

KARADENİZ TECHNICAL UNIVERSITY * THE INSTITUTE OF SOCIAL SCIENCES

DEPARTMENT OF WESTERN LANGUAGES AND LITERATURE

APPLIED LINGUISTICS

**THE ANALYSIS OF THE CORRELATION BETWEEN TEACHER AUTONOMY AND
TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE OF THE IN-SERVICE
EFL TEACHERS IN TURKISH CONTEXT**

MASTER'S THESIS

Nurtaç KARAOSMANOĞLU

AUGUST-2023

TRABZON

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Thesis Advisor: Asst. Prof. Dr. Raşide DAĞ AKBAŞ

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APPROVAL

Upon the submission of the dissertation, Nurtaç KARAOSMANOĞLU has defended the study “**The Analysis of the Correlation Between Teacher Autonomy and Technological Pedagogical Content Knowledge of the In-Service EFL Teachers in Turkish Context**” in partial fulfillment of the requirements for the degree of Master of Arts in Applied Linguistics at Karadeniz Technical University, and the study has been found fully adequate in scope and quality as a thesis by **unanimous / majority** vote on **21.09.2023**.

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I, **Nurtaç KARAOSMANOĞLU**, hereby confirm and certify that;

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ABSTRACT

Technology integration in education has become an important necessity for teachers and learners of the 21st century rather than being an alternative. As being the decision makers and designers of teaching procedures, teachers have an important role in technology integration into classroom practices. Therefore, the purpose of this study was to analyze the correlation between teacher autonomy and technological pedagogical content knowledge (TPACK) of the in-service teachers of English in Turkish context. Mixed methods research design was employed in this study. Two different forms called the Technological Pedagogical Content Knowledge (TPACK) Questionnaire and the Teacher Autonomy Scale were used as quantitative data tools. As a qualitative data tool, semi-structured interviews with ten volunteer EFL teacher who had the highest points in both questionnaires were conducted. A total of 221 EFL teachers teaching at different grades participated in this study. According to the findings, a statistically significant correlation between teacher autonomy and technological pedagogical content knowledge of the in-service teachers was found in Turkish context. The correlation between the sub-scales of both two questionnaires was statistically strong too. Moreover, both teacher autonomy scores and TPACK scores differed according to gender and teaching grade. According to the results in terms of teaching grades, high school teachers were more autonomous than secondary and primary school teachers. And also, male teachers 0-10 year experienced have the highest score in terms of TPACK. However, the analysis results showed that TPACK level differences between genders, years of teaching experience and teaching grades were statistically insignificant. In qualitative part, thematic analysis was employed. Both qualitative and quantitative results showed that teachers consider their autonomy and technological pedagogical content knowledge significantly related with each other under four main themes.

Keywords: Technological Pedagogical Content Knowledge, Teacher Autonomy, EFL teachers.

ÖZET

Eğitimde teknoloji kullanımı 21. Yüzyılın öğretmenleri ve öğrencileri için bir alternatif olmaktan ziyade önemli bir zorunluluk haline gelmiştir. Öğretim süreçlerinin tasarımcıları ve karar vericileri olarak öğretmenler ders içi uygulamalara teknolojiyi uyarlamakta önemli rol almaktadırlar. Bu yüzden, bu araştırmanın amacı Türkiye’de çalışan İngilizce öğretmenlerinin teknolojik pedagojik alan bilgisi seviyeleri ile öğretmen özerkliği seviyeleri arasındaki ilişkinin incelenmesidir. Katılımcılar Türkiye’de farklı okullarda farklı seviyelerde çalışan 221 İngilizce öğretmeninden oluşmaktadır. Bu çalışmada karma araştırma modeli kullanılmıştır. Nicel veriler için Teknolojik pedagojik alan bilgisi anketi ve Öğretmen özerkliği ölçeği adında iki anket uygulanmıştır. Nitel bölüm içinse, her iki anketten de yüksek puan alan 10 tane gönüllü İngilizce öğretmeniyle yarı yapılandırılmış mülakatlar yapılmıştır. Araştırma sonuçlarına göre, Türkiye’de çalışmakta olan öğretmenlerinin öğretmen özerkliği seviyeleri ile teknolojik pedagojik alan bilgisi seviyeleri arasında istatistiksel olarak önemli ilişki bulunmuştur. Ayrıca bu iki anketin alt boyutları arasında da anlamlı ilişki bulunmuştur. Farklı değişkenler açısından incelendiğinde ise hem öğretmen özerkliği hem de teknolojik pedagojik alan bilgisi açısından cinsiyet ve öğretim kademelerine göre farklılıklar görülmüştür. Lise İngilizce öğretmenlerinin öğretmen özerkliği seviyelerinin ortaokul ve ilkokul İngilizce öğretmenlerinden daha yüksek olduğu saptanmıştır. Ayrıca 0-10 yıl arası erkek öğretmenlerin de teknolojik pedagojik alan bilgisi seviyelerinin yüksek olduğu belirlenmiştir. Ancak teknolojik pedagojik alan bilgisi açısından cinsiyetin, mesleki deneyiminin, öğretmenlerin öğrenim durumları arasında istatistiksel olarak önemli fark bulunmamıştır. Nitel araştırma bölümünde ise tematik analize başvurulmuştur. Sonuçlara göre, öğretmenler teknolojik pedagojik alan bilgisi kavramını öğretmen özerkliği kavramıyla dört başlık altında ilişkilendirmektedir.

