HACETTEPE ÜNİVERSİTESİ
EĞİTİM BİLİMLERİ ENSTİTÜSÜ

Department of Foreign Language Education

English Language Teaching Program

EMERGENCY REMOTE TEACHING: EFL INSTRUCTORS' TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE AND SATISFACTION WITH TEACHING ONLINE

Eda TAYŞI

Ph. D. Dissertation

Ankara, 2023

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ACİL DURUM UZAKTAN ÖĞRETİMİ: İNGİLİZCE ÖĞRETİM GÖREVLİLERİNİN TEKNOLOJİK PEDAGOJİK ALAN BİLGİLERİ VE ÇEVRİMİÇİ ÖĞRETİMDEN MEMNUNİYETLERİ

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Ph. D. Dissertation

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Acceptance and Approval

To the Graduate School of Educational Sciences,

This thesis, prepared by **EDA TAYŞI** and entitled “Emergency Remote Teaching: EFL Instructors’ Technological Pedagogical Content Knowledge and Satisfaction with Teaching Online” has been approved as a thesis for the Degree of **Ph. D**. in the **Program of English Language Teaching** in the **Department of Foreign Language Education** by the members of the Examining Committee.

Chair	Doç. Dr. Senem ÜSTÜN KAYA	Signature
Member (Supervisor)	Prof. Dr. Nuray ALAGÖZLÜ	Signature
Member	Prof. Dr. Gonca YANGIN EKŞİ	Signature
Member	Dr.Öğr. Üyesi İsmail Fırat ALTAY	Signature
Member	Dr. Öğr. Üyesi Nilüfer CAN DAŞKIN	Signature

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This is to certify that thisdissertation has been approved by the aforementioned examining committee members on 05/07/2023 in accordance with the relevant articles of the Rules and Regulations of Hacettepe University Graduate School of Educational Sciences, and was accepted as a **Ph.D. Dissertation** in the **Program of English Language Teaching** by the Board of Directors of the Graduate School of Educational Sciences from ...../...../.....

Prof. Dr. İsmail Hakkı MİRİCİ

Director of Graduate School of Educational Sciences

Abstract

The present study aimed at investigating Turkish EFL instructors' perceived level of Technological Pedagogical Content Knowledge (TPACK) and satisfaction with teaching online in an emergency remote teaching context. A total of 205 instructors of English working at universities located in Turkey participated in the study. A mixed-method approach was used for data collection in which both quantitative and qualitative methods were used. Quantitative data were collected through the Online Faculty Satisfaction Survey (OFSS) and the TPACK-EFL scale. Qualitative data were gathered through semi-structured interviews with the instructors who were determined based on voluntariness. The findings showed that the general TPACK of the participants in this study was relatively high and they evaluated their CK as the highest and their TPACK as the lowest. It was also revealed that the mean scores related to non-technological knowledge domains of TPACK were significantly higher than the mean scores related to technological domains. Instructors who participated in this study were not very satisfied with teaching online in general, which stemmed mainly from student-related factors such as low motivation, participation, and attendance levels of students in online courses, lack of face-to-face contact and interaction with students, lack of technological equipment and internet connection problems. And lastly, it was found that instructors' level of TPACK could predict their satisfaction with teaching online. The findings of the present study have several important implications for language educators' TPACK, its implementation in both online and face-to-face education, and the improvement of online education practices in Turkey.

Keywords: tpack, satisfaction with teaching online, emergency remote teaching, online distance education, online language learning.

Öz

Bu çalışma, Türkiye'deki görev yapan İngilizce öğretim görevlilerinin Teknolojik Pedagojik Alan Bilgisi (TPAB) düzeylerini ve acil durum uzaktan öğretimi bağlamında çevrimiçi öğretimden memnuniyetlerini araştırmayı amaçlamıştır. Çalışmaya Türkiye'deki üniversitelerde görev yapan toplam 205 İngilizce öğretim görevlisi katılmıştır. Veri toplama için hem nicel hem de nitel yöntemlerin kullanıldığı karma yöntem yaklaşımı kullanılmıştır. Nicel veri, Çevrimiçi Fakülte Memnuniyet Anketi (OFSS) ve TPACK-EFL ölçeği ile toplanmıştır. Nitel veri ise gönüllülük esasına göre belirlenen öğretim görevlileri ile yapılan yarı yapılandırılmış görüşmeler yoluyla toplanmıştır. Bulgular, bu çalışmadaki katılımcıların genel TPAB'larının nispeten yüksek olduğunu ve alan bilgilerini en yüksek, TPAB'larını ise en düşük boyut olarak değerlendirdiklerini göstermiştir. Ayrıca, TPAB'ın teknolojik olmayan boyutlarına ilişkin ortalama puanların teknolojik boyutlara ilişkin ortalama puanlardan önemli ölçüde daha yüksek olduğu ortaya çıkmıştır. Bu çalışmaya katılan öğretim görevlilerinin genel olarak çevrimiçi ders vermekten pek memnun olmadıkları, bunun da temel olarak öğrencilerin çevrimiçi derslerdeki düşük motivasyonu, düşük katılım ve devam düzeyleri, öğrencilerle yüz yüze temas ve etkileşim eksikliği, gerekli teknolojik cihazların eksikliği ve internet bağlantısı sorunları gibi öğrencilerle ilgili faktörlerden kaynaklandığı görülmüştür. Son olarak, eğitmenlerin TPAB düzeylerinin çevrimiçi öğretimden duydukları memnuniyeti yordayabileceği bulunmuştur. Bu çalışmanın bulguları, dil eğitmenlerinin TPAB'ı, TPAB'ın hem çevrimiçi hem de yüz yüze eğitimde uygulanması ve Türkiye'deki çevrimiçi eğitim uygulamalarının iyileştirilmesi için önemli çıkarımlarda bulunmaktadır.

Anahtar sözcükler: tpab, çevrimiçi öğretimden memnuniyet, acil durum uzaktan öğretimi, çevrimiçi uzaktan eğitim, çevrimiçi dil öğrenimi.

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Symbols and Abbreviations

CK: Content Knowledge

EFL: English as Foreign Language

ERT: Emergency Remote Teaching

NUTS: Nomenclature of Territorial Units for Statistics

PCK: Pedagogical Content Knowledge

PK: Pedagogical Knowledge

TCK: Technological Content Knowledge

TK: Technological Knowledge

TPACK: Technological Pedagogical Content Knowledge

TPK: Technological Pedagogical Knowledge

Chapter 1

Introduction

In this chapter, the main problem which lays the foundation for this study is explained. In the second section, the significance and the purpose of the study are explained. In addition to these, the research questions, limitations and the assumptions of the study are presented.

Statement of the Problem

Education is one of the fields most affected by the global crisis, which is the result of the rapid spread of the covid-19 pandemic that broke out in early 2020. Face-to-face teaching was suspended in many educational institutions, from kindergartens to universities, due to the need to avoid enclosed spaces and crowds to prevent the disease from spreading. As a result of that, many countries and educational institutions had to maintain their educational practices remotely, taking advantage of the opportunities provided by information and communication technologies.

The necessity to make such a sudden and rapid transition from face-to-face to online learning environments, referred to as emergency remote teaching (ERT), was a challenging experience for educators in a variety of fields. Faculty with no previous experience of teaching online were given very little time - typically a week's preparation - to move their face-to-face courses to online (Marasi et al., 2020). In such a period when all the routines of teaching were broken on a global and local basis, how satisfied the educators were with working in a quite unfamiliar environment out of emergency would undoubtedly be very influential in the progress of the instructional process as well as in the well-being of both the educators and the students.

Instructor satisfaction with teaching online is defined as perceiving the process of teaching in the online environment to be efficient, effective and beneficial for the individual (Bolliger et al., 2014) and it is regarded as a strong predictor of the success of the any online

education programme in terms of instructors themselves, students and programme outcomes (Stickney et al. 2019). In a similar vein, The Online Learning Consortium (2021) states that quality online education is built on five pillars, one of which is faculty satisfaction.

There has been a growing interest in studying teachers' satisfaction with teaching online, especially with the significant shift towards online education in recent years. While there is a growing body of research in this area, it is fair to say that there is a need for more ongoing research in this field, in particular on a cross-institutional basis as the literature offers mainly small-scale studies that were conducted at single faculty/single institutions or in single disciplinary areas (Stickney et al., 2019).

Given the relatively recent emergence of emergency remote teaching as a response to the COVID-19 pandemic, there is still a limited amount of research specifically investigating instructors' satisfaction in this context. While emergency remote teaching has gained attention due to its widespread implementation, the focus of research has predominantly been on the immediate challenges, strategies, and outcomes rather than the specific aspect of instructor satisfaction (He & Xiao 2020; Trust & Whalen, 2020; Ontha et al.,2020; Liyanagunawardena & Williams, 2021; Talidong, 2020; Hazaea et al., 2021; Tue & Hanh, 2021; Linh et al.,2021; Turegun Çoban & Kuyumcu Vardar, 2021; Tumen Akyildiz, 2020b). Researchers have primarily focused on addressing the immediate needs and adapting to the new teaching environment, leaving the exploration of teacher satisfaction as a secondary research objective.

Language teaching, with its unique characteristics and requirements, presents specific challenges in the emergency remote teaching context. The lack of face-to-face interaction and real-time communication can pose problems for the interactive and communicative nature of language learning. However, there is a scarcity of studies that specifically delve into the satisfaction levels and experiences of language teachers during emergency remote teaching. This scarcity is even more important for the Turkish context,

which already had many unresolved issues in the field of foreign language teaching, even before the sudden shift to the ERT.

As stated earlier, during the pandemic crisis, teaching and learning practices could be maintained through information and communication technologies. At that point, therefore, it was necessary for the instructors, who were involved in the ERT process, to use the information and communication technologies effectively, in order to transmit their content knowledge to the students in pedagogically sound ways.

In a period where education maintained entirely through technological means and the effective integration of technology into instructional practices was critical, investigating Technological Pedagogical Content Knowledge (TPACK) among language instructors, might guide us towards a better account of “how teachers’ understandings of technology, pedagogy, and content can interact with one another to produce effective discipline-based teaching with educational technologies” in the online environment. (Harris et al., 2009, p.396). TPACK framework highlights the need for teachers to possess a balanced understanding of how technology, pedagogy, and content intersect in educational contexts. Therefore, it can be highly relevant and useful in the context of emergency remote teaching as it might support teachers in designing engaging online activities, assessing student learning, and thus ensuring the continuity of quality education even in unforeseen circumstances.

The relationship between language instructors' satisfaction with teaching online and their Technological Pedagogical Content Knowledge (TPACK) can be significant. When language instructors possess strong TPACK, it can positively impact their satisfaction with teaching online in several ways such as fostering student engagement, facilitating interactive language practice, providing timely feedback, catering to different learning styles, providing authentic language resources and multimedia materials, troubleshooting technical problems and so on. Although TPACK levels of foreign language teachers from different contexts have frequently been investigated to date, the literature suggests, to the

knowledge of the researcher, no specific studies that investigate the direct relationship between Technological Pedagogical Content Knowledge (TPACK) and instructor satisfaction with teaching online. Likewise, the existing accounts fails to reveal how language educators' satisfaction with teaching online enacts with their domain-specific TPACK in ERT contexts.

Aim and Significance of the Study

This dissertation aims to explore Turkish EFL instructors' perceived TPACK levels and their satisfaction with teaching online in an emergency remote teaching context. This study also attempts to reveal whether satisfaction with teaching online can be predicted by variables such as age, previous online teaching experience, and TPACK.

There are several important areas where this study makes an original contribution to literature. First, the scope of this study is the ERT context, which was a fairly new and unexplored context for both Turkey and the whole world that lacked enough evidence when this study was set out. This study provides an opportunity to gain an in-depth understanding of the multiple factors that affect language instructors' satisfaction with online teaching Looking at the ERT process from language instructors' point of view in order to identify and compensate for the problems will provide valuable insight into future online education practices, especially in Turkey. This is because every year, more and more universities from around the world begin to offer online programs. Therefore, it is an undeniable fact that online education will continue, albeit partially, even after the pandemic crisis is over.

Secondly, this study attempts to reveal language instructors' domain-specific technology integration practice by grounding it on TPACK, which is considered one and only theory-driven approach to give an account of how teachers integrate technology into instruction. Understanding TPACK levels of English instructors is important as an insight into the TPACK levels of English language teachers can be a key factor in the quality of language teaching. English teachers with higher TPACK levels have the knowledge and

skills to choose appropriate digital tools, and integrate technology effectively into the language classroom. In addition, instructors with sufficient TPACK levels can create engaging and interactive learning environments using technology tools and resources, which might lead to increased student motivation, participation, and interest in language learning. And thirdly, English instructors with robust TPACK can overcome the challenges of online and blended learning better.

This study aims to contribute to this growing area of research by exploring the relationship between language teachers' TPACK and satisfaction with teaching online. Having adequate TPACK might help English instructors use online platforms, digital tools and resources effectively with a view to create engaging and interactive online learning environments and thus ensure continuity and quality of language teaching in different learning modalities. To our knowledge, no single study exists which investigates the relationship between these two variables. Therefore, it is expected that this study makes a major contribution to literature by demonstrating the extent to which having adequate TPACK and thus being able to use information and communication technologies effectively in ERT facilitates this chaotic process.

Research Questions

The following research questions are addressed in the present study:

1. What level of overall TPACK do the instructors report having for teaching English?
    1.1 What level of knowledge do the instructors report having in each seven dimension of TPACK?
    1.2 Are there any statistically significant differences between the seven sub-dimensions of TPACK?
2. How satisfied are the instructors with teaching online overall and in terms of student-related, instructor-related, and institution-related factors?

3. To what extent can the following variables predict the instructors' satisfaction with teaching online: age, the amount of previous online teaching experience, and the level of TPACK (along with its sub-dimensions)?

Assumptions

This study has several assumptions. Firstly, it is assumed that the instructors will respond to the online surveys. The second assumption is that the instructors will volunteer to take part in the interviews, and they will be honest in their answers. In a similar vein, it is presumed that the survey items are understandable for the instructors, and they will respond to the surveys honestly.

Regarding the methodology of this study, combining quantitative and qualitative data is assumed to provide a more complete understanding of the research topic. It is also assumed that the overall validity and reliability of the findings of this study can be enhanced through the integration of quantitative and qualitative methods in the design. Finally, it is assumed that the findings of the present study will make an original contribution to the existing research in the field of TPACK, online education, online language education, and emergency remote teaching.

Limitations

Firstly, the study was conducted with a limited number of participants. This may reduce the statistical power of the survey. Secondly, the participants of this study were selected based on convenience. Participants who are easily accessible or willing to participate may not accurately represent the broader population being studied. Therefore, it is difficult to generalize the results of this study to the whole population. In addition, since convenience sampling does not use a randomized approach to selecting participants, it can be difficult to replicate the survey with the same results. And finally, convenience sampling may cause bias as volunteers may have different characteristics, motivations, or interests compared to non-volunteers.

Definitions

Technological Pedagogical Content Knowledge: the kind of teacher knowledge which emerges from the interactions between technology, pedagogy, and content, is considered as the core skill underlying effective teaching with technology.

Distance Education: various forms of study at all levels which not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises but which, nevertheless, benefit from the planning, guidance and teaching of a supporting organization.

Online Distance Education: distance education enabled by the internet that allows for greater and easier two-way communication and providing various Web 2.0 tools.

Emergency Remote Teaching: a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances.

Chapter 2

Theoretical Basis of Research and Literature Review

The purpose of this chapter is to present the theoretical framework of this study by referring to existing relevant literature. This chapter is divided into four main sections. Firstly, a brief history of distance education is presented. The second part moves on to describe online education, with a specific reference to online language education. In the third section, emergency remote teaching (ERT), its differences from online education and studies on ERT are presented. Finally, the last section provides an overview of Technological Pedagogical Content Knowledge (TPACK) framework with detailed account of the existing literature on TPACK.

Distance Education

The history of what is now called distance education dates to 19th century-vocational courses delivered by post (Casey, 2008). The starting point of these courses, also referred to as correspondence study, was to create an opportunity to study for those who cannot attend regular schools or universities due to various reasons (Lei & Gupta, 2010). Therefore, principles of access and equity of opportunity have been regarded the main motivation driving distance education field (Roberts, 1996).

What is Distance Education?

Ever since it was first put into practice, there have been various attempts to define distance education and describe the features that distinguish distance education from traditional face-to-face education. Holmberg (1995) defines distance education as in the following:

> … I would define distance education as covering various forms of study at all levels which not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises but which, nevertheless, benefit from the planning, guidance and teaching of a supporting organization. (p.2)

The two points that are mentioned in this definition are the physical distance between teachers and learners and the presence of an organization to plan, implement, and support the distance education. To contribute to the theory of distance education, Keegan (1980) analysed for widely accepted definitions of distance education and listed the main elements included in the definition of distance education as the following:

1. The separation of teacher and learner which distinguishes it from face-to-face lecturing
2. The influence of an educational organization which distinguishes it from private study.
3. The use of technical media, usually print, to unite teacher and learner and carry the educational content.
4. The provision of two-way communication so that the student may benefit from or even initiate change.
5. The possibility of occasional meetings for both didactic and socialization purposes.
6. The participation in an industrialized form of education which, if accepted, contains the genus of radical separation of distance education from other forms. (p.33)

According to Garrison and Shale (1987), however, Keegan's (1980) list of the distinguishing features of distance education is too restrictive which results in a narrow view of distance education. They based their claim on the assumption that this definition refers more to correspondence study, and it does not consider current and future changes in distance education delivery technology. Instead, they proposed three criteria to distinguish distance education from traditional modes of delivery:

1. Distance education implies that the majority of educational communication between (among) teacher and student(s) occurs non-contiguously.

2. Distance education must involve two-way communication between (among) teacher and student(s) for the purpose of facilitating and supporting the educational process.
3. Distance education uses technology to mediate the necessary two-way communication. (p.11).

These criteria, Garrison and Shale (1987) believed, reflected the information age ahead more which would be marked by the advances in information and communication technologies enabling more interactive and individualised distance education opportunities.

Distance Education from Past to Present

From 19th century when correspondence study was first practiced until today, the essence of distance education has largely maintained. However, innovations in information and communication technologies, especially the advent of the Internet in early 1990s, have significantly changed the practices of distance education and transformed it to what it is today.

Although distance education practices started at different times in different countries, there is a consensus among distance education researchers that it dates back to 19th century correspondence courses (Roberts, 1996). The history of distance education which started with correspondence courses and has now transformed into online instructional delivery systems being able to grant doctoral degrees requires a critical perspective to be understood clearly (Casey, 2008; Sumner; 2000). Therefore, Nipper's (1989) division of three generations distance education will be referred to below, in which each generation is marked by the specific technologies enabling student-to-teacher and/or student-to-students communicative action (Sumner, 2000).

According to Nipper (1989), the first generation of distance education is the correspondence study which involved printed self-study material delivered through postal service (Roberts, 1996; Sumner, 2000). Garrison (2000) also refers to this period of

correspondence study as the industrial era of distance education through which mass production and delivery of learning packages were the only means of overcoming geographical distance. However, it was a highly individualised mode of learning which enabled mainly one-way communication and hence isolated learners from group learning processes (Vrasidas & Glass, 2002; Sumner,2000).

The second generation of distance education, referred to as multimedia distance education, was marked by the use of broadcast media such as radio and television along with printed materials (Nipper, 1989). For example, live educational radio programmes enabled reduced instructional delivery time and increased classroom immediacy as learners were able to hear their teachers (Casey, 2008). In USA, the use of television as a means of content delivery platform was initiated by University of Iowa in 1930s, which was then expanded by the creation of the Instructional Television Fixed Service (ITFS). The IFTS consisted of 20 channels which provided educational institutions live or pre-recorded instructional material in various subjects and at different levels (Casey, 2008).

Although the second generation of distance education created alternative and perhaps more effective means of instructional delivery for the instructors, the nature of communication between students and teachers remained to be mainly one-way (Casey, 2008). According to Sumner (2000), the failure in promoting the two-way communication was due to the fact the quantity and seamlessness of production was emphasized over the quality of learning experience, which required a certain level of group interaction and social learning.

The third generation of distance education witnessed the rise of interactive technologies which are able to link learners together in real or delayed time by means of computer-mediated communication (CMC) such as audio- and videoconferencing (Roberts, 1996). CMC enabled by the internet has made the two-way communication between students and teachers as well as among students easier and faster. Synchronous and asynchronous CMC applications such as e-mail, audio- and videoconferencing have made

it possible to create a community of learners at a distance and conduct collaborative learning regardless of time and place (Garrison et al.,2003). Thus, online communication has provided the learners with a collaborative environment of learning where distances cannot constrain the educational practice.

The advent of the World Wide Web has also had a profound impact on the new generation of distance education. The World Wide Web enabled by the internet provides a collection of Web 2.0 tools used for different purposes such as Wikis and blogging platforms for writing, Youtube and Slideshare for sharing videos or other content, Facebook and Twitter for social networking, and Moodle and Blackboard as virtual learning environment (Kern, 2013). The affordance of Web 2.0 tools for education can be summarized as in the following:

> Web 2.0 allows and provides greater interactivity among users to change and transform static websites into fully interlink technologies, which offer interactive computing platforms where users can create and use content created by other participants. There are other features of Web 2.0 including the use of tags for identifying video and audio clips, the rating systems and the sharing of website links. These features are primarily believed to help users or learners in their self-learning efforts. The primary driver of Web 2.0 is the recent development of a person's ability to create and publish content online without the knowledge of a computer programming language, or the possession of specialized equipment beyond their personal computer. (Olaniran, 2009, p.261)

The implications of Web 2.0 tools for online education is that they make it easier for an average user to create and share content as the tools are not as complicated as they were in the past as well as allowing learners to acquire and improve their self-study habits (Taysi, 2016). In sum, online learning is considered a new paradigm within the previous paradigms of distance education through its ability to provide interactive learning experiences enabled by CMC and a variety of Web 2.0 tools (Garrison et al.,2003).

As Roberts (1996) states, as a result of the growing acceptance of technology-based approaches to learning, “distance learning” might become an old-fashioned term. Vrasidas and Glass (2002) supports this view who writes that there is a confusion about the terms “distance education”, “e-learning”, “online education” and “virtual education” and adds that there are no clear-cut boundaries between these terms any more as many institutions offer courses which combine face-to-face and distance study. Tallent-Runnels et al. (2006) also mentioned this inconsistency of the terminology in their review of the literature on online teaching and learning.

Meyer (2014) pointed out that using the Internet for teaching and learning has generated the multiple terms mentioned above and these terms may refer to different things despite the similarity in their instructional structures. Basing their work on this confusion in the field, Singh and Thurman (2019) conducted a systematic review of literature to examine different definitions of online learning and to identify the common elements in them. They concluded that use of technology, time element, interactivity, physical distance, and comparison to a traditional classroom were the most common themes identified in most of the definitions. Therefore, they defined online education as in the following:

> Online education is defined as education being delivered in an online environment through the use of the internet for teaching and learning. This includes online learning on the part of the students that is not dependent on their physical or virtual co-location. The teaching content is delivered online and the instructors develop teaching modules that enhance learning and interactivity in the synchronous or asynchronous environment. (p.302)

In the following section, the review of studies on online education will be based on this definition due to its comprehensiveness of the essential elements of online education.

Previous Studies on Online Education

In their review of research on online learning and teaching, Talent- Runnels et al. (2016) identified four prevalent themes: course environment, learners' outcomes, learners' characteristics, and institutional and administrative factors. The classification of the studies in the following section is based on these themes.

Course Environment. Studies which are classified into course environment category investigate such issues as classroom culture, structural assistance, online interaction, evaluation, and success factors (Talent-Runnels et al.,2006). Sullivan (2002) investigated college female students' (N=125) experiences of learning online. The findings indicated that the majority of the participants perceived online classes as more female-friendly, and they valued the anonymity they had in online classes.

Greene and Land (2000) aimed to find out how four different types of scaffolding, namely World Wide Web resources, procedural guidelines for the instructional activity, student-student interactions, and instructor-student interactions, helped college students (N=18) complete a World Wide Web project. The results indicated that face-to-face interaction with peers and instructors was significant for students to deal with the complexity of the projects. In another study conducted with 253 social work students at an American University, it was revealed that email communication with the instructor and the online provision of course information were the most valuable Web-assisted teaching strategies as perceived by students while online discussion groups, email and multimedia assignments and tests were reported not to be as useful. (Frey et al.,2003). Dennen et al.'s study (2007) aimed to examine the importance of 19 instructor actions from the perspective of both instructors and students in an online setting. 32 instructors and 170 students from two American universities participated in the study. The instructors believed that their actions that are focused on course content and provide feedback to students are more likely to boost students' performance. However, students tended to be more satisfied if their interpersonal communication needs are met.

In relation to the development of classroom culture, Conrad (2005) aimed to track the development of sense of community in 18 graduate students taking part in online program at a Canadian University. The data were gathered longitudinally, five times over two years through questionnaires, interviews and a focus group. The results showed that the students hold not themselves but also instructors and administrators responsible for creating a sense of community. According to them, instructors who were present, prompts, energetic, responsive, and knowledgeable strengthened the sense of community whereas the group's sense of purpose and motivation were negatively affected in the case of poor instruction (Conrad, 2005). Glazier's study (2016) showed that rapport-building with students through video updates, personalized e-mails, and personalized comments on students' work resulted in better learning for students.

Interactivity and interaction are the two most important affordances of digital technologies that separate online education from earlier forms of distance education. Sims (2003) attempted to examine how interactivity in an online course was perceived by undergraduate students (N=68) taking a course in multimedia and interactive learning at an Australian University. According to the findings, the participants perceived involvement and a focus on the individual learner as the most important aspects of interaction. Tu and McIsaac (2002) sought to investigate social presence, which is defined "as the feeling of community that a learner experiences in an online environment", with 51 graduate students taking an online course (p.131). The findings showed that although social presence with its three dimensions of social context, online communication, and interactivity had a positive influence on online interaction, frequency of participation does not represent high social presence. Another finding indicated by this study is that although CMC provided students a high level of privacy, it did not correlate with social presence (Tu & McIsaac, 2002).

Learners' Outcomes. A considerable number of studies has been concerned with the learning outcomes of online environments for students both cognitively and affectively (Talent-Runnels et al, 2006). Among them, most of the studies attempted to compare online

instruction to traditional instruction to determine which delivery format produced betters results in terms of students' performance and satisfaction with the course.

Although the general trend in the findings of these studies is that there is no difference in learning between these two types of instruction modes (Brown & Kulikowich, 2004; Smith et al.,2000; Caywood & Duckett, 2003; McFarland & Hamilton, 2005; Peterson, 2004; Ni, 2013), students may tend to perceive one mode of delivery more useful than the other. For example, while another study which compared preservice teachers' (N=87) performance in learning instructional planning revealed no significant difference between the face-to-face and the asynchronous online group, the findings of the students' interviews suggested that lower-performing students benefitted more from face-to-face instruction (Peterson, 2004). Ni (2013) also conducted a study to compare graduate students' performance in online and face-to-face research methods classes at the California State University. Although no significant difference was identified in learning effectiveness between two groups, classroom students' perceptions of the success of learning experience were higher than those of online students (Ni, 2013).

Unlike the findings cited above (Brown & Kulikowich, 2004; Smith et al.,2000; Caywood & Duckett, 2003; McFarland & Hamilton, 2005; Peterson, 2004; Ni, 2013) some studies suggest traditional instruction as being more effective than online instruction in terms of learning effectiveness (Brown & Liedholm, 2002; Faux & Black-Hughes, 2000; Hurlbut, 2018). Brown and Liedholm (2002) compared the performance of two groups of students who took Microeconomics course face-to-face and online. Based on the examinations they had, students in the face-to-face class significantly outperformed those in the online class, especially in applying basic concepts in more sophisticated ways. In a similar vein, social work students (N=33) at an American University who were taught social work history traditionally performed better than those who were taught the same lesson online (Faux & Black- Hudges, 2000). Hurlbut (2018) also found out students (N=53)

enrolled in a growth and development course as part of a teacher education programme performed slightly better than those who took the same course online (N=63).

One study by Maki et al. (2000) showed that although students who took an online introductory psychology course learned more content than those who took part in face-to-face sections, course evaluations at the end of the semester were higher for the face-to-face sections. Likewise, Ganesh et al. (2015) found out that students enrolled in an undergraduate marketing maths course ranked the traditional delivery format higher than the online format on four dimensions of course evaluation: overall evaluation, perceived competence, perceived communication, and perceived challenge.

In contrast to Maki et al. (2000) and Ganesh et al. (2015), Swan et al.'s (2000) investigation into students' perceptions of receiving online courses through the SUNY Learning Network, a system developed to deliver asynchronous online courses to the students at the State University of New York, yielded a high level of satisfaction and perceived learning regarding the online courses, which might stem from technology and students' computer literacy skills. The findings also yielded those students perceived their level of interaction with peers and instructors as high or higher than the traditional classrooms (Swan et al.,2000). In another study conducted at Texas Tech University, Maki and Maki (2001) found out that students who took an online psychology course had positive perceptions of an online quiz system called QUEB and there was a positive correlation between the use of QUEB and performance on examination.

Instructor feedback, the effectiveness of the instructors, and the difficulty of the learning materials online were also found out to be significant indicators of online learning success as reported by students (McFarland & Hamilton, 2005; Hurlbut, 2018).

Learners' Characteristics. Understanding what demographic, motivational, or personality features make students more successful, attentive, or persistent in their online studies than others has been a major concern of research, especially in the last 10 years.

A few studies attempted to examine self-efficacy among online learners. A study by Puzziferro (2008), conducted at an American university with 815 students taking a liberal arts course in an online environment showed that although students' online technologies self-efficacy scores did not correlate significantly with performance, three subscales of the Motivated Strategies for Learning Questionnaire, namely time and study environment and effort regulation were significantly correlated to their final grades (Puzziferro, 2008). Chang et al. (2014) found out that Taiwanese online college students (N=87) who had high level of perceived Internet self-efficacy performed better than students whose perceived Internet self-efficacy was lower. Another similar study by Tladi (2017) showed that out of three self-efficacy measures, namely self-regulated learning efficacy, distance learning self-efficacy and computer and online technologies self-efficacy, only distance learning self-efficacy significantly predicted academic achievement of students (N=263) enrolled at an online distance program at the University of South Africa.

Self-regulation of learning, defined as "the degree to which individuals are active participants in their own learning" (Dörnyei, 2005, p. 191), has also been investigated in various online learning contexts. One study conducted with students (N=204) taking online courses at an American University found that although online self-regulatory learning behaviours were not significantly correlated to academic achievement, they mediated the relationship between perceived online course communication and collaboration with academic achievement (Barnard et al., 2008). Similarly, Wang (2013) attempted to investigate the relationship among students' (N=256) characteristics, self-regulated learning, technology self-efficacy, and learning outcomes at an American University. The findings showed that students who had previous online learning experience had more effective online learning strategies and a higher level of motivation for their online studies. Students' high level of motivation had a positive impact on their course satisfaction, thus resulting in better learning (Wang, 2013).

Stephen et al. (2020) showed that students' reported level of self-regulation, self-efficacy, and self-directedness were all important predictors of their persistence in online courses. Two sub-scales of self-regulation, self-evaluation and environment, contributed significantly to explaining persistence, which means that students' ability to think about and reflect on their own learning process is an important predictor of whether they will continue their online courses or not. In addition, students who are able to create an ideal environment, comfortable and without any distraction, are more likely to persist in their online courses (Stephen et al., 2020).

Schwam et al. (2021) attempted to reveal the relationship of experience in online learning, online comfort, age, and gender with students' self-regulated learning profiles. The study was conducted at a public university in the United States with 477 students receiving one or more online courses. The findings yielded that age and experience of online learning were not correlated to students' self-regulated learning profiles whereas the level of online comfort they felt were. When students feel more comfortable with online learning, they are more likely to use self-regulatory strategies or if they employ more self-regulatory strategies, they will feel more comfortable with their online studies.

In terms of gender differences, Barrett and Lally (1999) aimed to investigate the different behaviours male and female post-graduate students (N=16) displayed in an online learning context. The study was conducted at a British University and the data were collected through transcriptions of the online discussion students participated, a student questionnaire, a focus group interview and students' diaries. The results revealed that despite having no significant difference in learning the course content, they differed significantly in their social and interactive behaviours. For example, men were found to send more and longer messages in the course environment than women whereas women were reported to send more interactive messages than men (Barrett & Lally,1999).

Chang et al.'s study (2014) with Taiwanese college students showed that although male students reported to have a higher degree of Internet self-efficacy and confidence than

female students, female students scored higher on the final exam (Chang et al.,2014). Likewise, another study by Gemmel and Harrison (2020), which was conducted at a university in UK with online postgraduate students revealed that female students had significantly higher GPA scores than male students did.

Bolliger and Halupa (2018) reported that female students displayed more engagement in their online course than female students did. Schwam et al. (2021) found that female students reported a higher use self-regulatory learning skills for their online courses than male students did. Overall, these studies investigating gender differences in online education seem to be in favour of female students in terms of academic attainment and engagement.

To investigate students' perceptions of engagement, transactional distance and outcomes in online learning environments, Bolliger and Halupa (2018) conducted a survey with 667 students from three different American universities. It was found out that there was a moderate correlation between student engagement, perceived transactional distance, and perceived learning outcomes. In addition, students' perceptions of transactional distance were found to be a predictor of student engagement. In other words, the less transactional distance students felt, the more engaged and satisfied they were in their online courses and thus they had more positive perceptions of their own learning performance (Bolliger & Halupa, 2018).

Lastly, one study conducted with 705 students enrolled in an online postgraduate program at a university in UK reported ethnicity to be the strongest predictor of student performance (Gemmel & Harrison, 2020). That is, students who reported to be Black African or Black Carribbean were less likely to have higher GPA scores than those from White category were (Gemmel & Harrison, 2020).

Institutional and Administrative Factors. Studies reviewed here mainly are concerned with institutional policies and institutional support students receive during their online education.

In an investigation into online graduate students' (N=155) perceptions of institutional and academic services provided by their university, the findings illustrated that Registration and Financial Aid and Scholarships services were perceived as being the most useful by students whereas Program-specific Academic Advising service was rated highest among academic support services (Trespalacios et al., 2021). In a similar study, online students at the New York Institute of Technology reported a high level of satisfaction with the existing institutional services such as Library, Admissions, Textbooks, Technical Assistance, Financial Aid, and Academic Advising. Despite this, they still needed some other services that would mainly serve to their social and psychological needs such as book clubs, current events chat rooms, a student newspaper or a personal and mental health counselling service (LaPadula, 2003).

Samra et al.'s (2021) study illustrated that undergraduate online students (N=348) at a university in the UK wanted more support, tools, guidance, and a more proactive response from their university to help them in managing their life roles and time, signalling forthcoming challenges, or solving work-family conflicts.

Simpson (2004) showed that institutions offering online distance courses can increase student retention through proactive interventions by identifying different types of retention, determining target groups for intervention, and using different media to communicate with the students. Another study which investigated student retention and academic support in a distance education context at a university in New Zealand found out that although the persistent students attributed their success and retention not to the support services but to their own efforts, their absence was noticeable for them (Nichols, 2009).

