by Thompson and Mishra (2009), instructors of EFL to non-native speakers face the same challenges as other educators. Multiple factors may hinder the integration of technology in institutions. Instructors may have trouble figuring out how to use technology in their lesson plans. It's also possible that they may not be up to date with the latest technological advancements that can be used in the classroom. According to Huang (2010), instructors have challenges since they do not have sufficient data on how to integrate technology into their classes. According to the findings of research conducted by Schunk and Pajares (2002), many EFL instructors do not possess the abilities essential to utilize technology in a way that will boost student involvement and motivation. In today's society, technology is everywhere, so it's really important for EFL instructors to include digital resources in their teaching practices.

In addition to the previously mentioned challenges, the techno-pedagogical efficacy and views of EFL instructors might have significant impact on the integration of technology within the EFL classroom. Techno-pedagogical efficacy refers to the instructor's confidence in their capacity to employ technology for the purposes of teaching and learning, as stated by Mishra and Koehler (2006). It is important to note that techno-pedagogical efficacy and views are not fixed traits. They can be developed and changed through professional development, self-reflection, and peer collaboration (Bandura, 2000). EFL instructors can improve their techno-pedagogical efficacy by developing their technological skills, learning new ways to integrate technology into their teaching, and reflecting on their own practice (Shulman, 1987). According to Mishra and Koehler (2006), educators with high techno-pedagogical efficacy are more likely to implement technology into their teaching strategies and use it in ways that improve student learning. Many EFL teachers, on the other hand, may not be very good at using technology for instructional purposes. According to Warschauer and Matuchniak (2010), nearly every EFL teachers are unfamiliar with using technology in the classroom. Chen's (2012) other study



showed that many EFL teachers did not want to use computers in the classroom. Instructors' personal views toward technology can influence how they use it in the classroom (Angeli and Valanides 2009). While some teachers may see technology as an invaluable resource, others may see it as a waste of time (Chen, 2012). Teachers with positive views toward technology are more likely to succeed in integrating it into the classroom (Chen, 2012).

### **Purpose of the Study and Research Questions**

The aim of this study is to investigate and reveal the views of English as a Foreign Language (EFL) instructors on techno-pedagogy through in-depth interviews in terms of self-efficacy in a higher education institution. Additionally, the study aims to reveal how EFL instructors' views are affected by their exposure to and use of technology while integrating technology into their teaching practices. The study also seeks to identify differences in instructors' technology use based on their educational background, gender, age, experience to raise awareness of the use of technology in EFL contexts. To that end, the following research questions are;

1. What are the levels of EFL instructors' techno pedagogy efficacy?
2. Is there a significant difference among the instructors in terms of their genders, BA and MA degrees, ages and their teaching experience regarding their techno pedagogy efficacy?
3. What are the views of EFL instructors in terms of their self-efficacy on techno pedagogy?

### **Significance of the Study**

The structure of Technological Pedagogical Content Knowledge (TPACK) discusses the relationships among technology, pedagogy, and content knowledge, providing educators with the chance to utilize modern technology and update their teaching methodologies. This study examines the self-efficacy of English as a Foreign Language (EFL) instructors in relation to technology integration, offering practical insights and solutions for higher education institutions. It bridges the gap between theoretical frameworks and real-world implementations. Nowadays, technology's impact on daily life and academic studies is significant so understanding language teachers' views and practices on technology integration is crucial for fostering a closer relationship between language learning and technology, which could help enhance the effectiveness of teaching strategies. A complete understanding of current technological and teaching skills can provide language instructors with valuable insights for

continuous development. As a consequence of this, the research connects the theoretical basis of educational technology strategies with the real-life challenges that EFL instructors encounter in their classrooms.

Moreover, the research examines the views of instructors regarding the integration of technology into their teaching strategies and how this impacts their self-efficacy. This study explores EFL instructors' personal experiences and viewpoints beyond data and statistics. It offers a deep knowledge of the mental and psychological aspects of technological integration, giving insight into the instructors' concerns, apprehensions, and motivations. This kind of in-depth study has the potential to serve as a significant resource for teacher training programs and professional development activities. These initiatives and courses seek not only to improve instructors' technological competence but also to enhance teachers' confidence and motivation.

In addition, this study offers useful insights on the various efficacy of technology in pedagogy based on an individual's educational background and possesses the potential to make a valuable contribution to the field of language teaching with the aim of enhancing the learning environment. While some instructors may have extensive technological training, others may not. This research highlights the efficacy disparities that result from these variables, underscoring the necessity for personalized support and training programs for EFL instructors. Tailored support can boost confidence among educators while integrating technology into education.

The findings gathered from this study could be used to improve the quality of instructional and professional efforts for educators. This research can identify EFL instructors' technology integration issues and opportunities to create targeted solutions and resources. It may also offer practical advice on dealing with and overcoming these challenges encountered by EFL instructors. Therefore, the aim of this study is not solely to assist educators in integrating technology into their teaching methods but also to offer guidance to language institutions in improving the support they provide for instructors. This comprehensive strategy is linked to the objective of increasing the overall quality of EFL education, which will assist both educators and students.

Finally, this study provides a thorough examination of EFL instructors' self-efficacy in techno-pedagogy, with a focus on their perspectives. It contributes to the continuing discussion on technological integration in language education by bringing together theoretical frameworks, practical insights, and a detailed knowledge of teachers' views. As technology evolves and shapes the educational landscape, the results of this study will remain highly significant,

providing a roadmap for both educators and institutions to manage the connection between technology and pedagogy.

### **Limitations**

The study seeks to gather data from teachers working in a university situated in the Mersin and Adana province. However, relying on data solely from these specific locations may limit the scope and generalizability of the results. The sample group for this research is limited to just three university EFL instructors. To enhance the comprehensiveness and generalizability of the study, it is recommended to include instructors from different regions of Turkey, and not just limit the research to two specific locations. Moreover, to broaden the scope of the study, elementary, secondary and high school EFL teachers can be considered as potential participants in addition to university instructors. Moreover, by adopting a qualitative research design that encompasses the school environment, a more comprehensive and in-depth analysis of primary, secondary, and high school EFL teachers' views regarding techno-pedagogy and their self-efficacy can be conducted.

### **Operational Definitions**

#### **Techno-pedagogy**

Techno-pedagogy refers to the amalgamation of technology and pedagogical concepts within the educational framework, encompassing instructional techniques and approaches to learning. This research domain explores the utilization of technology in the realm of education and instructional practices. It goes beyond the mere use of technology by emphasizing the thoughtful and pedagogically effective utilization of digital tools, software applications, online platforms, and multimedia resources to create dynamic and interactive learning environments (Levy, 2009). Integrating technological tools and resources into teaching practices improves classroom dynamics and the quality of students' education.

#### **Technology in ELT**

Technology in ELT refers to the use of various technological tools, devices, and resources in the field. Utilizing technology within the discipline of ELT involves the intentional incorporation of digital tools, software, and multimedia resources within the domain of language instruction, which supports language learning and teaching practices (Grgurović et al., 2021). The integration of these tools improves the learning experience by providing dynamic and interesting language practice, rapid feedback, and access to a diverse range of

language materials. As a result, it enables learners to acquire language skills and gain proficiency in a more effective manner.

### **Self-efficacy**

Bandura (1986: 391) defines the construct as individuals' appraisals of their abilities to competently strategize and perform the necessary actions in order accomplish particular performance objectives. Self-efficacy refers to one's personal perception of their own skills, specifically with regard to their ability to effectively deal with and achieve objectives within a given environmental context (Akhtar, 2008). Nevertheless, it is crucial to acknowledge that self-efficacy can emerge in different ways, including but not limited to academic efforts, parental responsibilities, and participation in sports. Although there is a correlation between self-efficacy and our sense of self-worth or personal value, it is important to highlight a notable discrepancy.

## **Review of the Literature**

### **Theoretical Framework of the Study**

This chapter provides the theoretical framework shaping the integration of technology in English Language Teaching (ELT). Focused on key concepts such as Technology in ELT, Techno Pedagogy in ELT, Self-efficacy in ELT, and Technological Pedagogical Content Knowledge (TPACK), it presents the intricate dynamics of technology and pedagogy. Then, related studies on Technological Pedagogical Content Knowledge (TPACK) both in Turkish and world context in the field of ELT are presented.

### **Technology in English Language Teaching**

During the 1990s, language labs were dynamic centers for language acquisition. The focused classrooms contained multiple rows of individual spaces, each equipped with cassette players, headphones, and microphones. Students engaged in exercises to improve their pronunciation, enhance their ability to understand spoken language, and participate in conversational activities with the use of pre-recorded audio recordings. Although computers were available, their use was restricted, with certain laboratories providing activities based on CD-ROMs. Despite the absence of modern technological features, these laboratories offered important chances for targeted training and self-directed education, significantly influencing the development of language skills for a whole generation. Although the early language labs established the foundation for individualized practice, the rise of the digital revolution in the

21st century introduced a wide range of innovative tools that completely changed the field of language learning and teaching. The 21st century has been dominated by globalization, which makes it crucial to develop competence in a number of foreign languages. In all of these languages, English is the most important. English Language Teaching (ELT) has been around for a long time, and its importance has been growing gradually, primarily because of the Internet. Graddol's (2000) study showed that there were about a billion people learning English in that year. But after ten years, the numbers had doubled. The estimate says that the number of people learning English will go up, which was at its highest point in 2010. The study stated earlier found that over 80% of the data stored on the internet is in the English language (Smith, 2023). The people who use English Language Teaching (ELT) have changed a lot recently. There are now more non-native speakers than native speakers (Jones, 2023). Because of this change, there is a lot of variety among learners in terms of their backgrounds, ages, countries, and learning experiences. Because of this, variety has become one of the most important parts of modern ELT. As science and technology have improved, digital technology has come into being and grown. It has been used very successfully in the classroom, especially in English lessons (Warschauer & Kern, 2000). Making use of audio, video, and animation effects has made the modern world a great place to learn and develop new ways to teach English. Researchers have found that using multimedia technology in English classrooms helps students move forward with their tasks and efforts and makes teaching more effective (Levy & Stockwell, 2006). The evolution of the English language has been closely linked with technological advancements, resulting in significant changes to our communication methods (Crystal, 2001). It might be argued that the expansion of the internet has contributed to the development of the English language, combining with the widespread accessibility of computers, which are no longer limited to a select group of individuals but rather accessible to a larger population (Graddol, 2006). There has been a notable increase in the body of scholarship regarding the integration of technology in English language training (Chapelle, 2014). The majority of these publications clearly identify technology as a crucial component in the realm of education. The dominant perspective has been to place significant emphasis on the inevitable role of technology in education, to the extent that it may dominate the human element of the instructor with the technological component.

The use of technology in English language teaching classrooms, the presentation of visual elements such as films and photos, and the utilization of various software applications provide teachers with the opportunity to integrate theoretical concepts into their lessons more comprehensively. Students can be motivated by utilizing computer programs, multimedia

resources, mobile apps, interactive whiteboards, language learning apps, virtual reality, and other digital media. Thus, with the help of using technology in ELT classes, instructors can turn theoretical concepts into practice, increase the students' passion for learning the language, and foster their commitment.

Warschauer (2006) states that technology in English Language Teaching (ELT) means using digital and electronic tools to make learning and teaching languages better. It is the goal to make language teaching more successful and efficient. In addition, a research carried out by Chapelle (2001) dives into detail about how technology can be used to teach languages. The author not only discusses how important language pedagogy is for producing activities and teaching tools that make language learning and assessment easier but also puts a lot of emphasis on how important technology is for improving speaking skills and comprehension.

The important role that technology plays in teaching English, especially in language classes, is shown in Warschauer and Healey's (1998) study. In the early 1900s, audiovisual aids like phonographs and films were introduced. In the 1960s and 1970s, computer-assisted language learning (CALL) software was created, which opened up a new era in teaching English by letting students learn at their own pace and in their own way. This changed the way English was taught. This ultimately enabled more adaptive and effective language teaching procedures. This technology development represented a huge step forward in ELT since it made it possible for language students to have access to a learning environment that was both more practical and more effective (Levy, 1997; Warschauer & Healey, 1998). The field of technology continues to advance in several areas of everyday life. A substantial number of individuals worldwide are accepting the integration of technology into their daily routines, recognizing its ability to enhance efficiency and reduce their consumption of time and energy. The use of technology in teaching English has considerably enriched the English language, transforming language education and allowing in a new era of innovation in ELT to provide numerous opportunities for learning English. In the 1980s and 1990s, widespread access to the internet and personal computers has significantly boosted language learning opportunities and fostered cooperation and communication among language learners. Wu and Chen (2018) emphasize the important effect of technology on online learning, and highlight its capacity to facilitate access to a wider audience of students from any geographical place and at any point in time. There are also a lot of digital tools and resources that can help with learning and teaching English. The aforementioned resources cover language-learning applications, internet-based dictionaries and grammatical correction tools, virtual educational environments, as well as multimedia content

such as films and interactive gaming platforms. Technology can enhance teacher analysis and tracking of student progress, improve student-teacher interaction, and improve collaboration between students and instructors. By using technology in ELT, teachers are able to create lessons that are more personalized for each student, which creates a student-centered classroom environment. Nevertheless, it is crucial to acknowledge that implementation of technology into ELT classes has its own set of challenges. Educators encounter various challenges despite their excitement about incorporating technology into their teaching practices. Some academic settings still have resistance towards using technology in teaching methods. One of the most significant issues is that the use of technology can be time-consuming and may need additional training for teachers (Warschauer & Matuchniak, 2010). This means that there is a need for professional development programs to help educators improve their digital skills (Tian et al., 2021).

The study that has already been done on learning a language with technology shows that people have a lot of different ideas about how well using technology to teach English works. Some authors, like Sung, and Liu (2016) and Lee (2010), have supported this idea, while others, like Lipsey and Wilson (2001), Norris and Ortega (2000), and Oswald and Plonsky (2010), have raised doubts about how well it works. People who want to use technology to help people learn a language say that it gives students more freedom, access to a wider range of language tools, and independence. On the other hand, opponents point out challenges such as inadequate resources and not enough software and hardware, particularly in nations with poor infrastructure. Additionally, they argue that students and teachers may lack understanding with technology. Furthermore, existing software may facilitate superficial and unrealistic interactions, place excessive value on multimedia, overwhelm language learners with too much content, and fail to provide appropriate feedback. In the end opponents claim that technology-based language learning often yields superficial and unrealistic feedback, further reducing its efficacy. History of Technology in ELT (2023) claims that it has given both students and teachers new and creative ways to use the English language.

### **Techno Pedagogy in English Language Teaching**

Techno-pedagogy, as defined by Gloria and Benjamin (2014), involves the integration of instructional methodologies with technology directly into the learning environment. It encompasses the strategic use of technology to enhance pedagogical approaches and learning outcomes. The integration of technology in education encompasses the utilization of various

instruments such as computers, interactive whiteboards, online learning platforms, and multimedia materials with the aim of enhancing instructional practices for educators and fostering engagement among students. The integration of accessible online platforms, such as smart classrooms, collaborative interaction, electronic libraries, digital books, and other supplementary online technologies, significantly contributes to enhancing the effectiveness of online instruction and facilitating the distribution of course materials (Courts & Tucker, 2012). According to Smith and Johnson (2018), including various learning styles and promoting active engagement are beneficial strategies. The effective use of technology in pedagogy offers the capacity to alter traditional methods of instruction. This implies that the educational process becomes more adaptable, readily available, and tailored to the specific requirements of the students. The pedagogical practices employed within the classroom should strive to avoid monotony and boredom, instead aiming at developing engaging, and creative learning environment that fosters novelty and significance. The enhancement of students' academic performance can be achieved through the utilization of diverse technological approaches and media by instructors. However, this effort necessitates the integration of techno-pedagogical abilities combined with academic proficiency. There are many members of the faculty who still insist on teaching using the outdated, tedious, and dull lecture technique; nevertheless, in the not-too-distant future, technology may be able to replace the professors in terms of both effectiveness and capability. Therefore, it is expected that the enhancement and integration of technical pedagogical skills with academic knowledge will not only enhance students' progress and achievement but also help teachers maintain their relevance and motivation.

Regarding techno-pedagogy internet-based platforms and websites provide the opportunity for individuals to engage in learning activities at their convenience, regardless of their location, and access a large range of educational resources from many global sources. In addition, Facebook, Twitter, Pinterest, and WhatsApp, among others, have comprehensive networking features that promote student-to-student and student-to-teacher collaboration (Curtis & Lawson, 2001; Fisher et al., 2000). Due to the rise in the number of internet-based students, there has been a spike in the digitization of traditional textbooks. A number of students today like utilizing mobile electronic devices like iPads, iPhones, and other tablets to store their learning materials (Melody & Ramsay, 2012; Tremblay, 2010). When educators integrate technology into their instructional practices, they have the opportunity to utilize digital resources, modeling techniques, and virtual reality experiences to enhance the engagement and applicability of the learning process (Smith & Johnson 2018). Through the utilization of this approach, students are afforded the opportunity to improve their cognitive skills related to



critical problem-solving and analysis through active engagement with authentic and significant content.

Techno-pedagogy in English Language Teaching (ELT) has been described as a concept that is specific and focused in its approach (Warschauer & Kern, 2000). Teachers use different strategies, methods, and approaches to integrate technology into their classrooms (Chapelle, 2014). The process includes thoughtfully analyzing how technology may help us in reaching our language learning objectives (Levy & Stockwell, 2006). Teachers need to be able to develop and implement teaching strategies that are influenced by the latest technological advancements (Brown, 2023). In order to use technology in ELT, teachers should have a good understanding of the different technology tools and know how to utilize them in ways that produce beneficial outcomes. The process requires making considerate choices about when and how to use technology to improve language teaching. ELT educators are utilizing technology strategically and pedagogically to enhance learning outcomes for students (Chen, 2018). By designing interactive, dynamic, and engaging language learning activities, they foster motivation and interest in the language learning process, demonstrating the potential of technology in the field of EFL (Dikke, 2018). Techno-pedagogy in the field of ELT pertains to the purposeful integration of technology within instructional approaches for the purpose of enhancing language learning (Chapelle, 2014). The process entails the use of digital tools, software applications, internet platforms, and multimedia resources to construct dynamic and interactive educational settings. The area of education, especially ELT, has been influenced by technological developments. The internet and personal computers transformed the way education was delivered in the 1990s, allowing students greater flexibility in when and where they can continue their studies (Graddol, 2006). Several benefits of integrating technology into ELT have been identified, such as increased student motivation and engagement, access to real-world language practice opportunities, and authentic language materials (Warschauer, 1996). Warschauer (2000) posits that techno-pedagogy is a comprehensive methodology that aims to maximize language acquisition outcomes through the utilization of technological resources. There are various advantages for both educators and students when using technology in English Language Teaching. Personalized learning is made possible by technological tools that allow students to access materials tailored to their own goals (Grgurovi et al., 2021). By putting students in a position to manage their own education and keeping them motivated, the individualized method improves academic outcomes. The use of multimedia elements like audio, video, and interactive activities is yet another advantage of modern technology in the field of language instruction. Chapelle (2001) argues that a media-rich environment not only

facilitates learning but also inspires creativity and critical thinking. Students are able to practice their language skills in authentic contexts by interacting with authentic resources. In addition, techno-pedagogy allows for the possibility of collaborative learning. Virtual classrooms, discussion forums, and online group projects allow learners to connect with classmates from different cultures, which helps them communicate across cultures and become more aware of the world (Dudeney, Hockly, & Pegrum, 2013). In order to integrate technology into teaching practices, EFL instructors must possess a certain level of technological competence, as well as an understanding of how to use technology effectively to support language learning so the implementation of techno-pedagogy necessitates educators' continuous professional development to integrate technology into their teaching practices. Teachers must stay updated with the latest technological advancements and be proficient in using various digital tools (Ertmer & Ottenbreit-Leftwich, 2013). Professional development programs can provide educators with essential abilities to create engaging digital content, design online assessments, and manage virtual classrooms. Additionally, techno-pedagogy requires a shift in the role of educators from traditional knowledge transmitters to facilitators and guides (Levy, 2009).