Anahtar Kelimeler: Teknolojik Pedagojik Alan Bilgisi, Öğretmen Özerkliği, İngilizce Öğretmenleri.

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LIST OF ABBREVIATIONS

CKN	: Content Knowledge;
EFL	: English as a Foreign Language
LGS	: Liselere Giriş Sınavı (The Entrance Exam for High School)
PCKN	: Pedagogical Content Knowledge;
TAS	: Teacher Autonomy Scale
TCKN	: Technological Content Knowledge;
TCKN	: Technological Pedagogical Knowledge;
TKN	: Technology Knowledge;
TPACK	: Technological Pedagogical Content Knowledge
YDT	: Yabancı Dil Testi (The Foreign Language Test)

INTRODUCTION

In today's world where knowledge and technology are changing and developing at a stunning speed, technology has become an essential necessity in education and training activities. In every area of education technology has important functions in development of generations and in shaping the future of societies. Although, new teaching materials emerge with each passing day, the knowledge of integrating technology into teaching plays a crucial role for effective use of these materials. Therefore, teachers are considered important figures to integrate technology into education system.

The availability of technological tools may not be sufficient enough to promote better learning and teaching outcomes. Mishra and Koehler (2006) stated that merely the concept of technology is not enough; teachers need guidance on how to integrate technology into their teaching properly. Rather than focusing on creating the new technology for education, primary focus should be on how technology is used in teaching (Mishra and Koehler, 2003). The framework of Technological Pedagogical Content Knowledge is based on the idea that teaching is a complex activity and it requires the combinations of different kinds of knowledge (Koehler and Mishra, 2009). The concept of Technological Pedagogical Content Knowledge (TPACK) describes the knowledge that teachers are required to achieve effective technology use in the classroom. TPACK design is composed of three main components (Technological Knowledge, Content Knowledge, and Pedagogical Knowledge) and their interactions. Shulman (1986) indicated that teacher knowledge should be consisted of pedagogical knowledge and content knowledge. He insisted that only being competent in terms of content knowledge and having heard about general pedagogical strategies is not enough; teachers are required to know how particular content should be presented. Shulman (1986) contributed to the concept of teacher knowledge by introducing pedagogical content knowledge (Mishra and Koehler, 2006). Shulman proposed his idea on teacher knowledge in 1980s, however, he did not discuss the technology integration into teaching.

Technological pedagogical knowledge has also the function of contributing to the realization of innovations in education. The most concrete form of the innovations made in education is seen in different educational applications or Web 2 tools. In order for the innovations to be successful, teachers must follow the changes in technology, master the functioning of different applications and integrate these innovations into teaching practices. In addition, in order for innovations to be successful, these applications and Web 2 tools must match with the aims, and objectives of the

teaching programs. Therefore, technological pedagogical content knowledge (TPACK) of teachers make it possible to get benefit from these technologies in an efficient way.

Another important point in education is teacher autonomy which means responsibility of teachers for taking their own decisions in their teaching practices. According to Smith (2003) teacher autonomy gives teachers freedom to implement not only their choices but also to take responsibility for their own teaching practices. According to Benson (2012) autonomous individuals can take strategic decisions, achieve to get away from negative situations and direct the processes in accordance with their own rules, therefore they can have internal control on directing their own teaching practices.