A case study conducted at a community college in the United States examined the changes in the organizational culture in relation to the administrative and faculty roles, in students enrolled in the courses, in teaching and learning, and in perceptions of online education (Mitchell, 2009). The data were collected from 13 administrators and 8 faculty

members through interviews, document analysis, and observation. An example of the changes as indicated by the findings was that the word facilitator was used instead of instructor or teachers in official documents. In terms of teaching and learning, faculty members reported using new methods for teaching in the online classroom. Although they spent more time and effort to deal with their online courses, the quality of the online instruction was higher than they had expected. In relation to the changes in the students, it was reported that the service area of the community college, previously serving as a local institution, expanded as a result of the increase in enrolment (Mitchell, 2009).

Instructor Satisfaction with Teaching Online. Within the context of online education, instructor satisfaction is defined "as the perception that the process of teaching in the online environment is efficient, effective, and beneficial for the individual" (Bolliger et al., 2014). Instructor satisfaction is a strong predictor of the success of the any online education programme which may impact students and faculty itself at the micro level and the outcomes of online initiatives and programs at the macro level (Stickney et al., 2019). Therefore, it is significant to identify and understand the factors influencing faculty satisfaction with teaching online.

In recent years, there has been an increasing amount of literature on assessing instructors' level of satisfaction with teaching online and identifying the factors that impede or increase it. While several studies have found high levels of satisfaction with teaching online among instructors (Bolliger & Wasilik, 2009; Stickney et al., 2019; Marasi et al.,2020; Walters et al.,2017; Wright, 2014), the findings of some other studies have indicated lower levels of satisfaction due to a variety of reasons (Downing & Dyment, 2013; Evans & Myrick, 2015; Al-Zahrani, 2015; Harrison et al.,2017; Luongo, 2018).

It has been demonstrated in the previous research that the flexibility in the teaching schedules, training provided to the instructors, convenient access to the courses both by the instructors and students, and an adequate level of interaction with the students were the most frequently reported motivating factors for instructors who teach online (Bolliger &

Wasilik, 2009; Stickney et al., 2019; Marasi et al.,2020; Walters et al.,2017; Wright, 2014; Huss & Eastep, 2015; Borup & Stevens, 2016). For example, in an investigation into faculty satisfaction with teaching online at a small research university in the Unites States, Bolliger and Wasilik (2009) found that instructors' (N=102) satisfaction was mainly related to student-related, instructors-related, and institution related factors. Moreover, student-related factors were reported to have the biggest impact on instructor satisfaction. The instructors in this study valued the fact that their students had flexible and convenient access to the courses.

Another similar cross-sectional survey with the faculty members (N=171) in the United States showed that a high-level satisfaction with online teaching which was mainly influenced by appropriate training provided to the instructors and flexibility in their schedules (Stickney et al., 2019). Likewise, Walters et al. (2017) found that faculty reported high levels of satisfaction with the accessibility of their courses and the technical support they receive.

On the other hand, factors reported to be impeding faculty satisfaction have been identified as lack student engagement and social interaction, heavy workload, insufficient administrative support, and insufficient technological and pedagogical skills to teach online (Marasi et al., 2020; Wright, 2014; Kibaru, 2018; Downing & Dyment, 2013; Evans & Myrick 2015; Al-Zahrani, 2015; Luongo, 2018). In a qualitative study with faculty members (N=5) and faculty administrators (N=5) at a university in the United States, the main challenges identified regarding online education were understanding learners and their needs in virtual environments, heavy workload, and the lack of adequate technological, pedagogical, and administrative support from the faculty (Kibaru, 2018).

Instructors (N=27) working at the Faculty of Education at an Australian University reported a dissatisfaction with teaching online due to their lack of confidence and competence in technical and pedagogical skills required for teaching online, and the lack of interaction in the online environment (Downing & Dyment, 2013). The technical and pedagogical challenges were also mentioned by faculty members (N=162) teaching

Massive Open Online Courses despite reporting a high level of satisfaction with teaching online (Evans & Myrick, 2015).

One cross-sectional study conducted at four different faculties of a university in the UK revealed that despite being confident in using learning management systems for online distance education, the main concern among the faculty members (N=531) was that some employers, companies, and countries would not value the qualifications obtained by online distance education (Harrison et al.,2017)

Luongo's experimental study at an American University (2018) showed that workshops on technological and pedagogical skills to teach online did not lead to an increase in faculty members' satisfaction levels of teaching online. This finding might result from the fact that self-reported barriers of the participants were mainly related to motivational and institutional factors such as lack of time, heavy workload, and insufficient administrative support (Luongo, 2018).

Previous research suggests very little evidence concerning the effect of personal and demographic variables on instructors' satisfaction with teaching online. One study which sought to determine the relationship between learning preferences and satisfaction with teaching online among faculty members (N=110) teaching at a community college in the United States reported that aural learners had a lower level of satisfaction with teaching online when compared to physical and social learners (McLawhon & Cutright, 2012). Tena et al.'s (2016) cross-sectional study conducted at different universities in Spain showed that while male instructors rated their skills of digital communication tools higher, female instructors made more use of them to communicate with their online students.

Previous Studies on Online Language Education

This section will review studies on language learning and teaching in fully online environments. In relation to the course environment in online language education contexts, Hampel and Plaines (2013) aimed to investigate the impact of the design and

implementation of interactive online activities on student engagement in a Moodle-based virtual learning environment. The study was designed as part of an open German course. The findings indicated online activities that included more teacher engagement, fewer tasks, and a simple structure were more likely to increase student engagement (Hampel & Pleines, 2013). A similar finding was also reported by Guo and Mollering (2017) who found that using online collaborative tasks with an appropriate level of difficulty might have a positive impact on students' language skills and confidence. One study on the use of specific collaborative tasks indicated that using decision-making tasks in a virtual EFL classroom contributed more to the Taiwanese students' (N=38) sense of social presence than jigsaw tasks did (Ko, 2016).

The use of an intelligent virtual learning environment specifically designed to improve listening and speaking skills led to a significant increase in the number of students' proper replies and their overall proficiency level (Hassani et al., 2016). In her survey which set to explore achievement in a distance language learning context, Sahin Kizil (2020) found that teaching presence, cognitive presence, perceived learning, and satisfaction were all significantly predicted academic achievement among learners of English (N=156) studying at a state university in Turkey. Another study which set to explore the relationship between Taiwanese high school students' willingness to communicate and their perceived social presence revealed that students were more likely to be willing to communicate in the target language when they felt they had less social presence (Le et al., 2018). Therefore, they preferred text and audio chat to video chat to practice the target language in their online classes (Le et al., 2018).

In an attempt to explore the impact of learning design decisions made by language teachers on student engagement, Rienties et al. (2018) gathered data from students taking online Spanish and French Courses at the Open University UK. The findings indicated that when teachers' activities were productive and assessment-related, student engagement were more likely to increase, which explained almost 55% of the variation in students' online

behaviour. Chang and Windeat (2016) investigated the patterns and development of collaboration among learners of English (N=47) in an online environment at a Korean University. Based on the findings, the main patterns of collaboration among students were writing assignments and posting them on the Assignment Discussion Forum, reading and commenting on assignments, and group work in preparation for the assignments. Although these patterns of collaboration remained the same throughout the course, the frequency of students' collaborative behaviours increased as the course progressed, which resulted in higher levels of motivation, confidence, and knowledge.

A number of studies have attempted to explore students' perceptions of learning a language in a fully online environment. In a study which set out to find out the views of university students' (N=478) on foreign language courses delivered via e-learning, Ozudogru and Hismanoglu (2016) found that students were usually negative about these e-learning language courses. However, no attempt was made to reveal the reasons why the students had such negative feelings towards e-learning. Another study conducted with 46 online learners of Chinese Language revealed that learners had difficulties in keeping up their schedule, working collaboratively with their classmates, keeping their motivation high and socializing in an online environment (Sun, 2014). Schulze and Scholz's study (2018) at a Canadian University reported that most of the students learning German online were not satisfied with their online courses due to a perceived lack of personal contact, individualized feedback, and student self-regulation.

In terms of learning outcomes, Hashemifardnia et al. (2021) showed that a Massive Open Online Course (MOOC) has significantly improved Iranian EFL students' (n=30) speaking complexity, fluency, and accuracy when compared to the control group (n=30) that did not receive the online treatment. Martin (2020) found out that distance learners of German who received targeted pronunciation training improved significantly on measures of perception and production accuracy. Aldrich and Moneypenny (2019) also found that although students who took online Spanish courses at the college level in the United States

significantly improved in pronunciation and fluency, they showed very little progress in vocabulary and sentence formation. Another study in which blended and online modes of instruction were compared revealed the superiority of blended mode to online mode regarding task achievement in a communication skills training course (Selvaraj et al., 2018).

Previous research presents very little evidence of the relationship between online language learners' characteristics and language learning outcomes. Hong et al. (2017) found out that learners' (N=73) intrinsic motivation to learn Chinese could predict their online learning self-efficacy, both of which were also correlated to their learning progress. In an investigation into learners' characteristics and the development of English language skills showed that students' positive attitudes toward ICT did not predict their learning outcomes, which might result from other individual differences (Ozawa, 2019).

In a similar vein, there is a scarcity of studies on institutional and administrative issues concerning online language teaching. In their mixed-method study, Steadman and Kraut (2018) aimed to determine the training needs of an online English program administrators (N=28) in the United States. The findings indicated that their needs were divided into three different categories: technological training, online pedagogy/instructional design training, and business/administrative training. It was also found that administrators with less formal training and experience in online education were more likely to lower levels of self-efficacy in managing online programs (Steadman & Kraut,2018).

In relation to language instructors' perceptions of and satisfaction with teaching online, surveys such as that conducted by Dashtestani (2014) and Yapar (2018) showed that although teachers had moderately positive attitudes towards the implementation of online distance education, lack of interaction and good quality materials, technical difficulties, and teachers' insufficient knowledge of were identified as major challenges of teaching online. Two other studies conducted with educators, teacher trainers, and providers of online Dutch courses to adults in Flanders reported costs, lack of technical and pedagogical support, teachers' insufficient ICT skills, the solitary learning mode, and

delayed feedback to be the perceived disadvantages of online education (De Paepe et al., 2019; De Paepe et al.,2018). On the other hand, flexibility, learner autonomy, and opportunities for remediation were found out to be the biggest perceived advantages of online environments (De Paepe et al.,2018).

Native-speaker English instructors working at Japanese Universities (N=100) complained about the lack of properly equipped and flexible computers rooms and insufficient training provided to the instructors to teach online and they stated that these two factors impeded the potential benefits of online education (Bracher, 2013). One study by Adnan (2017), carried out with 37 language instructors working at Turkish universities, demonstrated that there was a significant relationship between individual e-readiness and satisfaction with e-tutor, which was a professional development course preparing instructors for teaching online. The findings of another recent study indicated that online language educators valued the authentic and multimodal affordances, opportunities for tailored instruction/feedback, and productive interaction with students enabled by live classrooms (Meskill et al., 2020). Manegre and Sabiri (2020) also reported that online teachers of English N=35) believed in the effectiveness of virtual learning environments in creating opportunities for getting to know students and for more student engagement. They also believed that online students learn better and faster than students in traditional classroom do and that virtual learning environments may replace the traditional mode of classroom learning in the future (Manegre & Sabiri, 2020).

Overall, these studies highlight the need for more research into online language learners' characteristics, institutional and administrative issues concerning online language programs, and the potential learning outcomes of these programs. However, there seems to be some adequate evidence to indicate that insufficient ICT skills, lack of technical and pedagogical support and training, and lack of interaction were the main challenges online language instructors face, which were not any different from what instructors of other subjects complained about as reported in the previous section.

Emergency Remote Teaching

Online distance learning opportunities, which have already been developing in recent years, have started to be widely used in all areas of education all over the world since the outbreak of the Covid-19 pandemic. In an attempt to stop the viral outbreak, protocols have been made to shut down buildings including schools, universities and other educational institutions as a result of which emergency remote teaching (ERT) has been put into practice (Bozkurt &Sharma, 2020).

Although ERT benefit from what online distance education offers, it would be wrong to equate emergency remote teaching with online distance education (Bozkurt &Sharma, 2020). As stated by Schlesselman (2020), while educational institutions switched to an online mode of instructional delivery during the spring 2020 semester, what they actually provided was emergency remote teaching, not online education. Therefore, it is essential to identify the fundamental differences between these two terms which look quite similar and are often used interchangeably.

The first main difference is that online distance education programmes result from a careful design, planning, and development process whereas ERT “is a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances” (Hodges et al., 2020 p.7). While face-to-face education is regarded the default mode in ERT, digital technologies are used as back-ups or stopgaps (Schwartzman, 2020). In contrast to covering only the course content, quality online learning engages students with the content through realistic practice, real-world contexts and feedback; fosters collaboration between learners and creates a sense of community between students and with teachers (Schlesselman, 2020). This implies that ERT is just meant to compensate for the lack of face-to-face to instruction and designing and developing a carefully planned online curriculum from scratch is beyond the purpose of ERT.

How students are involved in the education process makes the second important difference between ERT and online distance education. According to Bozkurt and Sharma

(2020), online distance education provides a flexible option for learners while ERT is an obligation. Schlesselman (2020) highlights the aspect of flexibility as in the following:

> Another important aspect of designing an online course is being flexible. An online course will not look identical to a face-to-face class. Online courses tend to be even more engaging and interactive than a face-to-face class so students will interact heavily with the instructor, the other students, and the content in a meaningful way. Flexibility in the types of assessment incorporated in the course is also encouraged with the addition of more formative assessments and projects. (p.1043)

In other words, learners involved in an online distance education program usually have the freedom to take the courses they are interested in anytime and anywhere they want. However, learners involved in ERT are usually subject to more fixed class schedules with predetermined compulsory courses and exams to take.

As the migration process of universities to online mode of delivery is the result of a crisis which lacks proper planning and the employment of effective online education theories and models, some difficulties have been encountered by faculty, students and institutions during the implementation phase of ERT (Adedoyin & Soykan, 2020). As Murphy (2020) notes, although the switch to an online mode of instruction may be an appropriate solution to maintain social distancing, there will definitely be “a cost to removing face-to-face education from the realm of normal discourse” (p.493). Much of the current literature on ERT pays particular attention to challenges posed by this sudden imperative shift to online environments.

Poor or no internet connection and lack of the required devices such as computers and tablets have been among the most cited problems encountered through the ERT process (Adedoyin & Soykan, 2020; Toquero et al., 2021; Schwartzman, 2020; Williamson et al., 2020). Adodeyin and Soykan (2020) point out that as online learning is entirely dependent on technological devices and internet connection, students and teachers who could not meet these conditions have almost been excluded from the distance education

system. This view is supported by Williamson et al. (2020) who write about the digital inequalities among young people and draw attention to the significant variety in the ways that young people can access the internet and other digital technologies. Toquero et al. (2021) attempt to describe the issue of access inequalities using the case of Philippines:

> In the Philippines, it is a great challenge for some students in the far-flung areas to look for elevations in their area to capture even a bar of internet signal. Accordingly, it would be an additional burden to them while studying as they are always in a hurry in taking exams, passing requirements knowing that any time soon, they will lose internet connection. On the contrary, well-off families have all the resources they need for this kind of setting which widens gaps between them and the less fortunate people. (p.93)

This example indicates that inequalities in access to digital technologies and the internet cannot be explained as a simple problem of access to course content, and that it is also a serious social problem that tends to grow unless solid plans are made to provide students with fair access to remote education opportunities.

The challenges posed by studying and/or working from home have also been among the factors that make the emergency remote education process even more difficult both for instructors and for students. Schwartzman (2020) describes home as a problematic locale for learning due to such factors as no suitable space for uninterrupted work, additional childcare and other household responsibilities, lack of the required tools for online education, and irregular work schedules to make up for reduced family income as a result of the pandemic economical disruptions. These factors not only restrict access to educational opportunities, but also reduce the motivation of students and instructors and create undesired emotions such as anxiety and frustration. In the same vein, Adedoyin and Soykan (2020) draw our attention to human and pets' intrusion which they define as "the unexpected appearance or interruption of family members, friends, and or pets", causing distraction and loss of concentration especially during synchronous online live classes (p.5).

An inevitable consequence of the distance education process is the lack of meaningful social interaction among students. It is stated that the purpose of the school is not only to develop students cognitively, and the interactions of students with their peers is as critical for the holistic development of the students (Toquero et al., 2021). As the possibility of creating interaction and developing relationships among students under emergency remote education circumstances is very limited, social development opportunities of students will be equally limited. Although planned online education activities put emphasis on creating peer-to-peer and peer-to teacher interaction, emergency remote education is different in the sense that it is a crisis-response situation through which delivering the course content is the priority and usually the only thing teachers can do.

Inadequate digital skills have been another major concern both for teachers and students since the beginning of the emergency remote education process. Although contemporary students and young educators are called digital natives and hence expected to be tech-savy, a vast majority of them have not been able to show the digital skills that digital natives are expected to have (Bennett et al.,2008). This view is supported by Schwartzman (2020) who claims that “the challenges of transferring skills across different media and platforms may prevent digital natives from embracing online coursework. Lateral thinking across different technologies requires time and cannot be assumed as innate to digital natives” (p.508). Such a sudden and rapid transition from mainly face-to-face learning environments to online platforms requires a process of adaptation in terms of the digital skills and even digital natives cannot be considered already ready for online learning and teaching.

Previous studies on Emergency Remote Teaching

Over the past two years, most research in ERT has emphasized the experiences and opinions of students and instructors as well as the challenges they face through the remote education process. A number of studies investigating learners’ ERT experiences

have found that unreliable internet connection, lack of necessary electronic devices, work overload, lack of interaction with peers and instructors, vague and unstructured learning contexts, and negative feelings such as stress, despair, and anxiety have been the most reported challenges students have had to deal with since the beginning of pandemic remote education process (Ferri et al., 2020; Sharma et al., 2020; Stewart et al., 2021; Rotas et al., 2020; Tumen Akyildiz, 2020a). The findings of another study that aimed to determine the satisfaction level of higher education students (N=13447) at a state university in Turkey indicated a moderate level of satisfaction with online education (Simsek et al., 2021).

To find out the indicators that could determine the effectiveness of online education during ERT, He and Xiao (2020) conducted a case study at a Chinese University with 3430 students and 311 instructors. The findings showed that the tools used for online classes, teachers' digital skills, students' satisfaction of teachers and their own learning, and teachers' satisfaction with their own teaching effectiveness were the factors that could contribute to the effectiveness of online education through the ERT process. The findings of the same study also demonstrated the advantages of online classes as described by teachers including no time-space restrictions, sharing resources, playing back courses, strengthening a new way of interaction, no class size limitation, and the possibility of reusing class materials.

A number of studies have examined teachers' and faculty members' practices and perceptions of the ERT process. An online survey conducted in Italy (N=325) showed that K-12 educators did not feel prepared to use online or remote teaching strategies and tools and they needed more training in using technology for blended and online formats (Trust & Whalen, 2020). In another study which set to determine the instructors' preparedness for online teaching, who work in Kenya, Ghana, and South Africa, it was reported that although they had intermediate digital proficiency, they had a low level of satisfaction with online education due to such factors as internet connection, cost, and reliability (Pete & Soko, 2021). A descriptive cross-sectional survey conducted in India with nursing faculty (N=54)

found that emergency remote teaching is perceived as being less effective than face-to-face instruction, which may stem from work overload, poor internet connection and power outage (Ontha et al.,2020). They also reported putting extra effort into the preparation of teaching online, which is another demotivating factor for their lack of interest in teaching remotely (Ontha et al., 2020).

In a mixed-method survey conducted with teachers (N=153) in Sri Lanka, Liyanagunawardena and Williams (2021) reported that despite trying their best to keep lessons going, teachers had difficulties in relation to their lack of digital skills, the lack of devices, connectivity, and insufficient data plans and infrastructure. A small-scale qualitative study conducted by Durak and Cankaya (2020) in Turkey with 18 faculty members from 7 different departments showed that although the participants reported a high level of dissatisfaction with online teaching in the first term of pandemic education, namely 2019-2020 spring semester, they felt more satisfied in the 2020-2021 fall semester in which they began to Microsoft Teams for their synchronous classes. The reasons for the increase in their level of satisfaction were found out to be related to giving live lectures, several tools, interaction and ease of, all of which were enabled by the use of Microsoft Teams (Durak & Cankaya, 2020).

Previous Studies on Emergency Remote Language Learning and Teaching

As it is a fairly new concept, research does not provide us with enough evidence of the ERT experiences of language students and language instructors. Talidong (2020) found out that although Philippine teachers of English language working in an ERT context believed in the benefits of online teaching for students, they still encountered problems regarding ERT such as internet connection, technical problems, overloading of conferencing tools, and passive learners. One major limitation of this study was that the sample was limited to only 20 teachers. Another qualitative study investigating the challenges language instructors (N=19) face while teaching their emergency remote

classes revealed that in low-tech Arabic countries like Yemen and Libya, the education process has almost stopped due to the lack of technical infrastructure. However, in high-tech Arabic countries ERT is applied despite some problems such as students' and teachers' digital illiteracy, lack of resources, and assessment issues (Hazaea et al., 2021).

In an investigation into Vietnamese vocational English teachers' (N=45) attitudes to online teaching during Covid-19 pandemic showed that although the teachers' attitudes to online teaching were usually positive, they still had to face a number of challenges, including their digital skills and online classroom management skills, heavy workload, and students' technology competence and technical support (Tue & Hanh, 2021). The findings of another study conducted in Vietnam shed light on some significant points regarding the remote teaching practices of tertiary level English teachers (Linh et al.,2021). It was reported that Gmail and Google classroom were the most preferred platforms to make announcements to their online students, while Zoom and Google Meet were more frequently than other tools to deliver live online lessons. The popularity of these tools among the participants might stem from their functionality and practicality as well as teachers' level of digital skills and the appropriateness of the lesson contents (Linh et al., 2021).

Turegun Coban and Kuyumcu Vardar's study (2021), which aimed to examine Turkish EFL student teachers' and their instructors' perspectives into emergency remote education showed that the participants had both positive and negative opinions about the process. While the problems encountered were mainly due to technical problems, applied courses, low motivation and participation of the students, heavy workload, lack of social interaction, and assessment and evaluation, the positive aspects of remote teaching were reported as sharing a wide range of resources, flexibility in time and space, affordability, comfort, and the opportunity to review the recorded online classes (Turegun Çoban & Kuyumcu Vardar, 2021). In a similar vein, Tumen Akyildiz's (2020b) qualitative study found that Turkish EFL teachers (N=6) needed more training in using technology for teaching

English remotely and in how to adapt communicative and interactional language teaching methods to remote education.

In terms of language students' perspectives into ERT, one study conducted with 101 Chinese university students using a mixed-method approach showed that online English learning was mainly driven by extrinsic motivation, which is not different from face-to-face learning. In addition, the findings indicated that ERT provided students with more opportunities for interaction with peers and instructors, whereas collaboration among students was limited (Huang et al., 2021). Regarding students' preferences of digital platforms during ERT, Amin and Sundari (2020) found out that while students favored the use Cisco WebEX, a video conferencing platform, for its authenticity and meaning focus, WhatsApp was mainly preferred due to its learner fit, positive impact, and practicality.

The findings of another qualitative study conducted with Turkish secondary level EFL students (N=30) in Turkey revealed that although the students thought online language learning has several advantages, they still preferred a face-to-face mode of delivery for their language studies due to technical, economical, and individual problems (Tumen Akyildiz et al., 2021). It was also reported by the participants that their teachers emphasized the two receptive skills, reading and listening rather than the productive skills speaking and writing (Tumen Akyildiz et al., 2021). Ozturk Calik and Altay's (2021) study, which attempted to evaluate 7th grade video broadcasts for English language teaching from a pedagogical, educational and technical point of view, showed that these video broadcasts had several limitations such as a a limited use of body language, gestures and mimics, inadequate use of drama techniques and not providing the summary of the lesson, and lastly problems about the material design.

In view of all that has been mentioned so far, one may suppose that teachers' ability to use technology in their teaching plays a crucial role in effective implementation of teaching remotely.

Technological Pedagogical Content Knowledge (TPACK) Framework

Although the issue of using technology for educational purposes has a history of over 50 years, research on teacher technology integration was not based on a solid theoretical foundation until the Technological Pedagogical Content Knowledge Framework was introduced to the educational research community in 2006. (Mishra & Koehler, 2006; Angeli et al., 2016). The TPACK is a framework that was proposed to provide a theoretical foundation on how to integrate technologies into teaching as it aims to highlight "what makes a technology an educational technology by emphasizing that educational technologies exist in the interplay between pedagogical knowledge, content knowledge, and technological knowledge (Mishra & Koehler, 2006, p.51). Although much of the studies conducted until 2006 on teachers' use of technology focused solely on teachers' technological knowledge, it is now widely accepted that technological knowledge is not enough to teach with technology and that teachers need to use their technological knowledge in harmony with their content knowledge and pedagogical knowledge, the integration of which is known as TPACK (Voogt et al., 2016).

The main structure of this framework consists of three different bodies of knowledge, namely content, pedagogy, and technology along with the interactions among and between them. What makes this approach different is the emphasis on the connections among the three core components, showing "how teachers' understandings of technology, pedagogy, and content can interact with one another to produce effective discipline-based teaching with educational technologies" (Harris et al., 2009, p.396). Mishra et al. (2009) explain how the TPACK framework offers a new way of thinking about educational technology as in the following:

> How does the TPACK framework offer a new way of thinking about educational technology? First, by stressing how technology interacts with pedagogy and content, innovations are not necessarily relevant for teaching. Instead, emphasis is put on evaluating the entire teaching performance, not just one aspect of it. Second, using

> the TPACK framework helps educators reason about which technologies are worth learning; not to learn every technology and then figure out how to apply it. (p.51)

How did the TPACK framework emerge?

As it was stated earlier in this section, the lack of a theoretical framework about the relationship between technology and teaching was evident in before the TPACK framework was proposed to the educational research community. Mishra and Koehler (2006) pointed to this gap in literature, who wrote that although educational technology research literature presented us good and important examples of case studies, best practices, or the implementations of new pedagogical tools, there was a need to step back from the individually published pieces of research and to suggest a unified framework from these studies that would apply across different contexts.

From 1999 to 2005, several seminal papers and case studies were published which laid the foundation of the TPACK framework (Koehler & Mishra, 2005; Mishra & Koehler, 2003; Koehler et al., 2004; Mishra et al.,1999). For example, in one of those publications, Koehler and Mishra (2005) argued that “it is necessary to teach technology in contexts that honor the rich connections between technology, the subject matter (content), and the means of teaching it (pedagogy)” rather than the traditional trainings in which teachers are taught how to use the latest tools focusing only on technological skills. The same publication (Koehler & Mishra, 2005) also gives an account of Learning by Design approach, in which teachers from three different contexts sought ways to use technology in order to solve a problem of practice they might encounter. The results indicated that such a training helped the participant teachers develop flexible ways thinking about technology, design and learning which ultimately contributed to the development of technological pedagogical content knowledge.

Mishra and Koehler (2003) gave an account of the basic assumption underlying the Learn by Design Approach as in the following:

> This approach, which we call learning by design, allows teachers to learn in ways that ties their knowledge of technology to its' educational uses (i.e., authentic problem solving). Teachers focus on an educational issue or problem and seek to find ways to use technology to address the problem. In the traditional workshop/class approach, teachers are trained in the use of the newest tools that they might be able to use in their classroom. In the learning by design approach, in the context of solving a problem, teachers become the designers of the tools. Because their explorations of technology are tied to their attempts to solve educational problems, teachers learn "how to learn" technology and "how to think" about technology. Hence, teachers go beyond thinking of themselves as being passive users of technological tools and begin thinking of themselves as being active designers technology. (p.5)

This indicates that rather than training teachers in using specific software and hardware, the Learning by Design Approach gets teachers to solve educational problems or issues by using the available means of technology. Thus, it provides some sort of metacognitive awareness in teachers about the integration of technology into their practice.

Although these insights provided above were significant to development of the TPACK framework, what it was fundamentally built on was the Pedagogical Content Knowledge (PCK) framework proposed by Schulman (1986,1987). In his seminal article, Shulman (1986) questions the two types of teacher knowledge, namely content knowledge and pedagogical knowledge and writes that while subject matter knowledge was given utmost importance and pedagogy was ignored in 1870s, this turned just the other way around in 1980s, in which a teachers' content knowledge was regarded unimportant in comparison to pedagogical knowledge.

In reaction to the identification of teaching competence with pedagogy or content knowledge alone, he proposed the term "pedagogical content knowledge", which, according to him, includes "the most regularly taught topics in one's subject area, the most useful

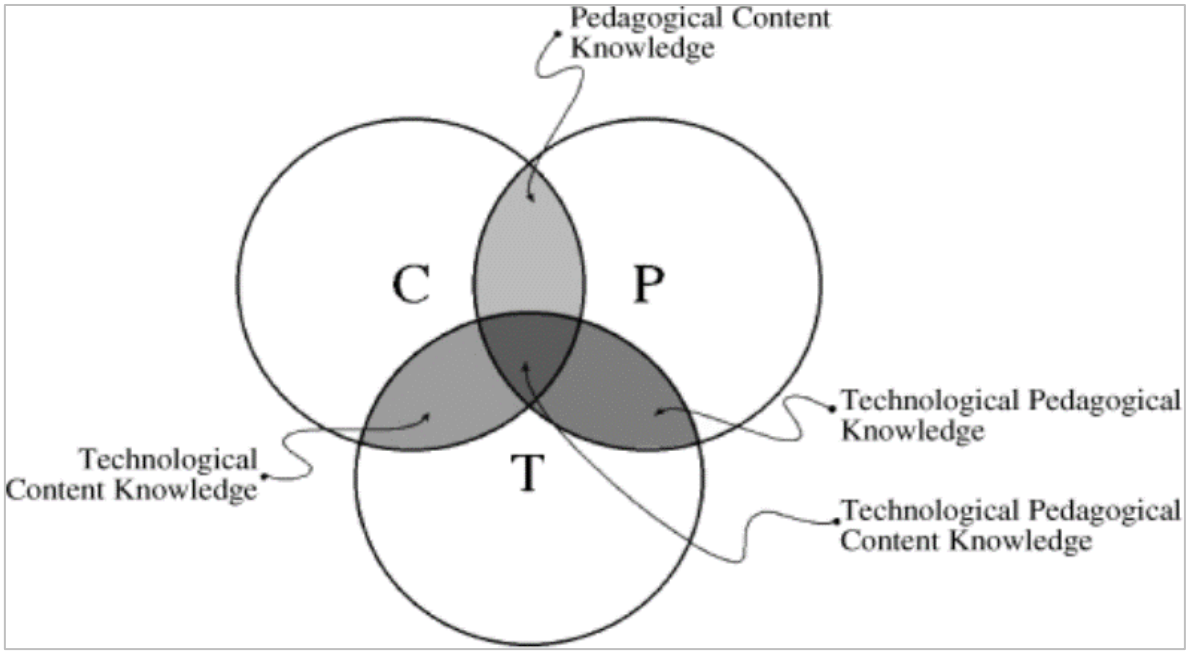
forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations" that will make that topic easier to understand for learners (p.9). In other words, PCK constitutes a distinct and unique form of teacher knowledge, which is a blending of content and pedagogical knowledge, but which also goes beyond the affordances of each of these knowledge domains.

What Mishra and Koehler (2006) did was extending Shulman's (1986,1987) framework of PCK by integrating the component of technological knowledge into the model. This new model of framework, which was built on Shulman's PCK (1986,1987) and gave an account of teachers' knowledge of technology and its relationship to content, pedagogy, and learners, was initially termed as TPCK. However, the term TPCK was changed to TPACK for practical purposes in 2008 as TPACK could be remembered and spoken more easily than the abbreviation TPCK (Mishra et al., 2009; Angeli et al., 2016).

What are the main components of the TPACK framework?

Figure 1 below illustrates how the intersections between and among content, pedagogy, and technology creates four new sets of interrelated knowledge:

Figure 1
Pedagogical Technological Content Knowledge Framework (Mishra et al.,2006, p.1025).



As will be clearly seen in Figure 1, Content, pedagogy and technology knowledge are the building blocks of this framework. Content knowledge (CK) refers to what teachers know about the subject matter they teach, as well as the nature of inquiry in that field (Koehler et al., 2013). CK can also be defined as what a teacher knows about the subject matter which is intended to be taught (Koehler & Mishra, 2008). Pedagogical knowledge (PK) is related to the profession of teaching such as theories of learning, different methods of teaching, lesson planning, classroom management, and assessment etc. While in 1870s, content knowledge was considered all that a teacher needed to know, a century later, in 1980s, pedagogical knowledge became much more important, pushing content knowledge to a secondary and almost unimportant position (Shulman, 1986).

Pedagogical Content Knowledge (PCK), located at the intersection of content and pedagogical knowledge, "represents the blending of content and pedagogy into an understanding of how particular aspects of subject matter are organized, adapted, and represented for instruction" (Mishra & Koehler, 2006, p.1021). The idea of PCK was first developed by Shulman (1986) which, according to him, refers to knowledge that goes beyond knowing the content alone and includes knowledge on how to teach a specific subject matter (Archambault & Barnett, 2010). For instance, the knowledge of verb tenses an English teacher has is an example of CK. Knowing different techniques of organizing, adapting presenting knowledge is related to PK. An understanding of the specific techniques and activities which are best suited to teach some specific verb tenses in a particular context can be called PCK.

Although it is hard to make a precise definition of Technological Knowledge (TK) due to its rapidly changing nature, using different hardware and software, the knowledge of basic applications such as word processor, spreadsheets etc, communication technologies such as e-mail, audio, and video conferencing, and the ability to use content management systems such as Blackboard and Moodle can still be included in TK (Compton, 2009). However, TK should not be considered including only the instrumental skills to operate such

pieces of technology successfully. It also refers to the knowledge of the affordances of some particular pieces of technology to achieve personal and professional goals (Jamieson-Proctor et al., 2010, as cited in Voogt et al.,2016). In this view, not only technology but also teachers have an active role in shaping the learning environment through the creative uses technology (Voogt et al., 2016). In other words, rather than knowing only the technical skills, what actually matters about TK is teachers' knowledge of what a particular piece of technology can actually do to boost students' learning and performance.

At the intersection of TK and CK lies Technological Content Knowledge (TCK), which refers to an understanding of how technology and content interrelated. TCK can be defined as knowledge of how to represent specific topics and concepts in a given domain with technology (Cox & Graham, 2009). It is also highlighted that the as the technologies used to represent these topics and concepts become mainstream, TCK transforms into CK (Cox & Graham, 2009). Regarding the importance of the TCK, Koehler (2013), asserts that "the choice of technologies affords and constrains the types of content ideas that can be taught. Likewise, certain content decisions can limit the types of technologies that can be used" (p.16). Therefore, teachers must know which technologies are the most suitable to present specific content, along with an understanding of how the representation of specific content can constrain or require the use of certain types of technologies.