A case in point of techno-pedagogy in ELT is the use of online language exchanges, where students can converse with other speakers of the target language in real-time, thus providing them with invaluable opportunities for authentic language practice (Warschauer, 1996). Besides these, with the help of techno-pedagogy knowledge educators can not only encourage self-directed learning and support learners in navigating online resources but also can create an inspiring learning environment that motivates learners to embrace technology for language learning. Yet, incorporating technology should not replace traditional pedagogical approaches but rather complement them. A balanced integration of technology with face-to-face interactions can optimize language learning experiences (Gillen & Staarman, 2016). Thus, Appropriate digital tools that are compatible with teaching objectives and appeal to different learning habits should be carefully selected by educators.

In today's world, the field of techno pedagogy is constantly evolving, with new advancements in technology paving the way for digital learning tools such as online courses, virtual classrooms, and educational software. The COVID-19 pandemic has accelerated the implementation of technology in education, causing an increase in remote learning and digital pedagogical practices.

## **Self-efficacy**

Self-efficacy is a psychological term that centers on an individual's assessment of their ability to successfully carry out a specific task within a particular context. According to research in various fields, including education, healthcare, and sports, self-efficacy significantly affects a person's behavior and performance.

In 1977, Bandura conducted one of the first studies on self-efficacy, defining it as people's thoughts about their abilities to produce specific levels of performance that exercise influence over events that affect their everyday lives (p. 191). According to Bandura (1986), self-efficacy refers to people's perceptions of their ability to effectively organize and carry out necessary actions in order to accomplish particular objectives for performance. There are four basic mechanisms through which self-efficacy affects behavior: cognitive, motivational, emotional, and selection processes.

Bandura (1997) proposed four distinct sources that contribute to the development of an individual's self-efficacy beliefs: (1) mastery experiences, (2) vicarious experiences, (3) verbal persuasion, and (4) physiological and affective states. Mastery experiences involve personal achievements and successes, while vicarious experiences come from observing others' accomplishments. Verbal persuasion involves receiving encouragement and positive feedback from others, and physiological and affective states encompass one's physical and emotional states that might influence self-efficacy beliefs. Understanding these sources enhances our comprehension of self-efficacy formation and its potential for modification.

Perceptions of self-efficacy have the potential to affect academic motivation, learning, and achievement, as indicated by research (Schunk, 1995; Pajares, 1996; Schunk & Pajares, 2002). Some minor overestimation of efficacy judgments can enhance effort and persistence, especially in challenging situations (Artino, 2012). However, it's important to focus on "modest" overestimation, as excessive overestimation can lead to unethical behavior or unrealistic expectations, as seen in Wyatt's (2018) study on language teacher self-efficacy.

Strong self-efficacy beliefs can facilitate effective problem management and goal commitment. Conversely, individuals with low self-efficacy may exhibit avoidance behaviors and experience negative emotions, negatively affecting performance and well-being.

Numerous studies support Bandura's theory of self-efficacy. For example, Schunk and Pajares (2002) found that self-efficacy significantly predicts academic achievement. Similarly, Luszczynska and Schwarzer (2002) demonstrated a positive association between self-efficacy and exercise program adherence. Self-efficacy is also related to mental health outcomes, as

evidenced by Rapee and Lim's (1992) research on coping with stress and Zvolensky and Eifert's (2003) study on panic symptoms.

Despite the value of self-efficacy in various domains, there are gaps in knowledge, including reliance on self-report measures subject to bias and the unclear causal relationship between self-efficacy and certain outcomes.

### **Self-Efficacy in English Language Teaching**

Self-efficacy in ELT among teachers plays a pivotal role in motivating learners to achieve academic success. It has a significant impact on how teachers teach and how their students learn. High teacher self-efficacy is linked to more motivated, engaged, and successful students. When teachers are confident in their ability to teach well and manage the classroom effectively, they believe in themselves and their students, creating an ideal learning environment (Ingle & Haberman, 2002). In the field of ELT, self-efficacy is observed to have diverse characteristics, each of which carries unique consequences for the process of teaching and learning.

The concept of self-efficacy in pedagogical skills refers to the teacher's perception and confidence in their ability to create and perform instructional strategies that provide positive educational outcomes. This component pertains to the level of self-assurance in evaluating student progress and adjusting instructional approaches to accommodate a range of learning requirements (Pajares, 1996). Educators that possess a strong sense of self-efficacy in the field of pedagogy are more motivated to engage in the study of novel teaching methodologies, hence boosting both student engagement and comprehension.

Considering the growing diversity among students, the significance of cultural competence cannot be underestimated. According to Pajares (1996), educators who possess a strong sense of self-efficacy in cultural competence demonstrate a firm belief in their capacity to comprehend and value the many cultural contexts of their students. The possession of this confidence enables educators to establish learning environments that are inclusive and culturally relevant, thus developing a sense of identity among every student.

The integration of technology holds significant importance in the field of English Language Teaching (ELT) within the contemporary digital environment. Educators who possess self-efficacy in the realm of technology integration demonstrate a strong belief in their ability to proficiently utilize technology for the purpose of classroom instruction and information acquisition (Tschannen-Moran & Woolfolk Hoy, 2001). Educators utilize digital

technologies and resources to enhance instructional practices, foster active student participation, and effectively adapt to online or blended learning settings.

A number of factors can impact teachers' self-efficacy beliefs in ELT, including; "Teaching experience" which means teachers with more teaching experience tend to have higher self-efficacy beliefs (Tschannen-Moran & Woolfolk Hoy, 2001). "Content knowledge" that refers to teachers who feel confident in their knowledge of English and ELT pedagogy are more likely to have high self-efficacy beliefs (Bandura, 1977). "Perceived teaching ability" which is named as teachers who believe that they are effective teachers are more likely to have high self-efficacy beliefs (Tschannen-Moran & Woolfolk Hoy, 2001). Student engagement and learning outcomes that pertain to teachers who see their students engaging in learning and achieving positive outcomes are more likely to have high self-efficacy beliefs (Bandura, 1977). "Mentoring and support" which concern teachers who receive mentoring and support from colleagues and supervisors are more likely to have high self-efficacy beliefs (Tschannen-Moran & Woolfolk Hoy, 2001).

The knowledge, thoughts, and views of teachers are significantly interconnected with their instructional practices inside the classroom setting. The self-views of teachers regarding their teaching abilities, sometimes referred to as "teachers' self-efficacy" or "efficacy beliefs," are widely acknowledged as a significant factor in shaping their views. The reason for this phenomenon is that instructors have a tendency to actively participate in activities that they believe themselves to be proficient in, while avoiding those in which they lack confidence (Bandura, 1997). Bandura considered self-efficacy to be a fundamental psychological mechanism that has an effect on human behavior. Existing literature in the field of education has shown that teachers' self-efficacy has a significant impact on both the methods they choose to use and the general atmosphere of the classroom. For instance, instructors who reflect a high level of self-efficacy have the belief that they possess the competence to enable alterations in student learning. In contrast, educators who possess a lower level of self-efficacy tend to attribute a greater degree of influence on student learning outcomes to outside factors, as compared to their teaching strategies (Gibson & Dembo, 1984). Self-efficacy views, or teachers' confidence in their teaching skills, perform a big role in ELT (Bandura, 1977; Tschannen-Moran & Woolfolk Hoy, 2001). Teachers who believe they are capable of good work are more likely to use effective teaching methods, remain positive when things get tough, and help their students do well (Abdullah & Wan Abd. Kadir, 2018; Dai, Wang, & Wei, 2021).

Self-efficacy, a concept that comes from Bandura's social cognitive theory, is very important in the area of ELT. This self-efficacy refers to a teacher's unwavering belief in their

capacity to influence student outcomes through effective teaching practices (Bandura, 1997). It goes beyond mere self-confidence; it shapes the teaching methods employed and the overall learning experiences of students.

Furthermore, recent scholarly studies in the field have delved into the examination of self-efficacy among instructors of ESL and EFL. The research studies examined how it connected with other critical teacher characteristics, including competency in the target language and emotional intelligence. Nevertheless, there is a limited body of research that has examined the relationship between self-efficacy and instructional techniques. Nishino (2012) conducted a study on Japanese EFL teachers, which revealed a correlation between efficacy beliefs and instruction. However, it is important to note that the study solely focused on the measurement of communicative behaviors.

Regarding research conducted on teachers and teacher education since 1985, Klassen and Durksen (2014) conducted a comprehensive review that mostly examined self-efficacy. Their study examined several aspects such as the tools utilized, analytical parameters, cultural considerations, sample characteristics, teacher control, and the well-being of teachers. In their study, Zee et al. (2016) conducted a comprehensive evaluation covering four decades, focusing on the self-efficacy beliefs of teachers in relation to classroom performance, academic achievement of students, and the overall well-being of instructors. Ramakrishnan and Salleh (2018) did a systematic review on self-efficacy within the span of time of 2014 to 2018. The study's results indicate a positive correlation between several factors, such as pedagogical studies, teaching experience, classroom management, student engagement, instructional policies, and teaching practices, with instructors' self-efficacy. The research has discovered several negative aspects that contribute to the lowering of teachers' self-efficacy. These elements include occupational stress and job satisfaction, both of which are significant components in the current setting.

According to Ghanizadeh and Moafian (2011), the level of a teacher's self-efficacy has a significant role in motivating learners to achieve academic success. The idea being discussed refers to the teachers' perceptions of their own competence to foster learning across various activities and in context-specific cognitive, metacognitive, affective, and social dimensions (Punyasettro et al., 2021; Tan et al., 2020). Following the delivery of an effective instructional session, a teacher's sense of satisfaction has the potential to improve their perceived capacity to achieve desired outcomes, commonly referred to as self-efficacy. This observation is consistent with the findings of Shang (2010), which suggest that persons who have high expectations of success in a specific endeavor are more likely to predict positive outcomes. The

impact of emotional states on a teacher's self-perception of teaching competency is contingent upon the manner in which attention is directed towards their emotional states (Bandura, 1997). Teachers with a heightened sense of efficacy are more likely to employ effective instructional strategies, persevere in challenging teaching scenarios, and achieve success in maintaining student engagement. According to a study conducted by Tschannen-Moran and Woolfolk Hoy (2007), there is evidence to suggest that teachers' self-efficacy has a significant impact on various aspects of their professional practice. These aspects include the level of effort teachers invest in preparing and delivering instruction, the goals they establish, their openness to adopting innovative teaching methods to enhance student learning, as well as their ability to remain resilient in the face of challenges.

### Technological Pedagogical Content Knowledge

The term "Technological Pedagogical Content Knowledge" (TPACK) refers to a key framework that encompasses the combination of pedagogical knowledge, technological knowledge, and content knowledge in the classroom. The framework was created by Mishra and Koehler (2006) to help educators better integrate technology into their lessons. Pedagogical content knowledge (PCK), technical content knowledge (TCK), and content knowledge (CK) are the three pillars of the TPACK framework (Mishra & Koehler, 2006). Pedagogical content knowledge (PCK), technical pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPACK) are the three main components of knowledge that are combined into four subcategories (Mishra & Koehler, 2006). In many presentations of the TPACK framework, the three primary circles and the four knowledge domains are represented as a Venn diagram. As seen in Figure 1.

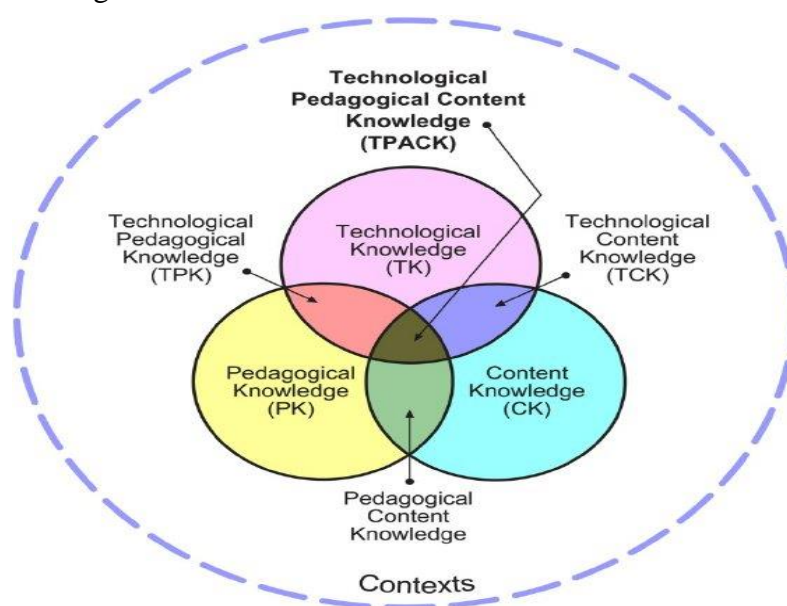


Figure 1: Technological Pedagogical Content Knowledge (Mishra & Koehler, 2008)

According to Koehler and Mishra (2008), teachers' familiarity with pedagogical methods and subject-specific technical resources is crucial for effective technological integration in the classroom. Below, there is an explanation of each of the knowledge components necessary to grasp the model developed by Mishra and Koehler (2006).

**Content Knowledge (CK):** Knowledge of the specific facts, definitions, theories, and principles that make up a given field is known as "content knowledge" (CK). It features in-depth understanding of relevant curricula, benchmarks, and evaluation procedures. (Mishra and Koehler, 2006; Koehler and Mishra, 2008). Content knowledge in English language teaching refers to an instructor's familiarity with the language being taught. The ability to listen, speak, read, and write in English, as well as familiarity with the culture that surrounds the language, are all part of this. Effective English language teachers (ELTs) have deep content knowledge.

**Technological Knowledge (TK):** The utilization of a wide range of technological instruments and resources by educators applies to the concept of "Technological Knowledge" (TK). Computers, programs, and various software and hardware tools can be categorized as digital tools (Mishra & Koehler, 2006). In the field of English Language Teaching (ELT), technological literacy refers to educators' level of expertise in employing various instruments such as multimedia materials, digital communication tools, and educational software that effectively support students' acquisition of the target language. The use of technology has a natural capacity to boost student motivation in ELT.

**Pedagogical Knowledge (PK):** Pedagogical Knowledge (PK) is a broad subject that includes lesson planning, classroom management, assessing students' language skills, and the development of engaging activities and learning objectives (Koehler & Mishra, 2008).

**Pedagogical Content Knowledge (PCK):** Pedagogical content knowledge" (PCK) is when a teacher knows all the best ways to teach something particular (Harris, Mishra, & Koehler, 2009; Koehler & Mishra, 2008; Mishra & Koehler, 2006). The pedagogical content knowledge possessed by proficient English language instructors encompasses a comprehensive understanding of how to teach English effectively, while considering the distinctive characteristics of the English language and the individual learning styles of their students. Approaches to teaching and learning English grammar, vocabulary, pronunciation, language skills, and cultural components in ways that are understandable and relevant to students make up what is known as pedagogical content knowledge (PCK) in English language teaching.

**Technological Pedagogical Knowledge (TPK):** According to Harris, Mishra, and Koehler (2009), "Technological Pedagogical Knowledge" (TPK) is the knowledge of how to use specific technology in specific ways to change teaching practices by using technological



tools and resources to build effective learning environments. A teacher who has technological pedagogical knowledge understands how to use technology as a teaching tool. It requires familiarity with numerous digital resources and the ability to implement them in the classroom effectively. TPK is extremely important in ELT because of the many ways in which it can improve language teaching.

**Technological Content Knowledge (TCK):** It is the capacity to use cutting-edge technology and adjust teaching techniques to fit the needs of students (Koehler & Mishra, 2008). Knowledge of how technology can be used to teach a given subject, in this case English language and its associated content, is what is meant by “Technological Content Knowledge” on the part of teachers. Acquiring fluency in spoken and written English, as well as its syntax, vocabulary, cultural norms, and related content, requires a level of TCK.

**Technological Pedagogical Content Knowledge (TPACK):** It is the knowledge of how to use technology in the classroom (Koehler & Mishra, 2008; Mishra & Koehler, 2006). Stated another way, TPACK is distinct from knowledge and its component ideas and their intersections. What’s more, it’s not just a mash-up of three distinct elements; rather, content, pedagogy, and technology are interdependent in ways that cannot be predicted or controlled by a single factor alone (Harris, Mishra, & Koehler, 2009). As Mishra and Koehler (2006) point out, teachers need to be aware of the myriad ways in which their own subject-matter expertise, technological fluency, and pedagogical understanding all interact with one another in the classroom. The incorporation of technology as a pedagogical tool to improve language education is at the heart of the connection between ELT and Technological Pedagogical Content Knowledge (TPACK). Teachers of English as a foreign language (TEFL) who have a firm grasp of TPACK can use digital tools to design engaging lessons for their students that also meet their needs in terms of content and pedagogy.

## **Related Studies**

Related studies in the literature are presented in the world and Turkish context.

### **Related Studies on Technological Pedagogical Content Knowledge (TPACK)**

In recent years, the integration of technology within the realm of education, commonly referred to as techno-pedagogy, has gained widespread acceptance. Technology has advanced so quickly that it has become an essential component in the field of education. This phenomenon is particularly evident since learners are developing with technology, meaning that technology has become a fundamental and completely integrated component of their lives.

Within the domain of EFL, technology integration presents a promising avenue for augmenting language acquisition and expanding language education. Thus, it is recommended that instructors of English as a Foreign Language (EFL) include technology into their EFL instruction as a means of enhancing the learning process. Nevertheless, the effective utilization of techno-pedagogy in EFL teaching hinges upon the views of EFL instructors. According to Dudeney and Hockly (2007), the utilization of technology within educational settings has evolved into a way in order to provide students with awareness to the external environment. EFL instructors must recognize the accessibility of instructional technology and seize this opportunity to enhance their pedagogy in order to meet this challenge. Some EFL teachers, however, are hesitant to take advantage of the chance to include technology into their courses. There are a number of reasons why teachers choose not to use technology when teaching English as a foreign language. Lack of resources, inadequate training, negative attitudes toward technology, low self-efficacy, and limited time to use technological tools are some of the reasons for the problem (Compeau & Higgins, 1995; Wang, Ertmer, & Newby, 2004; Buabeng-Andoh, 2012; Gilakjani, 2013).

### **Related Studies on Technological Pedagogical Content Knowledge in World Context**

To begin with, self-efficacy, a construct referring to one's confidence in their capacity to achieve success in a given context, has demonstrated considerable significance in various fields, such as in the field of education (Bandura, 1997). Building on this idea, Wang, Ertmer, and Newby (2004) conducted a study to investigate the influence of technology-integrated learning experiences on the self-efficacy of preservice teachers in relation to technology integration. The researchers discovered that the self-efficacy of pre-service teachers about the integration of technology in education was enhanced as a result of their interaction with technology savvy instructors who effectively utilized computers in the classroom. The results of their study indicate that it is important for teacher educators to serve as role models for pre-service teachers in order to facilitate their understanding of technology integration. These experiences can significantly contribute to the development of future teachers' confidence in integrating technology into their instructional practices. Abbitt and Klett (2007) performed a study to examine the various elements that impact the self-efficacy of pre-service teachers in regards to the integration of technology, as well as their attitudes towards integrating technology into their future positions as educators. The results of their study demonstrated that the level to which individuals consider computer technology as familiar significantly influenced their views in their own ability to integrate technology into their practices. One of the implications resulting

from their study refers to the necessity of implementing a pre-service education course that specifically addresses matters concerning the integration of technology. In a related study, Niederhauser and Perkmen (2010) conducted a study examining the self-efficacy of teachers in relation to the integration and utilization of technology, as well as their expectations on the outcomes of integrating technology into their teaching practices. The research findings indicate that teachers need to develop intrinsic motivation in order to utilize technology for the purpose of enhancing student learning. Furthermore, a significant finding emerged about the balance between the self-efficacy levels of pre-service teachers and their outcome expectations, depending upon their development of novel pedagogical competencies. Addressing difficulties related to outcome expectations assists pre-service teachers in fostering the self-motivational drive and self-efficacy necessary for using technology into their instructional practices. Additionally, the study conducted by Al-Awidi and Alghazo (2012) researched the impact of pre-service teachers' teaching experiences on their self-efficacy in the use of technology. The researchers discovered that teaching experiences, particularly those involving mastery and parallel experiences, had a significant impact on the participants' self-efficacy levels in relation to technology integration. The self-efficacy in technology integration of pre-service teachers is enhanced via their teaching experiences, as they are able to apply the knowledge they have received during their teacher education.