Statement of the Problem

In educational processes, teachers are considered one of the most important building stones that are responsible for determining educational strategies, goals and teaching activities so as to provide efficient long-lasting learning outcomes. Ramos (2006) states that the concept of autonomy gives teachers freedom to perform their works professionally in their teaching context. Moreover, according to Trebbi (2008) teacher autonomy is defined to act independently so as to make decisions on the issues concerned with their professional area. Moreover, it gives teachers opportunity to have a say on the matters of monitoring and assessing educational processes. Being autonomous can help teachers become more active in facing educational changes brought about by the wave of innovations in education and changing their attitudes to adapt to technological changes and integrate them into teaching facilities efficiently. Technology integration is crucial in English language teaching in Turkish context, too. With the development of the internet, educational innovations have gained more and more attention. Therefore, teachers have become the direct subjects to promote the application of information technology and integrate technology into classroom activities and teaching. Therefore, it can be seen that technological pedagogical knowledge is currently one of the most important contents of maintenance and development of teacher professionalism. As Ahmadi (2018) states technology makes language learning classrooms more engaging and it promotes learner autonomy. Therefore, technological pedagogical knowledge may help EFL teachers integrate technology in their classes and improve their autonomy and vice versa. As stated previously, successful technology integration in the classroom can be achieved when teachers feel themselves competent in terms of technology knowledge besides having sufficient level of content and pedagogical knowledge.

Considering all, the study tries to analyze whether the being autonomous teacher is related to having technological pedagogical content knowledge or whether technological pedagogical content knowledge (TPACK) results in creating more autonomous EFL teachers. The correlation between these two concepts is intended to be analyzed in the study.

Significance of the Study

Today, one of the most vital educational goal of 21st century is stated to educate students who are equipped with technological knowledge and language ability. In order to reach this goal today's educational systems should keep in touch with technological innovations and these systems should integrate technology into each field of education, from math to foreign language lessons. It is believed that technology enables foreign language learners to be more independent and it gives them the chance to learn in a more exciting and creative way. However, in order to integrate technology into teaching processes efficiently, first and foremost teachers need spaces to put their own decisions related to technology into practice. Therefore, teacher autonomy has significant role in developing an awareness on TPACK and bringing advantages of TPACK into teaching environments. Furthermore, the second requirement of 21st century for students is to learn a foreign language so as to be global citizens in today's globalized world. However, in order to master a foreign language, students need to see a foreign language as a communication tool rather than a lesson that need to be passed. It is believed that autonomous teachers may help turn English lessons into communication sessions through their innovative decisions which answer both students' needs and create efficient language learning environments. Also, in such a technology age, efficient language learning and teaching processes cannot be thought to be separated from technology. Therefore, the necessity of TPACK in English language teaching seems to be inevitable. In order to accomplish such necessity, the pivotal role of teacher autonomy should not be denied. The concept of technology itself may not be sufficient enough to promote better learning and teaching procedures. That is to say, technology is not a solution to the requirements of 21st century language learning and teaching. Language teachers are the ones to find better and suitable ways to implement technology into teaching procedures since technology integration is also very significant in English language teaching. As it provides images, videos, audio materials and unlimited sources of extensive reading materials, technology and the internet have crucial part in teaching and learning English. Therefore, English language teachers should be able to use technological tools and benefit from them in the best way as much as possible. It might have an effect on the level of interaction among students and it may promote learning by providing materials and activities for different learning styles of learners (Young, 2003). Having technological tools in the classroom may also help creating a positive and engaging atmosphere in the classroom towards learning English. Having positive attitudes towards a subject matter would lead students to be more confident and motivated and eventually more successful (Lee, 2000). For this reason, this study investigates and emphasizes one of the most highlighted and popular areas in modern era of language teaching. Therefore, the study explores the correlation between teacher autonomy of EFL teachers and their technological pedagogical content knowledge from different points.

Last but not least, in Turkey, there is no study examining the relationship between teacher autonomy and technological pedagogical content knowledge (TPACK) of ELT teachers. This study will be pioneer in revealing the importance of being an autonomous teacher so as to integrate technology into teaching practices efficiently in EFL context. Moreover, there is no study examining the variable graduation of department in terms of both teacher autonomy and TPACK levels of in-service EFL teachers in Turkey. This study presents the influence of graduation department on EFL teachers' autonomy and TPACK levels. To the best of the researcher's knowledge, this study is the first study aiming to reveal the relationship between teacher autonomy and technological pedagogical content knowledge of in-service EFL teachers in Turkish context and the effect of certain variables on these two concepts.