Technological Pedagogical knowledge (TPK) can be defined as "knowledge of the existence, components, of various technologies as they are used in teaching and learning settings, and conversely, knowing how teaching and capabilities might change as the result of using particular technologies" (Mishra & Koehler, 2006, p.1028). It includes knowledge of using technology in pedagogically sound ways without referring to specific subject matter (Angeli et al.,2016). In other words, TPK is an awareness of how certain types of technology can be adapted for teaching and learning purposes along with an understanding of whether they are suitable to be used in a particular context. In that respect, TPK is directly related to teachers' creativity as most types of technology are not usually invented for educational

purposes and TPK helps teachers realize the educational potential of a particular piece of technology.

Technological Pedagogical Content Knowledge (TPACK), which emerges from the interactions between technology, pedagogy, and content, is considered as the core skill underlying effective teaching with technology (Harris et al., 2009). Although TPACK arises from the multiple interactions among CK, PK, and TK, it goes beyond its individual component concepts and their intersections (Harris et al., 2009). Thus, a unique set of integrated knowledge emerges which gives an account of the highly complex skills involved in teaching with technology and can lead teachers towards integrating technology more successfully into their own specific contexts.

Although it is important for a teacher to know the affordances of specific technologies, it is not enough to integrate these technologies into their teaching practice effectively. What teachers really need is to use their technological knowledge in harmony with their pedagogical and content knowledge, the integration of which is known as TPACK (Voogt et al.,2016). According to Mishra et al. (2009), TPACK is the most significant form of teacher knowledge which brings together content, technology, and pedagogy but which also goes beyond each of them to develop a powerful teaching experience.

Theoretical Considerations for the TPACK framework

Despite having served to integrate many lines of research on teachers' technology integration and receiving much scholarly attention from around the globe, a number of theoretical concerns have been raised regarding the nature of TPACK framework and each of its domains (Herring et al., 2016; Archambault & Barnett, 2010). Cox (2008) asserted that PCK model, on which TPACK framework was built, is lacking precision. This view is supported by Graham (2011) who writes that PCK framework lack theoretical clarity and that understanding it is a prerequisite for understanding and measuring TPACK constructs effectively. In an attempt to account for the problem with the PCK model, Archambault and

Barnett (2010) question whether pedagogy and content are two distinct areas, or they are naturally bound together. According to them (Archambault & Barnett, 2010), it is hard to consider a specific matter without thinking about how to teach it, which makes it difficult to validate PCK as a framework.

The second challenge regarding the TPACK constructs is the claim that they lack clear and precise definitions, which are essential to a carefully considered theory (Cox, 2008; Archambault, 2010). In her conceptual analysis of TPACK framework which aimed to seek definitions of the component constructs of the TPACK model, Cox (2008), identified 13 different definitions for TCK, 10 for TPK, and 89 distinct definitions for TPACK in the literature (Cox, 2008, as cited in Graham, 2011). These differences were not insignificant and they "had major implications for understanding and measuring the constructs" (Graham, 2011, p.1956). As a result of this lack of precise and unclear definitions, very few studies have been able to contribute to the development of the TPACK framework (Graham, 2011). Therefore, it is vital to define each item precisely and differentiate between them conceptually in order to utilize the TPACK framework as a research tool (Cox, 2008). Otherwise, researchers using this framework cannot measure the constructs accurately (Cox, 2008), that will result in invalid research results.

Another controversial issue regarding TPACK framework is raised by Archambault and Barnett (2010) who assert that the practical application of this model is limited as it does not suggest any specific activities or methods to develop teachers' TPACK. Likewise, Graham (2011) holds the view that research done so far has focused more on the descriptive value than on the prescriptive value of the TPACK framework. According to him, the value of a theoretical model cannot be explained simply by describing a phenomenon and how "it facilitates one's ability to develop interventions that will predictably influence the phenomenon" is equally significant (Graham, 2011, pp.1958-1959). Therefore, it is regarded vital that the TPACK research focuses on the ways to develop TPACK rather than only describing the level TPACK among teachers.

While the views presented in this section suggest that more research is needed to validate the components of the TPACK framework and to eliminate its weaknesses, Angeli et al. (2016) suggests identifying how each knowledge domain in the framework contributes to the development of TPACK instead of devoting so much time to validate its components.

Previous Studies on TPACK

Ever since it was first put forward, TPACK framework has been investigated among teachers from different fields. In a critical literature review of previous studies on TPACK, the reviewed studies were categorised into four areas as exploring TPACK, assessing TPACK, developing TPACK, and applying TPACK (Tseng et al., 2020). The same path is followed in the following two sections.

Previous Studies on Exploring TPACK

Previous research findings into identifying the level of teachers' TPACK have been inconsistent and contradictory (Pamuk, 2012; Raman, 2017; Muhaimin, et al.,2019; Luik, et al.,2017; Roussinos & Jimoiyannis, 2019; Usta, 2021). For example, Raman (2017) reported that Malaysian pre-service teachers from different domains (N=154) had a high level of confidence in using ICT and TPACK. In a similar vein, Usta's study (2021) demonstrated that Turkish primary school teachers (N=301) had an adequate level of TPACK.

With regards to identifying teachers' level of different TPACK components, it was revealed that Indonesian science teachers (N=356) had a lower level of technology-based TPACK domains than non-technological knowledge domains which are PK, CK, and PCK (Muhaimin et al., 2019). In contrast to Muhaimin et al.'s findings (2019), another study conducted with Estonian pre-service teachers (N=419) showed TK as being the highest scored and PK as being the lowest scored domain, which might be due to the highly developed technology integration in Estonian schools (Luik, et al.,2017).

Roussinos and Jimoiyannis (2019) found that Greek primary education teachers'(N=399) perceived level of knowledge regarding the main TPACK domains content, technology, and pedagogy was high. However, the majority of the teachers tended to perceive the main TPACK domains separately and had difficulty in integrating their TPACK knowledge into their classroom practice (Roussinos & Jimoiyannis ,2019). Similarly, Pamuk (2012) found that although Turkish preservice teachers (N=78) had an adequate knowledge of TK and CK, the majority of the participants reported an inadequate level of PK and TPK, which had a negative impact on the creation the TPACK.

A number of studies have attempted to explain the relationship between TPACK constructs and such demographic variables as age, gender, and teaching experience (Jang & Tsai, 2013; Koh, et al.,2014; Jang & Tsai, 2012; Raman, 2017; Muhaimin et al.,2019; Luik et al.,2017; Roussionos & Jimoyiannis, 2019; Usta, 2021). What these studies found out do not seem to be contradictory regarding the influence of the demographic variables on teachers' TPACK.

Jang and Tsai's study (2013) found that the level of technological knowledge reported by male science teachers is higher than women teachers. Similar Jang and Tsai (2013), Muhaimin et al. (2019) and Luik et al. (2017) found out that male participants scored higher in technology-based knowledge domains TK, TPK, and TPACK than did female participants. A similar finding was attained by Roussinos and Jimoyiannis (2019) which showed male teachers perceiving themselves as being more competent than female teachers in terms of all TPACK technological dimension, namely TK, TPK, TCK, and TPACK. In contrast to the findings of four these studies mentioned above, Raman (2017) found that female pre-service teachers' confidence in using ICT for teaching and learning was higher than male teachers (N=154). Furthermore, some studies indicated no significant difference between male and female teachers' TPACK (Jang & Tsai, 2012; Koh et al.,2014; Usta, 2021).

Regarding the influence of age and teaching experience on teachers' TPACK, Koh et al. (2014) reported that Singaporean teachers with more teaching experience was less sure of their TPACK than novice teachers were (N=354). In contrast to Koh et al. (2014), Jang and Tsai's study (2012), which aimed to explore TPACK among Taiwanese elementary mathematics and science teachers' (N=818), showed that experienced teachers reported significantly higher TPACK than novice teachers did. In addition, teachers who used interactive white boards were found to have a higher level of TPACK than those teachers who did not (Jang & Tsai, 2012).

In an attempt to reveal the relationship between different TPACK components and age and teaching experience, one study conducted with Taiwanese secondary school science teachers (N=1145) showed while experienced teachers reported to have a higher level of CK and PCK than novice teachers did, teachers with less teaching experience was superior to more experienced teachers in terms of TK and TCK (Jang & Tsai, 2013). This finding is supported by Luik et al. (2017) who found out that while age correlated negatively with TK, it had a positive correlation with CK among Estonian pre-service teachers. However, Muhaimin et al. (2019) and Usta (2021) found no significant difference between the level of perceived TPACK and teaching experience and age.

Another study, that aimed to investigate structural relationships between TPACK, teacher self-efficacy, perceived ease of use and perceived usefulness, was conducted with the participation of 296 Korean pre-service teachers (Joo et al.,2018). The findings showed that teachers' TPACK significantly affected their self-efficacy, perceived ease of using technology, and perceived usefulness of technology. However, TPACK did not have a significant influence of their intention to use technology (Joo et al.,2018). In another similar study conducted with 366 Chinese K-12 teachers, the findings indicated that TPACK and computer self- efficacy had a significant negative effect on teachers' technostress (Dong et al.,2020). Furthermore, the effect of computer self-efficacy on technostress mediated through TPACK was found to be higher than the direct effect of computer self-efficacy on

technostress. This finding highlights the important role TPACK can play in reducing teachers' stress for technology use (Dong et al.,2020).

Previous Studies on Developing TPACK

Using different methodologies, a number of studies thus far have attempted to investigate various implementations on how to develop TPACK. Using a pretest-posttest quantitative research design, Chai et al. (2010b) found that taking an ICT course significantly enhanced Singaporean pre-service teachers' (N=899) perceived TPACK.

Other studies reviewed in this paper on the development of TPACK have used either qualitative or mixed-method research designs. For example, in an attempt to explore the effect of virtual exchange on pre-service teachers' (N=55) perceived TPACK, Rets et al. (2020) conducted a mixed-method study in which data were collected through a TPACK questionnaire and online diaries. The findings indicated growth in teachers' perceived TPACK. Furthermore, this growth was more evident in perceived levels of TK and TPK than it was in TCK (Rets et al., 2020). Similarly, Doering et al. (2014) found that a weeklong professional development program, in which content-specific tools and resources were used, significantly improved k-12 geography teachers' (N=35) TK, TPK, TCK, and TPACK. In another mixed-method study, Kapici and Akcay's study (2020) showed that an inquiry-based technology-enhanced lesson planning practice on a virtual platform led to a significant increase Turkish pre-service science teachers' (N=38) TPACK self-efficacy.

Several studies investigating TPACK have been carried out through qualitative methods of data collection (Koh et al.,2014(b); Jang, 2010; Sancar Tokmak, 2015; Gill & Dalgarno, 2017; Canbazoglu Bilici et al.,2016;). For example, one such study which aimed to reveal the interplay between TPACK and contextual factors, the data were collected through the lesson design discussions of 24 Singaporean primary school teachers (Koh et al.,2014). The findings showed that the articulation of some intrapersonal factors such as beliefs of teaching and the consideration of its pedagogical implications, it facilitated TPACK

(Koh et al., 2014). In addition to this, higher occurrences TPACK were found when the discussion team was facilitated by an experienced educational technologist (Koh et al.,2014).

Jang (2010)'s study with 4 Taiwanese science teachers aimed to reveal if the use of interactive white boards (IBWs) and peer coaching would have a positive impact on teachers' level of TPACK. The data was collected qualitatively through reflective journals, interviews, and written assignments. The findings showed that IBW-based peer coaching model significantly improved the TPACK of participant teachers. Another similar study showed that designing educational computer games resulted in improvement in Turkish Early Childhood Education pre-service teachers' (N=21) perceived TPACK (Sancar Tokmak, 2015).

A longitudinal case study by Canbazoglu Bilici et al. (2016) aimed to examine the TPACK development of Turkish pre-service science teachers (N=27) over a semester-long Science methods course. The data were collected through lesson plans and microteaching observations. The findings indicated that the Science methods course participants took had a positive impact on their TPACK (Bilici et al.,2016). In another longitudinal study, TPACK development of six Australian pre-service teachers were examined during their four-year teacher education programme. Through these four years, six semi-structured interviews were conducted with the participants. The findings showed that the participants' level of TPACK progressed through their four-year teacher education programme and school culture, resources, expectations and practice of supervising teachers, an ICT pedagogy subject were identified as the contributing factors for the TPACK development (Gill & Dalgarno, 2017).

Previous Studies on Applying TPACK

A few studies have examined how TPACK framework can be applied in different contexts through different methods (Hsu et al., 2015; Hong & Stonier, 2015; Sheffield et

al.,2015; Chai & Koh, 2017; Bonafini & Lee, 2021). Hsu et al.'s study (2015) aimed to find out the effects of a new framework they proposed, called TPACK-games (TPACK-G), on Taiwanese pre-school teachers' development of TPACK. This framework consists of four new domains of knowledge namely game knowledge (GK), game pedagogical knowledge (GPK)-knowledge of the games with its pedagogical affordances, game content knowledge (GCK)- knowledge of how to use games to represent specific content, and game pedagogical content knowledge – "knowledge of using games to implement teaching methods for any targeted content" (Hsu, et al.,2015, p.464). The findings revealed that the integration of TPACK-G framework significantly enhanced Taiwanese pre-school teachers' (N=49) game knowledge and game pedagogical content knowledge.

Similar to Hsu et al.'s study (2015), Chai and Koh (2017) investigated the changes in teachers' design beliefs and their TPACK development through Scaffolded TPACK lesson design model (STDLM) with pre-service teachers at a university in Singapore. The STDLM, which used the learning by design approach, was implemented through 12 weeks as part of a mandatory educational technology course. The data were collected quantitatively through two adapted scales. The findings showed that STDLM resulted in significant changes in teachers' design beliefs and their TPACK (Chai & Koh, 2017).

Sheffield et al. (2015) aimed to examine a TPACK-based unit, which lasted for 13 weeks and included 10 workshops, at the first year of science education programme at a university in Australia. The purpose of the unit, called as Inquiring About the World, was to "not only ensure preservice teachers had an immersed and deep understanding of the inquiry process that would then be transferable into their teaching, but also to provide an engaging and motivating experience by embedding useful open-source Web 2.0 tools" (Sheffield et al.,2015, p. 231). The findings indicated an improvement in science teachers' understanding of the science concepts. Furthermore, the unit helped them enhance their knowledge and confidence of Web 2.0 tools.

In a qualitative study which attempted to find out pre-service mathematics teachers' use of technological, pedagogical, and content knowledge to create video lessons with portable interactive whiteboards, it was found out that the participants demonstrated TK, PK, TCK, TPK while creating the video lessons. However, the examples of pedagogy-based knowledge domains were more evident in the video lessons when compared to other TPACK domains (Bonafini & Lee, 2021). Lastly, Hong and Stonier (2015) found out that a TPACK-based geographic information systems (GIS) training was successful at helping Georgian social sciences teachers (N=11) improve their use of GIS technologies in their classroom.

Previous Studies on Assessing TPACK

Ever since it was first proposed, scholars and researchers have been in search of suitable methods and methodologies for measuring the TPACK framework (Archambault, 2016). While some studies have employed quantitative methods to measure TPACK, qualitative measures such as performance assessments, interviews, and observation tools have also been widely used.

Performance assessments, which refer to the use of lesson plans, design tasks, learning activities, and case-based analyses, have been one of the preferred ways in order to measure TPACK qualitatively (Archambault, 2016). They provide a means of evaluate TPACK directly through an examination of participants' performance on given tasks (Koehler et al., 2013). Several studies made use of lesson plans in order to assess and evaluate TPACK development of teachers (Hofer & Grandgenett, 2012; Canbazoglu Bilici et al.,2016; Agyei & Voogt, 2015; Bonafini & Lee, 2021; Valtonen et al., 2020; Kapici & Akcay, 2020). According to Valtonen et al. (2020), writing lesson plans activates teachers' TPACK as they determine the content of the lesson, pedagogical practices and technologies in a way that they will support one another.

In a study conducted by Canbazoglu Bilici et al. (2016), technology- enhanced lesson plans were utilized in order to assess the pre-service science teachers' TPACK development at a university in Turkey. The lesson plans were analysed through a TPACK-based lesson plan assessment instrument (TPACK-LpAI) developed by Canbazoglu Bilici et al. (2012). While face and content validity of the TPACK-LpAI was achieved through expert view, two researchers evaluated lesson plans independently in order to ensure inter-rater reliability and internal consistency (Canbazoglu Bilici et al., 2016). The same instrument was also used in Kapici et al.'s study (2020) while analysing the inquiry-based technology-enhanced lesson plans designed by pre-service teachers.

Similar to Canbazoglu Bilici et. al (2016), Agyei and Voogt's study (2015) also utilized lesson plans as a means of data collection in order to determine pre-service mathematics teachers' TPACK development for spreadsheet integration. For the analysis of lesson plans, an adapted version of the Technology Integration Assessment Rubric (TIAR) created by Harris et al. (2010) was used. The measurement was found out to be reliable as the value for Cohen's kappa was 0.86.

In order to understand pre-service teachers'(N=133) decision-making process about the use of ICTs in their teaching at an American University, Graham et al. (2012) used design tasks in which participants were supposed to describe how and why they would teach some content-specific objectives using technology.

Hofer et al. (2011) utilized learning activities in order to trace the TPACK development of seven social sciences teachers after an in-service training programme. Participants of the study were supposed to give an account of the content-specific learning activities, designed as part of instructional planning, which was supported by the purposeful use of technology. What is significant about this approach is that it emphasizes learning activities and the technologies to be integrated are determined based on the learning activities (Hofer et al., 2011). The purpose of this approach, later called Learning Activity Types (LAT) by its designers (Hofer & Grandgenett, 2012), was to help teachers connect

“curriculum-based learning goals with content area-specific learning activities and complementary technology tools” (p.3858). As stated above, this approach emphasizes that learning goals and activities should determine the type of technologies to be used in the classroom.

Another way of assessing TPACK development by examining performance is through the use of case-based analyses, which is intended to help teachers realize the interactions between content, pedagogy, and technology through a process of case development which includes the stages of designing, enacting, and reflecting on their own experiences (Mouza & Karchmer- Klein, 2013). For example, in 2007 Brantley-Dias (2007) set to explore how the development of pedagogical technology integration content knowledge (PTICK) is facilitated by using cases. Data were collected through three course reflection papers, four case study responses, and four case study reflections from pre-service teachers (N=33) majoring in English and Science as part of a six-week summer IT course for educators. In order to ensure reliability, the research team met every two weeks to develop a common codebook. Moreover, a database which included researcher notes, protocols, timelines, artifacts and coded data was established to increase reliability.

Similarly, Mouza and Karchmer- Klein’s study (2013) aimed to find out the extent to which case development helped pre-service teachers recognize the interactions between technology, pedagogy, and content to examine their development of TPACK. The study took place at a university in the United States as part of an undergraduate teacher education program with 58 participants. As for data collection, each participant submitted a technology-integrated lesson plan along with a case report of the implemented lessons. Reliability was achieved by the Technology Integration Assessment Rubric (Harris et al.,2010), an instrument to evaluate pre-service teachers’ lesson plans whose validity and reliability is well-established, along with the subsequent coding by double researchers (Mouza & Karchmer- Klein, 2013). Groth et al. (2009) also used written lesson plans, lesson reviews by university faculty members, transcripts and videos of the implemented lessons,

and recordings and transcripts of the reflections on the implemented lessons as means of data collection for their study to keep a track of the TPACK development of teachers in a lesson study cycle.

As pointed out by Archambault (2016), interviews, another frequently applied method of data collection in TPACK research, have been used as part of other qualitative or quantitative methods for data triangulation (Pamuk 2012; Muhaimin et al.,2019; Tomte, et al.,2015; Hilton, 2016; Jang, 2015; Sancar Tokmak, 2015; Gill & Dalgarno, 2017; Jaipal & Figg, 2010; Mishra et al., 2007; Blau et al., 2016; Swallow, 2017) or for validating instruments (Harris et al., 2012). In order to give an account of the validity and the reliability of the data provided by the interviews, using multiple data sources and member checks (Pamuk, 2011; Muhaimin et al., 2019; Sancar Tokmak, 2015), using multiple researchers during data analysis (Gill & Dalgarno, 2017; Jaipal & Figg, 2010; Mishra et al.,2007; Blau et al., 2016), and receiving expert opinion (Sancar Tokmak, 2015) were identified as the most frequently applied methods. In relation to how the interview questions were designed, only Muhaimin et al. (2019) stated that they adapted interview questions from the survey instrument they used in the study. (Lin et al., 2013; Jang & Tsai, 2013). While only Sancar Tokmak (2015), and Gill and Dalgarno (2017) provided a list of the interview questions they used, Swallow and Olofson (2017) provided information about the focus of interview questions.

Koehler et al. (2013) wrote that a number of TPACK researchers conducted observations, which included video recording or field-note taking of technology-enhanced TPACK practices, to identify teachers' level and experiences of TPACK (Canbazoglu Bilici et al.,2012; Canbazoglu Bilici et al., 2016; Hofer et al., 2011; Bonafini & Lee, 2021; Pamuk, 2012; Doering et al., 2014; Sancar Tokmak, 2015; Jaipal & Figg, 2010; Mishra et al., 2007). While some of these studies did not mention using any specific observation instrument (Pamuk, 2012; Sancar Tokmak, 2015; Jaipal & Figg, 2010; Mishra et al., 2007), two studies

aimed to develop an observation rubric to measure TPACK practices accurately (Canbazoglu Bilici et al., 2012; Harris et al., 2010).

The first TPACK-based observation rubric was developed by Hofer et al. (2011), which was found to be valid and reliable. This observation instrument was designed based on another instrument called Technology Integration Assessment Rubric (Harris et al., 2010). In order to ensure the construct and face validity of the instrument, seven TPACK researchers examined the rubric and revisions were made on the instrument based on their suggestions. The reliability of the instrument was determined after 12 experienced technology-using teachers used it to observe and assess 12 video recorded lessons along with a test-retest procedure for each scorer. While the internal consistency was found to be .914 (Cronbach's Alpha), test-retest reliability was 93.9% (Hofer et al., 2011).

Canbazoglu Bilici et al. (2012) developed another instrument, named the TPACK Observation Protocol (TPACK-OP), to measure the level of TPACK through lesson observations. TPACK-OP was developed based on Magnusson et al.'s (1999) PCK model and it consists of six main sections, namely background information, classroom demographics, learning objectives, setting and activities, ratings of key indicators, and additional comments (Canbazoglu Bilici et al., 2016). The rating section includes the following items: "orientations toward science teaching with technology (Item 1), knowledge of assessment (Items 2 and 3), knowledge of students' understanding of science (Items 4 and 5), knowledge of instructional strategies (Item 6), knowledge of curriculum and curriculum materials (Items 7 and 8), respectively", which the rater ranks on a four-point scale from 0 to 4 (Canbazoglu Bilici et al., 2016, p.241).

In a critical literature review of empirical TPACK studies, Willermark (2018) pointed out that using self-assessments via surveys have been the most frequent approach to identify teachers' level of TPACK. Schmidt et al. (2009) developed a self-assessment survey, which was named the Survey of Preservice Teachers' Knowledge of Teaching and Technology, to identify preservice teachers' perceived level of seven knowledge domains

within the TPACK framework. After reviewing the relevant literature, an initial item pool consisting of 44 items was created by the research group and given to three TPACK experts for content validity evaluation. Based on the comments and suggestions of the experts, some items were deleted or modified, and some other items were added to the survey. The survey was distributed to 124 student teachers who enrolled in an instructional technology course. After the data was collected, a principal component factor analysis was run to investigate construct validity. As a result of the analysis, 28 eights were deleted from the survey. After a second factor analysis was run on the remaining items, the results showed that the final version of the survey, including 47 items, showed internal consistency reliability as the coefficient alpha ranged from .75 to .92 for TPACK subscales (Schmidt et al., 2009).

Chai et al. (2011) designed another survey instrument which an adaptation of Schmidt et al.'s (2009) survey in order to model Singaporean pre-service teachers' TPACK after a 12-week ICT course. Unlike the original survey (Schmidt et al., 2009), the findings of EFA (N=375) and CFA (N=343) in this study showed a five-factor model consisting of 31 items, with the loss of TCK and PCK scales.

Another instrument, Pre-service Teacher-Technological Pedagogical Content Knowledge Survey (PT-TPACK) including six TPACK dimension and 27 items, were developed and validated by Lux et al. (2011). Initial survey items (N=45) were designed after a literature review and pilot study were conducted. The survey was administered to 120 pre-service teachers studying at an American University. The results of an exploratory factor analysis and following a principal component analysis showed a six-factor survey consisting of 27 items in which TCK was the only missing component of TPACK. As an indicator of the internal consistency of the items, Coefficient alphas for each factor was as high in the following: TPACK = .90; TPK = .84; PK = .77; CK = .774; TK= .75; PCK = .65 (Lux et al., 2011).

In order to examine Taiwanese mathematics and science teachers' TPACK in relation to the use interactive white boards (IWB), an IWB-based TPACK questionnaire was

developed and validated (Jang & Tsai, 2012). The initial survey including 40 items was designed by the research team and examined by experts from the field. 210 teachers working at primary school level participated in the study. The findings of two rounds of factor analysis yielded in an IWB-based TPACK questionnaire consisted of 30 items divided in four components: CK (5 items), PCK (9 items), IWB-based TK (4 items), and TPACK (12 items). The internal consistency of the components ranged from .862 to .960 (Jang & Tsai, 2012).

Similar to IWB-based TPACK, another specific survey was developed by Lee at al. (2010) in order to explore Taiwanese teachers' Technological Pedagogical Content Knowledge related to Web-based instructional technologies. The data collected from 558 participants were subjected to both exploratory and confirmatory factor analyses. The findings indicated that TPACK-W survey was a valid and reliable instrument with 30 items in five factors, namely Web-general, Web-communicative, Web-Content Knowledge, Web-Pedagogical-Content Knowledge, and attitude toward Web-based instruction (Lee & Tsai, 2010).

Yurdakul et al. (2012) developed TPACK-deep in order to measure pre-service teachers' TPACK in Turkish context. The initial items of the survey emerged after analysing the data collected from a workshop in which nine experts in educational technologies worked together to identify TPACK indicators. An Exploratory Factor Analysis (EFA) and a Confirmatory Factor Analysis (CFA) were run on the data gathered from 995 participants. The findings revealed a four-factor scale: design, exertion, ethics and proficiency with a total of 33 items. The Cronbach's Alpha coefficient value for each factor were between .85 and .92 while it was .95 for the whole scale (Yurdakul et al.,2012).

Overall, all these studies presented in this section yielded ambivalent findings which might stem from the differences in data collection methods and instruments and from contextual differences in which these studies were conducted.

Previous Studies on Language Teachers' TPACK

This literature review is limited to the studies in the domain of language teaching in accordance with the research interest of the study.

Studies which sought to identify the TPACK levels of language teachers from different contexts through self-report questionnaires revealed that teachers were usually satisfied with their TPACK competencies in general (Cheng, 2017; Atar et al., 2019; Wu & Wang, 2015). However, in another study conducted in Singapore, Chinese language teachers (N=287) reported themselves to be strongest in terms of their CK, and weakest in terms of technology-related factors (TK, TPK, TCK) and TPACK in general (Chai et al., 2013). Wu and Wang's study (2015) cited above reported a similar finding in which EFL teachers consider their TK needs further development.

In terms of the gender differences, Solak and Cakir (2014) found that male pre-service English teachers had a higher level of TK than females, whereas females were stronger in terms of their PK. Another similar study conducted with pre-service English teachers in Turkey (N=76) reported females having proportionally higher level TPACK development with respect to TK and PK (Oz, 2015). Atar et al. (2019) also found no significant differences between male and female pre-service English teachers' TPACK levels in general (N= 182), whereas males outscored females in one of the dimensions measured, which Design.

With respect to the relationship between teaching experience and TPACK, Cheng (2017) found a significant positive relationship between teachers' CK, PK, and PCK and their teaching experience. Significant differences were found between novice and experienced EFL teachers, with experienced teachers being higher on PK and PCK, and novice teachers reporting their TK, TCK, TPK and TPACK to be higher (Nazari et al., 2019). TPACK was also found out to be the strongest predictor of the use of information and communication technologies (UICT) among Indonesian pre-service EFL teachers (N=287) (Habibi et al., 2019). Using quantitative self-report questionnaires has not been the only

way to investigate TPACK among language teachers. A case study conducted in Taiwan tried to identify the TPACK practices of three junior high EFL teachers through lesson plan analysis and stimulated recall (Tseng et al., 2011). In terms of their TCK, the teachers prioritized teaching grammar through technology. With respect to their TK, they frequently used Powerpoint, hot potatoes, weblog, and the internet as a source of materials. Regarding the TPK, elicitation, concept processing, tutorial, drill and practice were among the strategies that they thought could facilitate language teaching through the use of technology. In another ethnographic study, the findings of the data collected through observation field notes, teacher interviews, and teacher blogs showed that the teachers' (N=3) PK and years of teaching experience strongly influenced their mobile technology integration, whereas that was not the case with their TK and CK (Saudelli & Ciampa, 2016).

To date, a few studies have attempted to develop a valid self-report survey instrument to investigate the TPACK among language teachers. The TPACK-EFL survey (Baser et al., 2016) was developed to examine TPACK among preservice EFL teachers. As a result of the two rounds of exploratory factor analysis (EFA), the seven-factor structure of TPACK-EFL consisting of 39 items was confirmed which is consistent with TPACK framework: a) Technological Knowledge (9 items), b) Content knowledge (5 items), c) Pedagogical Knowledge (6 items), d) Pedagogical Content Knowledge (5 items), e) Technological Content Knowledge (3 items), f) Technological Pedagogical Knowledge (7 items), g) Technological Pedagogical Content Knowledge (4 items).

A similar instrument (ELF-TPACK), developed and validated by Bostancioglu et al. (2018) to measure TPACK for English language teaching, consisted of 36 items loading onto 6 factors: 5 CK items, 6 TK items, 7 PCK items, 6 TCK items, 6 TPK items, and 6 TPACK items. The results of the EFA indicated that PK and PCK loaded on a single factor, PCK which might stem from the close connecting between subject matter and the ways of teaching it (Bostancioglu & Handley, 2018).

In order to investigate preservice language teachers' self- report TPACK levels in the context of teaching multimodal literacies, another TPACK survey was developed and validated with a group of 220 participants from Indonesia, China, and Australia (Tan et al., 2019). As distinct from the two studies mentioned above (Baser et al., 2016; Bostancioglu & Handley, 2018), this instrument included items (N=32) based both on the constructs of TPACK and on multimodal literacies. The construct validity of the instrument was established with an eight-factor solution including: Pedagogical Content Knowledge for multimodal literacies (4 items), Technological Pedagogical Knowledge for twenty-first century learning (4 items), Knowledge about digital media tools (3 items), Knowledge about content-specific Technology (3 items), integrative TPACK for twenty-first century learning (5 items), Knowledge about social semiotics (4 items), Pedagogical Knowledge (4 items), and beliefs about the new culture of learning (5 items) (Tan et al.,2019).

Tseng (2016) developed and validated a 30-item scale to assess TPACK of EFL teachers, though this time from the perspective of the students. The findings of the validation process which was conducted through the administration of the survey to Taiwanese EFL students (N=257) revealed a five-factor model, indicating that students were not able distinguish some components of the TPACK model (Tseng, 2016).

Various studies have investigated how the TPACK framework could be applied to improve different aspects of language learning and teaching environments. As a result of a TPACK-based online writing course, Taiwanese nursing students' (N=51) writing skills have significantly improved (Tai et al., 2015). In a similar vein, receiving reading instruction from a TPACK model trained instructor had a positive impact on Jordanian EFL students' reading performance (Abu-Hardan et al., 2019). A TPACK-guided teacher training was also found to help Taiwanese English teachers (N=24) improve their Computer Assisted Language learning (CALL) competencies (Tai, 2015).

Research into how to develop TPACK among language teachers has also yielded noteworthy findings. Using telecollaboration as a means of exchanging practices and

experiences to design a technologically enhanced Content and Language Integrated Learning (CLIL) unit contributed significantly to Spanish pre-service teachers' (N=55) TPACK development (Bueno-Alastuey et al., 2018). Bustamante's study (2020) revealed that a 15-week training, conducted with 18 Spanish teachers, on the integration of Web 2.0 tools into the language classroom resulted in positive learning experiences in the three main areas of TPACK framework, namely pedagogy, technology, and content. Creating digital stories also significantly improved pre-service foreign language teachers' (N=71) TPACK self-confidence at a state university in Turkey (Sancar Tokmak & Yanpar- Yelken, 2015).

This chapter has aimed to present a summary of the existing literature in distance education, online education, emergency remote teaching (ERT) and TPACK. In the following chapter, the methodology of the present study will be provided in detail.

Chapter 3

Methodology

In this chapter, details about the research design, participants and setting, data collection instruments and methods, and the procedure of data analysis are presented.

Research Design

As it was stated earlier, there are two primary aims of this study: 1. to explore Turkish EFL instructors' perceived TPACK levels and satisfaction with teaching online in an emergency remote teaching context 2. To indicate whether the variables of age, the amount of previous online teaching experience, and TPACK level can predict participants' satisfaction with teaching online. Considering the purposes of the study, a mixed-methods approach, combining quantitative and qualitative methods, are used since including only quantitative and qualitative methods does not answer the needs of major approaches being used in social and human sciences (Nancy et al., 2009; Creswell, 2003).

In a mixed-methods study, data are collected and analysed, findings are integrated, and inferences are drawn through both qualitative and quantitative methods (Tashakkori & Cresswell, 2007). Thus, according to Malina et al. (2011), combining quantitative and qualitative methods, researchers are able to explore more complex aspects and relations of the human and social world and the research outcome is stronger than either method individually.

In order to justify the use of a mixed-method approach in this study, it is important to understand the strengths and weaknesses of both methods, qualitative and quantitative, individually. Dornyei (2007) defines quantitative research as involving data collection procedures in which data are collected in form of numerical data and then analysed mainly through statistical methods. On the other hand, qualitative research produces mainly non-numerical data which are analysed by non-statistical methods (Dornyei, 2007). It is asserted that although quantitative research is regarded systemic, rigorous, focused, and controlled

whose data is reliable and generalizable to a wider population, it fails to capture the subjective variety within individuals (Dornyei, 2007). Although it gives a picture of the general tendencies of a large group on a particular subject, questions as to why usually remain unanswered.

According to Dornyei (2007), unlike quantitative research methods, qualitative research procedures are exploratory in nature which can help understand complex phenomena by answering the question “why” through in-depth investigation of participants’ experience. However, qualitative research methods are usually criticized on the grounds that the sample studied is usually too small which makes generalizability of the findings questionable. It is also possible that less reliable findings are obtained through qualitative methods due to researcher bias (Dornyei, 2007). Considering all this information, it is pointed out that the biggest advantage of mixed methods research is its potential to make use of the strengths of both methods and to overcome the weaknesses of each method individually (Dornyei, 2007). Therefore, using a mixed-methods research design fits the purpose of this study as it aims to reveal not only participants’ the general tendencies of perceived TPACK and satisfaction with teaching online, but also to provide an in-depth understanding of their TPACK practices and the multiple factors that affect language instructors' satisfaction with teaching online.