Within the techno-pedagogical framework, the self-efficacy of EFL instructors is defined as their confidence in integrating technology into their teaching methodologies. Factors such as prior experience and access to technology can affect the levels of techno-pedagogy efficacy (Kim, 2019). Although there is a lack of study on the techno-pedagogical self-efficacy of EFL instructors, understanding their views is crucial to fostering their professional development and improving pedagogical practices. In addition, the level of techno-pedagogical efficacy, signifying the competence of EFL instructors in integrating technology into their teaching methodologies, can vary considerably across individuals. Understanding the levels of techno-pedagogical efficacy among EFL instructors is therefore critical in order to identify areas for growth and give related professional development opportunities (Lee, 2021). In terms of differences in techno-pedagogy efficacy among EFL instructors with different educational backgrounds, a number of studies have found that there are significant differences.

According to Ansyari (2015), a comprehensive professional development program should include key elements such as the TPACK framework as a foundation of knowledge, a design approach that encourages engaged participation, authentic learning experiences in a

collaborative setting, curriculum consistency, an intensive program schedule, and guidance, support, and feedback. For his research in 2015, Ansyari investigated how to build and assess a program to enable EFL teachers use basic technology. The research explored into how the parts of this program help English teachers improve their Technological Pedagogical Content Knowledge (TPACK). According to the study's data, people who took part in the professional development program said they had good experiences. The participants themselves said that the professional development events resulted in a rise in TPACK. In summary, the findings from data triangulation indicate that the professional development program focused on technology integration has a positive impact on the English lecturers' Technological Pedagogical Content Knowledge (TAPCK). Another study done by Absari et al., (2020) examined the factors affected teachers' TPACK. The study found that PK improves TPACK more than TK and CK. Additionally, TK, TPK, PK, and TPK positively affect TPK and TPACK. This study also revealed teachers understood and used varied strategies for instruction in class. But, in TK and TCK, the teachers have not used it maximally. In TK, the age factor affects someone in gaining knowledge of technology. Individuals prefer to learn new technology less as they get older.

Building upon the importance of understanding teachers' views and implementation of TPACK literacy, Drajiati, Tan, Haryati, Rochsantiningih, and Zainnuri (2018) conducted a significant study with the objective of investigating the perspective and implementation of teachers in both pre-service and in-service about TPACK literacy. The results of the study unveiled the instructor demographics in relation to their TPACK literacy. A comprehensive examination of the relevant scholarly works reveals that several research studies have been undertaken on the topic of TPACK and its connection with professional development. These studies include the works of Allan, Erickson, Brookhouse, and Johnson (2010), Bustamante (2019), Harris and Hofer (2017), Koh, Chai, and Lim (2017), and Ritter (2012). The aforementioned studies collectively indicate a lack of research related to the TPACK of both novice and experienced English instructors, as well as their professional development in this field.

### **Related Studies on Technological Pedagogical Content Knowledge in Turkish Context**

In the Turkish context, an examination of the existing literature indicates a significant amount of research focused on teachers' attitudes towards technology integration, in addition to studies investigating the Technological Pedagogical Content Knowledge (TPACK) of both in-service and pre-service teachers.

Akkoyunlu and Kurbanoglu (2003) examined the correlation between the perceived self-efficacy of pre-service teachers in computer skills and their perceived self-efficacy in information literacy. The research findings unveiled a noteworthy relationship between these two variables, in which the significance of this connection varied across different time periods. Furthermore, certain studies (Gunduz & Odabasi, 2004) have emphasized the significance of technology courses in teacher education for enhancing the self-efficacy of pre-service teachers in integrating technology. Moreover, Tezci (2009) conducted an analysis on the impact of teachers on the utilization of information and communication technology (ICT) in the field of education. The study findings indicated that the adoption of ICT by instructors in Turkey is relatively low, mostly covering the utilization of internet resources, email communication, word processing applications, and a limited selection of instructional compact discs. Educators who have had earlier experience and possess a deeper understanding, along with a positive mindset, are more inclined to employ information and communication technologies (ICT). In their research, Demiralay and Karadeniz (2010) examined the impact of information and communication technology (ICT) on pre-service elementary teachers' perceived literacy self-efficacy. As revealed by the results of their research, pre-service teachers' perceived self-efficacy in literacy was significantly impacted by a number of variables, including their computer competency and knowledge, the frequency with which they used computers and the internet, and the availability of access to these technologies. Other studies (Demir & Bozkurt, 2011; Arslan, 2012) have highlighted the importance of spending time using technology and having positive experiences with technology in increasing the self-efficacy of pre-service teachers in technology integration.

In addition, Unal (2013) undertook a research aimed at exploring the relationship between the techno-pedagogical proficiency of pre-service educators and their perspectives on self-efficacy concerning the use of technology. The results of the study indicated not only a statistically significant relation between the participants' views on self-efficacy and their techno-pedagogical competencies but also suggested that there is no significant variation observed with regards to the institution's variable. However, there are significant disparities among pre-service educators in terms of their views on self-efficacy in integrating technology into their instructional methods, which could be attributed to factors such as socio-economic position and gender. The studies primarily indicate comparable results, as seen in the research conducted by Çelik and Yeşilyurt (2013), which examines attitudes towards technology, perceived computer self-efficacy, and computer anxiety as factors influencing the effectiveness

of computer-assisted education. In a supplementary study, Keser, Karaođlan-Yılmaz, and Yılmaz (2015) tried to explore the views of pre-service educators on their self-efficacy in integrating technology and their levels of techno-pedagogical capacity. The findings of the study revealed that the participants receiving teacher training showed a significant level of competence in Technological Pedagogical Content Knowledge (TPACK) and held a positive perception of their own capacity to use technology into their teaching practices. Furthermore, the findings of the research demonstrated a significant difference in the perspectives of pre-service educators on their self-efficacy in the integration of technology, depending upon their grade levels. Nevertheless, there was no statistically significant difference identified in relation to gender among the individuals. In a similar vein, the study conducted by Özel and Arıkan (2015) revealed that instructors of English admitted their utilization of Web 2.0 resources, specifically blogs, podcasts, wikis, and social networking platforms, inside their personal contexts. Nevertheless, despite their belief that these tools should be employed as educational aids in their classrooms, a significant majority of instructors said that they were not effectively utilized within their teaching contexts.

Turgut (2017) conducted a study to investigate the views of instructors about Technological Pedagogical Content Knowledge (TPACK) within the domain of ELT. The research primarily examined programs designed for pre-service, in-service, and teacher-candidates. The primary objective of this study was to analyze and contrast the levels of TPACK among three distinct groups: teacher-candidates, pre-service EFL teachers, and in-service EFL teachers in Turkey. The study of both quantitative and qualitative data revealed significant differences among the variables under study. An in-depth review of the relevant studies suggests that the views of self-efficacy play a significant role in the utilization and integration of technology among pre-service teachers. Moreover, a study conducted by Bostancıođlu and Handley (2018) involved the development and validation of a questionnaire aimed at assessing the “TotalPACKage” (TPACK) specifically in the context of English as a Foreign Language (EFL). The findings of this study provided support for English language teacher education approaches that aim to integrate technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) rather than introducing them as separate entities. These approaches also emphasize the utilization of emerging and conventional technologies to represent language and create opportunities for communication, which are recognized as effective means to foster language acquisition. The study conducted by Isler and Yıldırım (2018) sought to investigate the perspectives of pre-service EFL instructors about their TPACK. Researchers found that almost all of the participants considered themselves to be proficient

technology users who knew how to integrate technology into language learning and teaching environments. With regards to the integration of technology, the research findings establish an understanding among the participants concerning numerous advantages associated with the integration of technology into English language instruction. The participants' perspectives suggested that integrating technology enhances individualized learning and improves engagement, and interactivity. In an attempt to explore the influence of autonomous learning tendencies on the self-efficacy beliefs of pre-service teachers in relation to technology integration, Bakac (2018) completed a study that involved examining the views of these individuals. The findings of the study suggest that the autonomous learning tendencies showed by pre-service teachers are of the highest significance in determining their self-efficacy beliefs. A study conducted by Baş and Şentürk (2018) found that Turkish in-service teachers have moderate TPACK perceptions across various sub-dimensions, including TK ( $M = 3.26$ ,  $SD = 11.65$ ), PK ( $M = 3.09$ ,  $SD = 5.97$ ), CK ( $M = 3.76$ ,  $SD = 2.29$ ), TPK ( $M = 3.03$ ,  $SD = 3.10$ ), PCK ( $M = 3.27$ ,  $SD = 3.01$ ), and TPACK ( $M = 3.35$ ,  $SD = 3.02$ ). However, they have low levels in the TCK sub-dimension. There are significant differences between male and female teachers, occupational experience, and educational level. Postgraduate education in-service teachers have higher scores in all TPACK sub-dimensions. In addition, a study done by Birisci and Kul (2019) sought to explore the levels of techno-pedagogical competence displayed by teacher candidates enrolled in a pedagogical formation education program, and its correlation with their views on self-efficacy in integrating technology. The study's findings unveiled that the participants showed a higher degree of self-efficacy beliefs with regard to the integration of technology. This positive relationship was found to have a beneficial impact on their competence in techno-pedagogy. According to a study conducted by Koyuncuoğlu (2021), graduate students' technological knowledge and TPACK competence are moderate, with low levels of technological knowledge among female students and male participants. Doctoral students' perceptions of TPACK competence vary depending on their field and level of education. The higher education system plays a pivotal role in producing skilled professionals for the contemporary information society by placing significant emphasis on the implementation of interactive pedagogical approaches and modern technology. By focusing on TPACK at the university level, the study makes society better by getting more individuals involved in education interested in TPACK skills. In the study by Koyuncuoğlu (2021), the answers to the TPACK scale items were studied by calculating arithmetic mean values of the answers. A criterion for interpreting the calculated arithmetic mean was established. This criterion was established using the formula:  $\text{Criterion} = A - B/5$  (A- 5 points for Always choice,

B- 1 point for Never option, 5- Number of options) =  $5 - 1/5=0.80$ . The following ranges were determined using this criterion: 1.00-1.79 1.80-2.59 Very low; 2.60-3.40 Moderate; 3.41-4.20 High; 4.21-5.00 Very high.

The primary emphasis is placed on the important role of self-efficacy in the integration of technology, particularly among pre-service and in-service teachers. Studies consistently highlight the positive correlation between exposure to technology and teachers' confidence in incorporating it into their pedagogical practices. Furthermore, literature places significant emphasis on the significance of Technological Pedagogical Content Knowledge (TPACK), claiming that its development is essential for the effective integration of technology in English Language Teaching (ELT). The findings underscore the importance of self-efficacy within the framework of technological integration. Research findings suggest that there is a notable correlation between experiences, namely those related to teaching, and the levels of self-efficacy showed by pre-service teachers. Furthermore, the results highlight the significance of implementing professional development programs that prioritize the Technological Pedagogical Content Knowledge (TPACK) framework in order to improve teachers' proficiency in technology. In the specific context of Turkey, research studies have demonstrated a range of Technological Pedagogical Content Knowledge (TPACK) among educators. Particularly, factors such as gender, professional experience, and degree of education have been found to have an influence on the level of TPACK. The research also underscores the importance of implementing thorough teacher training programs and integrating modern technologies in order to facilitate successful language acquisition. However, it is important to note that there is a significant study gap on Technological Pedagogical Content Knowledge (TPACK) among both novice and experienced English instructors. In brief, the literature highlights the significant impact that technology can have on English Language Teaching (ELT), specifically emphasizing the importance of self-efficacy and the development of Technological Pedagogical Content Knowledge (TPACK). There needs to be targeted professional development for teachers that gives them the skills they need to use technology effectively in their lessons. These programs should address the various problems that arise from factors such as educators' prior experience, gender, and access to resources. The existing corpus of scholarly works provides an adequate basis for comprehending the complex processes of integrating technology into language teaching.



## **2. METHODOLOGY**

This chapter provides a comprehensive overview of the methodological approach employed in this study, involving the research design, context and sample of the study, data collection tools, and reliability and validity of the quantitative and qualitative data analysis, procedure and ethical issues and finally data analysis. The methodological procedure was executed in alignment with the study's focus, with the aim of acquiring relevant information that may support in the desired response of research questions.

### **2.1. Research Design**

The current study utilized a research methodology that relied on a mixed-method research design, including both quantitative and qualitative approaches. This approach was employed to collect comprehensive data and gain a deeper understanding of the efficacy of techno-pedagogy among English as a Foreign Language (EFL) instructors in higher education institutions, as well as their views on techno-pedagogy. Several researchers have put a significant emphasis on the implementation of mixed-method research such as Creswell, Fraenkel, Wallen and Dörnyei. According to scholars mentioned above, Fraenkel and Wallen (2006) recommended the implementation of a mixed-method research design for a more comprehensive understanding of the relationships between dependent and independent variables. This approach involves comparing both quantitative and qualitative findings, enabling an in-depth comprehension of the subject matter for research. In line with this holistic approach, Dörnyei (2007) further emphasized the limitations of relying solely on qualitative data, noting that it may lead to overly simplistic, context-lacking, and reductionist findings. Therefore, the incorporation of quantitative data alongside qualitative data enriches research by adding depth to the quantitative results and providing substance to the overall findings (p. 45). Additionally, Creswell (2014) claims that the utilization of the quantitative data collecting method enabled the acquisition of reliable statistical data relevant to the interconnections among the variables linked to the research subject for research. In a similar vein, the utilization of qualitative data collection methods enhanced the interpretation of the quantitative data, enabling an understanding of fundamental variables and the development of coherent conclusions regarding the overall findings.

Qualitative phase in the research uses the obtained data from the interviews, which enable individuals express what they really think in support of the quantitative results. These

data show different points of view on a topic and show how complicated an issue is (Cresswell, 2012).

## 2.2. Sample of the Study

The participants of the study were English as a Foreign Language (EFL) instructors working in the English Preparatory Unit at the School of Foreign Languages, including both foundation universities and a state university. In convenience sampling, the researcher selects participants based on their convenience, such as their availability or proximity to the researcher (Creswell & Clark, 2011). This method is often used when it is difficult or time-consuming to select participants. The selection of the study group was conducted by purposeful convenient sampling methodology, which was employed to guarantee the acquisition of a sufficient number of data conveniently for addressing the research question. There were around 80 instructors both from foundation universities and a state university. However, the quantitative data collection involved a sample size of 54, whereas the qualitative data collection had a sample size of 6. The participants utilized several digital platforms such as Web 2.0 tools, learning management system (LMS) resources, in accordance with the course objectives and context-specific requirements so this helped the study to gather sufficient data for both quantitative and qualitative research.

The independent variables in this study include the demographic characteristics of participant EFL instructors, namely gender, age, educational background, and years of experience. These variables' descriptive statistics are shown in Table 1.

Table 1

*Characteristics of the EFL Instructors*

		<b>f</b>	<b>%</b>
<b>Gender</b> (n=54)	Female	39	72,2
	Male	15	27,8
<b>Age</b> (n=54)	23 – 26	5	9,3
	27 – 32	17	31,5
	33 – 40	15	27,8
	41+	17	31,5
<b>Degree</b> (n=54)	BA	18	33,3
	MA	36	66,7

<b>Experience</b> (n=54)	1 – 5	4	7,4
	6 – 10	20	37
	11 – 15	11	20,4
	16+	19	35,2

Note: f= frequency

The gender distribution among instructors of English as a Foreign Language (EFL) revealed that a significant majority identified as female (f=39), while male instructors constituted a fewer number (f=15). In relation to age, there was a notable association observed among individuals falling within the age range of 27 to 32 years (f=17). In terms of frequency, the sample of instructors aged 41 and above was the second most frequent (f=17), while the age group ranging from 23 to 26 had a smaller number of participants (f=5). In terms of educational backgrounds, the majority of instructors possessed a Master's degree (f=36) while those with a Bachelor's degree constituted a minority (f=18). Regarding teaching experience, the majority of instructors fell into the category of 6 - 10 years (f=20). In contrast, instructors with 1 - 5 years of experience were the fewest (f=4).

### 2.3. Data Collection Tools

The study utilized a combination of quantitative and qualitative data collection methods. In order to collect quantitative data, a standardized questionnaire “Technological Pedagogical Content Knowledge” framework (TPACK) developed by Baser et al. (2015) was utilized to obtain information regarding their self-efficacy of techno-pedagogy among EFL instructors regarding integrating technology into their teaching practices. The TPACK scale consists of 39 items and encompasses seven subscales (1. Technological Knowledge, 2. Content Knowledge, 3. Pedagogical Knowledge, 4. Pedagogical Content Knowledge, 5. Technological Content Knowledge, 6. Technological Pedagogical Knowledge, 7. Technological Pedagogical Content Knowledge). The scale employs a 5-point Likert scale, with participants rating each item from 1 to 5 (1. Strongly Disagree, 2. Disagree, 3. Neither Agree nor Disagree, 4. Agree, 5. Strongly Agree). This scale ranges from 39 to 195, with 39 being the lowest possible score and 195 being the highest.

To gather qualitative data, semi-structured questions within the interviews Crosswell (2006) were conducted. The interview form was developed by the researchers. The purpose of the interview questions was to gather detailed information about the instructors' knowledge and views regarding the use of technology in their teaching methods in order to support results of

quantitative data. The interviews were recorded using audio technology, then converted into written form through transcription.

#### 2.4. Reliability and Validity of the quantitative and qualitative data analysis

The validity and reliability study of the scale was conducted by Baser et al. (2015). Factor analysis was employed for the construct validity of the scale, and Cronbach's Alpha analysis was used for reliability. According to the factor analysis for seven subscales, the reliability coefficients for the TPACK factors ranged from .81 to .92, which indicated a high level of internal consistence. Freankel and Wallen (1996) state that this score is acceptable ( $\alpha \geq .7$ ). In order to maintain the validity and reliability of the TPACK, Cronbach alpha was calculated as part of this study. It is found out that the Cronbach alpha value of the scale was .86.

In qualitative studies, there are various perspectives on the importance, definition, conditions, and principles related to the validity and reliability (Creswell, 2013). Long and Johnson (2000) emphasize the importance of using diverse methods in data collection to ensure reliability and external validity. Patton (2002) highlights the significance of the thesis committee in expert review, where the thesis advisor examines coding and themes in the data analysis process, providing opinions and suggestions. This process ensures the quality of the data analysis and supports external validity. Accordingly, in this study, the thesis advisor examined coding and themes in the data analysis process, provided opinions and suggestions, and necessary adjustments were made.

Table 2 shows both the Cronbach's Alpha values of the TPACK developed and calculated by Baser et al. (2015) and the Cronbach's Alpha values of the TPACK in current study.

Table 2

*Cronbach Alpha for TPACK*

Subscale	Cronbach's Alpha (Baser et al, 2015)	Cronbach's Alpha Current Study
Technological Knowledge	.89	.84
Content Knowledge	.88	.88
Pedagogical Knowledge	.92	.85
Pedagogical Content Knowledge	.91	.87
Technological Content Knowledge	.81	.83

Technological Pedagogical Knowledge	.91	.81
Technological Pedagogical Content Knowledge	.86	.82

## 2.5. Procedure and Ethical Issue

Throughout this thesis study, ethical considerations were appropriately recognized and addressed. Before conducting the study, the necessary authorization was obtained from the Çag University Scientific Research and Publication Ethics Committee within the Institute of Social Sciences. The required research approvals were obtained from the Rectorate of Çag University, the Rectorate of Adana Alparslan Türkeş Science and Technology University, and the Rectorate of Toros University. The study took place in the 2022–2023 academic year after obtaining all required permissions in advance. Fifty-four English as a Foreign Language instructors completed the online questionnaire form. The data transferred to the SPSS software for statistical analysis. In addition to the steps already stated, the six people who were interviewed gave their written and verbal permission before the interview began. Participants who took part were also told that their answers would be kept secret and only used for study purposes.

## 2.6. Data Analysis

The analysis of the TPACK data was conducted utilizing the IBM Statistical Package for the Social Sciences (SPSS). Descriptive and inferential statistics were employed. The differences between TPACK (dependent variables) and the independent variables were investigated after TPACK were measured.