The Purpose of the Study

Teachers have one of the most influential positions in the formation of education and training. According to Bustingory (2008) teacher autonomy is related to professional teaching competence, this means that teachers who think analytically and develop reflective strategies do not depend on the pre-determined curriculums or programs to direct their teaching procedures. Therefore, they are more eager to participate in organizing and designing educational programs. As being the decision makers and designers of teaching procedures, teachers of English have an important role in technology integration into classroom practices since technology integration in education has become an essential factor for teachers and learners of the 21st century rather than being an alternative. Although different researchers conducted studies on teacher autonomy and TPACK in terms of different demographic variables, there is no study examining the correlation between these two concepts teacher autonomy and TPACK in language teaching. The impact of being an autonomous teacher on technology integration in EFL classes was not studied in related literature and vice versa. This study tries to cover this research gap by analyzing the relationship between these two concepts and their subscales. Therefore, the purpose of this study is to unveil the fact that whether there is a relationship between teacher autonomy and teachers' technological pedagogical content knowledge in English language teaching. The study aims to find whether autonomy is related to the concept of teachers' technological pedagogical content knowledge. It also aims to show the relationship between the autonomy of the EFL teachers and their technological pedagogical knowledge levels in terms of different variables such as genders, years of teaching experience, department of graduation and teaching grades. To this end, the study employed for mixed method approach which included quantitative and qualitative data collection processes. In quantitative part, two different questionnaires TAS and TPACK were filled by 221 volunteer in-service EFL teachers through online channels in Turkey. In qualitative part, 10 volunteer teachers participated in semi-structured interviews. In order to analyze research questions related to quantitative part, SPSS version 25 was used and for qualitative part thematic analysis was employed.

Research Questions

The present study aims to find out the answers of the following questions:

1. What are teacher autonomy levels of the in-service EFL teachers in Turkish context?
 - 1.1. Is there any difference between high schools, secondary and primary schools in terms of teacher autonomy levels?
2. What are technological pedagogical content knowledge (TPACK) levels of the in-service EFL teachers in Turkish context?
 - 2.1. Is there any difference between high schools, secondary schools and primary schools in terms of TPACK levels?
3. Is there a significant difference in technological pedagogical content knowledge (TPACK) scores in terms of certain variables (Gender, teaching experience, department of graduation)?
4. Is there a significant difference in teacher autonomy scores in terms of certain variables (Gender, teaching experience, department of graduation)?
5. Is there any relationship between teacher autonomy levels and technological pedagogical content knowledge (TPACK) levels of the in-service EFL teachers in Turkish context?
6. Is there any significant relationship between subscales of TPACK questionnaire and teacher autonomy scale?
7. How do in-service EFL teachers perceive the relationship between teacher autonomy and technological pedagogical content knowledge (TPACK)?

Limitations

The main limitation of this study is what was going on during the period of data collecting. This year, a big earthquake occurred in southeastern Anatolia in Turkey and several cities got affected from this terrible disaster. Therefore, several EFL teachers passed away in this disaster and many teachers deserted their cities and, all of the individuals in Turkey got affected psychologically. Although participants were sent invitations to participate in the study through e-mails or online forms, the participation rate was lower than expected. Therefore, the drawback regarding the number of the participants during data collection processes remains as the strongest limitation of the study.

CHAPTER ONE

1. LITERATURE REVIEW

1.1. Presentation

This chapter provides brief information on theoretical background knowledge related to the main issues employed in the study. At first, it starts with technology and education and goes on with the section on Technological Pedagogical Content Knowledge (TPACK) and its usage in language education. Later, the chapter presents brief information on teacher autonomy, promoting teacher autonomy and its impact on student autonomy and language education in the EFL context. The chapter presents a comprehensive literature review of the issues.

1.2. The Interplay Between Technology and Education

Throughout the world, technology has an impact on all aspects of life. It has changed the way of life as it helps us to complete challenging tasks both more easily and efficiently (Raja and Nagasubramani, 2018). It also reflects the changing habits and behaviors of individuals. “Technology is an application knowledge that includes the construction methods, tools, equipment and supplies used in an industry and their usage patterns” (TDK, 2022). İşman (2012) states that the concept of technology is not only about machines, however, it includes relations with humans and social environment. Raja and Nagasubramani (2018: 33) state that “technology is the mother of civilizations, arts and sciences”. Therefore, it can be said that technology has influenced every part of living conditions since the beginning of the humanity.