As stated earlier, this study examines three main research questions. For the first research question, participants’ perceived level of TPACK is explored through a quantitative survey (TPACK-EFL), and the qualitative data obtained through interviews are used to examine participants’ TPACK practices in more detail and to articulate reasons for the general tendencies. For the second research question, while the quantitative data collected through the online faculty satisfaction survey (OFSS) (Bolliger & Wasilik, 2009) provide a general of picture of how satisfied the instructors are with teaching online, the findings obtained through the analysis of the interviews indicate the reasons they attribute to their satisfaction or dissatisfaction. Although the statistical power of TPACK and the other

variables to predict instructors' satisfaction with teaching online is explored through the statistical analysis of quantitative data, the findings are supported with the interview data to explain why. Triangulating the data in this way for all three research questions helps the researcher "get richer, fuller data and/or to help confirm the results of the research" (Wilson, 2014, p.74). Therefore, it can be concluded that using a mixed-methods research design contributes to the reliability and the validity of the findings.

Cresswell (1999) put forward three main models of mixed-methods approach depending on the implementation of quantitative and qualitative methods in a study either sequentially and or concurrently: convergent parallel model, explanatory sequential model, and exploratory sequential model. In convergent parallel design, also referred to as convergence model, quantitative and qualitative data are collected concurrently during the same phase of the study, analysed independently, and the results are mixed for overall interpretation (Cresswell et al., 2007). The purpose of a researcher employing a convergent parallel design is to determine whether the results obtained from qualitative and quantitative methods confirm or contradict one another, and hence achieve more valid results. (Cresswell, 1999).

Explanatory sequential design is identified by the sequential implementation of qualitative and quantitative data at two separate phases. In this model, the findings obtained by the first phase of the study are used to shape the second phase of data collection. Cresswell and Plano (2007) uses the following example to explain how the sequential implementation of one method shapes the following:

> For example, the researcher collects and analyses quantitative data to identify significant predictors of adolescent tobacco use. Finding a surprising association between participation in extracurricular activities and tobacco use, the researcher conducts qualitative interviews with adolescents who are actively involved in extracurricular activities to attempt to explain the unexpected result (p.71).

As it is illustrated in this example, researchers design and implement the second phase of their study based upon the findings they obtained from the first phase. In the example above, for instance, there are no pre-determined interview questions and the surprising association found between extracurricular activities and tobacco use form the direction of the interview questions.

Thirdly, the exploratory sequential design also adopts a sequential data collection and analysis process through which the findings of the qualitative data obtained at the first phase of the study are used to form questions and scales of a quantitative instrument for the second phase. Therefore, the first qualitative phase is considered an exploratory one on which the second quantitative phase is built with the intent of generalizing the findings (Cresswell, 1999; Cresswell & Plano, 2007).

Considering the distinctive features of each model summarized above, it is possible to say that this study adopts a convergent parallel design as the quantitative and qualitative data are collected concurrently, not at two distinct phases, analysed separately, and the findings are mixed to determine the consistency of the findings and to reach an overall conclusion. In addition, both qualitative and quantitative instruments are pre-determined, and one instrument is not developed based upon the findings obtained by the other instrument.

Research Population and Participants

The population of a study refers to all the people whom the study is about whereas the sample is the group of people who participate in the study (Dornyei, 2007). Researchers recruit several sampling procedures to determine the participants of a study as it would be a huge waste of time, effort, and resources to conduct a study with the whole population (Dornyei, 2007). EFL instructors working at Turkish state universities in an emergency remote teaching context constitutes the population of this study. The sampling procedures

applied for this study are explained below for both the qualitative and the quantitative phases.

There are two main strategies of sampling for studies which employ quantitative methods of data collection, namely probability/random and non-probability sampling. If researchers determine their participants randomly, each person in the population has an equal chance of being in the sample (Kumar, 2011). On the other hand, non-probability sampling strategies are used when it is aimed to achieve a fairly representative sample using whatever sources are available to the researcher (Dornyei, 2007). Although non-probability sampling techniques suffer from the lack of the generalizability of the findings to the whole population, they are preferred by the researchers mainly for practical purposes. This study uses a non-probability sampling procedure as it is beyond the scope of this study to generalize the findings to the population.

A convenience sample of 205 EFL instructors took part in the quantitative phase of this study. As a non-probability sampling technique, a sample of convenience refers to participants "that are both easily accessible and willing to participate in the study" (Teddlie & Yu, 2007, p.78). In a convenience sample, participants are determined based on certain practical criteria "such as geographical proximity, availability at a certain time, easy accessibility, or the willingness to volunteer" (Dornyei, 2007, p.99). Although geographical proximity did not pose a problem for the accessibility of the participants as the surveys were sent electronically, willingness to volunteer was a significant determinant of the participants of this study.

Surveys were sent to the instructors working at 12 state universities in Turkey. These universities were determined based on Nomenclature of Territorial Units for Statistics (NUTS), which is a hierarchical division of the economic territories of European Union and the candidate countries in order to collect data about regional statistics and to analyse the regions socioeconomically ("NUTS – Nomenclature of Territorial Units for Statistics", n.d.). According to NUTS, there are 12 major socio-economical regions, also

called NUTS-1, in Turkey (“NUTS statistical regions of Turkey”, n.d.). One university from each statistical region are included in the study, as shown in Table 1 below:

Table 1
Universities Included in Data Collection and the Regions

University	NUTS-1
İstanbul University	İstanbul Region (TR1)
Çanakkale 18 Mart University	West Marmara Region (TR2)
Ege University	Aegean Region (TR3)
Eskisehir Anadolu University	East Marmara Region (TR4)
Hacettepe University	West Anatolia Region (TR5)
Çukurova University	Mediterranean Region (TR6)
Erciyes University	Central Anatolia Region (TR7)
Samsun 19 Mayıs University	West Black Sea Region (TR8)
Karadeniz Technical University	East Black Sea Region (TR9)
Atatürk University	Northeast Anatolia Region (TRA)
Firat University	Central East Anatolia Region (TRB)
Gaziantep University	Southeast Anatolia Region (TRC)

While determining the participant universities from each region, the number of EFL instructors at each university and the existence of an emergency remote English teaching context were also considered. The reason why the sample was selected from universities located in different socio-economical regions of Turkey is that the sample can better represent the population in this way. Previous studies investigating EFL instructors’ TPACK and online distance education experiences were often carried out at universities located in the western Turkey (Yapar, 2018; Ozudogru & Hismanoglu, 2016; Adnan, 2017; Atar et al., 2019; Oz, 2015; Solak & Cakir, 2014) and there are almost no such studies conducted with participants from different regions of Turkey.

As stated above, 205 instructors from 12 different universities responded to the online surveys sent by the researcher. Table 2 below illustrates the number of participants responding to the online surveys from each university:

Table 2
The Number of Participants Responding to Online Surveys

University	The number of participants
İstanbul University	30
Canakkale 18 Mart University	13
Ege University	14
Eskisehir Anadolu University	18
Hacettepe University	18
Cukurova University	18
Erciyes University	12
Samsun 19 Mayıs University	12
Karadeniz Technical University	14
Atatürk University	14
Firat University	24
Gaziantep University	18
Total	205

While female participants constitute 61% (N=125) of the sample, this percentage was 39% (N=80) with male participants. The average age of the survey participants was 39, that ranged between 27 and 60. Figure 2 below illustrates the latest degree that the survey participants hold:

Figure 2
The Latest Degree Survey Participants Hold

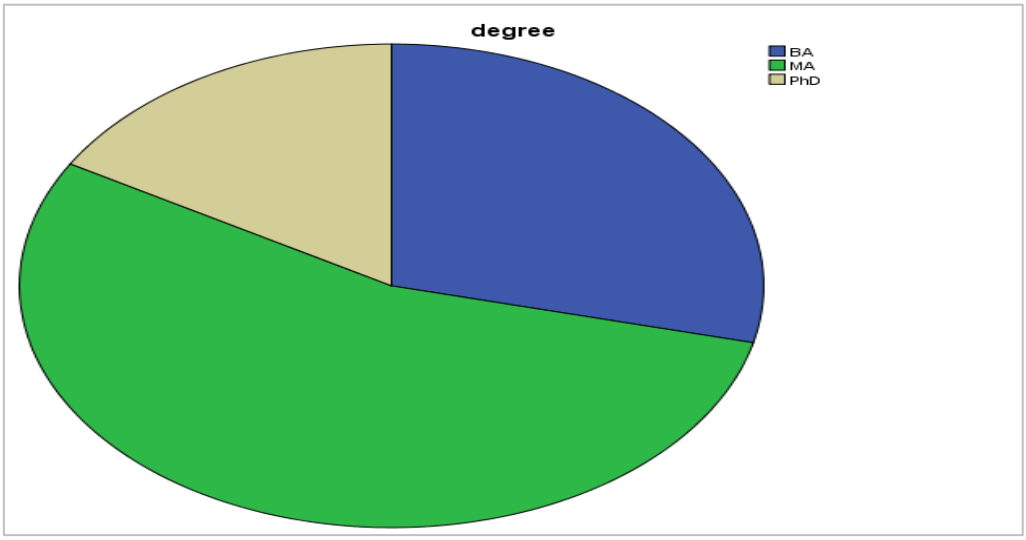


Figure 2 above illustrates that while 28,8 % of the survey participants (N=59) hold a BA degree, 16,6% (N=34) of them have a PhD degree. It is clearly seen that most of the participants (54,6 %, N=112) hold an MA degree. Mean values regarding survey participants' online and face-to-face teaching experience are shown in Table 3 below:

Table 3
Online and Face-to-Face Teaching Experience of Participants

	Mean
Online Teaching Experience	20 months
Face-to-face Teaching Experience	11 years 7 months

Table 3 above shows that at the time they responded to the surveys, the instructors had an average of 20 months of online teaching experience while their face-to-face teaching experience was an average of 11 years.

Semi-structured interviews were conducted with 16 EFL instructors for the qualitative phase of this study. Like the quantitative phase, participants for the interviews were determined by convenience sampling method. The instructors interviewed were selected from among the survey respondents who volunteered to take part in the interviews. At the end of the online surveys posted online, the participants were asked if they volunteered to take part in the interviews. The participants who volunteered to participate in the interviews wrote their contact information and were contacted by the researcher. In order to ensure equal distribution among the participants, one or two lecturers from each university were included in the interviews. The demographic information of the interview participants is shown in Table 4 below:

Table 4
Demographic Information of the Interview Participants

	Age	Gender	Degree	Online teaching Experience	Face-to-face teaching Experience	University
Instructor 1	29	Female	MA	15 months	6 years	Firat
Instructor 2	29	Male	MA	18 months	5.5 years	Firat
Instructor 3	32	Female	BA	16 months	9 years	Erciyes
Instructor 4	33	Female	MA	4 years	10 years	Atatürk
Instructor 5	31	Female	BA	15 months	7 years	İstanbul
Instructor 6	37	Male	PhD	24 months	15 years	İstanbul
Instructor 7	32	Female	MA	17 months	7 years	Çanakkale 18 Mart
Instructor 8	35	Female	MA	1,5 years	11 years	Karadeniz Teknik
Instructor 9	42	Male	MA	20 months	15 years	Gaziantep
Instructor 10	48	Female	MA	18 months	23 years	Çukurova
Instructor 11	31	Male	MA	2 years	7 years	Çukurova
Instructor 12	33	Female	MA	8 years	8 years	19 Mayıs
Instructor 13	29	Male	MA	18 months	6 years	Anadolu
Instructor 14	33	Female	MA	30 months	10 years	Anadolu
Instructor 15	35	Female	PhD	24 months	9 years	Ege
Instructor 16	35	Male	BA	20 months	9 years	Hacettepe

Data Collection

This study, which aims to, explore Turkish EFL instructors' perceived TPACK levels and their satisfaction with teaching online, employs a mixed method approach in which both qualitative and quantitative methods are used in order to collect data. While quantitative data were collected through online faculty satisfaction survey (OFSS) developed by Bolliger and Wasilik (2009) and TPACK-EFL survey developed by Baser et al. (2016). Qualitative data were gathered through semi-structured interviews with volunteer participants.

The data were collected in 2021-2022 Fall Term. As it was explained previously, quantitative and qualitative data were collected concurrently in this study. Before the data collection process started, the developers of the two surveys were contacted by the researcher via email and their written permissions were obtained for the scales to be used in this study. Secondly, Hacettepe University Ethics Committee was applied for ethical approval required for the study to be conducted. After the required approval was obtained from Hacettepe University Ethics Committee, surveys were sent to the administrations of participating universities for approval. After the university administrations approved the implementation of the questionnaires, they distributed the questionnaires electronically, via the electronic document management system or by email, to the instructors of English at their institutions.

Instructors volunteering to respond to the online surveys first needed to approve the consent form. In the approval form, the institution in which the study was carried out and its purpose, researcher's name, affiliation, and contact information were clearly stated. In addition, the survey respondents were informed in the consent form that their participation in the study was on a voluntary basis and no information was required about their identity. It was also stated that their answers would be confidential and used only for the purposes of this study.

In the last part of the online form containing the survey items, the participants were asked to indicate whether they would like to participate in the interviews for the qualitative

phase of the study. Participants who volunteered to be interviewed were asked to write their contact information in the relevant place and they were free to provide any contact information they preferred (email or telephone). The interview participants were contacted by the researcher through their contact information and the interviews were conducted at predetermined dates and times via videoconferencing and recorded with the approval of the participants. The interviews took 40-45 minutes on average.

Before the data collection process started, data collection instruments used in the study were piloted. According to Dornyei (2007), piloting research tools is a prerequisite in any study that can avoid any possible confusion, frustration, and complexity later.

Despite their well-established reliability and validity, the OFSS and the TPACK-EFL surveys were piloted on 20 participants. These participants were selected from among colleagues that the researcher can reach easily and quickly through personal communication channels. The surveys were sent to the participants through email who were asked to indicate any problem regarding the comprehensibility and the clarity of the survey items as well as the general layout of online survey form. Based on the feedback provided by the participants, a few spelling mistakes were corrected on the online survey form. No problems were reported regarding the clarity and comprehensibility of the survey items.

Three of these participants agreed to take part in the piloting of the interviews. After the interviews were conducted, interview questions were sent to the participants in written form which they were asked to think about and reflect on. In their feedback, the participants reported a few wording-related problems which affected the comprehensibility of interview questions, along with the proposed solutions. The feedback provided by the participants was used to make the necessary corrections on the questions. Furthermore, as a result of the preliminary analysis of the data obtained from these three interviews, it was seen that the answers given to two of the questions were almost the same and one of these questions was eliminated from the study. Hence, the interview questions to be used in the actual study took their final form. A summary of the data collection process is given in Table 5 below:

Table 5
Summary of the Data Collection Process

Step 1	Deciding on & designing the data collection instruments
Step 2	Getting permission from survey developers
Step 3	Getting ethical approval from Hacettepe University Ethics Comittee
Step 4	Piloting the study
Step 5	Distribution of the surveys to university administrations
Step 6	Completion of the surveys by participants & conducting interviews
Step 7	Completion of the data collection process

Instruments

In this study, a background questionnaire, the TPACK-EFL survey, the OFSS survey, and semi-structured interviews were used to gather data from the participants. The details about these data collection instruments are presented in the following sections.

TPACK-EFL Survey

In order to identify EFL instructors' perceived level of technological pedagogical content knowledge (TPACK), the TPACK-EFL survey (Appendix-B) developed and validated by Baser et al. (2016) was used in this study. The survey has a seven-factor structure which shows consistency with the TPACK framework, with a total of 39 items. The number of survey items for each seven structures of TPACK is shown Table 6 below:

Table 6
The Number of Items in the TPACK-EFL Survey

Constructs	Number of Items
Technological Knowledge (TK)	9
Content Knowledge (CK)	5
Pedagogical Knowledge (PK)	6
Pedagogical content knowledge (PCK)	5
Technological Content Knowledge (TCK)	3
Technological Pedagogical Knowledge (TPK)	7
Technological Pedagogical Content Knowledge (TPACK)	4
Total:	**39**

As it can be seen in Table 6, the TPACK-EFL survey consists of 39 items: 9 items for TK, 5 items for CK, 6 items for PK, 5 items for PCK, 3 items for TCK, 7 items for TPK, and 4 items for TPACK. Participants of this study responded to the items of the TPACK-

EFL survey, which are written in English, on a Likert-type scale including 10 intervals from 0 to 9. As the participants read the survey items, they were asked to indicate their opinions on how true each statement was for them on a scale ranging from 0 (nothing) to 9 (a great deal).

The first reason for the researcher to use the TPACK-EFL survey in this study is that it is specific to the field of English language teaching. Although TPACK studies have established several survey options to evaluate TPACK in a general way, survey tools with a high degree of specificity will produce better evaluation results of TPACK (Chai et al., 2016). The second reason is the established reliability and validity of the survey and each of its seven constructs.

The process of developing the TPACK-EFL survey started with data collection through qualitative means. Baser et al. (2016) conducted interviews with experts and analyzed some documents out of which the initial item pool consisting of 50 items emerged. The content validity of these initial items was checked by the views of experts and a preservice teacher, as a result of which some changes were made on the items such as reducing the length of instructions and eliminating or explaining ambiguous terms.

In order to establish the construct validity of the survey items, two rounds of exploratory factor analysis (EFA) were conducted. 174 preservice EFL teachers from a state university in Turkey participated in the first round of the EFA. The results showed a five-factor structure: TK, CK, PK, PCK, and the fifth factor as a combination of TCK, TPK, and TPACK items. Interviews were conducted with survey respondents (N=20) in which they were asked to reflect on TCK, TPK, and TPACK items. Based on the interviewees' feedback, some items were revised or eliminated from the survey.

A second EFA was run on the revised version of the survey whose participants were 204 preservice EFL teachers at a Turkish State University. The results indicated a seven-factor structure consisting of 39 items: 9 TK, 5 CK, 6 PK, 5 PCK, 3 TCK, 7 TPK, and 4 TPACK. The seven-factor structure of TPACK-EFL survey shows consistency with the

TPACK framework. Cronbach's Alpha coefficients for the seven factors of the TPACK-EFL survey ranged from .81 to .92, which provided evidence of the reliability of the instrument.

In this study, the Cronbach's Alpha Coefficient for the TPACK-EFL survey was found to be .95. In addition, each construct in the survey had a high level of reliability as Cronbach's Alpha coefficients ranged from .77 to .90 as shown in Table 7 below:

Table 7
Cronbach's Alpha Coefficients for TPACK-EFL Survey

	TK	CK	PK	PCK	TCK	TPK	TPACK	**Overall**
Cronbach's Alpha	.86	.78	.89	.84	.77	.90	.80	**.95**

According to Cresswell and Cresswell (2018), a Cronbach's alpha value that ranges between .7 and .9 is an indicator of the internal consistency of a scale. It is clearly seen in Table 7 above that the TPACK-EFL survey is reliable to be used in the context of this study.

The Online Faculty Satisfaction Survey (OFSS)

The online faculty satisfaction survey (OFSS) (Appendix-2) developed and validated by Bolliger and Wasilik (2009) was the second quantitative instrument to measure how satisfied the EFL instructors in this study were with teaching online. The survey includes 28 items with a three-factor structure: student-related (15 items), instructor-related (7 items), and institution-related (4 items) factors. The OFSS survey has two items (item 9 and item 18) which measure general satisfaction with teaching online.

The participants responded to survey items on a four-point Likert scale that includes four intervals from 1 to 4. As they read the items, they were supposed to indicate how much they agreed with each statement on scale ranging from 1 (strongly disagree) to 4 (strongly agree). Like the TPACK-EFL survey, items of the OFSS are written in English.

In line with the purposes of this study, the OFSS was used because it is "a valid and reliable instrument for measuring perceived faculty satisfaction in the online environment" (Bolliger and Wasilik, 2009, p.113). At the beginning of the scale development process, Bolliger and Wasilik (2009) created an item pool by reviewing the relevant literature. The

initial items were examined by a content and a psychometric expert as a result of which several modifications were made.

Having received expert opinions, the survey was piloted on 25 participants in order to ensure the clarity and comprehensibility of the items and a minor change was made to one item. 102 instructors who taught online at a small research university in the United States participated in the actual study. The results of a confirmatory factor analysis indicated a three-factor structure: student-related (15 items), instructor-related (7 items), and institution-related (4 items) factors. Cronbach's Alpha coefficient indicated a high level of internal reliability both for the total scale (0.85) and for the student-related factor (0.86) whereas it was moderate for the instructor-related (0.55) and institution-related (0.55) factors.

Cronbach's Alpha coefficients for the OFSS obtained in this study are provided in Table 8 below:

Table 8
Cronbach's Alpha Coefficients for the OFSS

	Student-Related	Instructor-Related	Institution-Related	General satisfaction	**Total Scale**
Cronbach's Alpha	.85	.58	.59	.76	**.87**

It is apparent from Table 8 above that, although the Cronbach's Alpha coefficients for the total scale (.87) and for the student-related (.85) were high, institution-related (.59) and instructor-related (.58) had a moderate level of internal consistency. According to Bolliger and Wasilik (2009), this might be due to the interplay between some of the instructor-related and institution-related issues as well as the lower number of questions on these two dimensions compared to the student dimension. Item 26 "I am concerned about receiving lower course evaluations in the online course as compared to the traditional one.*" was eliminated from data analysis since it significantly decreased the Cronbach's Alpha value for the institution-related factor.

Semi-structured Interviews

An interview is a kind of self-report which, despite being simple, can cover many subject areas and thus produce detailed and rich data (Marczyk et al., 2005). Depending on how the interview questions are structured, three main types of interviews are identified in the research literature: structured, unstructured, and semi-structured interviews. In a structured interview, researchers use the same set of pre-determined questions which have the same wording, order of questions, and response format (Kumar, 2011). Although data from structured interviews have the advantage of comparability, it is difficult to achieve variation or spontaneity in responses as the interviewer records the responses by using a coding scheme (Kumar, 2011; Dornyei, 2007). Therefore, structured interviews may fail to triangulate the data obtained by quantitative methods.

Unlike structured interviews, unstructured interviews give the researchers complete freedom in the content, order and wording of the questions (Kumar, 2011). This creates a relaxed atmosphere for interviewees to say more than they would in more formal situations (Dornyei, 2007). In semi-structured interviews, researchers have pre-determined questions, but the conversational manner of the interviews offer the researchers to ask more questions when they feel it is necessary to probe for more details (Longhurst, 2003). As Dornyei (2007) notes, the strength of semi-structured interviews is that “the interviewer provides guidance and direction (hence the '-structured' part in the name) but is also keen to follow up interesting developments and to let the interviewee elaborate on certain issues (hence the 'semi-' part)” (p. 136). Therefore, a semi-structured interview format is used to collect qualitative data in this study as it allows for more open-ended questions and probing to address some important questions that cannot be answered by standardized survey questionnaires (Adams, 2010).

In this study, semi-structured interviews consisting of 15 questions were used to collect qualitative data from volunteer participants. First, an initial question pool was created based on the relevant literature (Durdu & Dag, 2017; Ritter, 2012; Donmez, 2016) and the

researchers' own ideas and experiences. The question pool was revised by two faculty members in the field of language education, one of whom has studies in emergency remote teaching. These experts determined that the interview questions had content validity and suggested some slight modifications on the wording of some questions. After the piloting process, a few more slight modifications were made on the questions and two questions were eliminated from the interview. Thus, the interview questions consisting of 15 questions took their final form (Appendix-D).

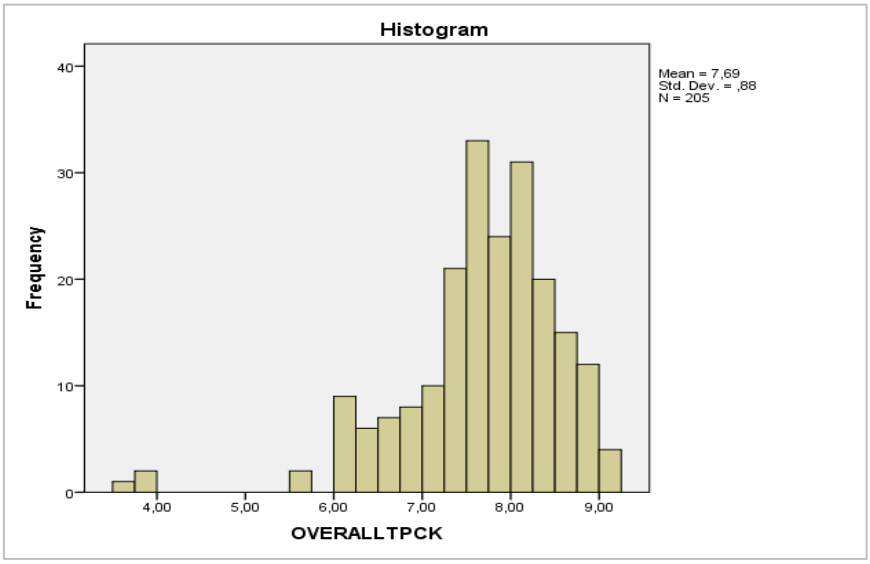
Although it may seem difficult to ensure the reliability of qualitative instruments due to narrative form and subjective nature of the data, the goal of the researcher should not be to achieve the same results, but to ensure that the data is dependable and consistent (Zohrabi, 2013). Therefore, in this study, the researcher sought help from a colleague, who is having a PhD in English Language Teaching, to code and analyse the interview data. There was a high agreement between the results obtained by the two researchers independently, which can be considered as the proof of the reliability of the interviews.

Data Analysis

Before the data were analysed to answer the research questions, the normality of the distribution was checked for both surveys through Kolmogorov-Smirnov statistics, the shape of the distribution in the histogram, and the line of the Q-Q plot.

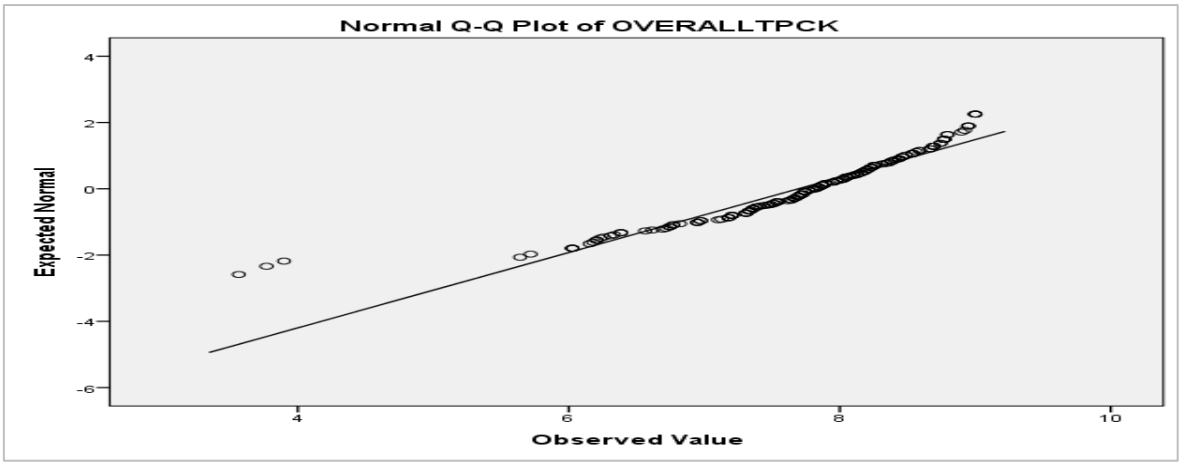
First, the normality of the distribution for participants' overall TPACK scores was assessed. The findings of the Kolmogorov-Smirnov statistics revealed a non-significant value ($p=.00$) which indicates that the distribution may not be normal. ($p<.05$). For further analysis, the shape of distribution in the histogram and the line of the Q-Q plot were examined. The findings are illustrated in Figure 3 and Figure 4 below:

Figure 3
The Shape of the Distribution of Overall TPACK Scores in the Histogram



The shape of the histogram suggests that the distribution of the scores for participants' overall TPACK scores seems to be normal, with most scores occurring at the centre, tapering out towards the extremes (Pallant, 2011, p.68). In Figure 4 below, the Q-Q plot line for the distribution of the scores are given:

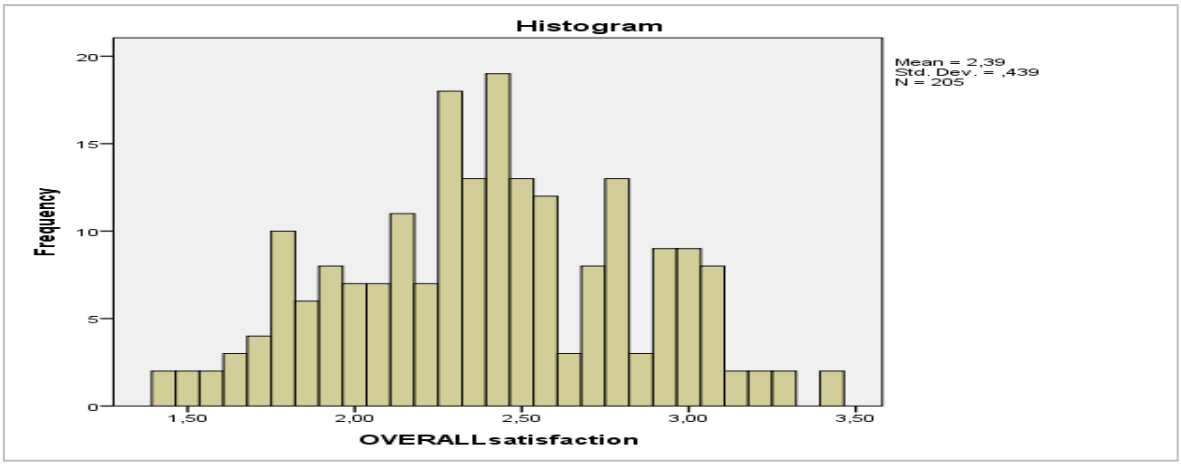
Figure 4
Q-Q Plot Line Showing the Distribution of Overall TPACK Scores



The Q-Q plot line also supported the findings of the histogram on the normality of the distribution as "a reasonably straight line suggests a normal distribution" (Pallant, 2010, p.63). Therefore, it can be concluded that the overall findings for the distribution of the participants' TPACK scores seem to be reasonably normal.

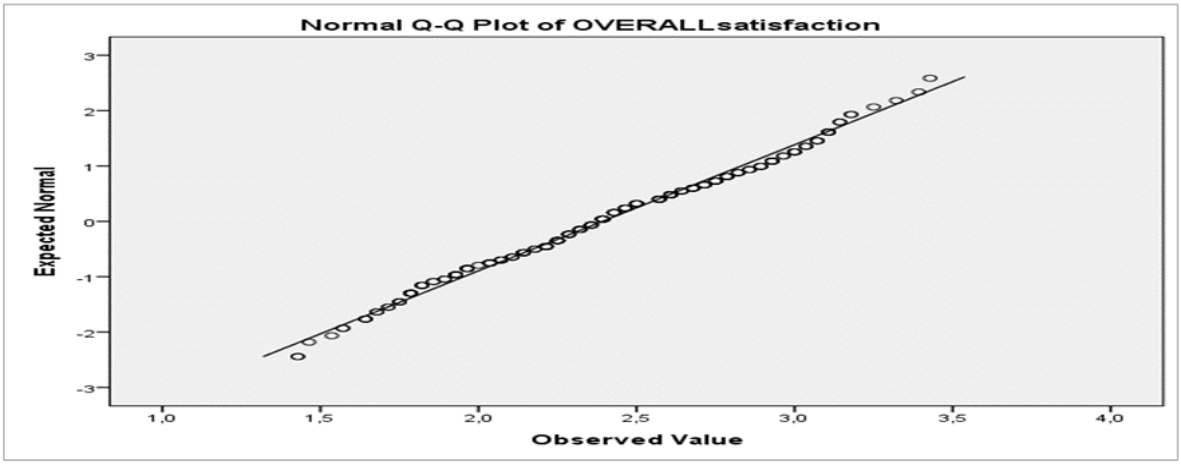
Secondly, the normality of the distribution for participants' overall satisfaction with teaching online was checked. The findings of the Kolmogorov-Smirnov statistics revealed a non-significant value (p=.20) which indicates normality (p>.05). This finding was supported by the shape of distribution in the histogram and the line of the Q-Q plot as shown in figures 5 and 6 below:

Figure 5
The Shape of the Distribution of Satisfaction Scores in the Histogram



As Figure 5 clearly shows, most of the scores for participants' satisfaction with teaching online are at the centre, which is an indicator of the normality of the distribution. The Q-Q plot line showing participants' overall scores of satisfaction with teaching online is given in Figure 6 below:

Figure 6
Q-Q Plot Line Showing the Distribution of Overall Satisfaction Scores



As the Q-Q plot line seems to be straight enough, it can be concluded that the distribution of the scores for participants' satisfaction with teaching online is normal.

In this study, while the quantitative data collected through the TPACK-EFL and the OFSS were analysed by using SPSS (Statistical Package for the Social Sciences) 24.0 programme, the qualitative data from semi-structured interviews were analysed through content analysis. The first research question, which aimed to identify the EFL instructors' perceived TPACK levels and to indicate if there are any significant differences between the sub-dimensions of TPACK-EFL, was answered through both quantitative and the qualitative data analysis. In order to identify participants' perceived TPACK levels, mean scores (*M*), and the standard deviations (*SD*) of the data obtained through the TPACK-EFL were calculated and reported. To identify the differences between the sub-dimensions of the TPACK-EFL, a one-way repeated measures ANOVA was conducted to find out if there were any significant differences among multiple sets of scores (Pallant, 2011). In order to examine participants' TPACK practices in more detail and to articulate reasons for the general tendencies, the qualitative data from the interviews were analysed by content analysis and the findings were reported to support the quantitative data to answer research question 1.

Before the qualitative data were analysed by content analysis, the interviews were transcribed by the researcher. For Kumar (2011), content analysis refers to analysing contents of the qualitative data from interviews to identify the main themes that stand out from participants' responses. According to him, there are four main steps of the qualitative content analysis process: identifying the main themes, assigning codes to the main themes, classifying responses under main themes, and integrating themes and responses into the text of report (Kumar, 2011). These four steps were followed by the two researchers who analysed the interview data in this study.

First, the researchers read the transcriptions several times and noted down their initial thoughts and impressions as suggested by Dornyei (2007) and Forman and

Damschroder (2015). The purpose at this stage was to understand the general meaning the interviewees try to communicate, from which broad themes emerged. At the second step, extracts of the transcribed data were highlighted, and keywords were used as codes in order to identify and retrieve the relevant data out of the whole data set (Dornyei, 2007; Forman & Damschroder, 2015). The coding process was completed by the two researchers separately and the findings indicated a high level of agreement between them. After the main themes have been identified and codes were assigned, the researchers went through the coded responses again and classified them under different themes (Kumar, 2011). These themes along with the example responses were reported in the findings section in order to answer the research questions.