In advance of doing an analysis of the quantitative data obtained from the Technological Pedagogical Content Knowledge (TPACK) scale, the researcher conducted an evaluation of the basic presumptions of normality in the research data. The use of the Kolmogorov-Smirnov Test is widely accepted for assessing the normality of data when the sample size above 50. Given that this study involved 54 individuals, the Kolmogorov-Smirnov test was determined to be more suitable for checking the normality of the data. The results of the analysis indicate that the distribution of sample sums and means differ from normality across the independent variables. The results of the normality test are shown in table 3.

Table 3  
*Results of Normality Test*

<b>Kolmogorov-Smirnov</b>			
	<b>Statistic</b>	<b>df</b>	<b>p</b>
<b>TPACK</b>	.161	54	.001

\*  $p \leq 0.05$

As shown in Table 4, descriptive statistics were applied to investigate participants' level of Technological Pedagogical Content Knowledge (TPACK) for the first research question. As for the second research question, Mann Whitney-U was used, which explores the differences between two independent variables regarding their gender and educational background. Then, Kruskal-Wallis-H was utilized, which helps explore the differences regarding the instructors' age and years of experience in the field of ELT. As Kruskal-Wallis test revealed a significant difference in the levels of Technological Pedagogical Content Knowledge (TPACK) across instructors, based on their teaching experiences, Post Hoc process, which is a technique for managing the familywise error rate in numerous comparisons, was applied to explore the differences among experience groups of foreign language instructors, with regards to their teaching experiences.

The purpose of qualitative data analysis is to carefully examine and contextualize data by organizing it into relevant components in order to address the research questions of the study (Merriam, 2009). In this respect, as for the third research question content analysis method was used for the responses to the interview questions. The interview was firstly transcribed verbatim and content analysis was promptly proceeded by the researcher regarding the third research question. The interview transcript was subsequently provided to another coder for an independent content analysis. The two coders collaborated to discuss and reach a consensus on theoretical concepts regarding codes, categories, sub-categories and data during the analysis. The results were organized according to the categories and sub-categories that were set up for the content analysis. According to Krippendorff (2004), content analysis is a method of research that seeks to reach valid and replicable inferences about the contexts in which texts or other significant material is utilized (p. 18).

Table 4

*Data Collection and Data Analysis Plan for Each Research Question*

<b>Research Questions</b>	<b>Data Collection Tools</b>	<b>Data Analysis</b>
1. What are the levels of EFL instructors' techno pedagogy efficacy?	TPACK Survey	Descriptive Statistics
2. Is there a significant difference among the instructors in terms of their genders regarding their techno pedagogy efficacy?	TPACK Survey	Mann Whitney U Test
a. in terms of their BA and MA degrees	TPACK Survey	Mann Whitney U Test
b. in terms of their ages	TPACK Survey	Kruskal-Wallis H
c. in terms of their experience	TPACK Survey	Kruskal-Wallis H and Post Hoc
3. What are the views of EFL instructors in terms of their self-efficacy on techno pedagogy?	Semi-Structured Individual Interview	Content Analysis

### **3. RESULTS**

The results of the quantitative and qualitative data are presented in the current chapter. In order to analyze the data and provide responses to the research questions of the present study, statistical tests are conducted. The section starts with the presentation of demographic profiles of the participants, which is succeeded by a comprehensive review of the survey data analyzed descriptively and inferentially. Following this, the results derived from the qualitative data are displayed. This is supported by the utilization of content analysis and the incorporation of interview results as qualitative data, which aid in providing the conclusions obtained through quantitative statistical analysis.

#### **3.1. Quantitative Results of the Study**

##### **Demographic Profiles of Participants**

The table presents a summary of the demographic characteristics of 54 English as a Foreign Language (EFL) instructors who took part in this research.

As it can be seen from the table 5, the female participants constituted the majority, accounting for 72.2% (n=39), while the number of males was 15, representing 27.8% of the total. The participants are classified into age categories as follows: 23-26, 27-32, 33-40, and 41 and beyond. The instructors were primarily between the ages of 27 and 32, as well as 41 years old and above. These age groups made up 63% (n=34) of the participants. 27.8% (n=15) of the participants are within the age range of 33 – 40 years, while 9.3% (n=5) fall within the age range of 23 – 26 years. Regarding their educational background, more than two-thirds of the instructors held a master's degree (66.7%, n=36), while the remaining individuals held a bachelor's degree (33.3%, n=18). Upon analyzing the teaching experience of the teachers, it was obvious that there was a variation among the four categories. The most significant category, comprising 37.0% (n=20) of the total, consisted of those with 6-10 years of experience. This was closely followed by those with 16 or more years of experience, accounting for 35.2% (n=19) of the instructors. A lesser percentage of instructors belonged to the groups of 11-15 years of experience (20.4%, n=11) and 1-5 years of experience (7.4%, n=4) respectively.



Table 5  
*Demographic background of participant EFL instructors*

	f	%
<b>Gender (N=54)</b>		
Male	15	27.8
Female	39	72.2
<b>Age (N=54)</b>		
23 – 26	5	9.3
27 – 32	17	31.5
33 – 40	15	27.8
41+	17	31.5
<b>Degree (N=54)</b>		
BA	18	33.3
MA	36	66.7
<b>Experience of Teaching (N=54)</b>		
1 – 5 years	4	7.4
6 – 10 years	20	37.0
11 – 15 years	11	20.4
16+ years	19	35.2

### **Descriptive Statistics for Research Question 1:**

In order to answer first question “What are the levels of EFL instructors’ techno pedagogy efficacy?” Technological Pedagogical Content Knowledge Scale was used which includes seven sub-categories: Technological Knowledge, Content Knowledge, Pedagogical Knowledge, Pedagogical Content Knowledge, Technological Content Knowledge, Technological Pedagogical Knowledge and Technological Pedagogical Content Knowledge. To obtain a more comprehensive understanding of how EFL instructors perceive the efficacy of their techno-pedagogy, descriptive statistics including mean, frequency, percentage, mean, and standard deviation values were computed for the overall TPACK subcategories. The results are presented in Table 6.

As it can be seen from Table 6, the mean scores for all of the sub-categories are above 3.5, which suggests that the instructors have a moderate to high level of techno-pedagogy efficacy. However, there is some variation in the scores across the sub-categories. The highest mean score is for content knowledge ( $M=4.82$ ,  $sd=.29$ ), followed by pedagogical content knowledge ( $M=4.58$ ,  $sd=.47$ ) and pedagogical knowledge ( $M=4.36$ ,  $sd=.57$ ). The lowest mean score is for technological pedagogical content knowledge (TPACK) ( $M=3.67$ ,  $sd=1.14$ ).

These highest scores suggest that the EFL instructors have a strong understanding of teaching and learning theories and practices, as well as a deep knowledge of the subject matter they teach. Technological Knowledge (TPK) has a mean score of 3.92, indicating a moderate understanding of various technologies and their capabilities. Technological Pedagogical Knowledge (TPK) and Technological Content Knowledge (TCK) also have mean scores in the moderate range ( $M=3.94$ ,  $sd=1.09$  and  $M=3.83$ ,  $sd=1.07$  respectively). In this respect, it is seen that they are also relatively strong in their knowledge of how to use technology to support effective teaching practices. However, they could benefit from additional support in developing their technological content knowledge) and their ability to integrate technology, pedagogy, and content to create effective learning experiences (TPACK). These scores also suggest that the instructors can likely utilize technology tools for essential tasks such as lesson planning, resource creation, and communication with students. However, they may need additional support in developing their ability to use technology to teach specific EFL concepts and support effective teaching practices. While they may possess individual strengths in each domain, effectively harmonizing these components to create cohesive and impactful learning experiences requires further refinement. Overall, the table suggests that the EFL instructors have a solid foundation in TPACK. However, there is room for improvement, particularly in

the areas of technological content knowledge and technological pedagogical content knowledge.

Table 6

*Descriptive Statistics related to the levels of EFL instructors' techno-pedagogy efficacy regarding sub-categories of TPACK*

<b>TPACK (N=54)</b>		
<b>Sub-Categories</b>	<b>mean</b>	<b>sd</b>
Technological Knowledge (TK)	3.92	.97
Content Knowledge (CK)	4.82	.29
Pedagogical Knowledge (PK)	4.36	.57
Pedagogical Content Knowledge (PCK)	4.58	.47
Technological Content Knowledge (TCK)	3.83	1.07
Technological Pedagogical Knowledge (TPK)	3.94	1.09
Technological Pedagogical Content Knowledge (TPCK)	3.67	1.14

### **Instructors' Level of Techno-Pedagogy Efficacy**

When it comes to the Items under sub-categories related to TPACK Scale, mean and standard deviation of each item is provided in Table 7.

#### **Technological Knowledge (TK)**

The highest score in the Technological Knowledge (TK) domain is found in Item 3 (M=4.51, SD=0.88), indicating a notable level of expertise in technological knowledge. This item assesses the proficiency of instructors in utilizing computer devices. On the other hand, the lowest score is seen in Item 8 (M=3.03, SD=1.37), indicating a lower level of TK. This item analyzes the instructors' proficiency in utilizing collaboration tools to achieve their teaching goals.

#### **Content Knowledge (CK)**

Item 11 (M=4.92, SD=0.26) represents the highest point of Content Knowledge (CK), emphasizing a remarkable degree of knowledge in this domain. This assessment evaluates an individual's proficiency in expressing thoughts and emotions through written English. Item 13 receives the lowest score (M=4.72, SD=0.49), suggesting that the participant possesses a considerable degree of expertise in the subject matter. The measure assesses the ability of instructors to perceive scholarly articles written in the English language.

### **Pedagogical Knowledge (PK)**

The highest score in Pedagogical Knowledge (PK) is observed in Item 19 ( $M=4.53$ ,  $SD=0.57$ ), indicating an elevated level of pedagogical understanding. This item evaluates instructors' capacity to integrate knowledge acquired from professional development programs into their teaching methods. In contrast, Item 20 ( $M=4.20$ ,  $SD=0.76$ ) indicates the lowest level of PK, evaluating instructors' ability to assist students in their independent learning outside the class to promote self-regulated learning.

### **Pedagogical Content Knowledge (PCK)**

The highest point of Pedagogical Content Knowledge (PCK) is represented by Item 21 ( $M=4.75$ ,  $SD=0.43$ ), demonstrating an impressive level of proficiency in PCK. This item assesses the instructors' proficiency in handling a classroom learning environment. On the other hand, Item 24 ( $M=4.37$ ,  $SD=0.68$ ) indicates a moderate level of PCK, specifically examining instructors' ability to create curriculum activities that promote the growth of students' linguistic abilities.

### **Technological Content Knowledge (TCK)**

The highest level of Technological Content Knowledge (TCK) is shown by Item 26 ( $M=4.20$ ,  $SD=1.20$ ), indicating a significant level of TCK. This item measures instructors' ability to utilize multimedia for the communication of ideas on various topics in the English language. In contrast, Item 28 ( $M=3.48$ ,  $SD=1.20$ ) reflects a lower degree of TCK, specifically measuring instructors' ability to effectively use collaboration tools for working with foreign persons.

### **Technological Pedagogical Knowledge (TPK)**

Item 32 ( $M=4.16$ ,  $SD=1.11$ ) is the highest point of Technological Pedagogical Knowledge (TPK), indicating a reasonable level of proficiency in the intersection of technology and teaching. This item measures the effectiveness of instructors in meeting the individual requirements of students by using information technology. Item 35 ( $M=4.16$ ,  $SD=1.24$ ) indicates a reasonable level of TPK, namely in the use of multimedia to promote students' language acquisition. In contrast, Item 29 ( $M=3.72$ ,  $SD=1.23$ ) demonstrates a modest level of TPK, specifically addressing instructors' ability to manage the classroom learning environment by integrating technology.

### **Technological Pedagogical Content Knowledge (TPCK)**

The highest level of Technological Pedagogical Content Knowledge (TPCK) is seen in Item 39 ( $M=3.87$ ,  $SD=1.24$ ), indicating a moderate level of knowledge in the intersection of technology, pedagogy, and content. This item analyzes instructors' ability to enhance their

professional development by using technology tools. On the other hand, Item 36 (M=3.48, SD=1.26) highlights a lower degree of TPACK, specifically examining instructors' ability to use collaboration tools to help students in their language acquisition.

The extensive results obtained from the study of the TPACK survey indicate that EFL instructors demonstrate a modest level of efficacy in integrating technology and pedagogy. Although they demonstrate high levels of technology knowledge and content knowledge, their proficiency in technological pedagogical knowledge and technological pedagogical content knowledge is slightly lower.

Table 7

*Descriptive Statistics for EFL instructors' level of techno-pedagogy efficacy regarding the items and sub-categories in TPACK*

<b>TPACK (N = 54)</b>		
<b>Sub -Categories &amp; Items</b>	<b>mean</b>	<b>sd</b>
<b>Technological Knowledge (TK)</b>		
Item 1. I can use basic technological terms (e.g. operating system, wireless connection, virtual memory, etc.) appropriately.	4.46	.92
Item 2. I can adjust computer settings such as installing software and establishing an Internet connection.	4.29	1.07
Item 3. I can use computer peripherals such as a printer, a headphone, and a scanner.	4.51	.88
Item 4. I can troubleshoot common computer problems (e.g. printer problems, Internet connection problems, etc.) independently.	3.48	1.42
Item 5. I can use digital classroom equipment such as projectors and smart boards.	4.35	.97
Item 6. I can use Office programs (i.e. Word, PowerPoint, etc.) with a high level of proficiency.	3.98	1.07
Item 7. I can create multimedia (e.g. video, web pages, etc.) using text, pictures, sound, video, and animation.	3.24	1.55
Item 8. I can use collaboration tools (wiki, edmodo, 3D virtual environments, etc.) in accordance with my objectives.	3.03	1.37

Item 9. I can learn software that helps me complete a variety of tasks more efficiently.	3.96	1.19
<b>Content knowledge (CK)</b>		
Item 10. I can express my ideas and feelings by speaking in English.	4.90	.29
Item 11. I can express my ideas and feelings by writing in English.	4.92	.26
Item 12. I can read texts written in English with the correct pronunciation.	4.81	.39
Item 13. I can understand academic texts (article, journal, book and book chapter) written in English.	4.72	.49
Item 14. I can understand the speech of a native English speaker easily.	4.74	.44
<b>Pedagogical knowledge (PK)</b>		
Item 15. I can use teaching methods and techniques that are appropriate for a learning environment.	4.37	.78
Item 16. I can design a learning experience that is appropriate for the level of students.	4.33	.80
Item 17. I can support students' learning in accordance with their physical, mental, emotional, social, and cultural differences.	4.33	.70
Item 18. I can collaborate with school stakeholders (students, parents, teachers, etc.) to support students' learning.	4.38	.68
Item 19. I can reflect the experiences that I gain from professional development programs to my teaching process.	4.53	.57
Item 20. I can support students' out-of-class work to facilitate their self-regulated learning.	4.20	.76
<b>Pedagogical content knowledge (PCK)</b>		
Item 21. I can manage a classroom learning environment.	4.75	.43
Item 22. I can evaluate students' learning processes.	4.70	.46
Item 23. I can use appropriate teaching methods and techniques to support students in developing their language skills.	4.51	.60
Item 24. I can prepare curricular activities that develop students' language skills.	4.37	.68
Item 25. I can adapt a lesson plan in accordance with students' language skill levels.	4.57	.56
<b>Technological content knowledge (TCK)</b>		

Item 26. I can take advantage of multimedia (e.g. video, slideshow, etc.) to express my ideas about various topics in English.	4.20	1.20
Item 27. I can benefit from using technology (e.g. web conferencing and discussion forums) to contribute at a distance to multilingual communities.	3.83	1.20
Item 28. I can use collaboration tools to work collaboratively with foreign persons (e.g. Second Life, wiki, etc.).	3.48	1.20
<b>Technological pedagogical knowledge (TPK)</b>		
Item 29. I can meet students' individualized needs by using information technologies.	3.72	1.23
Item 30. I can lead students to use information technologies legally, ethically, safely, and with respect to copyrights.	3.87	1.06
Item 31. I can support students as they use technology such as virtual discussion platforms to develop their higher order thinking abilities.	3.75	1.24
Item 32. I can manage the classroom learning environment while using technology in the class.	4.16	1.11
Item 33. I can decide when technology would benefit my teaching of specific English curricular standards.	4.09	1.20
Item 34. I can design learning materials by using technology that supports students' language learning.	3.83	1.31
Item 35. I can use multimedia such as videos and websites to support students' language learning.	4.16	1.24
<b>Technological pedagogical content knowledge (TPACK)</b>		
Item 36. I can use collaboration tools (e.g. wiki, 3D virtual environments, etc.) to support students' language learning.	3.48	1.26
Item 37. I can support students as they use technology to support their development of language skills in an independent manner.	3.83	1.31
Item 38. I can use Web 2.0 tools (animation tools, digital story tools, etc.) to develop students' language skills.	3.51	1.32
Item 39. I can support my professional development by using technological tools and resources continuously to improve the language teaching process.	3.87	1.24
Total	162.37	27.01

### Inferential Statistics for Research Question 2:

To address the second research question, “*Is there a significant difference among the instructors in terms of their genders, educational degrees, ages and experience in teaching in their techno pedagogy efficacy?*” Mann-Whitney U and Kruskal Wallis tests were conducted to determine if there is a statistically significant difference in the views of EFL instructors, based on their genders, educational degrees, ages and experience in teaching in their techno-pedagogy efficacy.

Table 8

*Mann Whitney U Test Results of Instructors’ Techno-pedagogy Levels by Gender.*

Scale	Gender	N	Sum of Means	Sum of Rank	U	p
TPACK	Male	15	30.53	458.00	247.00	.37
	Female	39	26.33	1027.00		

The findings of the Mann-Whitney U test comparing the levels of techno-pedagogy efficacy between genders are presented in Table 8. It is discovered that there is no statistically significant difference in the efficacy of techno-pedagogy between male and female instructors ( $p = 0.37$ ). This indicates that instructors of both genders demonstrate equal proficiency in utilizing technology.

Table 9

*Mann Whitney U Test Results of Instructors’ Techno-pedagogy Levels by Educational Degree*

Scale	Degree	N	Sum of Means	Sum of Rank	U	p
TPACK	BA	18	25.72	463.00	292.00	.55
	MA	36	28.39	1022.00		

The results of a Mann-Whitney U test comparing the levels of techno-pedagogy efficacy between instructors with BA and MA degrees are shown in Table 9.

In this situation, the p-value of the Mann-Whitney U is above the significance limit of 0.05 ( $p = .55$ ). This indicates that there is no statistically significant difference in the efficacy of techno-pedagogy between instructors with Bachelor’s and Master’s degrees. The results



indicate that teachers with both Bachelor's and Master's degrees demonstrate similar proficiency in utilizing technology.

Table 10

*Kruskal Wallis Test Results of Instructors' Techno-pedagogy Levels by Ages*

Scale	Ages	N	Sum of Means	X <sup>2</sup>	df	p
TPACK	23 – 26	5	20.90	3.45	3	.32
	27 – 32	17	24.53			
	33 – 40	15	27.03			
	41+	17	32.82			

Table 10 provides the results of a Kruskal-Wallis test that analyzes the degrees of techno-pedagogy efficacy among instructors of different ages. According to Kruskal-Wallis test, there is no statistically significant difference in the efficacy of techno-pedagogy among instructors of different ages ( $p=0.32$ ). This indicates that the results suggest that instructors of all age groups demonstrate equal proficiency in utilizing technology.

Table 11

*Kruskal Wallis Test Results of Instructors' Techno-pedagogy Levels by Experience*

Scale	Experience	N	Sum of Means	X <sup>2</sup>	df	p
TPACK	1 – 5	4	42.50	9.613	3	.02
	6 – 10	20	23.58			
	11 – 15	11	19.95			
	16+	19	32.84			

The results of Kruskal-Wallis test comparing the efficacy levels of instructors with varying levels of teaching experience are presented in Table 11. The findings demonstrate that there are statistically significant differences in the techno-pedagogy levels among the four experience groups ( $p = .02$ ). These findings indicate that the levels of instructors' Technological Pedagogical Content Knowledge (TPACK) differ based on their teaching experience.