Just as in research question 1, descriptive statistics (*M and SD)* supported with content analysis of the interviews were used for research question 2 to find out how satisfied the instructors were with teaching online regarding instructor-related, student-related, and institution-related factors. Research question 3 was answered in a two-step way. First, a multiple regression analysis was conducted assess the ability of age, previous amount of teaching online, and the total TPACK-EFL score to predict levels of the instructions' satisfaction with teaching online. As stated by Pallant (2011), this approach is used when it is aimed to find out how much variance in a dependent variable can be explained by a set of independent variables. Then, a second a multiple regression analysis assessed the ability of TPACK-EFL sub-dimensions to predict levels of the instructions' satisfaction with teaching online. Prior to that, preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedaticity.

Chapter 4

Findings

The present study was set to investigate Turkish EFL instructors' perceived level of Technological Pedagogical Content Knowledge (TPACK) and satisfaction with teaching online in an emergency remote teaching context. The purpose and significance of the study, a literature review, and the methodology used have been presented in the previous chapters. In this chapter, the findings for each research question are presented. Following the presentation of the findings, the main findings of the study are discussed in line with the existing literature.

What level of overall TPACK do the instructors report having for teaching English?

In order to answer the first research question, which aimed to identify the EFL instructors' perceived TPACK levels and to indicate if there are any significant differences between the sub-dimensions of TPACK-EFL, both quantitative and qualitative data were analysed. Participants' perceived TPACK levels were identified by means of the mean scores (*M*), and the standard deviations (*SD*) of the data obtained through the TPACK-EFL survey. The table below presents the findings of the descriptive statistics for the instructors' overall TPACK *levels:*

Table 9
Descriptive Statistics of Instructors' Overall TPACK-EFL score

	N	M	SD
TPACK-EFL	205	7.69	.88

As the findings of descriptive statistics clearly show in Table 9, the mean value for the participants' overall TPACK-EFL was found to be 7.69 with a standard deviation of .88. This result indicates that the participants of this study reported having relatively high TPACK levels for teaching English (*M*=7.69, *SD*=.88).

What level of knowledge do the instructors report having in each seven dimensions of TPACK?

The results of the descriptive statistics which aimed to identify the knowledge levels of EFL instructors in each of the seven dimensions of TPACK-EFL are illustrated in Table 10 below:

Table 10
Instructors' Knowledge levels in each of the seven TPACK-EFL dimensions

	TK	CK	PK	PCK	TCK	TPK	TPACK
M	7.48	8.46	7.99	8.06	7.30	7.55	6.84
SD	1.12	.60	.83	.86	1.59	1.18	1.47
N	205	205	205	205	205	205	205

Table 10 below presents the summary statistics for the reported knowledge levels of instructors in each seven dimension of TPACK-EFL. From these results, it is apparent that the participants rated their CK as the highest (*M=8.46, SD=.60*) and TPACK as the lowest *(M=6.84, SD=1.47)* among the other TPACK-EFL dimensions.

Technological Knowledge (TK)

Descriptive findings showing the mean values of each TK item are presented in Table 11 below:

Table 11
Descriptive Statistics of Instructors' Technological Knowledge

Items	M	SD	N
1. I can use basic technological terms appropriately	8.25	1.44	205
2. I can adjust computer settings such as installing software and establishing an Internet Connection.	8.13	1.52	205
3.I can use computer peripherals such as a printer, a headphone, and a scanner.	8.39	1.04	205
4. I can troubleshoot common computer problems independently.	7.20	1.74	205
5. I can use digital classroom equipment such as projectors and smartboards.	8.02	1.28	205
6. I can use Office programs (i.e. Word, PowerPoint, etc.) with a high level of proficiency.	7.86	1.34	205
7. I can create multimedia (e.g. video, web pages, etc.) using text, pictures, sound, video, and animation.	6.32	1.93	205
8.I can use collaboration tools (wiki, edmodo, 3D virtual environments, etc.) in accordance with my objectives.	5.96	2.55	205
9. I can learn software that helps me complete a variety of tasks more efficiently.	7.25	1.81	205
Overall:	**7.48**	**1.12**	**205**

As Table 11 above clearly shows, the instructors reported being proficient in basic computer terms *(M=8.25, SD=1.44),* and in using basic computer hardware (*M=8.39, SD=1.04)* and classroom equipments such as projectors and smartboards (*M=8.02, SD=1.28).* However, the findings above also yielded that the instructors felt much less competent in using online collaboration tools *(M=6.32, SD=1.93)* and in creating multimedia using text, pictures, sound, video, and animation *(M=5.96, SD=2.55).*

The qualitative data obtained through the semi-structured interviews with the instructors were analysed through content analysis in order to examine participants' TPACK practices in more detail and to articulate reasons for the general tendencies. The findings of the qualitative data supported the quantitative findings above. Of the sixteen instructors interviewed, none of them stated having difficulty in using basic computer hardware and digital classroom equipment such as projectors and smartboards. In fact, it is apparent that projectors and smartboard applications of the coursebooks have been an indispensable part of the interviewees' daily instruction. Regarding the use of projectors and smartboards, some extracts from the interviews are given below:

> *Despite being a very basic type of technology, we have computers in our classroom. Every day, I switch on that computer in the classroom and use it every minute of the day as it includes the smartboard application of the coursebook we use. We can*

project the whole book. I switch it on as soon as I enter the classroom and switch it off at the end of the lesson. I constantly project it on the screen, which makes my job easier. Also, it is much easier for the students to follow (Instructor 7).

....I mean, the projectors and sound system were always available in the classrooms. We never had a lesson without them because the lessons were much more ineffective in the classrooms without them. It cannot appeal to all students. The students can lose concentration easily and somehow, they cannot be motivated again. I mean, they need to both listen, and see and watch (Instructor 6).

In support of the quantitative findings in Table 11, only three of the interviewees reported creating multimedia using text, pictures, sound, video, and animation. The extracts below exemplify the creation of multimedia by the instructors:

...First of all, we tried to use the programmes that are called content creation, that is, which envisages and enables collaboration and working together. I used these programmes both on the basis of the curriculum and individually…. For example, we used story board that, a content creation and comic strip style story creation programme. Especially for students at lower levels, we used the grammar usage at lower levels, such as creating sentences, choosing words, creating dialogues, and then presenting them in a theatrical way in the form of role-play, as it allows us to create stories both visually and gradually. (Instructor 14).

…Then there is a programme called Edpuzzle. Using this programme, you can upload videos and add some questions to the videos. … Another one, called My Simple Share, turns written texts to videos. I use it for boring reading texts (Instructor 14).

Overall, the quantitative and the qualitative findings above suggest that despite being proficient in using basic technology, the participants in this study were less knowledgeable about and less confident in using higher level technologies.

Content Knowledge (CK) and Pedagogical Knowledge (PK)

Descriptive findings of CK and PK items are illustrated in Table 12 below:

Table 12
Descriptive Statistics of Instructors' Content and Pedagogical Knowledge

Items	M	SD	N
CK			
Item 10. I can express my ideas and feelings by speaking in English**.**	8.51	.81	205
Item 11. I can express my ideas and feelings by writing in English**.**	8.55	1.04	205
Item 12. I can read texts written in English with the correct pronunciation.	8.46	.77	205
Item 13. I can understand texts written in English.	8.79	.47	205
Item 14. I can understand the speech of a native English speaker easily.	8.01	.87	205
PK			
Item 15. I can use teaching methods and techniques that are appropriate for a learning environment.	8.24	.88	205
Item 16. I can design a learning experience that is appropriate for the level of students**.**	8.20	1.12	205
Item 17. I can support students' learning in accordance with their physical, mental, emotional, social, and cultural differences.	7.80	1.05	205
Item 18. I can collaborate with school stakeholders (students, parents, teachers, etc.) to support students' learning.	7.60	1.20	205
Item 19. I can reflect the experiences that I gain from professional development programs to my teaching process.	7.94	1.31	205
Item 20. I can support students' out-of-class work to facilitate their self-regulated learning.	7.53	1.42	205
Item 21. I can manage a classroom learnİng environment.	8.39	.84	205
Item 22. I can evaluate students' learning processes.	8.27	.82	205

The participants in this study reported having a high level of English proficiency *(M=8.46, SD=.60).* In fact, item 9, which asked participants to rate their proficiency in reading English, got the highest mean value in the whole scale *(M=8.79, SD=.478).* However, the findings above indicated that they were less confident in their overall pedagogical knowledge *(M=7.99, SD=.83).* While the instructors reported being highly knowledgeable about classroom management, *(M=8.39, SD=.84),* evaluating students' learning *(M=8.27, SD=.82),* and using appropriate teaching methods and techniques *(M=8.24, SD=.88),* they indicated being weaker in out-of-class issues such fostering self-regulated learning *(M=7.53, SD=1.42,* and collaboration with school stakeholders *(M=7.60, SD=1.20).*

The findings that emerged from the analysis of qualitative data supported the findings reported above. Almost all interviewees stated that their CK and PK was adequate. Nevertheless, there were points about which instructors felt weaker:

> *Not being able to use as many idioms as a native speaker is a point I feel weak about. But apart from that, I think I have enough knowledge and skills to address the level of the groups I teach* (Instructor 4).
>
> *The point that I sometimes find myself lacking is this pronunciation issue. But I actually know what to do for it. I think that is the only thing I should work upon. Apart from that, there is nothing I feel insecure about* (Instructor 5).
>
> *…but just for example, sometimes I come across with words that I don't know. But since I get prepared before the lesson, I am already competent enough to teach all the words. I do not have any problems in that respect, but of course there are things that I need to prepare beforehand* (Instructor 7).
>
> *Of course, for example, when I first started teaching writing, I really didn't remember anything about the rules of essays, but I improved it by doing a lot of research on essay and paragraph types* (Instructor 16*).*

The comments given above clearly show that when there are some points in their CK which needs improvement, the instructors know the ways to do it. Therefore, they can easily compensate for anything lacking in their CK. Two example comments regarding PK are given below:

> *I believe I have an adequate level of PK. In-service trainings provided by the publishing houses like Pearson and Oxford had significantly contributed to my knowledge of material development, classroom management, content creation and so on* (Instructor 9).
>
> *I believe I have the required pedagogical knowledge of different methods and I can adopt them so that the students can learn better (*Instructor 1*).*

The sum of the qualitative and quantitative findings summarized above suggest that the instructors who took part in this study considered having a good command of English and an adequate level of in-class pedagogical knowledge.

Pedagogical Content Knowledge (PCK)

Descriptive findings of PCK items are illustrated in the following table:

Table 13
Descriptive Statistics of Instructors' Pedagogical Content Knowledge

Items	M	SD	N
Item 23. I can use appropriate teaching methods and techniques to support students in developing their language skills.	8.20	.87	205
Item 24. I can prepare curricular activities that develop students' language skills.	7.96	1.15	205
Item 25. I can adapt a lesson plan in accordance with students' language skill levels.	8.05	.92	205
Overall:	**8.06**		

The mean values shown above indicate that PCK, which means knowledge of how to teach a particular subject, was high among the participants of this study. It is evident from the data that the instructors were confident in using specific methods and techniques to boost students' language skills (M=8.20, SD=.87), and adapting a lesson plan considering students' language skill levels (M=8.05, SD=.92).

Technological Content Knowledge (TCK)

As it was already mentioned above, TCK had the second-lowest mean value among the seven TPACK-EFL dimensions (M= 7.30, SD=1.59). Descriptive statistics of TCK items are given in Table 14 below:

Table 14
Descriptive Statistics of Instructors' Technological Content Knowledge

Items	M	SD	N
Item 26. I can take advantage of multimedia (e.g. video, slideshow, etc.) to express my ideas about various topics in English.	8.02	1.30	205
Item 27. I can benefit from using technology (e.g. web conferencing and discussion forums) to contribute at a distance to multilingual communities.	7.44	1.89	205
Item 28. I can use collaboration tools to work collaboratively with foreign persons (e.g. Second Life, wiki, etc.).	6.46	2.41	205

It is apparent from the descriptive findings given above that the instructors could take advantage of the multimedia to express their ideas about various topics in English (M=8.02, SD=1.30). However, they could use collaboration tools to work collaboratively with foreign persons to only a limited extent (M=6.46, SD=2.41).

In response to the interview questions: *"Which technologies do you use to improve your students' speaking, writing, listening and reading skills in English? How?"* and "*Which technologies do you use specifically for teaching English that you think make teaching English easier?",* two broad issues emerged. Firstly, it was apparent that using the Internet as a source of authentic and non-authentic materials to improve reading and listening skills and grammar was very prominent among the instructors. The findings showed that Youtube was by far the most frequently used (N=9) resource to improve students' listening skills, which is followed by the Ted Talks (N=6). In a similar vein, websites such as News-in-levels, which provide authentic reading materials suitable for different levels, were frequently used (N=9) to improve students' reading skills.

Using websites on which students can complete online language exercises was prominent (N=9) to improve grammar. In addition to that, the use of a digital grammar-checker such as Grammarly to enable students to self-correct their grammar mistakes was also a prominent finding in terms of grammar teaching (N=6). For teaching vocabulary, the majority of the instructors (N=11) reported that they used game-based learning platforms such as Kahoot and Quizlet. Only one instructor mentioned using concordancers for lexical analysis of words and phrases.

The second main issue emerged from the qualitative data analysis on the participants' TCK is that content creation tools were not widely used by the instructors, which was apparent from the technologies they used to teach the productive skills of speaking and writing. It was shown that video conferencing tools such as Zoom (N=7) and audio recording tools (N=6) were the technologies that the instructors frequently used to improve students' speaking skills. Three instructors stated they suggested their students use Cambly, a digital networking platform that connects students worldwide with native English tutors, to improve their speaking skills.

In terms of content creation tools, two instructors stated that they preferred presentation tools such as PowerPoint and Prezi to get students to make oral presentations.

Similarly, two other instructors reported that they used Flipgrid, a video discussion platform, to engage students in discussions by recording videos. Lastly, only one instructor reported preparing QR codes as speaking prompts for students.

Some participants (N=6) reported the convenience of virtual classrooms such as Edmodo and Google Classroom to improve students' writing skills. Four participants favored using Google Docs, which enables a collaborative writing environment, for writing instruction. In a similar vein, the convenience of Microsoft Word to provide feedback to students' written work was also mentioned by the instructors (N=5). However, similar to the findings presented above, only few instructors stated that they used content creation tools for writing skills. One instructor reported using a digital story telling tool, storyboardthat, to get students to create stories in English. Similarly, blogs were only used by one instructor to get students to practice writing in whatever subject they liked.

In sum, it was revealed that after TPACK, instructors' TCK got the second lowest mean value in the TPACK-EFL scale. The participants responded to three items for the TCK dimension of the scale. The mean values for these three items showed that the instructors felt less confident in using collaboration tools to work collaboratively with foreign persons. As there were only three items on the scale to measure TCK, a clearer picture of the participants' TCK was obtained through qualitative findings. The analysis of the qualitative data yielded that there was a strong emphasis among the instructors on the use of the Internet as a source of authentic and non-authentic materials to improve reading and listening skills and grammar. However, they reported making little use of content creation tools, as evidenced by their use of technology for teaching the productive skills of speaking and writing.

Technological Pedagogical Knowledge (TPK)

Descriptive findings of TPK items are illustrated in Table 15 below:

Table 15
Descriptive Statistics of Instructors' Technological Pedagogical Knowledge

Items	M	SD	N
Item 29. I can meet students' individualized needs by using information technologies.	7.16	1.61	205
Item 30. I can lead students to use information technologies legally, ethically, safely, and with respect to copyrights.	7.19	1.75	205
Item 31. I can support students as they use technology such as virtual discussion platforms to develop their higher order thinking abilities.	7.17	1.72	205
Item 32. I can manage the classroom learning environment while using technology in the class.	7.95	1.09	205
Item 33. I can decide when technology would benefit my teaching of specific English curricular standards.	7.82	1.21	205
Item 34. I can design learning materials by using technology that supports students' language learning.	7.62	1.41	205
Item 35. I can use multimedia such as videos and websites to support students' language learning.	8.00	1.43	205
Overall:	**7.55**	**1.18**	**205**

The above findings show that the instructors had confidence in their TPK as the mean values of all TPK items are higher than seven. It is apparent from the table that videos and websites were the most frequently used technologies by the instructors in the language teaching process *(M=8.00, SD=1.43).* In a similar vein, they reported being able to manage the classroom learning environment while using the technology *(M=7.95, SD=1.09)* and to decide when technology would benefit their teaching of specific English curricular standards *(M=7.82, SD=1.21)*. Item 29 "I can meet students' individualized needs by using information Technologies" got the lowest mean score *(M=7.16, SD=1.61)* among the TPK items, which indicates that the instructors felt weaker in serving to students' individual needs by using technology. However, since the mean values of all items were higher than seven, it can be concluded that the instructors had relatively high TPK levels.

The analysis of the qualitative data shed light on three broad issues regarding instructors' TCK. Firstly, the qualitative results revealed the main factors that influenced the instructors' decision-making process while incorporating technology into their lesson planning. The most frequently cited factor was that the technologies used should be in line with the purpose of the lesson (N=12). One participant commented:

When I hear about an application for the first time, Padlet or Google Forms for example, the first question I ask to myself is whether it is suitable for the lesson I will teach that day. Is it in line with my content? If I use this technology, how does it contribute to me and my students' learning? (Instructor 5)

Another instructor said:

…It is also important that it is relevant to what I will teach in that lesson. I don't want to use any irrelevant technology just because it is fun, I can do it at another time. You know, if there is a little connection with the subject matter I will teach, it will be much more effective. (Instructor 6)

Time constraints (N=9) and students' interests (N=9) were also considered important contextual factors by the interviewees when incorporating technology into their lesson plans. Nine of the instructors clearly stated that any piece of technology that they plan to use should not be time-consuming in the flow of the lesson. Some excerpts are given below:

First of all, the workload is an important factor for me. If I have not yet covered the topics that I have to cover that day, then I start questioning if I can make up for the extra 15-20 minutes I will spend using a particular technology. If not, I think it would be better to do this maybe a few days later or next week. (Instructor 14)

The most important thing is time. Any technological support that I will use should definitely not negatively affect the flow of the lesson We have to proceed within a certain curriculum. We need to teach certain subjects within a limited time. These technology-supported course materials are really motivating and effective, but their duration should be adjusted very well. When we try to use them without making a time plan, we will not be able to catch up with the curriculum. (Instructor 6)

The qualitative findings also revealed that for the instructors (N=9), it was equally important that the technologies to be used appealed to their students' interest. Talking about this issue an interviewee said:

Before using a piece of technology in the classroom, I ask myself "If I were a student, would I have fun with it? And would I want to use it again?" I immediately ask myself these two questions from the student's point of view, and if the answer is yes, I start using it. (Instructor 4)

Another interviewee stated:

….Apart from that, of course, students' profiles are really important. If you bring an irrelevant tool in which students are not interested at all, the whole lesson can result in dissapointment. (Instructor 12)

Other factors that the interviewees found crucial while integrating technology into their lessons are given in Table 16 below:

Table 16
Key Factors Influencing Instructors" Decision Making Process about Technology Integration

Factors	f
Suitability for the lesson objectives	12
Time Constraints	9
Students' Interest	9
User-friendliness	5
Physical Facilities of the Classroom	3
Students' Language Levels	5
Cultural Appropriateness of the Content	2

Table 16 above clearly shows that user-friendliness or practicality of the technological tools were also considered important by some of the interview participants (N=5). In other words, the participants found it important that the technological tools to be integrated into the lesson are easy to use for both themselves and for students in terms of the flow of the lesson.

It was also important for some of the instructors (N=5) that the language level of the content to be carried into the classroom through technology is not much higher compared to the language level of the students. While three instructors stated that physical features of the classroom, such as internet connection, influenced their decision-making process,

only two instructors reported that they considered whether the content was appropriate to the students' culture.

The second main theme that emerged from the qualitative findings in relation to TPK was the relationship between technology use and student motivation. In response to the question, “Do you think you can enhance students' interest and motivation for learning English by using technology?”, the vast majority of the participants (N=13) that they could enhance students’ motivation for learning English by using technology. Some example statements are given below:

> *In fact, I think these new generation of students are already innately motivated to use technology. It is actually not very difficult. In fact, I think it is difficult to do the lessons without integrating these technologies. I mean, I don’t think the lessons will be interesting for them when they go in a monotonous way.* (Instructor 12)

> *When we think about this age group, I mean generation z, you know, their area of interest is technology, if we do not integrate technology, students are not engaged in learning. Even if it is not only online education but also face-to-face education, we can somehow catch students when technology is integrated into it. They like fun and they are more willing to learn with technology.* (Instructor 8)

> *It definitely enhances because students are very used to, whether it is audio or video and since our students have grown up with this, I think they need it. Therefore, it is something that can increase their motivation and interest. Also, as I said, since I always use technology for entertainment or for a review, I usually choose things that increase their motivation, such as playing games or listening to songs. Therefore, I definitely think that it enhances.* (Instructor 7)

The excerpts above show the participants’ belief that knowing how to use technology in the classroom in a fun and engaging way is a prerequisite for teaching generation Z

students. However, four of these 13 instructors were more cautious about this. Some example comments are given below:

> *This can go both ways, both yes or no. It depends on the intensity of your use, whether you choose the material suitable for that level, and whether the students are interested or not. If you open a film and tell them to watch that film for 40 minutes and 50 minutes, then you cannot catch their interest. But if you use the right tools in accordance with your lesson plan that day even for a few minutes, of course you can increase their motivation.* (Instructor 9).

> *I don't think using technology alone, of course, increases motivation, but I think if teachers can make use of the technology properly, if they choose the right tools according to the right level, student's interest and motivation will definitely increase.* (Instructor 16).

As can be understood from the example statements above, the reason why these four instructors were cautious about the relationship between technology and student motivation is their belied that only using the right tools at the right time can increase students' motivation to learn.

Only three interviewees said that they could not motivate students to learn English through the use of technology. Their comments are presented below:

> *I don't think we can, but here is the thing. If the student is already motivated to learn, he/she will do it. I ask some of the high-achieving students how this happens. Some of them say that they play games. Some of them say that they watch a lot of films and documentaries. I mean, they already use the technology for learning themselves. They don't need to be motivated by me.* (Instructor 10).

> *I think that after a while they get used to it and nothing attracts their attention anymore. Exactly, because after a while they get used to it. "Oh, Padlet again?" "Oh,*

are we going to play this again?". So, I mean technology alone is not enough to motivate students. (Instructor 15)

It is evident from the comments above that these instructors believed they were not able to motivate students to learn English by using technology. It was due to the fact that since this generation of students are used to using technology, this is not something unusual for them and therefore does not evoke much excitement in them.

In sum, the participants reported that they were able to manage the learning environment in the class when using technology and to decide when technology would be useful for teaching specific standards in the English curriculum. However, they felt weaker in addressing the individual differences of students through the use of technology. Course objectives, time constraints and students' interests were found to be the most important factors for the instructors to consider when integrating technologies into their instruction. Moreover, there was a common belief among the instructors that they could motivate students for learning English by using technology.

Technological Pedagogical Content Knowledge (TPACK)

TPACK got the lowest mean value among the seven dimensions of the TPACK-EFL survey (M=6.84, SD=1.47). Descriptive findings of TPACK items are illustrated in Table 17 below:

Table 17
Descriptive Statistics of Instructors' Technological Pedagogical Content Knowledge

Items	M	SD	N
Item 36. I can use collaboration tools (e.g. wiki, 3D virtual environments,etc.) to support students' language learning.	6.55	2.07	205
Item 37. I can support students as they use technology to support their development of language skills in an independent manner.	7.48	1.23	205
Item 38. I can use Web 2.0 tools (animation tools, digital story tools, etc.) to develop students' language skills.	6.01	2.38	205
Item 39. I can support my professional development by using technological tools and resources to continuously improve the language teaching process.	7.33	1.58	205
Overall:	**6.84**	**1.47**	**205**

When the items are analysed seperately, it is seen that the instructors were able to use Web 2.0 tools *(M=6.01, SD=2.38)* and collaboration tools *(M=6.55, SD=2.07)* to develop students' language skills to only a limited extent. In a similar vein, item 38, in which participants evaluated their use of Web 2.0 technologies to enhance students' language skills, had the second lowest mean value of all the items *(M=6.01, SD=2.380).* On the other hand, item 37 "I can support students as they use technology to support their development of language skills in an independent manner" got the highest mean value, which imply that the participants felt much stronger in encouraging students to use collaboration tools.

Are there any significant differences between the seven sub-dimensions of TPACK-EFL?

To determine whether the mean score differences between the seven sub-dimensions of TPACK- EFL were statistically significant, a one-way repeated measures ANOVA was used. The results showed that there was a statistically significant difference in the mean scores for each of the seven TPACK-EFL dimensions (Wilk's Lambda=.37; F (6, 199) = 55.131; p=.00) with a medium effect size (multivariate partial eta squared =.62). Post-hoc comparisons using the Bonferroni test revealed that TK (*M=7.48, SD=1.12*) did not differ significantly from TCK (*M=7.30, SD=1.59*) and TPK (*M=7.55, SD=1.18*). Likewise, the difference between the mean values of PK (*M=7.99, SD=.83*) and PCK (*M=8.06, SD=.86*) was not significant. Except for these, differences between other TPACK- EFL dimensions were found out to be significant. It was evident from the findings that the participants*' CK (M=8.46, SD=.60)* and TPACK (*M=6.84, SD=1.47*) showed the greatest difference.

The most striking finding from the data above is that the non-technological knowledge domains of TPACK (*CK=8.46, PK=7.99, PCK=8.06)* obtained higher mean scores than the technological domains (*TK=7.48, TCK=7.30, TPK=7.55, TPACK=6.84).* It is evident from these results that the majority of the instructors who responded to this survey

were less confident in their technology-related knowledge than their content and pedagogical knowledge.

How satisfied are the instructors with teaching online in general and in terms of student, instructor, and institution-related factors?

Similar to the first research question, both quantitative and qualitative data analyses were used to answer the second research question. Quantitative data collected by the OFSS were analysed using descriptive statistics *(M, SD)* with a view to reveal how satisfied the instructors were with teaching online in general and in terms of student, instructor, and institution-related factors. Table 18 below provides the findings of the descriptive statistics:

Table 18
Descriptive Statistics for the Instructors' Satisfaction with Teaching Online

	M	*SD*	*N*
Overall	**2.14**	**.41**	**205**
Student-related	2.21	.47	205
Instructor-related	2.61	.51	205
Institution-related	2.44	.62	205

It can be seen from the mean values in Table 18 that the instructors who took part in this study were not very satisfied with online teaching in general (M=2.14, SD=.41). The findings obtained from the analysis of qualitative data supported this finding. Eight of the 16 interviewees stated that they were not much satisfied with teaching online. While four of the interviewees stated that they were satisfied with teaching online, the other four participants reported not being satisfied with teaching online at all.

When student-related, instructor-related, and institution-related factors were analysed separately, it was found that the student-related items got the lowest mean value *(M=2.21, SD=.47).* In other words, student-related factors led to more dissatisfaction with teaching online among the instructors compared to institutional *(M=2.44, SD=.62)* and individual factors *(M=.2.61, SD=.51).*

Student-Related Factors

The findings of the descriptive statistics for each student-related item are presented in Table 19 below:

Table 19
Descriptive Statistics for Student-Related Factors

Items	*M*	*SD*	*N*
Item1.The level of my interactions with students in the online course is higher than in a traditional face-to-face class.	1.63	.67	205
Item 2. The flexibility provided by the online environment is important to me.	3.13	.90	205
Item 3. My online students are actively involved in their learning.	2.30	.93	205
Item 7. I miss face-to-face contact with students when teaching online.*	1.47	.75	205
Item 10. My students are very active in communicating with me regarding online course matters	2.36	.95	205
Item 11. I appreciate that I can access my online course any time at my convenience.	3.22	.82	205
Item 12. My online students are more enthusiastic about their learning than their traditional counterparts.	1.63	.69	205
Item 16. I am satisfied with the use of communication tools in the online environment (e.g., chat rooms, threaded discussions, etc.).	2.91	.91	205
Item 17. I am able to provide better feedback to my online students on their performance in the course.	2.39	.93	205
Item 19. My online students are somewhat passive when it comes to contacting the instructor regarding course related matters.*	1.98	.90	205
Item 20. It is valuable to me that my students can access my online course from any place in the world.	3.58	.61	205
Item 21. The participation level of my students in the class discussions in the online setting is lower than in the traditional one.*	1.75	.94	205
Item 25. Not meeting my online students face-to-face prevents me from knowing them as well as my on-site students.*	1.72	.87	205
Item 27. Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.	2.71	.97	205
Item 28. It is more difficult for me to motivate my students in the online environment than in the traditional setting.*	1.86	.90	205
Overall:	**2.21**	**.47**	**205**

Note: *Recoded scale item.

When the findings of the descriptive statistics for each-student related item were analyzed seperately, it was seen that the reversed item 7 "*I miss face-to-face contact with my students when teaching online"* resulted in the lowest mean value *(M=1.47, SD=.75).* In a similar vein, it can be seen from Table 19 above that Item 1 "*The level of my interactions with students in the online course is higher than in a traditional face-to-face class*" (*M=1.63, SD=.67)* and Item 12 "*My online students are more enthusiastic about their learning than their traditional counterparts*" *(M=1.63, SD=.69)* had very low mean values.

From the data in Table 19, it is apparent that item 20 "*It is valuable to me that my students can access my online course from any place in the world" (M=3.58, SD=.61),* item

11 *"I appreciate that I can access my online course any time at my convenience*" *(M=3.22, SD=.82)* and item 2 "*The flexibility provided by the online environment is important to me" (M=3.13, SD=.90)* resulted in much higher values than the other student-related factors. Therefore, it can be concluded that the convenience and flexibility of online education created a sense of satisfaction among the instructors participated in this study.

In terms of student-related factors, four broad themes emerged from the qualitative data analysis. Table 20 below presents the student-related themes and the frequencies:

Table 20
Student-related Factors Affecting Satisfaction with Teaching Online

Factor	Themes	f
Student-Related	Lack of interaction	12
	Low motivation	9
	Low attendance to online classes	8
	Lack of electronical devives and internet connection problems	8

According to the findings presented in Table 20 above, the lack of student-student and student-teacher interaction in the online setting led to great dissatisfaction with teaching online among the instructors (*N=12).* Talking about this issue, some interviewees said:

> *…And interaction… If some rules are not set in advance, interaction can be a problem. And interaction is a must for teaching English. If students do not switch on their cameras or switch off their microphones, interaction is definitely a problem. (*Instructor 12*)*

> *I like traditional methods and building rapport with students. But it is difficult to do this over the internet. This is because they don't even want to switch on their cameras. I think I could not reach students very much because there is rapport between us. In my opinion, face-to-face education is necessary for building rapport. (*Instructor 10*)*

> *I like being in the classroom. Our profession requires us to be eye to eye with the students. When I didn't see the students, I realised that I was repeating myself many times when I watched my lessons. Because I can't get a reaction. If I was in the*

classroom, they wouldn't need to talk. They don't want to talk here either. The need to constantly get approval made it very difficult for me in this respect. This is one of the difficulties, not being able to see the students and not getting a reaction. (Instructor 5)

The fact that students were unmotivated for online classes appeared to be another significant challenge for the instructors. For example, one interviewee said:

In face-to-face education, you can motivate the students to attend the class and keep their attention. But in online education, unfortunately, students who are not interested in the lesson, who want to break away from the lesson, can see online education as an opportunity. Because in the lessons we have done online so far, students are not obliged to turn on the camera and speak. It is enough for the student to appear online in many lessons. Therefore, it is difficult to ensure the student's motivation for the lesson in online education. (Instructor 6).

Another interviewee put it as in the following:

I think the biggest negative factor about students is that they are so unmotivated for online classes. It's easier to motivate them face-to-face. They see you in flesh and blood. You walk around the classroom, you can easily give feedback. You look into their eyes and they are more motivated when they get your energy. What challenges me the most is definitely low motivation. Because the student does not want to participate in the lesson. (Instructor 16)

It is apparent from the extracts above that the instructors had difficulty in motivating students in the online setting which might stem from a lack of face-to-face interaction. The fact that students did not attend at online classes as much as they attended at face-to-face classes was another major cause of dissatisfaction among the instructors (N=8). Over half of those interviewed indicated that attendance at online classes must be compulsory in

order to ensure the quality and maintainance of online classes. Some example statements are given below:

> *As the attendance was not compulsory, many of them preferred not to attend. They thought they could learn on their own. They thought that they could somehow cover their deficits. Of course, it was impossible. But no matter how much we explained this, somehow they could not get involved. It was very difficult for them to be involved in that learning process.* (Instructor 7)

> *Attendance is not compulsory according to the current legislation. I believe this is an important problem. Having to read the assignments of people who did not attend at my lectures made me very upset and angry* (Instructor 14).

> *You are prepared for a lesson with enthusiasm because you believe many students will come. But you end up with only 1-2 students. For example you say, "Ali, you tell me", and you see and he is online, but he is not there. Yes, this bothered me a lot because attendance was not compulsory. He seems to be there, but he is not.* (Instructor 10).

In a similar vein, half of the interviewes (N=8) believed in the fact that most of the students did not have access to computers and a stable internet connection hampered online education. One participant commented:

> *However, there are many people who do not have access to computers, especially people living in rural areas. For example, I had a student, a sweet girl. She was constantly having connection problems because the place she lived in was a farm in a village. Even if students are hardworking, when there is a constant connection problem, people do not want it and they lose their motivation. And I wonder what she did in the exams, I mean, how did she solve the disconnection problem?* (Instructor 14)

Another interviewee said:

Many students do not have stable internet connection, they do not have tablets. They don't have computers. They try to follow the lesson from a small screen with a mobile phone. And of couse, this is not very effective. (Instructor 5)

Taken together, these results suggest that students' low levels of motivation, participation and attendance in online classes, the lack of face-to-face contact and interaction with the students, and the lack of electronical devices and internet connection problems were the most significant student-related causes of the instructors' dissatisfaction with teaching online.

Instructor-Related Factors

The data shown in Table 21 below can be used to give an account of the instructor-related factors that cause satisfaction and dissatisfaction with online teaching:

Table 21
Descriptive Statistics for Instructor-Related Factors

Items	M	SD	N
Item 4.I incorporate fewer sources when teaching an online course as compared to traditional teaching. *	3.02	.89	205
Item 5. The technology I use for online teaching is reliable.	3.24	.93	205
Item 8. I do not have any problems controlling my students in the online environment.	2.58	1.05	205
Item 13. I have to be more creative in terms of the resources used for the online course. *	1.81	.82	205
Item 14. Online teaching is frustrating because of the technical problems. *	2.41	.99	205
Item 22. My students use a wider range of resources in the online setting than in the traditional one.	2.60	1.62	205
Item 23. Technical problems do not discourage me from teaching online.	2.64	1.07	205
Overall:	**2.61**	**.51**	**205**

Note: *Recoded scale item.

As the Table 21 above illustrates, the majority of the participants believed in that the technology they used for online teaching was reliable *(M=3.24, SD=.93).* Although they reported using fewer resources when teaching online in comparison to traditional teaching *(M=3.02, SD=.89)*, they believed that they had to be more creative in using the resources available to them in the online environment *(M=1.81, SD=.82).* In addition to these, when the mean values of item 14 *(M=2.41, SD=.99),* and item 23 (M=2.64, SD=1.07) were

examined, it can be decuced that technical problems moderately affected participants' satisfaction with teaching online.

The analysis of the qualitative data yielded four main themes in terms of instructor-related factors affecting satisfaction with teaching online:

Table 22
Instructor-related Factors Affecting Satisfaction with Teaching Online

Factor	Themes	f
Instructor-related	Saving time	7
	The difficulty of working at home	4
	Improvement in Teachers' TPACK	5
	Health problems caused by excessive computer use	2

Nearly half of the interviewees stated that online teaching saved more time compared to face-to-face teaching. Some example comments are given below:

> *One convenience is not to get ready and go to school. It takes me an hour to get ready because...well, for example, when I go to school, I have to change my clothes and do my hair. But when teaching online, I can blow my eyes and start the lesson. I am not a person who sleeps for a very long time, but if I want to sleep too much, it saves me some time.* (Instructor 1)

> *What is good about online education is that it is time saving. In other words, in face-to-face education, transportation, going to the institutions where we will give lectures, coming home back, especially if the city you live in is a big city, these can be difficult. In other words, in Istanbul, you may need to spare about 3 hours before the lesson. You may need to leave your home and spend 2 and a half to 3 hours until you are ready at your destination. In online education, you can use this time to get prepared for the lesson. Therefore, I am only satisfied with this part because it saves me time.* (Instructor 6)

According to the findings presented above, the fact that online education saves time contributed to instructors' satisfaction with teaching online. A recurrent theme in the interviews was a sense among interviewees that teaching online led to improvement in their TPACK. The extracts below highlight this improvement:

> *…I mean, I realised we didn't know how to use a computer, we didn't know how to use technology. We were at the basic level, that is, just turning on the computer, looking at something on the internet, Word, PowerPoint, maybe that's all. But for example, in this online education process, I found maybe 50 different applications that could be an alternative to Powerpoint. I thought that it could attract students' attention more with much more visuals, more colours, and more animation. I mean, the pandemic actually gave us this opportunity.* (Instructor 9).

> *One good thing about teaching online is that it has improved our technological knowledge. We searched and found lots of different tools and applications so that the students will not fall behind. I feel I made a lot of effort for this.* (Instructor 16)

Some interviewees (N=4) stated that working at home posed problems for them. This issue is mentioned in the following excerpts:

> *I don't like doing courses from home. There has to be an educational environment for me. If you ask some teachers, for example, they may say they feel more comfortable at home, and that it motivates them much more. But for me, this is not the case. I must be in a school environment.* (Instructor 6)

> *Since we are at home, we do not have dress as we did in face-to-face education. And that's why, it is difficult to get motivated for working. This is a negative factor for me (Instructor 3).*

Another minor theme expressed by two of the interviewees is that they had some health problems due to excessive computer use. The two excerpts below address this issue:

Too much exposure to screen light gives me a headache. Sometimes I have to skip some parts in the lesson because of my headache. It's mentally exhausting. (Instructor 1)

For example, sitting at a desk for long hours has a negative effect on my health. So my health problems have increased. That's why I don't like it. (Instructor 10).

In sum, while the fact that online education saves time, creates improvement in instructors' TPACK, and the reliability of the technologies used positively affect the satisfaction of the lecturers, the difficulties caused by working from home, the necessity to be more creative when using resources in online courses, and the technical problems led to a great deal of dissatisfaction with teaching online.

Institution-Related Factors

Table 23 below provides descriptive data outlining the participants' satisfaction with online instruction in terms of institution-related factors:

Table 23
Descriptive Statistics for Institution-Related Factors

Items	M	SD	N
Item 6. I have a higher workload when teaching an online course as compared to the traditional one.*	2.31	1.12	205
Item 15. It takes me longer to prepare for an online course on a weekly basis than for a face-to face course. *	2.45	1.06	205
Item 24. I receive fair compensation for online teaching.	2.53	.95	205
Item 26. I am concerned about receiving lower course evaluations in the online course as compared to the traditional one. *	2.46	.93	205
Overall:	**2.44**	**.62**	**205**

Note: *Recoded scale item.

The close mean values given in Table 23 above show that the instructors were moderately satisfied with teaching online in terms of institutional factors**.** For example, the mean value for item 24 *(M=2.53, SD=.95)* indicates that the instructors believed the compensation they received was relatively fair. According to the data in Table 23, the views that the online workload is heavier than in the traditional environment *(M=2.31, SD=1.12)*

and that it takes more time to prepare for online courses *(M=2.45, SD=1.06)* were not widely adopted.

The analysis of the qualitative data regarding institution-related factors yielded three main themes, which are given in the following table:

Table 24
Institution-related Factors Affecting Satisfaction with Teaching Online

Factor	Themes	f
Institution- Related	Support provided by institutions to instructors	9
	Using the right platforms for online classes	7
	Ensuring the security of online exams	4

Over half of those interviewed (N=9) reported that they were content with the support provided by their institution during the transition to emergency remote teaching, which was hard and chaotic. Some of the example statements on the positive impact of working in a supportive organisation on satisfaction with teaching online are given below:

> *Last year, the tutorials recorded by our coordinator got us used to online education very easily. The videos he recorded and the fact that he constantly helped us is a factor that positively affects me about the institution. Because I didn't have as much difficulty as I expected. It was easy. I thought online teaching would be very hard, but it was not. As he has such a command of technology, he did not leave any question unanswered.* (Instructor 16)

> *…they were always helpful and available. They responded to the urgent questions asked even at 10 o'clock at night, without saying whether it was working hours or not. And they did this without any complaints. In that respect, I think they managed the process well.* (Instructor 7)

> *In general, I can say I am positive about my institution. Because the institution I worked for followed everything very closely. For example, while we were teaching, a technical team was always ready at that moment. When there is a problem during the lesson, you can immediately write a message and the technical team can step*

in and provide the connection again. In other words, there is a technical team ready to follow you and support you all the time. In that respect, the process was good. (Instructor 6).

Another recurrent theme in the interviews was using an appropriate platform for the online classes (N=5). The importance of finding and using the right platform for the instructors can be understood from the following statements:

The positive thing is that we've switched to Zoom this year. Last year we were using the school's own online system. We couldn't even hear the students there. They were writing to us on chat. This was something positive for me. (Instructor 5)

If more specialised systems such as Zoom, Skype or Blackboard are used, I think this can lead students to success. As student motivation is the same in the classroom and online, what really matters is to find and integrate the right technology. (Instructor 4)

It is apparent from the qualitative data that using online platforms whose effectiveness are widely recognised was a reason of satisfaction among the instructors. The third theme related to the institution that emerged from the qualitative data is ensuring the security of online exams (N=4). Failure to ensure exam security in the online environment was a major concern for some of the interviewees. The extracts given below show the comments of the interviewees on this issue:

Since we conduct the exams online, the students can cheat and we have no way to prove that. I am sure that there have been many cases of cheating that we unfortunately could not intervene. (Instructor 14).

We need to think about and figure out how we can better control students during online exams. (Instructor 10).

Variables Predicting Satisfaction with Teaching Online

A multiple regression analysis was used to reveal the extent to which age, the amount of previous online teaching experience and the total TPACK- EFL score can predict the instructors' satisfaction with teaching online. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedaticity. An examination of the R square value (.093) revealed that the model explains 9.3% of the variance in the dependent variable (R^2= *.093, F=6.89, p=.00.*) Further regression coefficients indicated that of the three independent variables entered in the model, only the total TPACK-EFL score significantly predicted the dependent variable. The findings are shown in Table 25 below:

Table 25
Standardized Regression Analysis Findings Predicting Online Teaching Satisfaction

	Standardized Coefficients			Correlations		
Predictors	β	t	Sig.	Zero-order	Partial	Part
Age	.086	1.278	.20	.067	.090	.086
Online Teaching Experience	.053	.784	.43	.059	.055	.053
Total TPACK-EFL Score	.292	4.437	.000	.289	.293	.291

As can be seen clearly from the data in Table 25 above, the total TPACK-EFL score was the only independent variable which significantly predicted instructors' satisfaction with teaching online, explaining almost 3% of the unique variance in the dependent variable *(β=.292, part=.291, p=.000).* A further regression analysis was carried out to find out which of the seven TPACK-EFL sub-dimensions predicts satisfaction with teaching online. The R square value (.147) showed that the model explained almost 15% of the variance in the dependent variable (R^2= *.147, F= 4.841, p=.00).* An examination of the correlation coefficients indicated that of the seven independent variables, only TPACK was a significant predictor of instructors' satisfaction with teaching online. The findings are presented in Table 26 below:

Table 26
Standardized Regression Analysis Findings Predicting Online Teaching Satisfaction

	Standardized Coefficients			Correlations		
Predictors	β	t	Sig.	Zero-order	Partial	Part
TK	.-236	-2.375	.053	.125	-.167	-.156
CK	-.019	-.210	.834	.170	.-015	.-014
PK	.153	1.164	.246	.244	.083	.077
PCK	-.092	-.746	.457	.162	-.053	-.049
TCK	.082	.591	.555	.280	.042	.039
TPK	.099	.651	.516	.292	.046	.043
TPACK	.315	2.658	.009	.334	.186	.175

According to the findings shown in Table 26 above, of the seven dimensions of TPACK-EFL, only TPACK significantly predicted the instructors' satisfaction with teaching online (*β=.315, p=.009*). However, the strenght of the relationship between these variables was medium (r=.33).

The analysis of the qualitative data not only confirmed this significant relationship between TPACK and satisfaction with teaching online, but also shed light on the reasons as to why the relationship was not strong. In support of the quantitative data, half of those who were interviewed (N=8) stated their belief in the relationship between TPACK and satisfaction with teaching online. Some example statements are given in the following:

> *I definitely think that the more competent we are in using technology, the more knowledge we have about using technology for language teaching, the better we are in online teaching. Otherwise what will happen if I cannot upload a video or start a recording. How will students participate in the lesson if we cannot do any of these. The problems we are talking about now would really be quite a small thing compared to the bigger problems that would arise, so I think it is definitely directly proportional. They are completely intertwined with each other, so I think that without one, the other will never happen.* (Instructor 16)

> *I think there is a relationship between the two. Remote teaching alone was difficult for us. If our TPACK had been low, this would have made the remote teaching*

process even more difficult. I would have had a harder time with this process. Yes, it is already a difficult process. I mean, remote teaching is already a difficult process because it is something new. It would definitely be more stressful. (Instructor 7)

….There are many teachers who retired in this process. If you do not know how to start and end the lesson, how to send students to the rooms or how to copy a link, how to use Google docs with students, if you do not know the reasons and purposes behind this, you cannot teach online. I mean, teachers who cannot do these things feel bad. (Instructor 15)

Despite valuing the relationship, some participants (N=5) indicated that an adequate level of TPACK was not enough for them to be satisfied with online teaching. One participant commented:

Of course, it is useful to be good at technology. Even if it is not much, I can do this, I know that. But there are so many different factors that affect me negatively. Therefore, I cannot say that it had a great effect on my satisfaction level. The system we use is already an easy one. (Instructor 3)

Two interviewees alluded to student-related factors:

If I couldn't use technology well, I would feel very bad and demotivated in the online setting. The lessons would be unsuccessful. It would probably be a stressful situation. Therefore, the level of satisfaction with teaching online is definitely related to TPACK but it is not only related to it. Because of all the factors I have just mentioned, especially those that are related to students. I say enough is enough. (Instructor 5)

We did not have much opportunity to put our TPACK knowledge into practice. While we were teaching online. We did not have the opportunity to open videos, use programmes or make competititons in the online setting. The reason for this is students' low attendance to classes. Since the students did not attend the class, I

could not do any of them. In this sense, I think emergency remote teaching process was inefficient. (Instructor 8)

The analysis of the qualitative data relating to the third research question revealed that the majority of the interviewees believed in and valued the relationship between their TPACK and satisfaction with teaching online. However, the negative factors mentioned in the previous section, especially those related to students, overrode TPACK and led to dissatisfaction with teaching online among the participants.

Overall, the quantitative and the qualitative findings relating to the third research question suggested that there was a statistically significant but medium-strength relationship between instructors' TPACK and their satisfaction with teaching online. This can be explained by the fact that factors such as low student participation, lack of motivation, etc., as mentioned in the previous section, negatively affected instructors' satisfaction with teaching online. In other words, having an adequate level of TPACK is considered crucial, but not enough to be satisfied with teaching online.

Discussion

This dissertation aims to explore Turkish EFL instructors' perceived TPACK levels and their satisfaction with teaching online in an emergency remote teaching context. A mixed methods approach was used to collect data, using both quantitative and qualitative methods. While the Online Faculty Satisfaction Survey (OFSS) and the TPACK-EFL scale were used to collect quantitative data, qualitative data were gathered through semi-structured interviews. To answer the first research question, descriptive statistics and a one-way repeated measures ANOVA were used in tandem with content analysis of the interviews. Likewise, descriptive statistics supported with the findings of the content analysis were used for the second research question. The third research question was answered through multiple regression analyses.

The findings showed that although the instructors had relatively high levels of TPACK, they were not satisfied with teaching online. The convenience and flexibility of online education created a sense of satisfaction among the instructors. However, students' low levels of motivation, participation and attendance in online classes, the lack of face-to-face contact and interaction with the students, and students' lack of technological equipment and internet connection problems were the most significant causes of the instructors' dissatisfaction with online teaching. It was also revealed that there was a statistically significant but weak relationship between instructors' technological pedagogical content knowledge and their satisfaction with teaching online. In the following section, the findings of the following research questions are discussed in line with the existing literature.

1. What level of overall TPACK do the instructors report to have for English Language Teaching?
    1.1. What level of knowledge do the instructors report having in each seven dimension of TPACK?
    1.2. Are there any statistically significant differences between the seven sub-dimensions of TPACK?
2. How satisfied are the instructors with teaching online overall and in terms of student-related, instructor-related, and institution-related factors?
3. To what extent can the following variables predict the instructors' satisfaction with teaching online: age, the amount of previous online teaching experience, and the level of TPACK (along with its sub-dimensions)?

Discussion on English Language Instructors' Perceived TPACK Level

The first research question aimed to explore EFL instructors' perceived TPACK levels and whether there were any significant differences between TPACK-EFL sub-dimensions. Mean scores (M) and standard deviations (SD) of the data obtained from the TPACK-EFL were calculated and reported to reveal participants' perceived levels of

TPACK. In order to identify the differences between the TPACK-EFL sub-dimensions, a one-way repeated measures ANOVA was run. To examine the participants' TPACK practices more closely and to identify reasons for the general trends, the qualitative data from the interviews were analysed using content analysis and the findings were reported to support the quantitative data.

Initial findings showed that the participants in this study had relatively high levels of TPACK. When the means for each TPACK dimension were analysed separately, it was found that the instructors rated their CK as the highest and their TPACK as the lowest. The most important finding regarding the first research question was that the means for non-technological knowledge domains of TPACK (*CK=8.46, PK=7.99, PCK=8.06)* were significantly higher than the means of technological domains (*TK=7.48, TCK=7.30, TPK=7.55, TPACK=6.84).* In other words, although the instructors were confident in their CK, PK, and PCK, they felt less competent in integrating their TK with their CK and PK to teach English effectively.

The present findings seem to be consistent with previous research which reported that the participant teachers felt themselves strongest in their CK and PK and weakest in technology-related knowledge domains, namely TK, TCK, TPK, and TPACK (Chai et al., 2015; Wu & Wang, 2015; Muhaimin et al., 2019; Roussinos & Jimoiyannis, 2019; Pamuk, 2012). However, these results contradict with Luik et al.'s (2017) study which revealed that Estonian pre-service teachers scored their TK as the highest and PK as the lowest. This, according to Luik et al. (2017), might stem from the highly developed technology integration in Estonian schools.

In fact, the findings obtained from this study showed that the instructors of English who participated in this study are not weak in terms of their TK. However, it is apparent that their TK cannot be sufficiently integrated with their CK and PK, which results in an inadequate level of TPACK. There are several possible explanations for these results.

One possible explanation might be that there is a lack of pre-service training on how to use information and communication technologies in English language teaching for different pedagogical and content purposes. Although basic ICT courses are compulsory in all undergraduate programs in Turkish Universities, there are not many English Language Teaching (ELT) programs that offer specific courses on the use of technology in teaching English. Moreover, one recent study that investigated the implementation of Computer Assisted Language Learning Courses in ELT programs of Turkish Universities found that in these courses, topics such as the history and theoretical foundations of CALL are generally emphasized and practical applications related to TPACK are barely included (Cesur et al., 2022). Therefore, it is difficult to say that a novice English teacher has a high TPACK awareness.

Secondly, it is widely recognized that most classrooms in Turkish Universities are equipped with basic hardware such as computers and projectors. However, considering that English preparatory education in Turkish universities is mostly based on coursebooks, it can be assumed that this hardware is mainly used for the purpose of projecting the classroom presentation tools provided by the publishing houses. Following a coursebook-based strict syllabus that allows very little flexibility and creativity, it is inevitable that the instructors will not have much opportunity to find TPACK-based solutions to the problems they face in their instructional processes.

Discussion on the Instructors' Satisfaction with Teaching Online

The second research question in this study sought to determine how satisfied the instructors were with teaching English online in an emergency remote teaching context in general and terms of student, instructor, and institution-related factors. To this end, the quantitative data were collected through the Online Faculty Satisfaction Survey (OFSS) whereas semi-structured interviews were conducted to collect qualitative data. While the

quantitative data collected by the OFSS were analysed using descriptive statistics (M, SD), the qualitative data analysed using content analysis method.

The initial findings yielded that the instructors who took part in this study were not very satisfied with teaching online in general. When analysed separately, student-related factors got the lowest mean value, which indicated that compared to institutional and individual factors, student-related factors led to more dissatisfaction with teaching online.

The overall findings obtained from the quantitative and the qualitative data analysis suggested that low motivation, participation, and attendance levels of students in online courses, lack of face-to-face contact and interaction with students, lack of technological equipment and internet connection problems are the most important reasons for instructors' dissatisfaction with online teaching.

In relation to instructor-related factors, the current study found that while the fact that online teaching saves time, improves teachers' TPACK and the reliability of the technologies used had a positive impact on teachers' satisfaction, the difficulties of working from home, the need to be more creative in using resources in online courses and technical problems led to a high level of dissatisfaction with online teaching.

The participants were found to be moderately satisfied with the institution-related factors on which the institutional support they received during the ERT process had a positive impact. There was also a belief that using the right online tools and platforms increased online teaching effectiveness. Lastly, the qualitative data analysis revealed that ensuring the security of online examinations was a main concern for the instructors.

These results will now be compared with the results of previous research. In doing so, studies that were conducted in the context of emergency remote teaching and studies that investigated online distance education will be evaluated separately. This is due to the fact that the differences between emergency remote teaching and online distance

education, described in detail in the literature review section, would necessarily affect the results.

Within the context of online distance education, while several studies found high levels of teacher satisfaction with online teaching (Bolliger & Wasilik, 2009; Stickney et al., 2019; Marasi et al.,2020; Walters et al.,2017; Wright, 2014), results from other studies have shown lower levels of satisfaction for various reasons (Downing & Dyment, 2013; Evans & Myrick, 2015; Al-Zahrani, 2015; Harrison et al.,2017; Luongo, 2018). The findings of the current study are consistent with the previous research cited above which identified low levels of satisfaction with teaching online among the instructors.

Regarding the main factors that led to dissatisfaction with teaching online, the results of this study match the previous studies on online distance education which found that lack of student engagement and social interaction had a negative impact on online teaching experience (Downing & Dyment, 2013; De Paepe et al., 2019; De Paepe et al.,2018). However, these results differ from two other studies which found out that the language instructors believed in the effectiveness of online environments for productive interaction (Meskill et al., 2020). The results of previous ERT studies also showed that the lack of interaction was a major problem (Turegun Coban & Kuyumcu Vardar, 2021; Tumen Akyildiz, 2020b; Huang & Yang, 2021; Durak & Cankaya, 2020). One explanation might be that no matter how sophisticated digital technologies are used, online environments are still much weaker than face-to-face education in promoting peer-to-peer and peer-to teacher interaction.

In this study, lack of the necessary electronical devices and internet connection problems were found to cause a negative online teaching experience among the instructors. Only one study conducted within the context of online distance education attained a similar result, that the lack of properly equipped and flexible computers rooms was a reason for dissatisfaction with teaching online among the language instructors (Bracher, 2013). No finding such as internet connection problem was found in any of the studies reviewed in

online distance education section. However, this finding was attained by much of previous ERT research (Pete & Soko, 2021; Ontha et al., 2020; Liyanagunawardena & Williams, 2021; Talidong, 2020; Hazaea et al., 2021). One explanation might be that due to the sudden and imperative shift to online environments, many institutions and even governments were caught unprepared in terms of financial resources and internet infrastructure.

Another reason regarding the importance of the finding discussed above is that it may explain to some extent the low motivation of students, which the instructors complained about. This finding is supported by the earlier studies which showed that some students were almost excluded from the remote education system due to the inequalities in accessing the internet and other technologies (Adodeyin & Soykan, 2020; Williamson et al., 2020; Toquero et al., 2021).

The findings of this study showed that online teaching is time-saving for the instructors and this is one of the most important factors that increased their satisfaction with teaching online. This finding agrees with the findings of both ERT and online distance education research, in which the flexibility provided by the online environments was highly valued by the instructors (Stickney et al., 2019; De Paepe et al.,2018; Walters et al., 2017; He & Xiao, 2020; Turegun Coban & Kuyumcu Vardar, 2021). It was also revealed in this study that working at home posed problems for the instructors. This finding supports the views of Schwartzman (2020) and Adodeyin and Soykan (2020) who described home as a problematic place for learning and teaching. However, none of the studies reviewed on online distance education attained a similar finding. A possible explanation might be that as these studies were conducted in the context of well-planned and designed online education, the instructors had already organised their home environment accordingly.

The participants in this study felt they needed to be more creative in using resources while teaching online and this affected them negatively. Although this finding has not been previously described, it may be attributed to their lack of knowledge and training on the

pedagogical skills required for teaching online. However, the instructors were positively influenced by the fact that they felt their TPACK improved while teaching online. This finding was unexpected and suggests that their TPACK may have improved as a result of the need to seek and find solutions to the problems they encountered in online teaching.

Another significant finding was that the platforms on which online courses were delivered had a major impact on instructor satisfaction. Delivering the online lesson through platforms whose effectiveness are widely recognised, was a reason of satisfaction among the instructors. This finding supports the ERT previous research (He & Xiao, 2020; Durak & Cankaya, 2020; Linh et al.,2021) which showed that the instructors preferred to use functional and practical tools that allow them to give online lectures and interact with students such as Zoom, Google Meet, and Microsoft Teams. However, there seems to be no similar finding in the previous online distance education research. This might be explained by the fact the in programs which set online distance education as the default mode, online platforms with appropriate features are preferred or designed based on program requirements and students' learning needs before online education begins.

The findings also yielded that the instructors valued and appreciated the support they received from the institution, which affected them positively. Previous research on ERT shows no evidence of the role of administrative issues. However, studies investigating satisfaction with online distance education found a tendency for the participants to be dissatisfied with institutional support they received (Kibaru, 2018; Luongo, 2018; Bracher, 2013; Evans & Myrick, 2015; Al-Zahran, 2015). This discrepancy could be attributed to the participants’ awareness of the heavy burden on the shoulders of administrative people during the transition to ERT process, which was hard, chaotic, and required various factors to be considered and adapted together immediately.

Lastly, the way in which examinations were carried out in the online environment was found to be an element of concern and dissatisfaction for the instructors who took part in this study. While previous studies on online distance education presents no similar result,

the results of a few previous ERT studies are consistent with this finding (Hazaea, 2021; Turegun Coban et al & Kuyumcu Vardar, 2021). There are two likely causes for this difference. Firstly, as was mentioned earlier, quality online learning enables learners to interact with the content through realistic practice (Schlesselman, 2020). Therefore, there is usually no concern to implement high security exams in online distance education programmes. The second reason could be attributed to the exam-oriented education in Turkey. It is widely accepted and indicated by the previous scholarly work (Sener, 2018; Tasdemir, 2015; Meseci, 2018; Kartal, 2013) that exams are of great importance at almost every level of the Turkish education system. It is therefore not surprising that the participants in this study were concerned about the implementation and the security of the exams.

Discussion on the Variables Predicting Satisfaction with Teaching Online

A multiple regression analysis was run to find out whether the variables a) age, b) the amount of previous online teaching experience and c) the total TPACK- EFL score can predict the instructors' satisfaction with teaching online. The findings showed that out of these three variables, only the total TPACK-EFL score predicted instructors' satisfaction with teaching online. In other words, there was a statistically significant relationship between the participants' scores from the TPACK-EFL survey and their satisfaction with teaching online.

A second multiple regression analysis was conducted with seven independent variables entered into the model, namely a) TK, b) CK, c) PK, d) PCK, e) TCK, f) TPK, and g) TPACK. The findings showed that out of the seven independent variables, only TPACK was a significant predictor of instructors' satisfaction with teaching online. Despite being statistically significant, there was a medium strenght correlation between these two variables as shown by the correlation coefficient value.

The analysis of the qualitative data yielded findings which helped understand the finding mentioned above. Although the participants believed in the significance of the

TPACK for effective online teaching, the negative factors mentioned in the previous section such as low student participation, lack of motivation, etc. negatively affected instructors' satisfaction with teaching online. In other words, having an adequate level of TPACK is considered crucial, but not enough to be satisfied with teaching online.

These results now will be discussed in comparison with the results of previous research. Firstly, as indicated in the literature review section, there is very little evidence from previous research on the impact of personal and demographic variables on teachers' satisfaction with online teaching. Therefore, it is important that the current study did not find a significant relationship between a) age, b) the amount of previous online teaching experience and satisfaction with teaching online.

To the knowledge of the researcher, the relationship between TPACK and satisfaction with teaching online has not been explored before. Therefore, this study made a second unique contribution to the existing literature by revealing that TPACK can, to some extent, predict satisfaction with teaching online. However, it was also shown that despite being important, having sufficient TPACK is not enough to be satisfied with teaching online due to the factors listed above that affected the instructors negatively. In that respect, this study supports the findings of previous studies in which lack of student motivation, participation, and attendance into the classes along with the lack of internet connection and electronical devices were found to impede online teaching process (Downing & Dyment, 2013; De Paepe et al., 2019; De Paepe et al.,2018; Turegun Coban & Kuyumcu Vardar, 2021; Tumen Akyildiz, 2021b; Huang et al., 2021; Durak & Cankaya, 2020; Pete & Soko, 2021; Ontha et al., 2020; Liyanagunawardena & Williams, 2021; Talidong, 2020; Hazaea et al., 2021). Taken together, one can comment that while those who had inadequate levels of TPACK suffered more in the emergency remote teaching process, the others who reported having adequate TPACK could not put it into the practice very much owing to the problems cited above.

Chapter 5

Conclusion and Suggestions

This chapter presents the concluding remarks that summarise the study and provide pedagogical implications and suggestions for future research.

Summary of the Study

The purpose of the current study was to explore Turkish EFL instructors' perceived levels of TPACK and satisfaction with teaching online in an emergency remote teaching context. It also aimed to assess the ability of age, amount of previous online teaching experience and TPACK sub-dimensions to predict instructors' satisfaction with online teaching. In line with the main purposes of the study, a mixed-methods approach which combine quantitative and qualitative methods was used. Of the three main models of mixed-methods approach, a convergent parallel design was adopted as the quantitative and qualitative data were collected concurrently, analysed separately, and the findings were mixed to determine the consistency of the findings and to reach an overall conclusion.

The quantitative data were collected through the TPACK-EFL and the Online Faculty Satisfaction Survey (the OFSS) from 205 instructors of English working at state universities in Turkey. The TPACK-EFL survey, developed by Baser et al. (2016), was used to identify instructors' perceived levels of technological pedagogical content knowledge (TPACK). It included a seven-factor structure and a total of 39 items. The survey was found to be reliable within the context of study as the Cronbach's Alpha Coefficient for the total scale was .95. In addition, each construct in the survey had a high level of reliability as Cronbach's Alpha coefficients ranged from .77 to .90.

The Online Faculty Satisfaction Survey (OFSS), developed and validated by Bolliger and Wasilik (2009), was used to measure EFL instructors' satisfaction with teaching online in this study. The survey contained 28 items with a three-factor structure: student-related factors, instructor-related factors, and institution-related factors. The OFSS survey also has

two items measuring overall satisfaction with teaching online. In this study, the Cronbach's alpha coefficients for the total scale (.87) and for the student-related (.85) were high, whereas the institution-related (.59) and instructor-related (.58) dimensions had moderate levels of internal consistency. This might have stemmed from the interplay between some of the instructor-related and institution-related issues as well as the lower number of questions on these two dimensions compared to the student dimension.

This study used semi-structured interviews consisting of 15 questions to collect in-depth qualitative data. The validity of the interview questions was ensured through expert opinion. The qualitative data were coded and analysed by two separate researchers. The high level of agreement between the results obtained independently by the two researchers was regarded as the evidence of the reliability of the interviews.

The data collection process started after the ethical approval was obtained from Hacettepe University Ethics Committee. The questionnaires were sent to the instructors of English electronically, via the electronic document management system or by email. Participants who volunteered to be interviewed were contacted by the researcher and the interviews, which took about 40 minutes, were carried out via video conferencing.

A convenience sample of 205 EFL instructors from 12 state universities in Turkey participated in the quantitative phase of the study. These universities were determined based on Nomenclature of Territorial Units for Statistics (NUTS), according to which there are 12 major socio-economical regions in Turkey. Considering the number EFL instructors employed and the existence of an emergency remote English teaching context, one university from each NUTS region was included in the study.

The normality of the distribution was checked for both surveys before the data were analysed to answer the research questions. The quantitative data collected through TPACK-EFL and OFSS were analysed using SPSS (Statistical Package for the Social Sciences) 24.0, whereas the qualitative data from semi-structured interviews were analysed using content analysis.

The first research question aimed to determine the perceived TPACK levels of EFL instructors and to show whether there were significant differences between the sub-dimensions of TPACK-EFL survey. Descriptive findings (M, SD) obtained through the TPACK-EFL survey suggested that those participating in this study were relatively high in their overall TPACK and they were found to rate their CK the highest and TPACK the lowest. It was also revealed that the mean scores for the non-technological knowledge domains of TPACK were significantly higher than the mean scores for the technological domains. It is evident from this finding that the participants' TK could not be sufficiently integrated with their CK and PK, and the result was an inadequate level of TPACK.

The second research question sought to determine how satisfied the instructors were with teaching English online in an emergency remote teaching context in general and terms of student, instructor, and institution-related factors. To this end, the quantitative data collected through the Online Faculty Satisfaction Survey (OFSS) were analysed using descriptive statistics (M, SD), whereas the qualitative data obtained from the interviews were analysed through content analysis method.

The initial findings were that the instructors who participated in this study were not very satisfied with teaching online in general. When analysed separately, student-related factors received the lowest mean score, indicating that student-related factors such as low motivation, participation, and attendance levels of students in online courses, lack of face-to-face contact and interaction with students, lack of technological equipment and internet connection problems, led to more dissatisfaction with online teaching compared to institutional and individual factors.

The instructors were found to be satisfied with the facts that online teaching saved time and improved their' TPACK. In addition, the reliability of the technologies used had a positive impact on their satisfaction. However, there was a high level of dissatisfaction with online teaching due to the difficulties of working from home, the need to use resources more creatively in online courses and the technical problems.

In terms of the institution-related factors, the findings showed that the participants were moderately satisfied on which institutional support during ERT had a positive effect. In addition, using the right online tools and platforms were thought to make online learning more effective. However, they were dissatisfied with the fact that their institutions had failed to ensure the security of the online exams.

For the third research question, a multiple regression analysis was carried out to find out whether the variables a) age, b) amount of previous online teaching experience and c) total TPACK-EFL score could predict teachers' satisfaction with teaching online. The results showed that out of these three variables, only the total TPACK-EFL score predicted teachers' satisfaction with online teaching. A second multiple regression analysis demonstrated that out of the seven sub-components of TPACK-EFL, only TPACK was a significant predictor of instructors' satisfaction with teaching online. Taken together with the analysis of the qualitative data, it was suggested that having an adequate level of TPACK was considered crucial, but not enough to be satisfied with teaching online due to the negative factors revealed by the previous research question.

Pedagogical Implications

The findings of the present study have several important implications for future practice in online education, especially for Turkey. Firstly, the fact that digital and Internet-based technologies are inevitable realities of our time should be taken into account in the development of educational policies, especially at university level. In that respect, infrastructure work enabling cheap and easy internet access for students should be increased throughout the country. Likewise, government and universities should work together to plan the provision of tools such as tablets and laptops that students need to continue their studies in the 21st century.

Institutions planning to provide online education should try to offer a suitable physical working environment for instructors who, for various reasons, have difficulty in working at

home. In addition, instructors should be provided with in-service training which, rather than a purely technological context, focuses on the pedagogical and subject-specific dimensions of online teaching such as promoting interaction and collaboration in the online environment. Through in-service trainings, instructors should also be encouraged and supported to use alternative ways of assessment such as portfolios and performance tasks instead of traditional tests.

The findings of this study showed that the platforms through which online lessons are delivered affect instructor satisfaction. Therefore, institutions planning to provide online education should consider the opinions of teaching staff when deciding which platforms will be used to deliver online courses. The online platforms to be used should be user-friendly, encourage interaction and meet the needs of students and teachers. Where possible, instructors should be given the freedom to use platforms that they feel comfortable with in terms of their own digital skills and the learning needs of their students. Finally, there is a need to standardise the rules for the management of online education, particularly with regard to attendance, in order to avoid haphazard practices.

This study showed that TPACK can, to some extent, predict satisfaction with teaching online. Nevertheless, it was also shown that, although important, having sufficient TPACK is not enough to be satisfied with teaching online. This implies that TPACK awareness should be enhanced in educators who will teach online, regardless of the subject matter they teach. Regarding online language teachers, continious in-service training should be provided that focuses on how to develop the four language skills by through interactional and collaborative tools. In this way, progress can be made in overcoming the lack of interaction which, according to the findings, regarded as one of the biggest problems with online education.

Suggestions for Further Research

This study aimed to investigate investigate Turkish EFL instructors' perceived of Technological Pedagogical Content Knowledge (TPACK) levels and their satisfaction with teaching online in an emergency remote teaching context. To this end, data were collected from 205 EFL instructors working at 12 state universities in Turkey. Although these universities were determined based on NUTS to represent the population better, the number of the participants were limited who were selected based on convenience sampling. Therefore, further research can be conducted with a larger sample of participants by considering different demographic characteristics such as age, gender and the latest degree being hold.

Longitudinal studies that aim to track development process of TPACK with a few participants through alternative data collection methods such as observation and reflective journals can contribute to the existing body of knowledge even more compared to conducting cross-sectional surveys to explore TPACK. Furthermore, experimental studies can be conducted to reveal whether in-service trainings on how to use specific technological tools for language teaching purposes can improve language educators' TPACK. At that point, studies focusing on some specific technologies language educators less confident, such as content creation and collaboration tools, can be carried out. In such studies, not only detecting an improvement in teachers' TPACK but also the question whether teachers' improved TPACK may boost students' language learning can be investigated.