With a sum of means of 42.50, the group comprising instructors with 1-5 years of experience demonstrates a higher degree of techno-pedagogical proficiency in comparison to instructors with varying degrees of experience. Instructors who have had 16 or more years of experience showed a value of means (32.84), indicating a moderate level of techno-pedagogy skill among other instructors. Instructors who have been teaching for 6-10 years show a lower mean (23.58) compared to those with 16 or more years of experience. This suggests a possible decrease in techno-pedagogy levels within this specific range of experience. The group with 11-15 years of experience demonstrates the lowest mean (19.95), indicating a possible decline in Techno-pedagogy proficiency during this stage of experience.

Table 12

*Post Hoc results of Instructors' Techno-pedagogy Levels by Experience.*

	Experience (I)	Experience (J)	p
TPACK	1 – 5	6 – 10	.049
		11 – 15	.043
		16+	.606
	6 – 10	1 – 5	.049
		11 – 15	.960
		16+	.331
	11 – 15	1 – 5	.043
		6 – 10	.960
		16+	.241
	16+	1 – 5	.606
		6 – 10	.331
		11 - 15	.241

The data presented in the table 12 indicates that there is a significant difference in techno-pedagogical efficacy between instructors who have 1-5 years of teaching experience and those who have 6-10 years of experience ( $p=.049$ ). Additionally, a notable disparity exists in the level of techno-pedagogical efficacy between educators holding 1-5 years of experience and those with 11-15 years of experience ( $p=.043$ ). Specifically, the group with more years of experience exhibits a higher degree of techno-pedagogical efficacy.

### 3.2. Qualitative Results

#### Qualitative Data Results for Research Question 3:

The following section presents a comprehensive review of the results derived from the qualitative data analysis, with a particular focus on the perspectives of six EFL instructors regarding the integration of technology into their courses. The analysis utilized a content analysis methodology, where categories and sub-categories were determined from the participants' responses to the interview questions.

Table 13

*Content Analysis of Techno-Pedagogical Integration in EFL Instruction*

<b>Types of Technologies Used</b>	
<b>Sub-categories</b>	<b>Codes</b>
Online Platforms and Tools	Facilitating engagement, interaction, and resource sharing
Educational Software	Managing course content, tracking progress, and delivering personalized learning
Web 2.0 Tools	Promoting active learning, collaboration, and gamification
Smart Devices	Supporting diverse learning styles and enhancing accessibility
<b>Technology Proficiency</b>	
<b>Sub-categories</b>	<b>Codes</b>
Areas of Proficiency	Interactive whiteboards, multimedia, online resources, digital literacy
Areas of Insufficiency	Emerging technologies, technical troubleshooting, online teaching platforms
<b>Technology Integration Purposes</b>	
<b>Sub-categories</b>	<b>Codes</b>
Enhancing Student Engagement and Learning Process	Fostering interactive lessons, integrating multimedia activities, and encouraging participation, promoting learner autonomy, self-reliance

Enhancing Teaching Content	Stimulating thinking, increasing class participation and teaching practical language skills
<b>Technology Integration Confidence</b>	
<b>Sub-categories</b>	<b>Codes</b>
High	Embracing new technologies, technical competence, adapting to changing needs, and attending workshops/webinars
Moderate	Positive student outcomes, successful experiences, peer collaboration, student feedback
<b>Successful Technology Integration</b>	
<b>Sub-categories</b>	<b>Codes</b>
Gamification	Utilizing risk-and-reward gameplay, competitive activities and interactive quizzes
Online Platforms	Employing brainstorming tools and utilizing task assignment platforms
Authentic Materials	Creating flipped lessons, integrating topic-related video clips/news articles, highlighting real-world language usage, sampling paragraphs, and using group discussion prompts
App Integration	Utilizing language learning apps, and interactive dictionaries
<b>Perception of Self-Efficacy regarding Technology Integration</b>	
<b>Sub-categories</b>	<b>Codes</b>
Contribution to Continuous Development	Enhancing digital literacy, exploring new apps, and diversifying teaching materials, adapting methods, and experimenting with new tools

Positive Attitude Shift	Recognizing technology's value, staying updated with educational technology, and embracing innovation
Postgraduate Education Impact	Enhancing proficiency, harmonizing resources with schedules, and integrating technology effectively
<b>Obstacles and Challenges</b>	
<b>Sub-categories</b>	<b>Codes</b>
Lack of Sample Materials	Developing own materials, collaborating with colleagues, and utilizing online resources effectively
Abundant Online Resources	Evaluate resource relevance, curate content, and maximize resource potential
Technical Problems During Class	Prepare backup materials, utilize offline resources, and troubleshoot promptly
<b>Overcoming Issues</b>	
<b>Sub-categories</b>	<b>Codes</b>
Trying to solve by oneself	Using compact materials or converting files to reduce loading and downloading times, writing sample paragraphs and essays, removing irrelevant resources
Getting help from an expert or a colleague	Seeking guidance from training websites, building a support network with colleagues, seeking the expertise of IT, receiving guidance from colleagues on the use of technological devices
Doing research	Doing a comprehensive research on studied lesson samples, attending workshops and online courses, seeking targeted training, identifying appropriate technology

The interview comprised six EFL instructors, each with distinct backgrounds and experiences. Participant 1, a 28-year-old individual with 4 years of teaching experience,

possesses both a bachelor's and master's degree in English Language Teaching (ELT). However, he considered online conferences focused on technology integration to be unhelpful. Participant 2, a 45-year-old individual with 20 years of teaching experience and a Bachelor's degree in English Language and Literature, lacked any formal instruction in computer usage. Participant 3 is a 30-year-old individual with 7 years of teaching experience. She has obtained a bachelor's degree in English language teaching and a master's degree in English language education. Additionally, she completed a computer usage course during her undergraduate studies. Participant 4, a 43-year-old person with 20 years of teaching experience and a Bachelor's degree in American Culture and Literature, completed both a university course and in-service training specifically focused on computer usage. Participant 5 is a 44-year-old person with 17 years of professional experience. She has obtained a Bachelor of Arts degree in Translation and Interpretation, a Master of Arts degree in English Language Teaching, and is currently working towards a Doctor of Philosophy degree in the same subject. Her profound familiarity with computers began in secondary and high school, continued with computer literacy classes during their BA, and further flourished through their translator profession. Participant 6, a 51-year-old individual with 28+ years of experience and a graduate of Çukurova University ELT Department, has taken multiple courses on computer usage throughout her teaching profession. The diversified sample of participants offered invaluable experiences and points of view regarding the integration of technology in English as a Foreign Language (EFL) classes.

Table 13 provides a comprehensive overview of the different types of technology used, instructors' feelings of competence and limitations, the diverse purposes for technology integration, and the evolution of self-efficacy in this area. Additionally, it highlights the obstacles and challenges faced by instructors and the various strategies they employ to overcome them.

This analysis reveals a complex and nuanced picture of EFL instructors' views on their self-efficacy in integrating technology into their teaching practices. The identified categories and subcategories, along with their corresponding codes, provide valuable insights into various aspects of this phenomenon.

**Types of Technologies Used:** Participants mentioned various technologies they utilize, including online platforms and tools, educational software, podcasts, learning management systems, video conferencing tools, online dictionaries, Web 2.0 tools, and smart devices. These tools are perceived as facilitating engagement, interaction, resource sharing, managing course

content, tracking progress, promoting active learning, collaboration, and gamification, and supporting diverse learning styles.

*“I regularly use online platforms like Kahoot! and Quizlet to create interactive quizzes and games that help my students review vocabulary and grammar in a fun and engaging way.”*

*“I usually use the interactive whiteboards, computers and laptops, OHP’s LMS (learning Management Systems) of the books, audio and visual materials such as videos, podcasts, online sources and websites to support my students’ learning and sometimes e-books.”*

*“I try to make use of some applications such as Mentimeter or Padlet for brainstorming activities which I believe makes the lesson more interactive and fun.”*

*“...I assign certain asynchronous activities for assessment, allowing me to monitor individual student progress effectively.”*

**Technology Proficiency:** While participants reported areas of proficiency such as interactive whiteboards, multimedia, online resources, and digital literacy, they also acknowledge areas of insufficiency. These include emerging technologies, technical troubleshooting, lack of proficiency in new tools and online teaching platforms.

*“I believe I am most effective when I can enhance students’ engagement through interactive lessons that integrate various multimedia elements, such as interactive websites, videos, audios, and games.”*

*“I feel sufficient in using a built-in interactive whiteboard software in the class as I can use all of its features effectively in the classroom.”*

*“I am not very proficient in using technology in the classroom, but I’m working on improving...”*

*“... there are times when I feel genuinely inadequate in using technology, especially when faced with technical challenges that are beyond my control.”*

**Technology Integration Purposes:** Integrating technology is primarily seen by the participants as a means to enhance student engagement and learning, stimulating thinking, increasing class participation, and teaching practical language skills. Fostering interactive lessons, integrating multimedia activities, promoting learner autonomy, and enriching teaching content are key goals.

*“I use technology in the classroom to enrich teaching content and make the best of class time, activate students’ thinking and make classes more fun.”*

*“These multimedia components serve the purpose of evaluating students’ comprehension skills, listening abilities, and vocabulary knowledge.”*

*“... This approach not only aids in effective time management but also fosters learner autonomy, allowing students the opportunity to become more self-reliant in their learning process.”*

**Technology Integration Confidence:** The level of confidence varies among instructors. Those with high confidence are characterized by their willingness to embrace new technologies, technical competence, adaptability, and actively seeking professional development opportunities. Moderate confidence stems from positive student outcomes, successful experiences, peer collaboration, and student feedback.

*“My all life has always been integrated with technology more than an average human of today, so this has always been an advantage to me.”*

*“What actually increased my self-confidence in my technology integration process was not how I used it, but how effective the outcome was.”*

*“While I’m not an expert, I’m willing to learn and adapt to provide the best learning experience for my students.”*

*“I understand that I am good at technology when I collaborate with my colleagues and also get feedback from my students.”*

*“...the successful integration of technology typically results in an elevation of my self-confidence level, particularly when learners respond positively to the activities that I have designed or integrated into my classes.”*

**Successful Technology Integration:** Gamification, online platforms, authentic materials, and app integration are identified as successful strategies. Utilizing risk-and-reward gameplay, competitive activities, brainstorming tools, task assignment platforms, flipped classrooms, topic-related video clips, podcasts, and language learning apps are highlighted as effective practices for facilitating discussions and supporting student research.

*“I tried my best to create online games to practice grammar by using applications such as Kahoot and made use of some of the websites...”*

*“I not only use digital contents (e-books, recordings) but also using authentic materials such as video clips or news articles to expose students to real- world language usage and cultural aspects.”*

*“I found podcasts related to the topics we were covering. I used some videos to make the topic clear when we were studying Writing. In my Writing classes, I shared some sample paragraphs and essays on screen.”*

**Perception of Self-Efficacy regarding Technology Integration:** Participants described how their self-efficacy in integrating technology has evolved over time. Many noted



a gradual improvement through experience, training, and feedback from colleagues and students. Technology integration is perceived by the participants as contributing to continuous development, enhancing digital literacy, encouraging exploration of new tools, and diversifying teaching materials. It also appears to foster a positive attitude shift, encouraging instructors to recognize the value of technology, staying updated, and embracing innovation. Postgraduate education is seen as enhancing proficiency, harmonizing resources with schedules, and facilitating effective technology integration.

*“... I adjusted methods on changing needs and circumstances. The more flexible and adaptable I am the higher self-efficacy I have.”*

*“I think it has changed in a positive way over the years. At the beginning of my teaching career, I was quite concerned about using technology in the classroom. However, I recognized the importance of technology in modern education and decided to take small steps to improve my tech skills...”*

**Obstacles and Challenges:** Lack of sample materials, abundant online resources, and technical problems during classes are identified as significant challenges. Developing own materials, collaborating with colleagues, effectively evaluating resources, selecting and organizing content, preparing backup materials, utilizing offline resources, and troubleshooting promptly are mentioned as the methods of coping.

*“I used to encounter challenges in the selection of suitable online resources for my target audience. Initially, I experimented with numerous online sources, striving to harness their full potential.”*

*“...so I had to prepare extra materials or offline materials for backup plans.”*

*“To navigate these challenges, I established a network of support. I collaborated with colleagues, enlisted assistance from the assistant director, and sought the expertise of IT professionals to troubleshoot and resolve technical hiccups effectively.”*

**Overcoming Issues:** Instructors employ various strategies to overcome challenges, including self-reliance (using compact materials, writing sample materials, removing irrelevant resources), seeking expert help (training websites, IT support, colleagues), and engaging in continuous learning (researching, attending workshops, targeted training).

*“When I encounter technical difficulties or challenges, I try to find solutions on my own through online resources or by reaching out to colleagues for help. I also attend workshops and training sessions to improve my technical skills.”*

*“I collaborate with my colleagues to share resources, ideas, and strategies for integrating technology effectively. We also provide each other with support and encouragement as we continue to learn and grow in this area.”*

Overall, the analysis suggests that EFL instructors are generally positive about integrating technology into their teaching, recognizing its potential benefits for both themselves and their students. However, they also acknowledge the challenges they face and the need for ongoing support and professional development to further enhance their self-efficacy in this area.

## **4. DISCUSSION AND CONCLUSION**

### **Introduction**

Technology integration has become a crucial component of teaching approaches in the ever-changing field of language education. This study explores the complex correlation between English as a Foreign Language (EFL) teachers, their Technological Pedagogical Content Knowledge (TPACK) effectiveness, and the various factors influencing this competence. By analyzing many aspects such as gender, education level, age, and teaching experience, this research provides a detailed understanding of how these characteristics interact with instructors' technological and pedagogical abilities. With the help of TPACK survey, the discussion revolves not only around the preferences of instructors' technology use, their levels of techno-pedagogy efficacy, the differences among the instructors in terms of their gender, age, educational background and the experience in teaching but also focuses on unveiling the instructors' views for utilizing technology in language classrooms through in depth interview questions. The study's implications provide insights into both areas of proficiency and areas that can be enhanced, offering guidance to educators and legislators on how to enhance the integration of technology. In addition, thorough recommendations for future research support ongoing investigation and improvement of approaches that might enhance the overall efficiency of technology in English as a Foreign Language (EFL) teaching. Lastly, the synthesis of these ideas offers a comprehensive perspective and highlights the importance of continuous research in determining the future of technology-enhanced language learning.

## 4.1. Discussion

### Discussion of the First Research Question 1

The first research question of this study “*What are the levels of EFL instructors’ techno pedagogy efficacy?*” aimed to investigate the levels of EFL instructors’ Technological Pedagogical Content Knowledge (TPACK) efficacy by employing the TPACK Scale, which includes seven sub-categories: Technological Knowledge (TK), Content Knowledge (CK), Pedagogical Knowledge (PK), Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPCK). Descriptive statistics, including mean, frequency, percentage, and standard deviation values, were analyzed to gain deeper insights into instructors’ views on TPACK.

The overall findings reveal that EFL instructors exhibit a moderate to high level of techno-pedagogy efficacy across all sub-categories. The highest mean scores are for Content Knowledge, Pedagogical Content Knowledge, and Pedagogical Knowledge, suggesting a strong understanding of teaching and learning theories, deep subject matter knowledge, and effective instructional practices. Instructors with robust educational backgrounds, including advanced degrees in English language teaching are likely to possess a strong foundation in content knowledge. Ongoing professional development and training opportunities may have equipped instructors with advanced pedagogical strategies and content-specific methodologies. Instructors with extensive teaching experience are likely to have accumulated a wealth of subject-specific knowledge and pedagogical expertise. Participation in professional learning communities and collaborative teaching initiatives might expose instructors to diverse perspectives and innovative instructional approaches. Institutions that prioritize faculty development and provide resources for ongoing professional growth may contribute to instructors’ proficiency. The highest mean scores in CK, PCK, and PK likely result from a combination of factors, including educational background, professional development, teaching experience, engagement with educational research, collaborative efforts, subject matter expertise, and institutional support. These elements collectively contribute to the instructors’ strong understanding of teaching and learning theories, deep subject matter knowledge, and effective instructional practices. However, Bostancıoğlu and Handley (2018) played a pivotal role in the development and validation of a questionnaire assessing “TotalPACKage” (TPACK) specifically in the context of English as a Foreign Language (EFL). The study provided support for integrating technological knowledge, pedagogical knowledge, and content knowledge.

The current study reveals that Technological Pedagogical Content Knowledge (TPCK) exhibits the lowest mean score, suggesting that this may be an area that could benefit from enhancement. The lower mean score in Technological Pedagogical Content Knowledge (TPCK) among EFL instructors suggests that, compared to other aspects of technological and pedagogical proficiency, there may be specific challenges or areas of improvement in integrating technology, pedagogy, and content. EFL instructors might not have received sufficient training or professional development opportunities that specifically address the integration of technology, pedagogy, and content. As a result, there is a possibility that instructors struggle to integrate technology into their teaching practices in a way that enhances both pedagogy and content delivery. EFL instructors may also be more accustomed to traditional teaching methods and it could be argued that they find it challenging to adapt to newer, technology-enhanced pedagogical approaches. Integrating technology often requires a shift in teaching paradigms, and instructors may need support in making this transition. One might posit that instructors are not fully aware of the range of technologies available or do not know how to leverage these tools to enhance their teaching. It could be argued that a lack of awareness or familiarity with educational technologies could impede their ability to integrate them into their pedagogical practices. Moreover, there is a possibility that instructors are resistant to change or hesitant to adopt new technologies due to concerns about their efficacy, potential disruptions, or a fear of the unknown. Integrating technology effectively into teaching requires a deep understanding of how to align technology, pedagogy, and content. It is within the realm of possibility that instructors find it challenging to navigate this complexity, especially if they lack clear guidelines or models for effective integration. On the other hand, Baş and Şentürk (2018) explored TPACK perceptions among Turkish in-service teachers, revealing moderate TPACK perceptions and significant differences based on gender and educational level.

Further analysis of the sub-categories in this study provides a nuanced understanding of instructors' strengths and areas requiring enhancement. Examining the specific items within each sub-category sheds light on instructors' competencies and challenges. For instance, in the Technological Knowledge (TK) domain, item 3 (proficiency in utilizing computer devices) receives a high score, which might suggest a comfort level with basic technology tools, likely including personal computers, laptops, or tablets, while item 8 (proficiency in utilizing collaboration tools) score is lower, which shows that instructors may face challenges in integrating technology into their existing teaching methods and strategies, impacting their proficiency in this particular area because collaboration tools often involve more advanced

functionalities, such as setting up and managing group interactions, utilizing communication features, understanding file-sharing mechanisms, and coordinating cooperative work. It is reasonable to assume that instructors are not familiar or proficient in these specific aspects of technology use.

In Content Knowledge (CK), item 11 (proficiency in expressing thoughts and emotions through written English), soars to the highest score, showcasing the possibility of instructors' remarkable command of this crucial aspect of communication skills. This could be a result of a teaching philosophy that prioritizes effective expression of ideas and emotions in written form, aligning with the communicative aspects of language teaching. Meanwhile, item 13 (ability to perceive scholarly articles written in English) scores lower, indicating a potential area for improvement in navigating scholarly content. One could reasonably assert that instructors may not have had extensive exposure to or training in teaching students how to engage with scholarly articles, especially if their educational background or teaching experience has not emphasized research-oriented content. Similarly, a study conducted by İşler and Yıldırım (2018) found that Turkish EFL teachers scored higher on grammar and vocabulary knowledge compared to knowledge of language acquisition theories and methodologies. This reflects a similar disparity between skills like written expression and engagement with research-oriented content.