With regard to online teaching and learning, this study and several other studies have shown that lack of interaction is one of the main factors that cause dissatisfaction for both online teachers and online students. Therefore, action research can be conducted to increase student-student and student-teacher interaction in the online classroom environment. In such action research studies, the intervention may be some collaborative tasks, social presence of the teachers and students, and even the use of a technological tool that will require students to interact with one another and with the teacher.

This study analysed satisfaction with teaching online only as related to teaching staff. Further descriptive research into the subject can be conducted with students and even with the administrative staff. As stated earlier in the previous sections, one of the findings of this study was administrative factors, especially administrative support, were crucial in the ERT process.

Likewise, student-related factors were found to be the biggest reason of dissatisfaction with teaching online among the instructors in this study. Therefore, the examination of the remote education process from the perspective of students and even parents will help compare the results and hence provide valuable insights for future educational practices in Turkey.

References

Abu-Hardan, F., Al-Jamal, D.A., & Sa'di, I.T. (2019). TPACK: Time to be Considered in Teaching Reading. *International Journal of Learning, Teaching and Educational Research, 18(6)*, 68-95.

Adams, W.C. (2010). Conducting Semi-Structured Interviews. In J.S. Wholey, H.P. Hatry & K.E. Newcomer (Eds.), *Handbook of Practical Program Evaluation* (pp. 365-377). John Wiley & Sons.

Adedoyin, O.B., & Soykan, E. (2020): Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*, *31(2)*, 863-875. https://doi.org/10.1080/10494820.2020.1813180

Adnan, M. (2017). Professional development in the transition to online teaching: The voice of entrant online instructors. *ReCALL*, *30(1)*, 88-111.

Agyei, D.D., & Voogt, J.M. (2015). Pre-service teachers' TPACK competencies for spreadsheet integration: insights from a mathematics-specific instructional technology course. *Technology, Pedagogy and Education*, *24(5)*, 605-625. https://doi.org/10.1080/1475939X.2015.1096822

Aldrich, R.S., & Moneypenny, D. (2019). Assessing Spanish Proficiency of Online Language Learners after Year 1. *The EuroCALL Review, 27 (2)*, 28-39.

Al-Zahrani, A.M. (2015). Faculty satisfaction with online teaching in Saudi Arabia's higher education institutions. *International Journal of Instructional Technology and Distance Learning,12 (4),* 17-28.

Amin, F. M., & Sundari, H. (2020). EFL students' preferences on digital platforms during emergency remote teaching: Video Conference, LMS, or Messenger Application? *Studies in English Language and Education, 7(2)*, 362-378.

Angeli, C., Valanides, N., & Christodoulou, A. (2016). Theoretical Considerations of Technological Pedagogical Content Knowledge. In M.C Herring, M.J Koehler & P. Mishra (Eds.), *Handbook of Technological Pedagogical Content Knowledge (TPACK) for Educators* (pp. 11-32). Routledge.

Archambault, L. (2016). Exploring the Use of Qualitative Methods to Examine TPACK. In M.C Herring, M.J Koehler & P. Mishra (Eds.), *Handbook of Technological Pedagogical Content Knowledge (TPACK) for Educators* (pp. 65-86). Routledge.

Archambault, L.M., & Barnett, J.H. (2010). Revisiting technological pedagogical content knowledge: Exploring the TPACK framework. *Computers & Education*, *55*, 1656-1662.

Atar, C., Aydın, S., & Bağcı, H. (2019). An investigation of pre-service English teachers' level of technopedagogical content knowledge. *Journal of Language and Linguistic Studies, 15(3)*, 794-805.

Barnard, L., Paton, V., & Lan, W. (2008). Online Self-Regulatory Learning Behaviors as a Mediator in the Relationship between Online Course Perceptions with Achievement. *International Review of Research in Open and Distance Learning, 9 (2),* 1-11.

Barrett, E., & Lally, V. (1999). Gender differences in an on-line learning environment. *Journal of Computer Assisted Learning*, *15*, 48-60.

Baser, D., Kopcha, T.J., & Ozden, M.Y. (2016). Developing a technological pedagogical content knowledge (TPACK) assessment for preservice teachers learning to teach English as a foreign language. *Computer Assisted Language Learning*, *29 (4),*749-764.

Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, *39(5)*, 775–786. https://doi.org/10.1111/j.1467-8535.2007.00793.x

Blau, I., Peled, Y., & Nusan, A. (2016). Technological, pedagogical and content knowledge in one-to-one classroom: teachers developing “digital wisdom”. *Interactive Learning Environments,* 24(6), 1215-1230. http://dx.doi.org/10.1080/10494820.2014.978792

Bolliger, D.U., & Halupa, C. (2018). Online student perceptions of engagement, transactional distance, and outcomes. *Distance Education*, *39(3)*, 299-316. https://doi.org/10.1080/01587919.2018.1476845

Bolliger, D.U., & Wasilik, O. (2009). Factors influencing faculty satisfaction with online teaching and learning in higher education. *Distance Education*, *30 (1),*103-116.

Bolliger, D.U., Inan, F.A., & Wasilik, O. (2014). Development and Validation of the Online Instructor Satisfaction Measure (OISM). *Journal of Educational Technology & Society*, *17 (2),* 183-195.

Bonafini, F.C., & Lee, Y. (2021). Portraying Mathematics Pre- service Teachers’ Experience of Creating Video Lessons with Portable Interactive Whiteboards through the TPACK.*The New Educator*, *17(4),* 327-352. https://doi.org/10.1080/1547688X.2021.1980167

Borup, J., & Stevens, M.A. (2016). Factors Influencing Teacher Satisfaction at an Online Charter School. *Journal of Online Learning Research, 2(1)*, 3-22.

Bostancioglu, A., & Handley, Z. (2018). Developing and validating a questionnaire for evaluating the EFL ‘Total PACKage’: Technological Pedagogical Content Knowledge (TPACK) for English as a Foreign Language (EFL). *Computer Assisted Language Learning*, *31(5-6)*, 572-598.

Bozkurt, A., & Sharma, R.C. (2020). Emergency remote teaching in a time of global crisis due to CoronaVirus pandemic. *Asian Journal of Distance Education*, *15(1)*, 1-6.

Bracher, J. (2013). A survey of online teaching by native-speaker English instructors at Japanese universities. *The JALT CALL Journal, 9(3)*, 221-239.

Brantley-Dias, L., Kinuthia, W., Shoffner, M.B., Castro, C.D., & Rigole, N.J. (2007) Developing Pedagogical Technology Integration Content Knowledge in Preservice Teachers. *Journal of Computing in Teacher Education*, *23(4)*, 143-150. https://doi.org/10.1080/10402454.2007.10784574

Brown, B. W., & Liedholm, C. E. (2002). Can Web courses replace the classroom in principles of microeconomics? *American Economic Review*, *92(2)*, 1–12.

Brown, S. W., & Kulikowich, J. M. (2004). Teaching statistics from a distance: What have we learned? *International Journal of Instructional Media*, *31(1)*, 19–35.

Bueno- Alastuey, M.C., Villarreal, I., & Esteban, S.G. (2018). Can telecollaboration contribute to the TPACK development of pre-service teachers?.*Technology, Pedagogy and Education*, *27 (3)*, 367-380.

Bustamante, C. (2020) TPACK-based professional development on web 2.0 for Spanish teachers: a case study. *Computer Assisted Language Learning*, *33(4)*, 327-352.

Canbazoglu Bilici, S., Guzey S. S., Donna J. D., Roehrig, G., Karahan, E., & Yamak, H. (2012). Evaluating pre-service science teachers' self-efficacy toward TPACK. *In Colloquium on P-12 STEM Education Research*, Minnesota, MN.

Canbazoglu Bilici, S., Guzey, S. S., & Yamak, H. (2016). Assessing pre-service science teachers' technological pedagogical content knowledge (TPACK) through observations and lesson plans. *Research in Science & Technological Education*, *34(2)*, 237–251. https://doi.org/10.1080/02635143.2016.1144050

Casey, D.M. (2008). A Journey to Legitimacy: The Historical Development of Distance Education through Technology. *TechTrends*, *52(2)*, 45-51.

Caywood, K., & Duckett, J. (2003). Online vs. On-Campus Learning in Teacher Education. *Teacher Education and Special Education, 26 (2)*, 98-105.

Cesur, K., Yilmaz, T.S., Borekci, R., & Can, E. (2022). Suggested Syllabus Content for Computer Assisted Language Learning Course in English Language Teaching Programs. *Turkish Journal of Social Research, 26 (3),* 795-810.

Chai, C. S., Koh, J. H. L., Chin, C. K., & Tan, C. L. (2013). Exploring Singaporean Chinese *language teachers' technological pedagogical content knowledge and its relationship* to the teachers' pedagogical beliefs. *The Asia-Pacific Education Researcher*, *22(4)*, 657–666. https://doi.org/10.1007/s40299-013-0071-3

Chai, C.S., Koh, J.H.L., & Tsai, C-C. (2016). A Review of Quantitative Measures of Technological Pedagogical Content Knowledge (TPACK). In M.C Herring, M.J Koehler & P. Mishra (Eds.), *Handbook of Technological Pedagogical Content Knowledge (TPACK) for Educators* (pp. 87-106). Routledge.

Chai, C.S., Koh, J. H.L., Tsai, C-C., & Tan, L.L.W. (2011). Modeling primary school pre-service teachers' Technological Pedagogical Content Knowledge (TPACK) for meaningful learning with information and communication technology (ICT). *Computers & Education*, *57*, 1184-1193.

Chai, C.S., Koh, J.H.L., & Tsai, C-C. (2010). Facilitating Preservice Teachers' Development of Technological, Pedagogical, and Content Knowledge (TPACK). *Journal of Educational Technology & Society, 13(4)*, 63-73.

Chai, C.S., & Koh, J. H. L. (2017). Changing teachers' TPACK and design beliefs through the Scaffolded TPACK Lesson Design Model (STLDM). *Learning: Research and Practice, 3(2)*, 114-129.

Chang, C.S., Liu, E.Z-F., Sung, H-Y., Lin, C.H., Chen, N-S., & Cheng, S-S. (2014). Effects of online college student's Internet self-efficacy on learning motivation and performance. *Innovations in Education and Teaching International*, *51 (4)*, 366-377. https://doi.org/10.1080/14703297.2013.771429

Chang, H., & Windeatt, S. (2016). Developing collaborative learning practices in an online language course. *Computer Assisted Language Learning*, *29 (8)*, 1271-1286. https://doi.org/10.1080/09588221.2016.1274331

Cheng, K.-H. (2017). A survey of native language teachers' technological pedagogical and content knowledge (TPACK) in Taiwan. *Computer Assisted Language Learning*, *30 (7)*, 692-708. https://doi.org/10.1080/09588221.2017.1349805

Compton, L.K.L. (2009). Preparing language teachers to teach language online: a look at skills, roles, and responsibilities. *Computer Assisted Language Learning, 22(1)*, 73-99.

Conrad, D. (2005). Building and Maintaining Community in Cohort-Based Online Learning. *Journal of Distance Education*, *20 (1),* 1-20.

Cox, S. (2008). *A conceptual analysis of technological pedagogical content knowledge* (Unpublished doctoral dissertation). Brigham Young University, Provo UT.

Cox, S., & Graham, C.R. (2009). Diagramming TPACK in practice: Using an elaborated model of the TPACK framework to analyse and depict teacher knowledge. *TechTrends, 53(5)*, 61-69.

Creswell, J. W. (1999). Mixed-method research: Introduction and application. In *Handbook of educational policy* (pp. 455-472). Academic press.

Creswell, J. W. (2003). *Qualitative, Quantitative and Mixed Methods Approaches.* Sage.

Creswell, J. W., & Plano, C. V. L. (2007). *Designing and conducting mixed methods research*. Sage.

Dashtestani, R. (2014). English as a foreign language teachers' perspectives on implementing online instruction in the Iranian EFL context. *Research in Learning Technology*, *22.* https://doi.org/10.3402/rlt.v22.20142

Dawson, C. (2002). *Practical Research Methods*. Oxford.

De Paepe, L., Zhu, C., & Depryck, K. (2018). Online Dutch L2 learning in adult education: educators' and providers' viewpoints on needs, advantages and disadvantages. *Open Learning: The Journal of Open, Distance and e-Learning*, *33(1)*, 18-33. https://doi.org/10.1080/02680513.2017.1414586

De Paepe, L., Zhu, C., & Depryck, K. (2019). Development and implementation of online Dutch L2 courses in adult education: educators' and providers' perceptions of constraints and critical success factors. *Innovation in Language Learning and Teaching*, *13 (3)*, 277-291. https://doi.org/10.1080/17501229.2018.1462369

Dennen, V.P., Darabi, A.A., & Smith, L.J. (2007). Instructor–Learner Interaction in Online Courses: The relative perceived importance of particular instructor actions on performance and satisfaction. *Distance Education*, *28 (1), 65-79.* https://doi.org/10.1080/01587910701305319

Doering, A., Koseoglu, S., Scharber, C., Henrickson, J., & Lanegran, D. (2014). Technology Integration in K–12 Geography Education Using TPACK as a Conceptual Model. *Journal of Geography, 113(6)*, 223-237.

Dong, Y., Xu, C., Chai, C.S., & Zhai, X. (2020). Exploring the Structural Relationship Among Teachers' Technostress, Technological Pedagogical Content Knowledge (TPACK), Computer Self-efficacy and School Support. *Asia-Pacific Edu Res, 29(2)*, 147-157. https://doi.org/10.1007/s40299-019-00461-5

Donmez, M. (2016). *A Video Case Study on TPACK Indicators in Technology Enhanced Language Teaching Classrooms in Turkey* (Master's Thesis). Middle East Technical University, Ankara.

Dornyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Lawrence Erlbaum Associates Publishers.

Dornyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies.* Oxford.

Downing, J.J., & Dyment, J.E. (2013). Teacher Educators' Readiness, Preparation, and Perceptions of Preparing Preservice Teachers in a Fully Online Environment: An Exploratory Study. *The Teacher Educator*, *48(2)*, 96-109.

Durak, G., & Çankaya, S. (2020). Emergency Distance Education Process from the Perspectives of Academicians. *Asian Journal of Distance Education*, *15(2)*, 159-174. https://doi.org/10.5281/zenodo.4303782

Durdu, L., & Dag, F. (2017). Pre-Service Teachers' TPACK Development and Conceptions through a TPACK-Based Course. *Australian Journal of Teacher Education*, *42(11)*, 150-171.

Evans, S., & Myrick, J.G. (2015). How MOOC instructors view the pedagogy and purposes of massive open online courses. *Distance Education*, *36(3)*, 295-311. https://doi.org/10.1080/01587919.2015.1081736

Faux, T. L., & Black-Hughes, C. (2000). A Comparison of Using the Internet Versus Lectures to Teach Social Work History. *Research on Social Work Practice*, *10 (4)*, 454-466.

Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations. *Societies, 10(4)*,86. https://doi.org/10.3390/soc10040086

Forman, J., & Damschroder, L. (2015). Qualitative Content Analysis. *Empirical Methods for Bioethics: A Primer*. 39-62.

Frey, A., Faul, A., & Yankelov, P. (2003). Student Perceptions of Web-Assisted Teaching Strategies. *Journal of Social Work Education*, *39 (3)*, 443-457. https://doi.org/10.1080/10437797.2003.10779148

Ganesh, G., Paswan, A., & Sun, Q. (2015). Are Face-to-Face Classes More Effective Than Online Classes? An Empirical Examination. *Marketing Education Review, 25(2)*, 67-81. https://doi.org/10.1080/10528008.2015.1029851

Garrison, D. R., Anderson, T., & Archer, W. (2003). A Theory of Critical Inquiry in Online Distance Education. In Michael G.M.& William G. A (Eds.), *Handbook of Distance Education (*pp. 113-129). Lawrence Erlbaum Associates.

Garrison, D.R., & Shale, D. (1987). Mapping the boundaries of distance education: Problems in defining the field. *American Journal of Distance Education*, *1(1)*, 7-13. https://doi.org/10.1080/08923648709526567

Gemmell, I., & Harrison, R. (2020). Factors associated with differential attainment among transnational students on an online distance learning programme. *Open Learning: The Journal of Open, Distance and e-Learning, 38(2),* 136-148.*https://doi.org/10.1080/02680513.2020.1820318*

Gill, L., & Dalgarno, B. (2017). A qualitative analysis of pre-service primary school teachers' TPACK development over the four years of their teacher preparation programme. *Technology, Pedagogy and Education, 26(4)*, 439-456. https://doi.org/10.1080/1475939X.2017.1287124

Glazier, R.A. (2016). Building Rapport to Improve Retention and Success in Online Classes, *Journal of Political Science Education*, *12(4)*, 437-456. https://doi.org/10.1080/15512169.2016.1155994

Graham, C.R., Borup, J., & Smith, N.B. (2012). Using TPACK as a framework to understand teacher candidates' technology integration decisions. *Journal of Computer Assisted Learning, 28*, 530-546. **https://doi.org/10.1111/j.1365-2729.2011.00472.x**

Greene, B.A., & Land, S.M. (2000). A Qualitative Analysis of Scaffolding Use in a Resource-Based Learning Environment Involving the World Wide Web. *Journal of Educational Computing Research, 23(2)*, 151-179.

Groth, R., Spickler, D., Bergner, J., Bardzell, M. (2009). A qualitative approach to assessing technological pedagogical content knowledge. *Contemporary Issues in Technology and Teacher Education*, *9(4)*, 392-411.

Guo, S., & Mollering, M. (2017). Collaborative tasks in Web conferencing: A case study on Chinese online. *The JALT CALL Journal, 13(1)*, 3–23. https://doi.org/10.29140/jaltcall.v13n1.209

Habibi, A., Yusop, F.D., & Razak, R.A. (2019). The role of TPACK in affecting pre-service language teachers' ICT integration during teaching practices: Indonesian context. *Education and Information Technologies, 25(3)*, 1929-1949.

Hampel, R., & Pleines, C. (2013). Fostering Student Interaction and Engagement in a Virtual Learning Environment: An Investigation into Activity Design and Implementation. *CALICO Journal*, *30(3)*, 342-370. **https://doi.org/10.11139/cj.30.3.342-370**

Hampel, R., & Stickler, U. (2005*).* New skills for new classrooms: Training tutors to teach languages online*. Computer Assisted Language Learning, 18 (4),* 311-326.

Harris, J., Grandgenett, N., & Hofer, M. (2010). Testing a TPACK-based Technology Integration Assessment Rubric. In Gibson, D., &Dodge, B. (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2010* (pp. 3833– 3840). Association for the Advancement of Computing in Education.

Harris, J., Mishra, P., & Koehler, M. (2009). Teachers' Technological Pedagogical Content Knowledge and Learning Activity Types: Curriculum-based Technology Integration Reframed. *Journal of Research on Technology in Education, 41 (4)*, 393-416.

Harris, J.B., & Hofer, M.J. (2011) Technological Pedagogical Content Knowledge (TPACK) in Action. *Journal of Research on Technology in Education*, *43(3)*, 211-229. https://doi.org/10.1080/15391523.2011.10782570

Harris, J.B., Grandgenett, N.F., & Hofer, M, J. (2012). Testing an instrument using structured interviews to assess experienced teachers' TPACK. In C.D. Maddux, D. Gibson, & R. Rose (Eds.), *Research Highlights in technology and teacher education* (pp.15-22). Association for the Advancement of Computing in Education.

Harrison, R., Hutt, I., Thomas-Varcoe, C., Motteram, G., Else, K., Rawlings, B., & Gemmell, I. (2017). A Cross-Sectional Study to Describe Academics' Confidence, Attitudes, and Experience of Online Distance Learning in Higher Education. *Journal of Educators Online*, *14*(2), 1-9.

Hashemifardnia, A., Shafiee, S., Esfahani, F.R., & Sepehri, M. (2021). Effects of Massive Open Online Course (MOOC) on Iranian EFL Learners' Speaking Complexity, Accuracy, and Fluency. *CALL-EJ*, *22(1)*, 56-79.

Hassani, K., Nahvi, A., & Ahmadi, A. (2016). Design and implementation of an intelligent virtual environment for improving speaking and listening skills. *Interactive Learning Environments*, *24 (1)*, 252-271. https://doi.org/10.1080/10494820.2013.846265

Hazaea, A.N., Bin-Hady, W.R.A., & Toujani, M.M. (2021). Emergency Remote English Language Teaching in the Arab League Countries: Challenges and Remedies. *CALL-EJ*, *22(1)*, 201-222.

He, W., & Xiao, J. (2020). The Emergency Online Classes During COVID-19 Pandemic: A Chinese University Case Study. *Asian Journal of Distance Education*, *15(2)*, 21-36. https://doi.org/10.5281/zenodo.4292664

Hilton, J.T. (2016). A Case Study of the Application of SAMR and TPACK for Reflection on Technology Integration into Two Social Studies Classrooms. *The Social Studies, 107(2)*, 68-73. https://doi.org/10.1080/00377996.2015.1124376

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The Difference Between Emergency Remote Teaching and Online Learning. *EDUCAUSE, https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning.*

Hofer, M., & Grandgenett, N. (2012). TPACK Development in Teacher Education. *Journal of Research on Technology in Education*, *45(1)*, 83-106. https://doi.org/10.1080/15391523.2012.10782598

Hofer, M., & Harris, J. (2010). Differentiating TPACK development: Using learning activity types with inservice and preservice teachers. In C. D. Maddux, D. Gibson, & B. Dodge (Eds.), *Research highlights in technology and teacher education 2010* (pp. 295–302). Society for Information Technology and Teacher Education.

Hofer, M., Grandgenett, N., Harris, J., & Swan, K. (2011). Testing a TPACK-based technology integration observation instrument. In Society for Information Technology & Teacher Education International Conference (pp. 4352-4359). Association for the Advancement of Computing in Education (AACE).

Holmberg, B. (1995). *Theory and Practice of Distance Education*. Routledge.

Hong, J. E., & Stonier, F. (2015). GIS In-Service Teacher Training Based on TPACK. *Journal of Geography*, *114(3),* 108-117. https://doi.org/10.1080/00221341.2014.947381

Hong, J-C., Hwang, M-Y., Tai, K-H., & Lin, P-H. (2017). Intrinsic motivation of Chinese learning in predicting online learning self-efficacy and flow experience relevant to students' learning progress. *Computer Assisted Language Learning*, *30(6)*, 552-574. https://doi.org/10.1080/09588221.2017.1329215

Hsu, C-Y., Liang, J.C., & Su, Y-C. (2015). The Role of the TPACK in Game-Based Teaching: Does Instructional Sequence Matter?. *Asia-Pacific Edu Res, 24(3)*, 463-470. http://dx.doi.org/10.1007/s40299-014-0221-2.

Huang, M., Shi, Y. & Yang, X. (2021). Emergency remote teaching of English as a foreign language during COVID-19: Perspectives from a university in China. *International Journal of Educational Research and Innovation (IJERI), 15,* 400-418.

Hurlbut, A.R. (2018). Online vs. traditional learning in teacher education: a comparison of student progress. *American Journal of Distance Education*, *32(4)*, 248-266. https://doi.org/10.1080/08923647.2018.1509265

Huss, J., & Eastep, S. (2015). Faculty Expectations Toward Their Online Courses: Are They on the Same Screen with Their Students?. *Journal of Inquiry & Action in Education, 6 (3),* 15-41.

Jaipal, K. & Figg, C. (2010). Unpacking the "Total PACKage": Emergent TPACK Characteristics from a Study of Preservice Teachers Teaching with Technology. *Journal of Technology and Teacher Education*, *18(3),* 415-441.

Jamieson-Proctor, R., Finger, G., & Albion, P. (2010). Auditing the TK and TPACK confidence of pre-service teachers: Are they ready for the profession? *Australian Educational Computing, 25(1)*, 8-17.

Jang, S. J. (2010). Integrating the interactive whiteboard and peer coaching to develop the TPACK of secondary science teachers. *Computers & Education, 55*, 1744-1751. https://doi.org/10.1016/j.compedu.2010.07.020

Jang, S. J., & Tsai, M. F. (2012). Exploring the TPACK of Taiwanese elementary mathematics and science teachers with respect to use of interactive whiteboards. *Computers & Education, 59*, 327-338.

Jang, S. J., & Tsai, M. F. (2013). Exploring the TPACK of Taiwanese secondary school science teachers using a new contextualized TPACK model. *Australasian Journal of Educational Technology*, *29(4),* 566-580.

Joo, Y. J., Park, S., & Lim, E. (2018). Factors Influencing Preservice Teachers' Intention to Use Technology: TPACK, Teacher Self-efficacy, and Technology Acceptance Model. *Educational Technology & Society, 21(3)*, 48–59.

Kapici, H. O., & Akcay, H. (2023). Improving student teachers' TPACK self-efficacy through lesson planning practice in the virtual platform. *Educational Studies,* 49 (1), 76-98. https://doi.org/10.1080/03055698.2020.1835610

Kartal, S. (2013). Öğretmen Adaylarının Görüşlerine Göre Eğitim Sistemimizde Değiştirilmesi Gereken Noktalar. *Uşak Üniversitesi Sosyal Bilimler Dergisi, 6,* 255-269.

Keegan, D.J. (1980) On defining distance education. *Distance Education*, *1(1),* 13-36.

Kern, N. (2013). Technology Integrated English for Specific Purposes Lessons: Real Life Language, Tasks and Tools for Professionals. G. Motteram (Eds.), *Innovations in Learning Technologies for English Language Teaching* (pp.87-115). British Council.

Kibaru, F. (2018). Supporting Faculty to Face Challenges in Design and Delivery of Quality Courses in Virtual Learning Environments. *Turkish Online Journal of Distance Education, 19 (4),* 176-197.

Ko, C.-J. (2016). The effect of task types on foreign language learners' social presence in synchronous computer-mediated communication (SCMC). *The JALT CALL Journal, 12(2),* 123–149. https://doi.org/10.29140/jaltcall.v12n2.205

Koehler, M. J., & Mishra, P. (2005). Teachers learning technology by design. *Journal of Computing in Teacher Education*, *21(3)*, 94.

Koehler, M., Mishra, P., Yahya, K., & Yadav, A. (2004). Successful teaching with technology: The complex interplay of content, pedagogy, and technology. In *Society for Information Technology & Teacher Education International Conference* (pp. 2347-2354). Association for the Advancement of Computing in Education (AACE).

Koehler, M.J., & Mishra, P. (2008). Introducing TPCK. In AACTE Committee on Innovation and Technology (Eds.), *Handbook of technological pedagogical content knowledge (TPCK) for educators* (pp.3-29). Routledge.

Koehler, M.J., Mishra, P., & Cain, W. (2013). What is Technological Pedagogical Content Knowledge (TPACK)?. *Journal of Education, 193 (3)*, 13-19.

Koh, J. H. L., Chai, C. S., & Tay, L.Y. (2014). TPACK-in-Action: Unpacking the contextual influences of teachers' construction of technological pedagogical content knowledge (TPACK). *Computers & Education, 78*, 20-29.

Koh, J. H. L., Chai, C. S., & Tsai, C. C. (2014). Demographic Factors, TPACK Constructs, and Teachers' Perceptions of Constructivist-Oriented TPACK. *Educational Technology & Society*, *17 (1)*, 185–196.

Kumar, R. (2011). *Research methodology: A step-by-step guide for beginners*. Sage.

LaPadula, M. (2003). A Comprehensive Look at Online Student Support Services for Distance Learners. *American Journal of Distance Education*, *17(2)*, 119-128. https://doi.org/ 10.1207/S15389286AJDE1702

Le, T.V., Cunningham, U., & Watson, K. (2018). The relationship between willingness to communicate and social presence in an online English language course. *The JALT CALL Journal, 14(1)*, 43–59. https://doi.org/10.29140/jaltcall.v14n1.223

Lee, M-H., & Tsai, C-C. (2010). Exploring teachers' perceived self efficacy and technological pedagogical content knowledge with respect to educational use of the World Wide Web. *Instructional Science*, *38*, 1-21. https://doi.org/10.19171/uefad.1110455

Lei, S.A., & Gupta, R.K. (2010). College Distance Education Courses: Evaluating Benefits and Costs from Institutional, Faculty and Students' Perspectives. *Education, 130* (4), 616-631.

Lin, T.C., Tsai, C.C., Chai, C.S., & Lee, M.H. (2013). Identifying science teachers' perceptions of technological pedagogical and content knowledge (TPACK). *Journal of Science Education and Technology*, *22 (3)*, 325-336. https://doi.org/10.1007/s10956-012-9396-6

Linh, L. T. N., Lam, N.T., & Ngoc, N.H. (2021). Using E-Learning Platforms in Online Classes: A Survey on Tertiary English Teachers' Perceptions. *AsiaCALL Online Journal, 12(5),* 34-53.

Liyanagunawardena, T. R. & Williams, S. A. (2021). Emergency remote education: Experience from Sri Lanka during Covid-19. *Asian Journal of Distance Education*, *16(1),* 207-229. https://doi.org/10.5281/zenodo.4988349

Longhurst, R. (2003). Semi-structured Interviews and Focus Groups. In N. Clifford, M. Cope, T. Gillespie & S. French (Eds.), *Key Methods in Geography* (143-156). Sage.

Luik, P., Taimalu, M., & Suviste, R. (2017). Perceptions of technological, pedagogical and content knowledge (TPACK) among pre-service teachers in Estonia. *Educ Inf Technol, 23*, 741-755. https://doi.org/10.1007/s10639-017-9633-y

Luongo, N. (2018). An examination of distance learning faculty satisfaction levels and self-perceived barriers. *Journal of Educators Online*, *15* (2).

Lux, N.J., Bangert, A.W., & Whittier, D.B. (2011). The Development of an instrument to Assess Preservice Teachers' Technological Pedagogical Content Knowledge. *Journal of Educational Computing Research*, *45 (4)* 415-431.

Maki, R.H., Maki, W.S., Patterson, M., & Whittaker, P.D. (2000). Evaluation of a Web-based introductory psychology course: I. Learning and satisfaction in on-line versus lecture courses. *Behavior Research Methods. Instruments, & Computers, 32 (2)*, 230-239.

Maki, W.S., & Maki, R.H. (2001). Mastery quizzes on the Web: Results from a Web-based introductory psychology course. *Behavior Research Methods, Instruments, & Computer, 33(2),* 212-216.

Malina, M. A., Norreklit, H. S., & Selto, F. H. (2011). Lessons learned: advantages and disadvantages of mixed method research. *Qualitative Research in Accounting & Management*, *8(1)*, 59-71. https://doi.org/10.1108/11766091111124702

Manegre, M., & Sabiri, K.A. (2020). Online language learning using virtual classrooms: an analysis of teacher perceptions. *Computer Assisted Language Learning*, *35(5-6)*, 973-988.https://doi.org/10.1080/09588221.2020.1770290

Marasi, S., Jones, B., & Parker, J.M. (2020). Faculty satisfaction with online teaching: a comprehensive study with American faculty. *Studies in Higher Education*, *47(3),* 513-525. https://doi.org/10.1080/03075079.2020.1767050

Martin, I.A. (2020). Pronunciation development and instruction in distance language learning. *Language Learning & Technology*, *24(1)*, 86-106.

McFarland, D., & Hamilton, D. (2005). Factors Affecting Student Performance and Satisfaction: Online versus Traditional Course Delivery. *Journal of Computer Information Systems*, *46(2)*, 25-32.

McLawhon, R., & Cutright, M. (2012). Instructor Learning Styles as Indicators of Online Faculty Satisfaction. *Journal of Educational Technology & Society*, *15 (2)*, 341-353.

Meseci, F. (2017). İngiltere'de İlköğretim Performans Değerlendirme Sistemi ve Türkiye İçin Öneriler. *Journal of Values Education, 5 (14),* 79-105.

Meskill, C., Anthony, N. & Sadykova, G. (20YY). Teaching languages online: Professional vision in the making. *Language Learning & Technology*, *24*(3), 160–175.

Meyer, K. A. (Ed.). (2014). *Student Engagement Online: What Works and Why: ASHE Higher Education Report, Volume 40, Number 6*. John Wiley & Sons.

Mishra, P., & Koehler, M. J. (2003). Not “what” but “how”: Becoming design-wise about educational technology. In Y. Zhao (Ed.), *What should teacher know about technology? perspectives and practices* (pp. 99-122). Information Age Publishing.

Mishra, P., & Koehler, M.J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teacher College Record, 108(6)*, 1017-1054.

Mishra, P., Koehler, M. J., & Kereluik, K. (2009). Looking back to the future of educational technology. *TechTrends*, *53 (5),* 48-53.

Mishra, P., Peruski, L., & Koehler, M. (2007). Developing technological pedagogical content knowledge (TPCK) through teaching online. In R. Carlsen et al. (Eds.), *Proceedings of Society for Information Technology& Teacher Education International Conference 2007* (pp.2208-2213). Association for the Advancement of Computing in Education (AACE).

Mishra, P., Zhao, Y., & Tan, H.S. (1999). From concept to software: Unpacking the blackbox of design. *Journal of Research on Computing in Education*, *32(2)*, 220-238.

Mitchell, R.L.G. (2009). Online Education and Organizational Change. *Community College Review, 37 (1)*, 81-101.

Mouza, C., & Karchmer- Klein, R. (2013). Promoting and Assessing Pre-Service Teachers' Technological Pedagogical Content Knowledge (TPACK) in the Context of Case Development. *Journal of Educational Computing Research*, *48(2)*, 127-152.

Muhaimin, M., Habibi, A., Mukminin, A., Saudagar, F., Pratama, R., Wahyuni, S. et al. (2019). A sequential explanatory investigation of tpack: Indonesian science teachers' survey and perspective. *Journal of Technology and Science Education, 9(3),* 269-281. http://dx.doi.org/10.3926/jotse.66

Murphy, M.P.A. (2020). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy*, *41(3)*, 492-505. https://doi.org/10.1080/13523260.2020.1761749

Nazari, N., Nafissi, Z., Estaji, M., & Marandi, S.S. (2019). Evaluating novice and experienced EFL teachers' perceived TPACK for their professional development. *Cogent Education, 6(1)*, 1-26.

Ni, A.Y. (2013) Comparing the Effectiveness of Classroom and Online Learning: Teaching Research Methods. *Journal of Public Affairs Education*, *19(2)*, 199-215. https://doi.org/10.1080/15236803.2013.12001730

Nichols, M. (2010). Student perceptions of support services and the influence of targeted interventions on retention in distance education. *Distance Education, 31(1)*, 93-113. https://doi.org/10.1080/01587911003725048

Nipper, S. (1989). Third Generation Distance Learning and Computer Conferencing. In R. Mason, & A. Kaye (Eds.), *Mindweave: Communication, Computers and Distance Education* (pp. 63-73). Oxford: Pergamon Press.

NUTS - Nomenclature of Territorial Units for Statistics (n.d.). Retrieved February 11, 2021 from https://ec.europa.eu/eurostat/web/nuts/background.

NUTS Statistical Regions of Turkey (n.d.). Retrieved February 10, 2021 from https://en.wikipedia.org/wiki/NUTS_statistical_regions_of_Turkey.