Pedagogical Knowledge (PK) reveals strengths in integrating knowledge from professional development programs, item 19 (reflecting professional development experiences in teaching). It is plausible that instructors may have a pedagogical approach that places a strong emphasis on reflective teaching practices. Instructors who actively seek and engage in professional development opportunities are more likely to reflect on their experiences which might demonstrates a commitment to continuous learning and a willingness to apply new insights to teaching practices. Instructors who recognize the value of professional development in enhancing teaching effectiveness may be more inclined to actively apply the insights gained. One may contend that instructors who embrace a philosophy of lifelong learning are more likely to view professional development as an ongoing process. This mindset may promote continuous reflection and integration of new knowledge into teaching practices. Similarly, the impact of professional development on teachers' TPACK and technology integration practices in the English language classroom by Adigwe (2017) examines the relationship between professional development and increased TPACK and technology use in EFL teaching. Additionally, TPACK development through technology-integrated professional development for language teachers by Zheng & Sun (2018) investigates the effectiveness of a blended professional development program for enhancing TPACK in EFL teachers. In the current study, the low score in item 20

(supporting student self-regulated learning out-of-class) highlights a need for improvement in assisting students in independent learning outside the class. It could be argued that instructors have limited awareness or understanding of effective self-regulated learning strategies and there is a probability that instructors who primarily employ traditional teaching approaches may not have explicitly addressed self-regulated learning in their teaching methods. Similarly, in a study, the role of technology-mediated feedback by Wang & Sun (2013) emphasizes the potential of technology-based feedback tools for supporting self-regulation in EFL contexts.

Pedagogical Content Knowledge (PCK) emphasizes proficiency in handling a classroom learning environment. This shows that the instructors who excel in classroom environment management, as emphasized in item 21(classroom environment management), might deliver subject matter content effectively, equip to address behavioral challenges and maintain discipline and adapt to the diverse needs of learners, which creates a positive and interactive atmosphere in the classroom. However, item 24 (curricular activities for language skill development) suggests room for improvement in creating curriculum activities that promote linguistic growth. This could be due to instructors not only not identifying their curricular activities sufficiently to meet the diverse needs and proficiency levels of their students, but also to their interests not effectively integrating technology into language skill development activities, such as using digital tools, multimedia, or online resources. Similarly, in a study conducted by Nilson and Sunal (2023), the authors investigated the Pedagogical Content Knowledge (PCK) of EFL instructors in Turkey. The focus of the study was on how these teachers plan curriculum activities to promote language development. The results indicated that teachers showed proficiency in generating engaging activities. However, they encountered difficulties in harmonizing these activities with specific language learning objectives and confirming that the activities fostered the development of all four language abilities (listening, speaking, reading, writing). Item 26 (utilizing multimedia for expressing ideas in English) displays strength in utilizing multimedia for communication for Technological Content Knowledge (TCK). This indicates that instructors might understand how multimedia can improve language abilities and may be skilled at using multimedia resources, such as video and slideshows, to effectively express ideas, showing a comfort with technology integration into language training. On the other hand, Item 28 (collaborating with foreign peers using tools like Second Life and Wiki) indicates a need for improvement in using collaboration tools effectively. This highlights that instructors might not have received formal training on how to use collaboration tools effectively, and technical challenges or barriers such as unfamiliarity with the tools and pedagogical concerns may hinder their utilization of these tools. It also

indicates that instructors may not fully understand the dynamics of effective collaboration. The study conducted by Yilmaz and Yalvac (2017) examined the relationship between EFL teachers' pedagogical content knowledge (PCK) and technology knowledge (TK) in relation to technology integration. The findings revealed that strong PCK positively influenced the use of multimedia tools like video and slideshows for effective communication, contrary to this current study for Item 26. The reasonable proficiency showcased in item 32 (managing the classroom learning environment with technology) and item 35 (utilizing multimedia for enhanced language learning) for Technological Pedagogical Knowledge (TPK) implies that instructors' proficiency in TPK may integrate technology to address individual student requirements, tailor instructional content through technological means, and employ digital platforms for announcements, feedback, and discussions. However, there is room for improvement in item 29 (meeting students individualized needs), indicating that instructors might not have received adequate training on personalized learning technologies, and the approach to technology integration may be instructor-centered rather than student-centered. Conversely, a study by Chai and Lim (2015) examined pre-service teachers' technology integration practices and challenges in classroom environment management. The findings revealed that participants used technology for various purposes like creating a positive learning environment, enhancing student engagement, and facilitating communication and highlight how teachers proficient in TPK use technology to create a positive and engaging learning environment. It also emphasized that strong TPK leads to teachers using technology to increase student engagement and participation in the classroom.

Examining Technological Pedagogical Content Knowledge (TPCK), item 39 (supporting professional development using technological tools and resources) reveals a moderate level of knowledge through technology tools for continuous professional development. This suggests that instructors, who may have limited exposure to a diverse range of technological tools, could face challenges in engaging extensively in continuous professional development due to time constraints. The moderate level might also indicate a potential need for further alignment between professional development activities and specific pedagogical goals. Item 36 underscores a lower proficiency in using collaboration tools for student language acquisition. This may be attributed to instructors' potential lack of familiarity with specific tools like wikis or 3D virtual environments. Furthermore, inadequate training on the effective use of collaboration tools for language acquisition might cause a lower proficiency. Technical challenges or barriers, including insufficient training and technical skills, compatibility issues with operating systems and devices, and challenges integrating with existing learning

management systems (LMS), may hinder instructors from effectively integrating collaboration tools into their teaching practices. Koh et al. (2010) discovered in a comparable study that the participants failed to differentiate between TPACK categories including technological content knowledge and technological pedagogical knowledge. Disparities in TPACK perceptions were noted based on gender; however, the impact of age and instruction level did not appear to be substantial. The research revealed that pre-service teachers held moderate confidence in their perceptions of TPACK. Furthermore, the study identified weak relationships between perceptions of TPACK and distinctions in age and gender. Additionally, another study examines secondary school teachers' Technological Pedagogical Content Knowledge (TPACK) for video-based flipped learning (VFL) (Wu et al., 2022). It found that teachers generally have confidence in their TPACK, with learner-centered and moderate teacher-centered beliefs.

### **Discussion of the Second Research Question**

The second research question of this study “*Is there a significant difference among the instructors in terms of their genders, ages, BA and MA degrees and teaching experience regarding their techno pedagogy efficacy?*” seeks to figure out whether there is a significant difference in the instructors' techno pedagogy efficacy based on their genders, ages, BA and MA degrees, and teaching experience. The Mann-Whitney U test, which evaluated the efficacy of techno-pedagogy in male and female instructors, found no significant differences. This suggests that both genders possess an equal level of expertise in integrating technology into pedagogical practices. These findings may undermine any pre-existing beliefs regarding gender-related differences in the efficacy of technology-based teaching methods within the sample group. Similarly, in 2013, Unal conducted a study to investigate the correlation between the technological and pedagogical skills of future teachers and their beliefs about their ability to effectively use technology. Significant correlation was found between pre-service educators' techno-pedagogical proficiency and their self-efficacy towards technology use. No significant variation was observed in institution variables, but socio-economic position and gender may contribute to disparities in integrating technology into instructional methods. Additionally, Keser and Karaođlan-Yılmaz's (2015) study revealed a significant difference in pre-service educators' self-efficacy in integrating technology and their techno-pedagogical capacity. Participants showed competence in TPACK and positive perception of technology use. However, no significant difference was found in gender. The Mann-Whitney U test, comparing techno-pedagogy efficacy between instructors with Bachelor's and Master's degrees in the current study, found no significant differences. Instructors with both Bachelor's and Master's



degrees demonstrate similar expertise in integrating technology into their teaching methods. There is a probability that passion and experience might be more important than degrees when it comes to technology integration. While higher education might provide skills, it could be argued that individual motivation and continual study might be more important. However, a study conducted by Baş and Şentürk (2018) found that Turkish in-service teachers have moderate TPACK perceptions across various sub-dimensions, including TK, PK, CK, TPK, PCK, and TPACK. They have low levels in the TCK sub-dimension. There are significant differences between male and female teachers, occupational experience, and educational level. In this study, the obtained results in the Kruskal-Wallis test of different age groups of instructors suggest that there are no statistically significant differences in the effectiveness of technopedagogy based on age, which indicates that educators of all ages might exhibit the same proficiency in utilizing technology for educational reasons. The findings may contradict claims regarding age-related differences in the efficacy of technology-based teaching methods among the instructors. The study underscores that the ability to integrate technology into teaching methods may not dependent on age. It is reasonable to assume that young and old, tech-savvy instructors have a secret weapon: a passion for learning motivated by curiosity and perseverance. There is a possibility that they see technology as a game, not a chore, and turn every classroom into an engaging digital journey

Moving to teaching experience, the Kruskal-Wallis test analyzes the efficacy of technopedagogy across instructors with varying degrees of teaching experience, resulting in statistically significant variations. It is worth mentioning that there is a noticeable difference in the efficacy of technology-based teaching between instructors who have been teaching for 1-5 years and those who have been teaching for 6-10 years. This suggests a clear relationship between technological and pedagogical skills at different times of one's career, namely in the early and mid-career stages. Furthermore, there is a substantial distinction between instructors who have 1-5 years of experience and those who have 11-15 years of experience. This highlights a major difference in the effectiveness of using technology in teaching, with the more experienced group showing greater proficiency. Exploring the reasons behind this, several factors may come to light. One could argue that possible factors contributing to this phenomenon include the dynamic nature of educational technology, the necessity for ongoing professional growth, and changes in teaching methods. Instructors who are in the early stages of their career may have a greater awareness of current trends and recent advancements in teaching methods, resulting in a higher level of competency in using technology for pedagogical purposes. There is a probability that early-career instructors are at the leading edge of

integrating technology into classrooms, not solely because of their recent training or youthful idealism, but as a result of a combination of factors that have led them to become creative practitioners in technology. Being digital natives, they might effortlessly navigate the digital realm and fully understand its capacity for educational purposes. Coming directly from academic experiences firmly grounded in the integration of technology, it is within the realm of possibility that these instructors possess a strong commitment to innovation and an enthusiastic willingness to explore fresh ideas. As the desire to distinguish oneself in a competitive educational environment makes technology an effective tool for displaying unique teaching methods and gaining attention, early-career instructors, unlike more experienced teachers who have established routines, might have a natural adaptability that encourages trying new things and readily accepting novel technologies.

According to the results of this study, it is not an unreasonable assumption that instructors at the midpoint of their careers may find great value in receiving customized treatments that can renew their abilities, so that they remain in harmony with the latest educational technology paradigms. It is not implausible to suggest that the rapid advancement of educational technology may be perceived by mid-career instructors as an overwhelming force, demanding significant efforts to stay current. There is also a probability that those experienced instructors in this study demonstrate an increased comprehension and tendency to integrate technology into their classes. This tendency can be linked to a variety of factors that contribute to their professional achievement and development. It is reasonable to assume that these instructors actively seek opportunities to remain up-to-date in the ever-changing world of education, acknowledging the importance of staying informed about technological advancements. Furthermore, it is possible that they are adaptable, having noticed important shifts in educational trends and recognizing the need to modify teaching methodologies to meet the increasing needs of students in a technology-driven society. Over time, these instructors might develop a greater sense of familiarity with technology, thereby decreasing any initial concerns or reluctance associated with accepting novel teaching tools while integrating technology into their teaching practices. Moreover, there is a probability that mid-career instructors benefit from exposure to a variety of professional development opportunities, including workshops, conferences, and training sessions. These opportunities may introduce them to novel teaching technologies and strategies, motivating them to implement these instruments into their classrooms. Recognizing the significance of student involvement, it is not an unreasonable assumption that those experienced instructors use technology to enhance learning, making it more interactive, dynamic, and relevant to students' lives. Additionally,

motivated by their understanding of the advantages of technology and the potential for collaboration, it is conceivable that these instructors actively participate in conferences and professional learning networks, which they consider the advantages of these for their teaching strategies. By developing their techno-pedagogical abilities, the instructors create engaging learning opportunities that not only may empower their students, but also may result in enhanced results and an increased sense of fulfillment in their teaching practice. The continuous development of new technologies and evolving teaching methods could generate feelings of inadequacy and uneasiness, potentially reducing the mid-career instructors' confidence and passion for adopting technology in the classroom. However, to unlock the full potential of mid-career instructors and address the challenges they face, tailored programs may become crucial for sustaining and improving their techno-pedagogical skills. Lastly, although institutions enhance instructors' capabilities by offering specialized resources and training, equipping them with the necessary skills and confidence for effectively using technology, it is crucial to keep in mind that each instructor possesses distinct qualities, and the use of technology should not follow a straightforward path only based on their career level. The primary objective is to create a culture that encourages continuous learning and support, allowing all educators, regardless of their level of experience with technology, to critically think about its ever-changing potential and create a technologically advanced and appealing educational environment for everyone.

The findings in this study are consistent with the wider discussion on the changing role of technology integration in education. Similarly, in other studies one of which was carried out by Al-Awidi and Alghazo (2012) examined how the teaching experiences of pre-service teachers affect their self-confidence in using technology. The researchers found that educational experiences, namely those involving mastery and parallel experiences, had a substantial influence on the participants' self-efficacy levels regarding the integration of technology. Additionally, Tezci's (2009) study on the influence of instructors on ICT implementation in education found that in Turkey, ICT usage is limited, primarily focusing on online resources, email communication, word processing software, and instructional compact discs. Educators with previous experience, understanding, and a positive attitude are more likely to use ICT. Moreover, a study by Turgut (2017) examined the views of instructors on Technological Pedagogical Content Knowledge (TPACK) in English language teaching (ELT) programs. The research analyzed the levels of TPACK among teacher-candidates, pre-service EFL teachers, and in-service EFL teachers in Turkey. The study found significant differences in variables, with self-efficacy views playing a crucial role in technology utilization and integration among pre-service teachers.

### **Discussion of the Third Research Question**

In addition to quantitative data, interview was conducted to collect qualitative data regarding the views of EFL instructors' self-efficacy as for the third research question "*What are the views of EFL instructors in terms of their self-efficacy on techno pedagogy?*"

According to the analyzed data in the current study, the instructors consistently emphasized their preference for online platforms, educational software, and Web 2.0 tools, citing a collective desire to enhance student engagement and interaction. There might be several reasons that they prefer using these technological devices. One may contend that this choice stems from the belief that these technologies create a dynamic and participatory learning environment, fostering heightened student involvement in the language learning process. There is a probability that learning management systems were also recognized by the instructors for their instrumental role in tracking students' progress, providing timely feedback, and enabling adaptive instructional strategies. Moreover, the use of technology for some of the instructors like podcasts, video conferencing tools, and online dictionaries may be based on the expectation that these tools foster active learning and interaction in the classroom, facilitating group activities and enhancing the overall learning experience. As for the instructors in the study, the combination of smart devices and a range of online applications seem required as a planned method to adapt to different learning styles among a variety of learners. Furthermore, the integration of technologies for gamification purposes might be seen by the instructors as contributing to a more enjoyable and motivating learning atmosphere, aligning with contemporary pedagogical approaches. Similarly, earlier study (Batsila & Tsihouridis, 2018; Graham, 2015; Ismail et al., 2019) has shown that using Kahoot! increases students' English learning. Kahoot! can help teachers create an ideal classroom atmosphere to boost students' academic enthusiasm and get the greatest teaching results. It enables teachers to design an appealing and individualized learning environment, maximize learning, and enhance students' experiences receiving, processing, and interacting with content. The EFL instructors involved in the study expressed a detailed view on their confidence in using technology for teaching, highlighting both areas where they were proficient and areas where they lacked competence. This thorough comprehension reveals the complex interaction between training, experience, and the changing field of educational technology, which might affect instructors' confidence in using technology for teaching. Proficiency in several areas, such as interactive whiteboards, multimedia, online resources, and digital literacy, is frequently associated with prior training, experience, or personal interest. It is plausible that prior training equips the instructors with technical skills and pedagogical knowledge, while experience builds confidence through

troubleshooting and successful integration. There is a possibility that personal interest fuels further exploration and knowledge sharing, creating a virtuous cycle of proficiency. However, there might be shortcomings in addressing developing technologies, technical problem-solving, and a lack of knowledge in utilizing new tools and online teaching platforms. The participants' concern with developing technology may be linked to the rapid rate of technical advancement, resulting in a lack of familiarity because instructors may often find themselves overloaded and struggling to keep up with the rapid emergence of new technologies. Thus, this is within the realm of possibility that instructors feel in a sense of inadequacy and a reliance on conventional teaching approaches. Insufficient technical troubleshooting skills may also result from a deficiency in formal IT training, which could leave instructors unprepared to handle technological issues on their own. Furthermore, the recognized weakness in skills with new tools and online teaching platforms may stem from insufficient opportunities for professional development, exposure, or an organized framework for remaining informed about educational innovations. From this point of view, a similar study carried out by Mishra and Koehler (2006) found a number of areas in which educators showed competency, such as the use of interactive multimedia technologies, online resources, and the integration of digital literacy abilities into their teaching. This level of digital literacy ability may be the result of individual interest, earlier teaching, or practical familiarity with these specific tools. The EFL instructors involved in this study express several reasons for using technology into their English language lessons. One could argue that participants predominantly see technology as an effective tool that can improve student engagement and facilitate the process of learning. For the instructors in this study the interactive and dynamic character of electronic tools may be seen to engage students and stimulate more interactive learning experiences. Instructors also indicate the possible objective of utilizing technology to encourage cognitive activity in students, implying that technology could function as a means to foster the development of analytical thinking and problem-solving abilities. There is a possibility that integrating technology into the classroom could enhance class engagement. Interactive technologies offer several ways for students to contribute, thus fostering a more inclusive learning environment. In addition, it could be argued that participants perceive technology as a possible accelerator for teaching practical language skills, with the expectation that it could facilitate real language usage and improve overall language competency. Instructors demonstrate a willingness to promote interactive classes and include multimedia activities, acknowledging these approaches as factors that facilitate dynamic interactions and adapt to various learning preferences. The objective of fostering learner autonomy through technology is in accordance with the notion that these tools have the potential

to enable students to assume control of their educational trajectory (Benson, 2001). Additionally, the objective of enhancing teaching content using technology demonstrates a belief in its natural capacity to offer a variety of resources, enabling teachers to improve their materials for a more comprehensive and efficient educational experience. It could be argued that the expressed opinions of the instructors provide an understanding of the complex and potentially influential function of technology integration in EFL education, highlighting its ability to improve engagement, autonomy, and overall learning. Similarly, the rapid pace of technological advancement can leave instructors feeling overwhelmed and unable to keep up, as noted by studies like Ertmer and Ottenbreit-Leftwich (2010). This can lead to a sense of inadequacy and reliance on traditional teaching methods. Moreover, lack of formal IT training can create gaps in instructors' abilities to handle technical issues independently, as indicated by research from Ertmer (2005). This can hinder effective technology integration and disrupt learning experiences.

The data about the confidence of EFL instructors in integrating technology indicates a variety of confidence levels, highlighting the various viewpoints and experiences within the field of teaching. Instructors with a strong sense of confidence show a willingness to accept and integrate novel technologies, possess proficiency in technological issues, exhibit adaptability, and actively engage in seeking possibilities for professional advancement. There is a possibility that the high level of confidence of instructors is by a willingness to embrace new ideas and actively pursue the improvement of skills. Conversely, instructors who possess a moderate level of confidence explain their self-confidence to positive student outcomes, effective experiences in integrating technology, collaborative efforts with colleagues, and important feedback from students. The moderate degree of confidence is likely based on concrete and favorable teaching experiences and this might emphasize the influence of effective technology utilization on both instructors and learners. Regarding the current study, a study by Mishra and Koehler (2006) and Baser et al., (2015) found that confident instructors had good technical skills and could solve difficulties independently. The reduced dependence on external support allowed them to deal with technical issues without affecting teaching or student learning.

The EFL instructors who participated in the research provided samples of successful technology integration in their English language instruction settings, presenting a wide variety of techniques and resources. Adoption of gamification, use of online platforms, integration of authentic information, and integrating of various apps seem all effective tactics by the instructors. As a result, this shows that educators may notice how they blend engagement, personalization, and real-world use into learning, changing it into an engaging learning

environment. Participants highlight successful strategies such as using risk-and-reward gameplay, competing in activities, brainstorming tools, and task assignment platforms. This may result from a vibrant synergy of engagement, choice, and real-world connection, igniting student agency and skill mastery. Furthermore, the use of flipped classrooms, topic-specific video clips, podcasts, and language learning software has been identified by the instructors as effective in fostering conversations and facilitating students with their studies. One of the instructors demonstrated their proficiency in integrating technology by developing online games for grammar practice using tools such as Kahoot, expressing confidence in their abilities. Another instructor highlighted the importance of including genuine resources, like as video clips and news articles, to familiarize students with realistic language usage and cultural elements. Moreover, the effective cases mentioned included the use of podcasts to enhance topic relevancy and the integration of visual aids such as videos in Writing sessions. The instructors explain their success in these cases to the engaging and interactive nature of the strategies used. Podcasts, news articles and video clips may be useful to instructors because they inject real-world relevance, create visual engagement, and generate interactive conversations, changing passive learning into dynamic learning. Furthermore, the integration of genuine resources and multimedia components aligns with participants' objectives of increasing student involvement and offering realistic language exposure. Authentic materials and multimedia are likely important to instructors because they simulate real-world language use, provide varied exposure, and encourage interactive communication, directly aligning with student goals of greater participation and authentic language experience. The teachers' adaptability, originality, and effective use of technology contribute to their overall self-efficacy in techno-pedagogy, as demonstrated by these successful practices. Regarding the current study results, authentic materials, such as news articles or video clips, should be used in ELT classes as suggested by Benson (2001). Students are exposed to real-world language use and cultural situations, which helps them improve linguistic accuracy and intercultural skills.

EFL instructors' self-efficacy in integrating technology has evolved over time, with participants recognizing an ongoing improvement due to a combination of experience, training, and feedback from colleagues and students. As per the results, the instructors perceive the integration of technology as an inspiration for continuous development, encouraging the acquisition of digital expertise, and inspiring the study of novel technologies within research. This could be due to the instructors' belief in the transformative impact of technology on pedagogical practices and educational importance. According to the participant's statement about instructors changing their strategies based on changing requirements and conditions,

there is a positive association between flexibility and increased self-efficacy. This continuous improvement in self-efficacy could be linked to the instructors' adaptable attitude. In addition, the improvement of self-efficacy might be linked to a change in mindset, where instructors recognize the importance of technology in education may keep themselves informed about progress, and readily adopt new ideas. Postgraduate education may be acknowledged by the instructors as an effective way of enhancing competency, aligning resources with timelines, and fostering successful technology integration. In general, the instructors declare that their increasing confidence in integrating technology is affected by their capacity to adapt, understand the importance of technology, engage in ongoing training, and take an active approach to enhancing their skills. Regarding the current study results, the significance of "teacher learning communities" as a source of motivation and assistance for this type of adaptable and creative mindset is pointed out by Ertmer (2005). Teachers can learn from one another's successes and failures, solve problems, and exchange best practices through professional collaboration. Ertmer (2005) further examines the vital significance of views in the process of technology integration among instructors. Acknowledging the value of technology in the realm of education, remaining updated on developments, and embracing novel concepts are all factors that contribute to the development of self-efficacy.

The study also highlighted that EFL instructors had numerous obstacles while integrating technology into their ELT courses. The impediments were a lack of sample materials, an overwhelming abundance of internet resources, and technological challenges encountered during classes. The instructors assert that these problems arise from the dynamic nature of technology, necessitating ongoing adaptation to identify appropriate online resources tailored to their target audience. From this point of view, instructors not only might be feeling that they need to actively seek out new resources, evaluate their suitability, and adapt their lesson plans accordingly but also might be feeling that they need to be proficient in navigating online platforms. Thus, they might be thinking that they could find the opportunity to identify credible sources, and troubleshoot technical issues to overcome information overload and glitches effectively. The attempt to select appropriate materials involved careful analysis using online resources, showcasing willingness to fully maximize their capabilities so instructors asserted that they adopted several ways to overcome challenges, such as developing their own educational materials, collaborating with colleagues, and proficiently analyzing the quality of resources. Furthermore, in order to find solutions to technological challenges, instructors might be aware of collaborative approach that fosters innovation and expands the pool of potential solutions that might be the reason why instructors actively sought external assistance by



communicating with other teachers, seeking the help of experts, consulting IT experts and engaging in ongoing learning. The instructors' statement regarding the solutions that are utilized due to necessity, demonstrating a creative and adaptable attitude to addressing obstacles in integrating technology corroborates this idea. The instructors' determination to enhance their self-efficacy in techno-pedagogy may be demonstrated by their resilience and dedication to professional development, despite encountering various obstacles. An effective teacher training program that integrates technology should prioritize learning methods that entail practical use of technology, establish connections with real classroom environments, and emphasize the development of reflective practices (Hubbard, 2008; Sert & Li, 2017). A study conducted by Gönen (2019) highlights the importance of reflective practice in assessing the effectiveness of technology-enhanced learning sessions. The study suggests that a thoughtful approach to integrating technology into education can help overcome obstacles and increase motivation for future activities. The study's results indicate that teachers need training to integrate technology with the results of education.

## **4.2. Conclusion**

Ultimately, this thorough analysis of the proficiency of EFL instructors in Technological Pedagogical Content Knowledge (TPACK) provides essential understanding of the complex relationship between technology, teaching methods, and subject matter in language teaching. The results of this study show that instructors have a generally noteworthy degree of efficacy in the use of technology for teaching, with noticeable strengths observed in their subject matter knowledge, ability to teach the subject matter, and overall teaching competence. Nonetheless, the specific barrier in Technological Pedagogical Content Knowledge (TPCK) emphasizes the need for specific strategies, such as specialized teaching and professional development, to increase the effective integration of technology, pedagogy, and content. The study encourages tailored professional development programs, recognizing the critical need of ongoing support, collaboration, and participation in professional learning environments. Furthermore, it challenges commonly held beliefs about gender, age, and variations in technology abilities for teaching, highlighting the importance of personal commitment, constant learning, and adaptability in deciding successful technology integration. The varied degrees of teaching experience highlight the dynamic nature of technical and pedagogical skills over an instructor's career, which in turn affects their efficacy of techno-pedagogy. These complex and detailed findings make an important contribution to the ongoing discussion on Technological

Pedagogical Content Knowledge (TPACK) in English as a Foreign Language (EFL) teaching. They provide valuable guidance for future research and actions with the goal of improving instructors' skills in using technology for teaching in a constantly evolving educational environment.

### **4.3. Implications**

This study has many implications, as it offers a detailed understanding of the efficacy of EFL instructors' Technological Pedagogical Content Knowledge (TPACK). The study reveals that there might be an acceptable level of skill in techno-pedagogy across several sub-categories. However, it also emphasizes a special issue in Technological Pedagogical Content Knowledge (TPCK). This highlights the need for focused interventions, such as specialized training and professional development opportunities, to overcome potential obstacles to successfully integrating technology, pedagogy, and content. Moreover, the study underlines the value of tailored professional development programs, stating that teachers with advanced degrees and substantial teaching experience have good expertise in their fields but require ongoing encouragement to improve their teaching skills. Furthermore, engagement and collaboration with professional learning networks may be crucial elements in order to introduce educators to a wide range of viewpoints and cutting-edge teaching methods. Additionally, the study puts into question previously held beliefs about gender, age, and education-based differences in techno-pedagogical ability. It implies that personal determination, ongoing development, and adaptability might be more important than formal qualifications in determining successful technological integration. Different levels of teaching experience indicate the dynamic nature of technical and pedagogical skills over the period of an instructor's career, which influences the efficacy of techno-pedagogy. These conclusions provide valuable contributions to the continuing discussion on Technological Pedagogical Content Knowledge (TPACK) in English as a Foreign Language (EFL) instruction. They offer guidance for future research and methods aimed at improving instructors' technological and pedagogical skills.

### **4.4. Suggestions for further Studies**

The results of this study may establish the foundation for various possibilities in future research on the integration of technology in EFL teaching. Conducting longitudinal studies in order to monitor the long-term development of EFL instructors' technological and pedagogical abilities might be a satisfying option for future research. Furthermore, the use of comparative

studies could be employed to examine differences in the implementation of technology in various language teaching environments and institutions, providing an understanding of the factors that affect these differences. Future research ought to utilize qualitative methodologies, including as interviews or focus group discussions, to better explore instructors' attitudes, opinions, and experiences with technology integration. One could argue that intervention studies might be crucial for developing and implementing specific programs that aim to improve the Technological Pedagogical Content Knowledge (TPCK) of EFL instructors. Assessing the results of these interventions may provide important information about effective methods for improving overall competency. Collaborating with EFL instructors from many countries to gain insights into the global perspective on integrating technology might strengthen our understanding of how cross-cultural factors influence the usage of technology in teaching strategies. Examining new technologies like as artificial intelligence and virtual reality, as well as analyzing the consequences of existing teacher training programs and educational regulations, may be critical domains that need exploring. Scholars could offer essential contributions to the ongoing discussion on the integration of technology in language education by studying these study criteria, as well as provide guidance for the development of appropriate techniques and regulations.

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## APPENDICES

## Appendix A. Request Form for Permission to Conduct Thesis Ethics Survey

T.C	
ÇAĞ ÜNİVERSİTESİ	
SOSYAL BİLİMLER ENSTİTÜSÜ	
TEZ / ARAŞTIRMA / ANKET / ÇALIŞMA İZİNİ / ETİK KURULU İZİNİ TALEP FORMU VE ONAY TUTANAK FORMU	
ÖĞRENCİ BİLGİLERİ	
T.C. NOSU	
ADI VE SOYADI	Mehmet Serkan Balta
ÖĞRENCİ NO	2021008019
TEL. NO.	
E - MAIL	
ADRESİ ERİ	
ANA BİLİM DALI	İngiliz Dili Eğitimi
HANGİ AŞAMADA OLDUĞU (DERS / TEZ)	Tez
İSTEKDE BULUNDUĞU DÖNEME AİT DÖNEMLİK KAYDININ YAPILIP-YAPILMADIĞI	2022 / 2023 - GÜZ / BAHAR DÖNEMİ KAYDINI YENİLEDİM.
ARAŞTIRMA/ANKET/ÇALIŞMA TALEBİ İLE İLGİLİ BİLGİLER	
TEZİN KONUSU	Yükseköğretim Kurumlarında İngilizceyi Yabancı Dil Olarak Öğreten Öğretim Elemanlarının Tekno Pedagojik Etkinliklerinin ve Tekno Pedagojiye İlişkin Görüşlerinin İncelenmesi.
TEZİN AMACI	Bu tez, İngilizceyi Yabancı Dil Olarak Öğreten (İYD) öğretim elemanlarının teknolojik pedagojik içerik bilgilerini (TPACK) ve bu bilgileri öğretim süreçlerine nasıl entegre ettiklerini incelemektedir. Bu tezin amacı, İYD öğretiminde TPACK konusundaki literatüre katkı sağlamak, eğitim politikaları ve uygulamalarına katkıda bulunmak ve İYD öğretim elemanlarının TPACK kullanımında profesyonel gelişimlerini desteklemektir. Sonuç olarak, bu proje, teknolojiyi kullanarak İYD öğrencileri için dil öğrenme fırsatlarını maksimize eden etkili öğrenme ortamlarının geliştirilmesini teşvik etmeyi amaçlamaktadır.
TEZİN TÜRKÇE ÖZETİ	Bu çalışma, İngilizceyi Yabancı Dil Olarak Öğreten (İYD) öğretim elemanlarının teknolojik pedagojik içerik bilgilerini (TPACK) nasıl kullandıklarını ve dil eğitimlerine nasıl entegre ettiklerini araştırmaktadır. Bu çalışma, İYD öğretmenleri arasındaki mevcut TPACK durumunu değerlendirmenin yanı sıra İYD kurslarında teknoloji entegrasyonu ile ilgili potansiyelleri ve sorunları belirlemeyi amaçlamaktadır. Ayrıca, İYD öğretim elemanlarının şu anda ne kadar TPACK bilgisine sahip olduklarını belirlemek, teknoloji kullanımıyla birlikte ortaya çıkan fırsatları ve zorlukları araştırmak ve İYD derslerinde teknolojinin kullanımını sınırlayabilecek faktörleri belirlemek için bu projede nicel araştırma yaklaşımlarının yanı sıra nitel araştırma yaklaşımları da kullanılacaktır.
ARAŞTIRMA YAPILACAK OLAN SEKTÖRLER/ KURUMLARIN ADLARI	Çağ Üniversitesi, Adana Alparslan Türkeş Bilim ve Teknoloji Üniversitesi, Toros Üniversitesi
İZİN ALINACAK OLAN KURUMA AİT BİLGİLER (KURUMUN ADI- ŞUBESİ/ MÜDÜRLÜĞÜ - İLİ - İLÇESİ)	Çağ Üniversitesi Yabancı Diller Yüksek Okulu Müdürlüğü Tarsus / Mersin, Adana Alparslan Türkeş Bilim ve Teknoloji Üniversitesi Yabancı Diller Yüksek Okulu Sarçam / Adana, Toros Üniversitesi Yabancı Diller Yüksek Okulu Mezitli / Mersin
YAPILMAK İSTENEN ÇALIŞMANIN İZİN ALINMAK İSTENEN KURUMUN HANGİ İLÇELERİNE/ HANGİ KURUMUNA/ HANGİ BÖLÜMÜNDE/ HANGİ ALANINA/ HANGİ KONULARDA/ HANGİ GRUBA/ KİMLERE/ NE UYGULANACAĞI GİBİ AYRINTILI BİLGİLER	Çağ Üniversitesi, Alparslan Türkeş Bilim ve Teknoloji Üniversitesi ve Toros Üniversitesinde İngilizceyi Yabancı Dil Olarak Öğreten (İYD) öğretim elemanları üzerinde hem nicel hem de nitel araştırma yapılacaktır.

UYGULANACAK OLAN ÇALIŞMAYA AIT ANKETLERİN/ ÖLÇEKLERİN BAŞLIKLARINI HANGİ ANKETLERİN - ÖLÇELERİN UYGULANACAĞI	Teknolojik Pedagojik İçerik Bilgisi (TPACK), Görüşme formu					
EKLER (ANKETLER, ÖLÇEKLER, FORMLAR, ... V.B. GİBİ EVRAKLARIN İSİMLERİYLE BİRLİKTE KAÇ ADET/SAYFA OLDUKLARINA AIT BİLGİLER İLE AYRINTILI YAZILACAKTIR)	1) ..... (.....3.....) Sayfa .....TPACK..... Ölçeği. 2) ..... (.....) Sayfa ..... Anketi. 3) ..... (.....1.....) Sayfa .....Görüşme..... Formları. 4) ..... (.....) Sayfa .....					
ÖĞRENCİNİN ADI - SOYADI: Mehmet Serkan Balta	ÖĞRENCİNİN İMZASI: ..... TARİH: 20 / 06 / 2023					
<b>TEZ/ ARAŞTIRMA/ANKET/ÇALIŞMA TALEBİ İLE İLGİLİ DEĞERLENDİRME SONUCU</b>						
1. Seçilen konu Bilim ve İş Dünyasına katkı sağlayabilecektir.						
2. Anılan konu ..... faaliyet alanı içerisine girmektedir.						
1.TEZ DANIŞMANININ ONAYI	2.TEZ DANIŞMANININ ONAYI (VARSA)	ANA BİLİM DALI BAŞKANININ ONAYI		SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRÜNÜN ONAYI		
Adı - Soyadı: Gürcan Demiroğları Unvanı: Dr. Öğr. Üyesi	Adı - Soyadı: ..... Unvanı: .....	Adı - Soyadı: Şehnaz Şahinkarakaş Unvanı: Prof. Dr.		Adı - Soyadı: Murat Koc Unvanı: Prof. Dr.		
İmzası: e-İmzalı 20.06.2023	İmzası: ..... ..... / ..... / 20....	İmzası: e-İmzalı ..... / ..... / 20.....		İmzası: e-İmzalı ..... / ..... / 20....		
<b>ETİK KURULU ASIL ÜYELERİNE AİT BİLGİLER</b>						
Adı - Soyadı: Şehnaz ŞAHINKARAKAŞ	Adı - Soyadı: Yücel ERTEKİN	Adı - Soyadı: Şirvan KALSIN	Adı - Soyadı: Mustafa BAŞARAN	Adı - Soyadı: Mustafa Tefvik ODMAN	Adı - Soyadı: Hüseyin Mahir FİSUNOĞLU	Adı - Soyadı: Jülide İNÖZÜ
Unvanı : Prof. Dr.	Unvanı : Prof. Dr.	Unvanı: Prof. Dr.	Unvanı : Prof. Dr.	Unvanı: Prof. Dr.	Unvanı : Prof. Dr.	Unvanı : Prof. Dr.
İmzası: e-İmzalı ..... / ..... / 20.....	İmzası: e-İmzalı ..... / ..... / 20.....	İmzası: e-İmzalı ... / ..... / 20.....	İmzası: e-İmzalı ..... / ..... / 20.....	İmzası: e-İmzalı ... / ..... / 20.....	İmzası: e-İmzalı ..... / ..... / 20.....	İmzası: e-İmzalı ..... / ..... / 20.....
Etik Kurulu Jüri Başkanı - Asıl Üye	Etik Kurulu Jüri Asıl Üyesi	Etik Kurulu Jüri Asıl Üyesi	Etik Kurulu Jüri Asıl Üyesi	Etik Kurulu Jüri Asıl Üyesi	Etik Kurulu Jüri Asıl Üyesi	Etik Kurulu Jüri Asıl Üyesi
ÖY BİRLİĞİ İLE	<input checked="" type="checkbox"/>	Çalışma yapılacak olan tez için uygulayacak olduğu Anketleri/Formları/Ölçekleri Çağ Üniversitesi Etik Kurulu Asıl Jüri Üyelerince İncelenmiş olup, 20 / 06 / 2023 - 20 / 10 / 2023 tarihleri arasında uygulanmak üzere gerekli izin verilmesi tarafımızca uygundur.				
ÖY ÇOKLUĞU İLE	<input type="checkbox"/>					
AÇIKLAMA: BU FORM ÖĞRENCİLER TARAFINDAN HAZIRLANDIKTAN SONRA ENSTİTÜ MÜDÜRLÜĞÜ SEKRETERLİĞİNE ONAYLAR ALINMAK ÜZERE TESLİM EDİLECEKTİR. AYRICA FORMDAKI YAZI ON İKİ PUNTO OLACAK ŞEKİLDE YAZILACAKTIR.						

## Appendix B. Consent Form for Thesis Survey Implementation on a Voluntary Basis

Tarih: 09.10.2023

ÇAĞ ÜNİVERSİTESİ  
SOSYAL BİLİMLER ENSTİTÜSÜ  
ETİK KURULU

### BİLGİLENDİRİLMİŞ ONAM FORMU

Bu formun amacı katılmanız rica edilen araştırma ile ilgili olarak sizi bilgilendirmek ve katılmanız ile ilgili izin almaktır.

Bu kapsamda "Yüksek Öğretimde Yabancı Dil Öğitmenlerinin Tekno-pedagoji Yeterliliği ve perspektifleri üzerine bir çalışma" başlıklı araştırma "Mehmet Serkan Balta" tarafından **gönüllü katılımcılarla** yürütülmektedir. Araştırma sırasında sizden alınacak bilgiler gizli tutulacak ve sadece araştırma amaçlı kullanılacaktır. Araştırma sürecinde konu ile ilgili her türlü soru ve görüşleriniz için aşağıda iletişim bilgisi bulunan araştırmacıyla görüşebilirsiniz. Bu araştırmaya **katılmama** hakkınız bulunmaktadır. Aynı zamanda çalışmaya katıldıktan sonra çalışmadan **çıkabilirsiniz**. Bu formu onaylamanız, **araştırmaya katılım için onam verdiğiniz** anlamına gelecektir.

#### Araştırmayla İlgili Bilgiler:

**Araştırmanın Amacı:** Bu anketin amacı, üniversitelerde Yabancı Diller Yüksekokullarında İngilizce Hazırlık birimlerinde çalışan öğretim elemanlarının Teknolojik Pedagojik İçerik Bilgisi (TPACK) düzeylerini değerlendirmektir.

**Araştırmanın Nedeni:** Anketin yapılma nedeni, katılımcıların öğretim yöntemlerinde teknoloji, pedagoji ve içerik entegrasyonuna ilişkin bilgi ve uygulamalarını kapsamlı bir şekilde anlamaktır.

Süresi: 20 dakika

**Araştırmanın Yürütüleceği Yer:** Çağ Üniversitesi YADYO, Toros Üniversitesi YADYO ve Alparslan Türkeş Bilim ve Teknoloji Üniversitesi YADYO.