Olaniran, B. A. (2009). Culture, learning styles and Web 2.0. *Interactive Learning Environments*, *17 (4*), 261-271.

Online Learning Consortium (OLC). (2021, March 22). *Quality Framework.* https://onlinelearningconsortium.org/about/quality-framework-five-pillars/

Oz, H. (2015). Assessing Pre-service English as a Foreign Language Teachers' Technological Pedagogical Content Knowledge. *International Education Studies, 8(5),* 119-130.

Ozawa, S. (2019). Effects of Japanese University Students' Characteristics on the Use of an Online English Course and TOEIC Scores. *CALICO Journal, 36 (3),* 225-239.

Ozturk Calik, E., & Altay, I. F. (2021). Analysis of English Lesson Broadcasts during Emergency Remote Teaching from Pedagogical, Instructional and Technical Aspects. *International Journal of Education Technology and Science, 1(2),* 71-87.

Ozudogru, F., & Hismanoglu, M. (2016). Views of Freshmen Students on Foreign Language Courses Delivered via E-learning. *Turkish Journal of Distance Education, 17(1)*, 31-47.

Pallant, J. (2011). *SPSS Survival Manuel: A step by step guide to data analysis using SPSS.* Allen & Unwin.

Pamuk, S. (2012). Understanding Preservice Teachers' Technology Use through TPACK Framework. *Journal of Computer Assisted Learning, 28,* 425-439. **https://doi.org/10.1111/j.1365-2729.2011.00447.x**

Pete, J., & Soko, J. (2020). Preparedness for online learning in the context of Covid-19 in selected Sub-Saharan African countries. *Asian Journal of Distance Education*, *15(2)*, 37-47. https://doi.org/10.5281/zenodo.4292688

Peterson, C.L., & Bond, N. (2004) Online Compared to Face-toFace Teacher Preparation for Learning Standards-Based Planning Skills. *Journal of Research on Technology in Education*, *36(4),* 345-360. https://doi.org/10.1080/15391523.2004.10782419

Puzziferro, M. (2008). Online Technologies Self-Efficacy and Self-Regulated Learning as Predictors of Final Grade and Satisfaction in College-Level Online Courses. *The American Journal of Distance Education*, *22(2)*, 72-89. https://doi.org/10.1080/08923640802039024

Raman, A. (2017). TPACK Confidence of Pre-service Teachers in University Utara Malaysia. *Mediterranean Journal of Social Sciences, 5 (22)*, 167-175. https://doi.org/10.5901/mjss.2014.v5n22p167

Rets, I., Rienties, B., & Lewis, T. (2020). Transforming pre-service teacher education through virtual exchange: a mixed-methods analysis of perceived TPACK development. *Interactive Learning Environments, 31(3),* 1229-1241. https://doi.org/10.1080/10494820.2020.1826983

Rienties, B., Lewis, T., McFarlane, R., Nguyen, Q., & Toetenel, L. (2018). Analytics in online and offline language learning environments: the role of learning design to understand student online engagement. *Computer Assisted Language Learning*, *31 (3)*, 273-293. https://doi.org/10.1080/09588221.2017.1401548

Ritter, R.S. (2012). *Teachers' Planning Process: TPACK, Professional Development, and the Purposeful Integration of Technology*. (Master's Thesis). Montana State University, Montana.

Roberts, J.M. (1996). The Story of Distance Education: A Practitioner's Perspective. *Journal of the American Society for Information Science*, *47 (11)*, 811-816.

Rotas, E. E., & Cahapay, M. B. (2020). Difficulties in Remote Learning: Voices of Philippine University Students in the Wake of COVID-19 Crisis. *Asian Journal of Distance Education, 15(2),* 147-158. https://doi.org/10.5281/zenodo.4299835

Rotas, E., & Cahapay, M. (2020). Difficulties in Remote Learning: Voices of Philippine University Students in the Wake of COVID-19 Crisis. *Asian Journal of Distance Education*, *15*(2), 147-158.

Roussinos, D., & Jimoyiannis, A. (2019) Examining Primary Education Teachers' Perceptions of TPACK and the Related Educational Context Factors, *Journal of Research on Technology in Education*, *51(4)*, 377-397. https://doi.org/10.1080/15391523.2019.1666323

Sahin Kizil, A. (2021). Predicting achievement in distance language learning: a structural equation model. *Open Learning: The Journal of Open, Distance and e-Learning*, *36(1)*, 88-104. https://doi.org/10.1080/02680513.2020.1787819

Samra, R., Waterhouse, P., & Lucassen, M. (2021). Combining and managing work-family-study roles and perceptions of institutional support. *Distance Education*, *42 (1),* 88-105. https://doi.org/10.1080/01587919.2020.1869530

Sancar Tokmak, H. (2015). Pre-service teachers' perceptions on TPACK development after designing educational games. *Asia-Pacific Journal of Teacher Education, 43(5),* 392-410. https://doi.org/10.1080/1359866X.2014.939611

Sancar Tokmak, H., & Yanpar-Yelken, T. (2015). Effects of creating digital stories on foreign language education pre-service teachers' TPACK self-confidence. *Educational Studies*, *41 (4),* 444-461.

Saudelli, M.G., & Ciampa, K. (2016). Exploring the role of TPACK and teacher self-efficacy: an ethnographic case study of three iPad language arts classes. *Technology, Pedagogy and Education*, *25(2)*, 227-247.

Schlesselman, L.S. (2020). Perspective from a Teaching and Learning Center During Emergency Remote Teaching. *American Journal of Pharmaceutical Education*, *84(8)*, 1042-1044.

Schlesselman, L.S. (2020). Perspective from a Teaching and Learning Center During Emergency Remote Teaching. *American Journal of Pharmaceutical Education, 84 (8)*, 1042-1044.

Schmidt, D. A., Baran, E., Thompson, A.D., Mishra, P., Koehler, M. J.,& Shin, T.S. (2009) Technological Pedagogical Content Knowledge (TPACK), *Journal of Research on Technology in Education*, *42(2)*, 123-149. https://doi.org/10.1080/15391523.2009.10782544

Schulze, M., & Scholz, K. (2018). Learning trajectories and the role of online courses in a language program. *Computer Assisted Language Learning*, *31(3)*, 185-205. https://doi.org/10.1080/09588221.2017.1360362

Schwam, D., Greenberg, D., & Li, H. (2021). Individual Differences in Self-Regulated Learning of College Students Enrolled in Online College Courses. *American Journal of Distance Education*, *35(2),* 133-151. https://doi.org/10.1080/08923647.2020.1829255

Schwartzman, R. (2020) Performing pandemic pedagogy. *Communication Education*, *69(4),* 502-517. https://doi.org/10.1080/03634523.2020.1804602

Selvaraj, V., & Viswanathan, R. (2018). Performance Analysis in Blended and Online Classrooms: An Experimental Study. *CALL-EJ, 19(2),* 100-124.

Sener, M. (2018). Türkiye'de Yaşanan Eğitim Sorunlarına Güncel Bir Bakış. *Milli Eğitim, 218*, 187-199.

Sharma, M., Onta, M., Shrestha, S., Sharma, M. R., & Bhattarai, T. (2020). The pedagogical shift during COVID-19 pandemic: Emergency remote learning practices in nursing and its effectiveness*. Asian Journal of Distance Education*, *16(1),* 98-110. https://doi.org/10.5281/zenodo.4695275

Sheffield, R., Dobozy, E., Gibson, D., Mullaney, J., & Campbell, J. (2015). Teacher education students using TPACK in science: a case study. *Educational Media International*, *52(3),* 227-238. https://doi.org/10.1080/09523987.2015.1075104

Shulman, L. (1986). Those Who Understand: Knowledge Growth in Teaching. *Educational Researcher*, *15(2),* 4-14.

Shulman, L. (1987). Knowledge and Teaching: Foundations of the New Reform. *Harvard Educational Review, 57 (1),* 1-21.

Simpson, O. (2004). The impact on retention of interventions to support distance learning students. *Open Learning: The Journal of Open, Distance and e-Learning*, *19 (1)*, 79-95.

Sims, R. (2003). Promises of Interactivity: Aligning Learner Perceptions and Expectations with Strategies for Flexible and Online Learning. *Distance Education*, *24(1),* 87-103. https://doi.org/10.1080/01587910303050

Simsek, I., Kucuk, S., Kose Biber, S. & Can, T. (2021). Online learning satisfaction in higher education amidst the Covid-19 pandemic. *Asian Journal of Distance Education*, *16(1)*, 247-261. https://doi.org/10.5281/zenodo.5047848

Singh, V., & Thurman, A. (2019). How Many Ways Can We Define Online Learning? A Systematic Literature Review of Definitions of Online Learning (1988-2018). *American Journal of Distance Education*, *33(4)*, 289-306. https://doi.org/10.1080/08923647.2019.1663082

Smith, S.B., Smith, S.J., & Boone, R. (2000). Increasing Access to Teacher Preparation: The Effectiveness of Traditional Instructional Methods in an Online Learning Environment. *Journal of Special Education Technology, 15 (2)*, 37-46.

Solak, E., &Çakır, (2014). Examining Preservice EFL Teachers' TPACK Competencies in Turkey. *Journal of Educators Online*, *11(2),* 1-22.

Steadman, A., & Kraut, R. (2018). Preparing the Online Language Program Administrator: A Needs Analysis of Intensive English Programs in the United States*. CALICO Journal, 35(3),* 274–293*.* https://doi.org/10.1558/cj.34636

Stephen, J.S., Rockinson-Szapkiw, A.J., & Dubay, C. (2020). Persistence Model of Non-traditional Online Learners: Self-Efficacy, Self-Regulation, and Self-Direction. *American Journal of Distance Education*, *34(4),* 306-321. https://doi.org/10.1080/08923647.2020.1745619

Stewart, N.K., Rahman, A., Adams, P.R., & Hughes, J. (2021). Same storm, different nightmares: emergency remote teaching by contingent communication instructors during the pandemic. *Communication Education*, *70 (4),* 402-420. https://doi.org/10.1080/03634523.2021.1948084

Stickney, L.T., Bento, R.F., Aggarwal, A., & Adlakha, V. (2019). Online Higher Education: Faculty Satisfaction and Its Antecedents. *Journal of Management Education,* 43 (5), 509-542.

Sullivan, P. (2002). "It's Easier to Be Yourself When You Are Invisible": Female College Students Discuss Their Online Classroom Experiences. *Innovative Higher Education*, *27(2),* 129-144.

Sumner, J. (2000). Serving the System: A critical history of distance education. *Open Learning: The Journal of Open, Distance and e-Learning, 15(3)*, 267-285.

Sun, S.Y.H. (2014). Learner perspectives on fully online language learning. *Distance Education, 35 (1)*, 18-42. https://doi.org/10.1080/713688409

Swallow, M. J. C., & Olofson, M.W. (2017). Contextual Understandings in the TPACK Framework. *Journal of Research on Technology in Education*, *49(3-4)*, 228-244. https://doi.org/10.1080/15391523.2017.1347537

Swan, K., Shea, P., Fredericksen, E., Pickett, A., Pelz, W., &Maher, A. (2000). Building Knowledge Building Communities: Consistency, Contact and Communication in the Virtual Classroom. *Journal of Educational Computing Research*, *23(4)*, 359-383.

Tai, H.C., Pan, M.Y., & Lee, B.O. (2015) Applying Technological Pedagogical and Content Knowledge (TPACK) model to develop an online English writing course for nursing students. *Nurse Education Today*, *35*, 782-788.

Tai, S-J.D. (2015). From TPACK-in-Action Workshops to Classrooms: CALL Competency Developed and Integrated. *Language Learning & Technology, 19(1),* 139-164.

Talent-Runnels, M.K., Thomas, J.A., Lan, W.Y., Cooper, S., Ahern, S.C., Shaw, S.M., & Liu, X. (2006). Teaching Courses Online: A Review of the Research. *Review of Educational Research, 76 (1),* 93-155.

Talidong, K.J.B. (2020). Implementation of emergency remote teaching (ERT) among Philippine teachers in Xi'an, China. *Asian Journal of Distance Education*, *15(1),* 196-201.

Tan, L., Chai, C.S., Deng, F., Zheng, C.P., & Drajati, N.A. (2019). Examining pre-service teachers' knowledge of teaching multimodal literacies: a validation of a TPACK survey. *Educational Media International*, *56 (4),* 285-299.

Tasdemir, M. (2015). Problems Perceibed by Preservice Teachers on the Turkish National Education System. *Turkish Studies International Periodical for the Languages, Literature and History of Turkish or Turkic, 10(7),* 881-898.

Tashakkori, A., & Cresswell, J.W. (2007). The New Era of Mixed Methods. *Journal of Mixed Methods Research, 1(3),* 3-7.

Teddlie, C., & Yu, F. (2007). Mixed Methods Sampling: A Typology with Examples. *Journal of Mixed Methods Research*, 1 (1), 77-100.

Tena, R.R., Almenara, J.C., & Osuna, J.B. (2016). E- Learning of Andalusian University's Lecturers. Gender. *The Turkish Online Journal of Educational Technology,* 15 (2), 25-37.

Tladi, L.S. (2017). Perceived ability and success: which self-efficacy measures matter? A distance learning perspective. *Open Learning: The Journal of Open, Distance and e-Learning*, 32(3), 243-261. https://doi.org/10.1080/02680513.2017.1356711

Tomte, C., Enochsson, A-B., Buskqvist, U., & Kårstein, A. (2015). Educating online student teachers to master professional digital competence: The TPACK-framework goes online. *Computers& Education*, 84, 26-35.

Toquero, C. M. D., Calago, P. A., & Pormento, S. B. (2021). Neoliberalism crisis and the pitfalls and glories in emergency remote education. *Asian Journal of Distance Education,* 16(1), 90-97. https://doi.org/10.5281/zenodo.467277

Trespalacios, J., Uribe-Flórez, L., Lowenthal, P.R., Lowe, S., & Jensen, S. (2021). Students' Perceptions of Institutional Services and Online Learning Self-Efficacy. *American Journal of Distance Education, 37(1),* 38-52. https://doi.org/10.1080/08923647.2021.1956836

Trust, T., & Whalen, J. (2020). Should Teachers be Trained in Emergency Remote Teaching? Lessons Learned from the COVID-19 Pandemic. *Journal of Technology and Teacher Education,* 28(2), 189-199.

Tseng, J. J. (2016). Developing an instrument for assessing technological pedagogical content knowledge as perceived by EFL students. *Computer Assisted Language Learning*, 29(2), 302-315.

Tseng, J.-J., Chai, C.S., Tan, L., & Park, M. (2020). A critical review of research on technological pedagogical and content knowledge (TPACK) in language teaching. https://psycnet.apa.org/doi/10.1080/09588221.2020.1868531

Tseng, J-J., Cheng, Y-J., & Lin, C.C. (2011). Unraveling In-service EFL Teachers' Technological Pedagogical Content Knowledge. *The Journal of Asia TEFL*, 8(2), 45-72.

Tu, C-H., & McIsaac, M. (2002). The Relationship of Social Presence and Interaction in Online Classes. *The American Journal of Distance Education*, 16(3), 131-150. https://doi.org/10.1207/S15389286AJDE1603_2

Tue, H. N., & Hanh, L.D. (2021). Vocational English Teachers' Challenges on Shifting Towards Virtual Classroom Teaching. *AsiaCALL Online Journal,* 12(3), 58-73.

Tumen Akyıldız, S. (2020a). College students' views on the pandemic distance education: A focus group discussion. *International Journal of Technology in Education and Science (IJTES),* 4(4), 322-334.

Tumen Akyıldız, S. (2020b). Pandemi döneminde yapılan uzaktan eğitim çalışmalarıyla ilgili İngilizce öğretmenlerinin görüşleri (bir odak grup tartışması). *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi*, (21), 679-696. https://doi.org/10.29000/rumelide.835811

Tumen Akyıldız, S., Çelik, V., & Ahmed, K.H. (2021). The Impact of Covid-19 Pandemic on EFL Classes through the Lenses of Secondary Learners. *International Journal of Education,* 9 (4), 389-406.

Turegun Çoban, B., & Kuyumcu Vardar, A. (2021). Evaluation of distance English language teaching education during COVID-19 pandemic from the perspectives of ELT student teachers and their instructors. *Journal of Pedagogical Research, 5*(3), 198-220. https://doi.org/10.33902/JPR.2021371746

Usta, B. (2021). Examination of the Technological Pedagogical Content Knowledge (TPACK) and In-service Training of Primary School Teachers. (MA Thesis). Yıldız Teknik University, Istanbul.

Valtonen, T., Leppänen, U., Hyypiä, M., Sointu, E., Smits, A., & Tondeur, J. (2020). Fresh perspectives on TPACK: pre-service teachers' own appraisal of their challenging and confident TPACK areas. *Education and Information Technologies*, *25*(4), 2823-2842. https://doi.org/10.1007/s10639-019-10092-4

Voogt, J., Fisser, P., Tondeur, J. Braak, & J.V. (2016). Using Theoretical Perspectives in Developing an Understanding of TPACK. In M.C Herring, M.J Koehler & P. Mishra (Eds.), *Handbook of Technological Pedagogical Content Knowledge (TPACK) for Educators* (pp.33-52). Routledge.

Vrasidas, C., & Glass, G. V. (2002). A conceptual framework for studying distance education. In C. Vrasidas & G. V. Glass (Eds*.), Current Perspectives in Applied Information Technologies: Distance Education and Distributed Learning* (pp. 31-56). Information Age Publishing.

Walters, S., Grover, K.S., Turner, R.C., & Alexander, J.C. (2017). Faculty Perceptions Related to Teaching Online: A Starting Point for Designing Faculty Development Initiatives. *Turkish Online Journal of Distance Education,* 18 (4), 4-19.

Wang, C-H., Shannon, D.M., & Ross, M.E. (2013). Students' characteristics, self-regulated learning, technology self-efficacy, and course outcomes in online learning. *Distance Education,* 34(3), 302-323. https://doi.org/10.1080/01587919.2013.835779

Willermark, S. (2018). Technological Pedagogical and Content Knowledge: A Review of Empirical Studies Published from 2011 to 2016. *Journal of Educational Computing Research,* 56 (3), 315-343.

Williamson, B., Eynon, R., & Potter, J. (2020) Pandemic politics, pedagogies and practices: digital technologies and distance education during the coronavirus emergency. *Learning, Media and Technology,* 45(2), 107-114.

Wilson, V. (2014). Research Methods: Triangulation. *Evidence Based Library and Information Practice, 9(1)*, 74-75*.*

Wright, C.V. (2014). Planning to Meet the Expanding Volume of Online Learners: An Examination of Faculty Motivation to Teach Online. Educational Planning, *21(4),* 35-49.

Wu, Y.-T., & Wang, A.Y. (2015). Technological, Pedagogical, and Content Knowledge in Teaching English as a Foreign Language: Representation of Primary Teachers of English in Taiwan. *The Asia-Pacific Education Researcher*, 24(3), 525–533. https://doi.org/10.1007/s40299-015-0240-7

Yapar, O.E. (2018). *Exploring EFL Instructors' Experiences with Distance Education* (Doctoral Dissertation). 18 Mart University, Çanakkale.

Yurdakul, I.K., Odabasi, H.F., Kilicer, K., & Coklar, A.N. (2012). The development, validity and reliability of TPACK-deep: A technological pedagogical content knowledge scale. *Computers & Education*, 58, 964-977.

Zohrabi, M. (2013). Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings. *Theory and Practice in Language Studies,* 3(2), 254-262.

APPENDIX – A: Personal Information Form

Değerli Öğretim Elemanları,

Bu çalışma, İngilizceyi yabancı dil olarak öğreten öğretim görevlilerinin Teknolojik Pedagojik Alan Bilgisi düzeyini ve çevrimiçi öğretimden memnuniyet düzeylerini acil durum uzaktan öğretimi bağlamında araştırmayı amaçlamaktadır. Araştırmaya katılmayı kabul ederseniz, toplamda 56 maddeden oluşan iki ölçeğe yanıt vermeniz beklenmektedir. Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Sizden kimlik veya çalıştığınız kurum/bölüm/birim belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak, sadece araştırmacı tarafından değerlendirilecektir.

Katılımın için teşekkür ederiz.

Tez Danışmanı — Araştırmacı

Prof.Dr. Nuray ALAGÖZLÜ — Öğr. Gör. Eda TAYŞI

Cinsiyetiniz: Erkek ( ) Kadın ( )

Yaşınız:

Görev yaptığınız kurumun adı:

Mezuniyet Derecesi: Lisans ( ) Yüksek Lisans ( ) Doktora ( )

Toplam yüz yüze öğretim tecrübeniz (yıl veya ay bazında):

Toplam çevrimiçi öğretim tecrübeniz (**yıl veya ay bazında):**

APPENDIX - B: TPACK-EFL Survey

Constructs	Items
Technological Knowledge	**(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 smartboards. **(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.
Content Knowledge (CK)	**(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 texts 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. *(continued)* **(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.
Technological Pedagogical Content Knowledge (TPACK)	**(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 to continuously improve the language teaching process.

APPENDIX - C: The Online Faculty Satisfaction Survey

No.	Item
1.	The level of my interactions with students in the online course is higher than in a traditional face-to-face class. SR1
2.	The flexibility provided by the online environment is important to me. IR1
3.	My online students are actively involved in their learning. SR2
4.	I incorporate fewer resources when teaching an online course as compared to traditional teaching.* IR2
5.	The technology I use for online teaching is reliable.
6.	I have a higher workload when teaching an online course as compared to the traditional one.*
7.	I miss face-to-face contact with students when teaching online.*
8.	I do not have any problems controlling my students in the online environment.
9.	I look forward to teaching my next online course.
10.	My students are very active in communicating with me regarding online course matters. SR
11.	I appreciate that I can access my online course any time at my convenience. IR
12.	My online students are more enthusiastic about their learning than their traditional counterparts. SR
13.	I have to be more creative in terms of the resources used for the online course.* IR
14.	Online teaching is often frustrating because of technical problems.*
15.	It takes me longer to prepare for an online course on a weekly basis than for a face-to face course.*
16.	I am satisfied with the use of communication tools in the online environment (e.g., chat rooms, threaded discussions, etc.).
17.	I am able to provide better feedback to my online students on their performance in the course.
18.	I am more satisfied with teaching online as compared to other delivery methods.
19.	My online students are somewhat passive when it comes to contacting the instructor regarding course related matters.*
20.	It is valuable to me that my students can access my online course from any place in the world.
21.	The participation level of my students in the class discussions in the online setting is lower than in the traditional one.*
22.	My students use a wider range of resources in the online setting than in the traditional one.
23.	Technical problems do not discourage me from teaching online.
24.	I receive fair compensation for online teaching.
25.	Not meeting my online students face-to-face prevents me from knowing them as well as my on-site students.*
26.	I am concerned about receiving lower course evaluations in the online course as compared to the traditional one.*
27.	Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.
28.	It is more difficult for me to motivate my students in the online environment than in the traditional setting.*

Note: *Recoded scale item.

APPENDIX - D: Interview Questions

1. Are there any technologies or programs you use specifically for teaching English? If any, which technologies do you think make teaching English easier? How and in what way?

2.Do you think that you have sufficient content knowledge in English? What methods do you use to improve this?

3. How did you improve your ability to use technology in English lessons? What sources do you use on for this?

4. When it comes to including technology in your lesson planning, what are the major factors that influence your decision-making process?

5. Do you think you can enhance students' interest and motivation for learning English by using technology? If yes, how?

6.Which technologies do you use to improve your students' speaking, writing, listening and reading skills in English? How?

7.Do you think you can integrate the technology you use in English lessons adequately into the lessons and skills?

8. Can you evaluate students by using technology in English language teaching? Can you briefly talk about this process?

9.Do the technologies you use in your lesson working as they should be or as planned? If not, how do you deal with possible problems yourself? Can you give an example?

10. How satisfied are you with teaching English online? What are the advantages and difficulties of online teaching? Please explain.

11. Are there any self-related factors that positively or negatively affect your satisfaction with online education? If any, what are they?

12. Are there any student-related factors that positively or negatively affect your satisfaction with online education? If any, what are they?

13. Are there any institution-related factors that positively or negatively affect your satisfaction with online education? If any, what are they?

14. Do you think your ability to use technology in teaching English has an effect on your satisfaction level with online teaching? If so, how would you explain the relationship?

15. What are your suggestions for the development and improvement of teaching English online?

APPENDIX - E: Consent Form

Değerli Öğretim Elemanları,

Fırat Üniversitesi Yabancı Diller Yüksekokulu İngilizce Hazırlık biriminde öğretim görevlisiyim. Aynı zamanda, Hacettepe Üniversitesi Eğitim Bilimleri Enstitüsü İngiliz Dili Eğitimi dalında doktora eğitimimi sürdürmekteyim. Doktora tezim kapsamında, Prof. Dr. Nuray Alagözlü danışmanlığında İngilizceyi yabancı dil olarak öğreten öğretim görevlilerinin Teknolojik Pedagojik Alan Bilgisi düzeyini ve çevrimiçi öğretimden memnuniyet düzeylerini acil durum uzaktan öğretimi bağlamında araştırmayı amaçlıyorum. Bu çalışmanın yürütülebilmesi için Hacettepe Üniversitesi Etik Komisyonundan ve üniversitelerinizin yönetimlerinden gerekli izinler alınmıştır.

Araştırmaya katılmayı kabul ederseniz, toplamda 56 maddeden oluşan iki ölçeğe yanıt vermeniz beklenmektedir. Bu iki ölçek dahilinde sizlere yöneltilecek maddeler, öğretim uygulamalarınızda Teknolojik Pedagojik Alan Bilginizi nasıl faaliyete geçirdiğinizi ve çevrimiçi öğretimden memnuniyet düzeyinizi ölçmeyi amaçlamaktadır. Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Sizden kimlik veya çalıştığınız kurum/bölüm/birim belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak, sadece araştırmacı tarafından değerlendirilecektir. Maddelerin sonunda size, çalışmanın nitel ayağı için gerçekleştirilecek ve kayıt altına alınacak olan yarı yapılandırılmış görüşmelere katılmayı isteyip istemediğiniz sorulacaktır. Çalışmanın bu aşamasına katılım da tamamen gönüllülük esasına dayalıdır. Gönüllü olmanız halinde, size ulaşabilmemiz adına tercih ettiğiniz herhangi bir iletişim bilginizi bizimle paylaşmanız istenecektir. Bu görüşmeler, izin verdiğiniz takdirde kayıt altına alınacaktır. Kayıt altına alınan cevaplarınız da tamamıyla gizli tutulacak ve sadece araştırmacı tarafından değerlendirilecektir.

Çalışma, genel olarak kişisel rahatsızlık verecek sorular içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini yarıda bırakıp çıkmakta serbestsiniz. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Hacettepe Üniversitesi öğretim üyelerinden Prof. Dr. Nuray Alagözlü (E-posta: nurayalagozlu@gmail.com) ya da öğretim görevlisi Eda Tayşı (E-posta:edsoylemez@gmail.com) ile iletişim kurabilirsiniz

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum.

Ad Soyad	Tarih	İmza	Telefon
	------/----/-----		

Araştırmanın yürütücüsü

Adı Soyadı: Eda TAYŞI

Adres: Fırat Üniversitesi Yabancı Diller Yüksekokulu Elazığ.

Tel. No:

Eposta:

İmza:

Tarih:

APPENDIX - F: Ethics Committee Approval

Tarih: 08/07/2021
Sayı: E-35853172-300-00001650702

T.C.
HACETTEPE ÜNİVERSİTESİ REKTÖRLÜĞÜ
Rektörlük

Sayı : E-35853172-300-00001650702 8.07.2021
Konu : Eda TAYŞI Hk. (Etik Komisyon İzni)

EĞİTİM BİLİMLERİ ENSTİTÜSÜ MÜDÜRLÜĞÜNE

İlgi : 27.05.2021 tarihli ve E-51944218-300-00001585691 sayılı yazı.

Enstitünüz Yabancı Diller Eğitimi Anabilim Dalı İngiliz Dili Eğitimi Bilim Dalı doktora programı öğrencilerinden **Eda TAYŞI'nın Prof. Dr. Nuray ALAGÖZLÜ** danışmanlığında yürüttüğü "**Acil Durum Uzaktan Öğretimi; İngilizce Öğretim Görevlilerinin Teknolojik Pedagojik Alan Bilgileri ve Çevrimiçi Öğretimden Memnuniyetleri**" başlıklı tez çalışması Üniversitemiz Senatosu Etik Komisyonunun **08 Haziran 2021** tarihinde yapmış olduğu toplantıda incelenmiş olup, etik açıdan uygun bulunmuştur.

Bilgilerinizi ve gereğini saygılarımla rica ederim.

Prof. Dr. Vural GÖKMEN
Rektör Yardımcısı

Bu belge güvenli elektronik imza ile imzalanmıştır.
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E-posta yazımd@hacettepe.edu.tr İnternet Adresi: www.hacettepe.edu.tr Elektronik Ağ: www.hacettepe.edu.tr
Telefon: 0 (312) 305 3001-3002 Faks 0 (312) 311 9992
Kep: hacettepeuniversitesi@hs01.kep.tr
Bilgi için: Duygu Didem İLERİ
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APPENDIX - G: Declaration of Ethical Conduct

I hereby declare that…

- I have prepared this thesis in accordance with the thesis writing guidelines of the Graduate School of Educational Sciences of Hacettepe University;
- all information and documents in the thesis/dissertation have been obtained in accordance with academic regulations;
- all audio visual and written information and results have been presented in compliance with scientific and ethical standards;
- in case of using other people's work, related studies have been cited in accordance with scientific and ethical standards;
- all cited studies have been fully and decently referenced and included in the list of References;
- I did not do any distortion and/or manipulation on the data set,
- and **NO** part of this work was presented as a part of any other thesis study at this or any other university.

(05)/(07/(2023)

Eda TAYŞI

APPENDIX - H: Thesis/Dissertation Originality Report

13/06/2023

HACETTEPE UNIVERSITY
Graduate School of Educational Sciences
To The Department of Foreign Language Education

Thesis Title: Emergency Remote Teaching: EFL Instructors' Technological Pedagogical Content Knowledge and Satisfaction with Teaching Online

The whole thesis that includes the *title page, introduction, main chapters, conclusions and bibliography section* is checked by using **Turnitin** plagiarism detection software take into the consideration requested filtering options. According to the originality report obtained data are as below.

Time Submitted	Page Count	Character Count	Date of Thesis Defense	Similarity Index	Submission ID
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1. Bibliography excluded
2. Quotes included
3. Match size up to 5 words excluded

I declare that I have carefully read Hacettepe University Graduate School of Educational Sciences Guidelines for Obtaining and Using Thesis Originality Reports; that according to the maximum similarity index values specified in the Guidelines, my thesis does not include any form of plagiarism; that in any future detection of possible infringement of the regulations I accept all legal responsibility; and that all the information I have provided is correct to the best of my knowledge.

I respectfully submit this for approval.

Name Lastname: Eda TAYŞI
Student No.: N16241621
Department: Foreign Language Education
Program: English Language Education
Status: ☐ Masters ☒ Ph.D. ☐ Integrated Ph.D.

Signature

ADVISOR APPROVAL

APPROVED
Prof. Dr. Nuray ALAGÖZLÜ

APPENDIX - I: Yayımlama ve Fikrî Mülkiyet Hakları Beyanı

Enstitü tarafından onaylanan lisansüstü tezimin/raporumun tamamını veya herhangi bir kısmını, basılı (kâğıt) ve elektronik formatta arşivleme ve aşağıda verilen koşullarla kullanıma açma iznini Hacettepe Üniversitesine verdiğimi bildiririm. Bu izinle Üniversiteye verilen kullanım hakları dışındaki tüm fikri mülkiyet haklarım bende kalacak, tezimin tamamının ya da bir bölümünün gelecekteki çalışmalarda (makale, kitap, lisans ve patent vb.) kullanım haklan bana ait olacaktır.

Tezin kendi orijinal çalışmam olduğunu, başkalarının haklarını ihlal etmediğimi ve tezimin tek yetkili sahibi olduğumu beyan ve taahhüt ederim. Tezimde yer alan telif hakkı bulunan ve sahiplerinden yazılı izin alınarak kullanılması zorunlu metinlerin yazılı izin alınarak kullandığımı ve istenildiğinde suretlerini Üniversiteye teslim etmeyi taahhüt ederim.

Yükseköğretim Kurulu tarafından yayınlanan **"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına ilişkin Yönerge"** kapsamında tezim aşağıda belirtilen koşullar haricince YÖK Ulusal Tez Merkezi / H.Ü. Kütüphaneleri Açık Erişim Sisteminde erişime açılır.

- Enstitü/Fakülte yönetim kurulu kararı ile tezimin erişime açılması mezuniyet tarihinden itibaren 2 yıl ertelenmiştir. (1)
- Enstitü/Fakülte yönetim kurulunun gerekçeli kararı ile tezimin erişime açılması mezuniyet tarihimden itibaren … ay ertelenmiştir. (2)
- Tezimle ilgili gizlilik kararı verilmiştir. (3)

…… /…… /……

(imza)

Öğrencinin Adı SOYADI

"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"

(1) Madde 6. 1. Lisansüstü tezle ilgili patent başvurusu yapılması veya patent alma *sürecinin devam etmesi durumunda, tez danışmanının önerisi ve enstitü anabilim dalının uygun görüşü Üzerine enstitü veya fakülte yönetim kurulu iki yıl süre ile tezin erişime açılmasının ertelenmesine karar verebilir.*

(2) Madde 6. 2. Yeni teknik, materyal ve metotların kullanıldığı, henüz makaleye dönüşmemiş veya patent gibi yöntemlerle korunmamış ve internetten paylaşılması durumunda 3. şahıslara veya kurumlara haksız kazanç; imkânı oluşturabilecek bilgi ve bulguları içeren tezler hakkında tez danışmanın önerisi ve enstitü anabilim dalının uygun görüşü üzerine enstitü veya fakülte yönetim kurulunun gerekçeli kararı ile altı ayı aşmamak üzere tezin erişime açılması engellenebilir.

(3) Madde 7. 1. Ulusal çıkarları veya güvenliği ilgilendiren, emniyet, istihbarat, savunma ve güvenlik, sağlık vb. konulara ilişkin lisansüstü tezlerle ilgili gizlilik kararı, tezin yapıldığı kurum tarafından verilir. Kurum ve kuruluşlarla yapılan işbirliği protokolü çerçevesinde hazırlanan lisansüstü tezlere ilişkin gizlilik kararı ise, ilgili kurum ve kuruluşun önerisi ile enstitü veya fakültenin uygun görüşü Üzerine üniversite yönetim kurulu tarafından verilir. Gizlilik kararı verilen tezler Yükseköğretim Kuruluna bildirilir.*

Madde 7.2. Gizlilik kararı verilen tezler gizlilik süresince enstitü veya fakülte tarafından gizlilik kuralları çerçevesinde muhafaza edilir, gizlilik kararının kaldırılması halinde Tez Otomasyon Sistemine yüklenir

**Tez danışmanının önerisi ve enstitü anabilim dalının uygun görüşü üzerine enstitü veya fakülte yönetim kurulu tarafından karar verilir.*