#### Çalışmaya Katılım Onayı:

Katılmam beklenen çalışmanın amacını, nedenini, katılmam gereken süreyi ve yeri ile ilgili bilgileri okudum ve gönüllü olarak çalışma süresince üzerime düşen sorumlulukları anladım. Çalışma ile ilgili ayrıntılı açıklamalar yazılı ve sözlü olarak tarafıma sunuldu. Bu çalışma ile ilgili faydalar ve riskler ile ilgili bilgilendirildim.

Bu araştırmaya kendi isteğimle, hiçbir baskı ve zorlama olmaksızın katılmayı kabul ediyorum.

Katılımcının (Islak imzası ile\*\*)

Adı-Soyadı:

İmzası\*\*:

Araştırmacının

Adı-Soyadı: Mehmet Serkan Balta

e-posta:

İmzası:

\*\*\*Online yapılacak uygulamalarda, ıslak imza yerine, bilgilendirilmiş onam formunun anketin ilk sayfasındaki en üst bölümüne yerleştirilerek katılımcıların kabul ediyorum onay kutusunu işaretlemesinin istenilmesi gerekmektedir.



## Appendix C. Technological Pedagogical Content Knowledge Scale

Dear Participant,

You are invited to participate in a research study that aims to assess the Technological Pedagogical Content Knowledge (TPACK) of instructors working in the School of Foreign Languages in English Preparatory units at universities. The purpose of this survey is to gain insights into your knowledge and practices related to the integration of technology, pedagogy, and content in your teaching.

TPACK is a framework that recognizes the critical role of technology in educational settings and emphasizes the intersection of three key knowledge domains: Technological Knowledge (TK), Pedagogical Knowledge (PK), and Content Knowledge (CK). By examining the TPACK of instructors, we can better understand their strengths and areas where further support or training may be needed to enhance the effectiveness of technology integration.

Your participation in this survey is entirely voluntary, and all responses will be kept strictly confidential. The survey consists of 30 questions that will require you to reflect on your experiences, knowledge, and practices related to technology integration in your teaching. It is expected to take approximately 10 minutes to complete.

The scale includes some statements related to the program, and there are five options provided for each statement. Please mark the most appropriate option for you, ranging from "Strongly Disagree" to "Strongly Agree."

- 1- Strongly Disagree
- 2- Disagree
- 3- Neither Agree nor Disagree
- 4- Agree
- 5- Strongly Agree

Each option corresponds to a different level of agreement, with "Strongly Disagree" representing the lowest level of agreement and "Strongly Agree" representing the highest level of agreement.

By participating in this study, you will contribute to advancing our understanding of TPACK and its implications for teaching in English Preparatory units. The findings from this research can potentially inform the development of professional development programs and support strategies tailored to the specific needs of instructors in our context.

Please be assured that your responses will be aggregated and reported in a manner that ensures anonymity and confidentiality. No individual or identifiable information will be associated with your survey responses.

If you have any questions or concerns regarding this study or your participation, please feel free to contact \_\_\_\_\_.

Thank you for considering participation in this research. Your valuable insights and contributions are greatly appreciated.

Sincerely

---

**DEMOGRAPHIC INFORMATION****Gender**

Male

Female

**Age**

18 - 22

23 - 26

27 - 32

33 - 40

41 +

**Degree**

BA Program

MA program

**How many years of teaching experience do you have in your subject area?**

1 - 5

6 - 10

11 -15

16+

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
<b>Item No</b>	<b>Technological knowledge (TK)</b>					
1	I can use basic technological terms (e.g. operating system, wireless connection, virtual memory, etc.) appropriately.					
2	I can adjust computer settings such as installing software and establishing an Internet connection.					
3	I can use computer peripherals such as a printer, a headphone, and a scanner.					
4	I can troubleshoot common computer problems (e.g. printer problems, Internet connection problems, etc.) independently.					
5	I can use digital classroom equipment such as projectors and smart boards.					
6	I can use Office programs (i.e. Word, PowerPoint, etc.) with a high level of proficiency.					
7	I can create multimedia (e.g. video, web pages, etc.) using text, pictures, sound, video, and animation.					
8	I can use collaboration tools (wiki, edmodo, 3D virtual environments, etc.) in accordance with my objectives.					
9	I can learn software that helps me complete a variety of tasks more efficiently.					
	<b>Content knowledge (CK)</b>					
10	I can express my ideas and feelings by speaking in English.					
11	I can express my ideas and feelings by writing in English.					
12	I can read texts written in English with the correct pronunciation.					
13	I can understand academic texts (article, journal, book and book chapter) written in English.					
14	I can understand the speech of a native English speaker easily.					

Pedagogical knowledge (PK)						
15	I can use teaching methods and techniques that are appropriate for a learning environment.					
16	I can design a learning experience that is appropriate for the level of students.					
17	I can support students' learning in accordance with their physical, mental, emotional, social, and cultural differences.					
18	I can collaborate with school stakeholders (students, parents, teachers, etc.) to support students' learning.					
19	I can reflect the experiences that I gain from professional development programs to my teaching process.					

20	I can support students' out-of-class work to facilitate their self-regulated learning.					
Pedagogical content knowledge (PCK)						
21	I can manage a classroom learning environment.					
22	I can evaluate students' learning processes.					
23	I can use appropriate teaching methods and techniques to support students in developing their language skills.					
24	I can prepare curricular activities that develop students' language skills.					
25	I can adapt a lesson plan in accordance with students' language skill levels.					

Technological content knowledge (TCK)						
26	I can take advantage of multimedia (e.g. video, slideshow, etc.) to express my ideas about various topics in English.					
27	I can benefit from using technology (e.g. web conferencing and discussion forums) to contribute at a distance to multilingual communities.					
28	I can use collaboration tools to work collaboratively with foreign persons (e.g. Second Life, wiki, etc.).					
Technological pedagogical knowledge (TPK)						
29	I can meet students' individualized needs by using information technologies.					
30	I can lead students to use information technologies legally, ethically, safely, and with respect to copyrights.					

31	I can support students as they use technology such as virtual discussion platforms to develop their higher order thinking abilities.					
32	I can manage the classroom learning environment while using technology in the class.					
33	I can decide when technology would benefit my teaching of specific English curricular standards.					
34	I can design learning materials by using technology that supports students' language learning.					
35	I can use multimedia such as videos and websites to support students' language learning.					
<b>Technological pedagogical content knowledge (TPACK)</b>						
36	I can use collaboration tools (e.g. wiki, 3D virtual environments, etc.) to support students' language learning.					
37	I can support students as they use technology to support their development of language skills in an independent manner.					
38	I can use Web 2.0 tools (animation tools, digital story tools, etc.) to develop students' language skills.					
39	I can support my professional development by using technological tools and resources continuously to improve the language teaching process.					

## Appendix D. Semi structured interview questions

These interview questions are designed to gather valuable insights from EFL instructors regarding their views on self-efficacy in techno-pedagogy. The interviewees' backgrounds are assessed to establish a context for their experiences and qualifications. The questions aim to delve into their personal experiences, perceptions, and challenges related to integrating technology into English Language Teaching (ELT) classrooms.

### Interviewee Background

1. Can you give me a brief information about your age, and experience as an EFL instructor?
  
2. What is your education background? Briefly explain. How long have you been working as an EFL instructor?
  
3. Have you ever taken a course regarding computer use during your university education or teaching career?

### Interview Questions

1. What types of technologies do you commonly use in an ELT classroom setting?
  
  2. In what ways do you find yourself sufficient and insufficient when using technology in the classroom? Please explain it by giving examples.
  
  3. For what purposes do you use technology with regards to teaching English inside the classroom? Please, give some details.
  
  4. How would you describe your self-confidence level in integrating technology into your ELT courses, and could you share examples of experiences that increased your self-confidence when using technology in your classroom setting?
  
  5. Can you share specific instances where you successfully integrated technology into your ELT classes?
  
  6. In what ways has your self-efficacy in technology integration evolved over the years?
  
  7. What obstacles or challenges have you encountered when integrating technology into your ELT courses? How have you overcome them?
-

## Appendix E. Consent form for conducting interview

### INTERVIEWEES CONSENT FORM

The goal of this study is to provide information on EFL instructors' views concerning techno-pedagogy in terms of self-efficacy at higher education institutions. The study was carried out by Mehmet Serkan Balta from **Çağ** University. This consent form is a necessary form to ensure that you agree to the terms of participation in the interviews. Therefore, could you please fill out and sign this form to show that you have read and approved the following?

My name is \_\_\_\_\_. I agree to participate in the interview, which will be conducted in the School of Foreign Languages and should take around half an hour. My participation in this research is voluntary, and I understand that I have the right to cancel or end the interview at any moment. I am aware of the goal of the study and the reason I am taking part in the interview process. I agree to the audio recording of the interview. I consent to the researcher's use of the interview data for research. I understand that my identity will remain anonymous in any report on the results of this interview. I am informed that if I have any inquiries concerning the study, I can contact the researcher at any time.

**Date:**

**Signature of the interviewee:**

|

**Signature of the researcher:**

## Appendix F. Request for thesis ethics permission from the Directorate of the Çağ University Social Sciences Institute



T.C.  
ÇAĞ ÜNİVERSİTESİ  
Sosyal Bilimler Enstitüsü

Sayı : E-23867972-050.01.04-2300006182  
Konu : Bilimsel Araştırma ve Yayın Etiği  
Kurulduğu Kararı Alınması Hk.

21.06.2023

REKTÖRLÜK MAKAMINA

**İlgi:** Rektörlük Makamının 09.03.2021 tarih ve E-81570533-050.01.01-2100001828 sayılı Bilimsel Araştırma ve Yayın Etiği Kurulu konulu yazısı.

İlgi tarihli yazınız kapsamında Üniversitemiz Sosyal Bilimler Enstitüsü Tezli Yüksek Lisans Programlarında tez aşamasında kayıtlı olan **Şevval CEYHAN, Nazife Nisa OK, Mücahit GÜNAY, Mehmet Serkan Balta, Ali Deniz Görhan, Büşra Ergül, Hasan Oran, Kardelen Aynacı** isimli öğrencilerimize ait tez evraklarının "Üniversitemiz Bilimsel Araştırma ve Yayın Etiği Kurulu Onayları" alınmak üzere Ek'te sunulmuş olduğunu arz ederim.

Prof. Dr. Murat KOÇ  
Sosyal Bilimler Enstitüsü Müdürü

Ek :

- 1 - 1 adet öğrenciye ait tez evrakları dosyası.
- 2 - 3 adet öğrenciye ait tez evrakları dosyası.
- 3 - 4 adet öğrenciye ait tez evrakları dosyası.

**Appendix G. Çağ University thesis ethics permission letter**

T.C.  
ÇAĞ ÜNİVERSİTESİ  
Rektörlük

Sayı : E-81570533-044-2300006805  
Konu : Bilimsel Araştırma ve Yayın Etiği  
Kurul İzni Hk.

17.07.2023

**SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRLÜĞÜNE**

- İlgi : a) 04.07.2023 tarih ve E-23867972- 050.01.04-2300006329 sayılı yazınız.  
b) 06.07.2023 tarih ve E-23867972- 050.01.04-2300006400 sayılı yazınız.  
c) 07.07.2023 tarih ve E-23867972- 050.01.04-2300006435 sayılı yazınız.  
ç) 22.06.2023 tarih ve E-23867972- 050.01.04-2300006224 sayılı yazınız.  
d) 21.06.2023 tarih ve E-23867972- 050.01.04-2300006182 sayılı yazınız.  
e) 10.07.2023 tarih ve E-23867972- 050.01.04-2300006515 sayılı yazınız.

İlgi yazılarda söz konusu edilen **Önder Parlakyıldız, Şevval Ceyhan, Nazife Nisa Ok, Mücahit Günay, Mehmet Serkan Balta, Ali Deniz Görhan, Büşra Ergül, Hasan Oran, Kardelen Aynacı, Öykü Eşberk, Ayşenur Perçem, Metin Bolat, Betül Begüm Karadayı, Hatice Danişoğlu, Özlem Erin, İzzettin Bilgin, İbrahim Ata Can Ceren, Muhammed Batuhan Gün, Fahriye Aycan Şahin, Halil Bilsay Tezel ve Gamze Öztemir Aydoğan** isimli öğrencilerimize ait tez evrakları Bilimsel Araştırma ve Yayın Etiği Kurulunda incelenerek uygun görülmüştür.

Bilgilerinizi ve gereğini rica ederim.

Prof. Dr. Şehnaz ŞAHİNKARAKAŞ  
Rektör Yardımcısı



## Appendix H. Letter of Permission for Surveys from the Institute of Social Sciences, Çağ University



T.C.  
ÇAĞ ÜNİVERSİTESİ  
Sosyal Bilimler Enstitüsü

Sayı : E-23867972-044-2300006946  
Konu : Mehmet Serkan Balta'nın Tez  
Anket İzni Hk.

20.07.2023

### DAĞITIM YERLERİNE

İngiliz Dili Eğitimi Tezli Yüksek Lisans Programında kayıtlı **Mehmet Serkan Balta** isimli öğrencimizin, “**Yükseköğretim Kurumlarında İngilizceyi Yabancı Dil Olarak Öğreten Öğretim Elemanlarının Tekno Pedagojik Etkililiklerinin ve Tekno Pedagojiye İlişkin Görüşlerinin İncelenmesi**” konulu tez çalışması Üniversitemiz öğretim üyesi **Dr. Öğr. Üyesi Gürcan Demirogları**'nın tez danışmanlığında yürütülmektedir. Adı geçen öğrenci tez çalışmasında **Üniversitemiz Yabancı Diller Yüksekokulu'nda yabancı dil olarak İngilizceyi öğreten öğretim elemanlarını** kapsamak üzere kopyası Ek'lerde sunulan anket uygulamasını yapmayı planlamaktadır. Üniversitemiz Etik Kurulunda yer alan üyelerin onayları alınmış olup, gerekli iznin verilmesi hususunu bilgilerinize rica/arz ederim.

Prof. Dr. Murat KOÇ  
Sosyal Bilimler Enstitüsü Müdürü

Ek : 1 adet öğrenciye ait tez anket evrakları dosyası.

Dağıtım:

Gereği:  
Yabancı Diller Yüksekokulu Müdürlüğüne

Bilgi:  
Rektörlük Makamına

## Appendix I. Çağ University Thesis Survey Permission Request Letter



T.C.  
ÇAĞ ÜNİVERSİTESİ  
Sosyal Bilimler Enstitüsü

Sayı : E-23867972-044-2300006947  
Konu : Mehmet Serkan Balta'nın Tez  
Anket İzni Hk.

20.07.2023

### DAĞITIM YERLERİNE

İngiliz Dili Eğitimi Tezli Yüksek Lisans Programında kayıtlı **Mehmet Serkan Balta** isimli öğrencimizin, “**Yükseköğretim Kurumlarında İngilizceyi Yabancı Dil Olarak Öğreten Öğretim Elemanlarının Tekno Pedagojik Etkililiklerinin ve Tekno Pedagojiye İlişkin Görüşlerinin İncelenmesi**” konulu tez çalışması Üniversitemiz öğretim üyesi **Dr. Öğr. Üyesi Gürcan Demirogları**'nın danışmanlığında yürütülmektedir. Adı geçen öğrenci tez çalışmasında **Üniversiteniz Yabancı Diller Yüksekokulu'nda yabancı dil olarak İngilizceyi öğreten öğretim elemanlarını** kapsamak üzere kopyası Ek'lerde sunulan anket uygulamasını yapmayı planlamaktadır. Üniversitemiz Etik Kurulunda yer alan üyelerin onayları alınmış olup, gerekli iznin verilmesi hususunu bilgilerinize sunarım.

Prof. Dr. Şahnaz ŞAHİNKARAKAŞ  
Rektör Yardımcısı

Ek : 1 adet öğrenciye ait tez anket evrakları dosyası.

Dağıtım:

Gereği:

Adana Alparslan Türkeş Bilim ve Teknoloji Üniversitesi Rektörlüğüne  
Toros Üniversitesi Rektörlüğüne

## Appendix J. Letter of permission for thesis survey



T.C.  
TOROS ÜNİVERSİTESİ REKTÖRLÜĞÜ  
Genel Sekreterlik

Sayı : E-64399374-605.01-37186  
Konu : Tez Çalışması İzni Hk. (M.S. BALTA)

16.08.2023

**ÇAĞ ÜNİVERSİTESİ REKTÖRLÜĞÜNE**  
Adana-Mersin Karayolu Üzeri Pk:33800 Yenice-Tarsus/Mersin

İlgi : a) 20.07.2023 tarihli ve E-23867972-044-2300006947 sayılı yazınız.  
b) Yabancı Diller Yüksekokulu Müdürlüğü 14.08.2023 tarihli ve E-21532369-605.01-37028 sayılı yazısı.

İlgi (a) yazınız ile sunulan; Üniversitemiz lisansüstü öğrencisi Mehmet Serkan BALTA'nın Dr. Öğr. Üyesi Gürcan Demiroğları'nın danışmanlığında yürüttüğü "Yükseköğretim Kurumlarında İngilizceyi Yabancı Dil Olarak Öğreten Öğretim Elemanlarının Tekno Pedagojik Etkililiklerinin ve Tekno Pedagojiye İlişkin Görüşlerinin İncelenmesi" konulu tez çalışması kapsamında Üniversitemiz Yabancı Diller Yüksekokulu'nda yabancı dil olarak İngilizceyi öğreten öğretim elemanlarını kapsamak üzere anket uygulamasını yapma talebi sunulmuştur.

Söz konusu çalışma hakkında Üniversitemiz Yabancı Diller Yüksekokulu'ndan alınan ve uygun görüş bildirir ilgi (b) yazı ekte iletilmekte olup, bilgilerinizi ve gereğini rica ederim.

Prof.Dr. Ömer ARIÖZ  
Rektör

Ek: İlgi (b) yazı



T.C.  
ADANA ALPARSLAN TÜRKEŞ BİLİM VE TEKNOLOJİ ÜNİVERSİTESİ  
Elektronik Belge Yönetim Sistemi ve Evrak Hizmetleri Müdürlüğü

Sayı : E-89121770-044-67427  
Konu : Anket Uygulama İzni Hk.

26.07.2023

### YABANCI DİLLER YÜKSEKOKULU MÜDÜRLÜĞÜNE

İlgi : Çağ Üniversitesi Rektörlüğünün 20.07.2023 tarihli ve E-23867972-044-2300006947 sayılı yazısı.

Çağ Üniversitesi Rektörlüğünün alman anket çalışması ile ilgili yazı ekte gönderilmektedir. Söz konusu ankete gönüllülük esasına dayalı olarak katılım sağlanabilecektir.

Bilgilerinizi ve ilgililere duyurulması hususunda gereğini rica ederim.

Prof. Dr. Serkan TOKGÖZ  
Rektör Yardımcısı

Ek: İlgili Yazı ve Ekleri



T.C.  
ÇAĞ ÜNİVERSİTESİ  
Yabancı Diller Yüksekokulu



Sayı : E-23932836-044-2400002467  
Konu : Mehmet Serkan Balta'nın Tez  
Anket İzni Hk.

14.03.2024

#### DAĞITIM YERLERİNE

İlgi : 20.07.2023 tarihli ve E-23867972-044-2300006946 sayılı belge.

İngiliz Dili Eğitimi Tezli Yüksek Lisans Programında kayıtlı Mehmet Serkan Balta isimli öğrencinizin, "Yükseköğretim Kurumlarında İngilizceyi Yabancı Dil Olarak Öğreten Öğretim Elemanlarının Tekno Pedagojik Etkililiklerinin ve Tekno Pedagojiye İlişkin Görüşlerinin İncelenmesi" konulu tez çalışmasını Yabancı Diller Yüksekokulu'nda yabancı dil olarak İngilizceyi öğreten öğretim elemanlarını kapsayan anket uygulaması birimizce uygun görülmüş olup, 21.07.2023-09.10.2023 tarihleri arasında yapılmıştır.

Saygılarımla arz/rica ederim.

Dr. Öğr. Üyesi Semiha GÜRSOY  
Yabancı Diller Yüksek Okulu Müdürü

Dağıtım:

Gereği:  
Sosyal Bilimler Enstitüsü Müdürlüğüne

Bilgi:  
Rektörlük Makamına