Developing technology has influenced every area from agriculture to industrialization at an unbelievable speed. Educational practices have fallen under the impact of these unavoidable transformations in technology as well. According to Corby (2008), technology is the way of easy and quick information. Due to technology, people can reach information in a more comfortable way without time and place restrictions. Students can find information and share it through various digital tools in service all around the world. Therefore, it can be said that technology has aided to remove boundaries in education. According to Zengin and Aksu (2017), long lasting learning and teaching processes can be achieved with the help of technology, learning can be easily adapted to students’ life styles and better learning outcomes can be accomplished (Zengin and Aksu, 2017). Technology urges learners to be responsible for their own learning by providing the possibility to

learn without time and place restriction. Furthermore, according to Viorica-Torii and Carmen (2013), technology gives learners opportunity to create their own way of learning. This means that technology has helped learners with different learning styles gain autonomy to process information in a way which accords with their learning styles. Also, technology has changed teachers' roles by making them facilitator in the classroom rather than being the only source of information. According to Lai (1993), in technology equipped classes, teachers are supposed to provide guidance to their learners when it is necessary without being dominant figures. In such classes, it is supposed that teachers also need to be autonomous in order to be able to adapt technological tools and applications to learning and teaching practices efficiently.

Technology cannot be used in the classroom without considering some certain procedures which are named Educational Technology. According to Kurt (2015), the term Educational Technology is defined as an area that focuses on designing, developing, implementing and evaluating teaching and learning materials with the purpose of developing better teaching and learning environments. For the appropriate use of educational technology, it is important to determine the goals of the education, learner differences and the aims of curriculum in order to choose the most appropriate teaching and learning materials.

Today, it is obvious that technological devices constitute a large part of the teaching materials. Especially, in EFL classes, EFL teachers need a wide variety of technological tools and applications from CDs to a wide range of web2 tools to achieve language teaching effectively in terms of four language skills; reading, writing, listening and speaking. For this reason, in today's world, students cannot be thought apart from technology. Therefore, integrating technology into foreign language education is a necessity rather than a choice of a teacher so as to manage effective teaching and learning processes. However, while deciding on technological materials and applications, teachers should consider students' needs and the components of the curriculum in order to meet the purpose of the educational technology. Furthermore, Costley (2014: 9) states that technology integration into education has advantages such as student motivation, student engagement in leaning activities, student collaboration, recognizing opportunities, self-confidence of students and technology skills.

As for the significance of the relationship between teachers and students, Riel (1992) stresses that changes in education can affect both teachers' and students' attitudes towards it. Also, it is mentioned that without teachers' efforts and willingness, technology cannot have an impact on education. For this reason, it can be said that teachers play crucial role in the implementation of technology into education.

1.3. Technology and Education in Turkey

As a recent topic, technology integration into teaching has gained an importance in Turkish educational system, especially for the last ten years. In this developing world, Turkish educational system has also tried to catch up with the speed of Information Communication Technologies (ICT). The study conducted by Yilmaz (2011) “Evaluation of the Technology Integration Process in the Turkish Education System” presents the recent developments in Turkish educational system. In the study, technology integration process in certain grades of education is described. According to the results of the study, the developments in technology didn’t improved the educational practices in Turkish context in terms of effective technology usage. It is claimed that teachers in this context are not qualified enough to integrate technology into their teaching processes, therefore, the researcher emphasizes the necessity of teacher training programs for technology integration.

As a technological innovational attempt in Turkish educational system, Movement of Enhancing Opportunities and Improving Technology Project (Turkish acronym FATİH) is considered to increase the effective use of technology for both students and teachers in every classroom and it is also aimed to provide equal opportunities in every educational setting. Accordingly, five main principles are proposed as accessibility, efficiency, equality, measurability and quality (FATİH Project, 2022). With this project, millions of notebooks have been delivered to students and teachers, and also the boards of all classes have been transformed into smart boards. All of the teachers in Turkey have attended in seminars to use technological tools and applications effectively. Together with FATİH project, DynED Application was introduced to all levels of EFL classes in order to turn language learning into more attractive and effective process. It is an application which includes a wide range of games and activities from reading to spelling to develop English in every aspect, teachers could follow students’ language learning progress and send them feedbacks. However, due to insufficient technological tools (computers) in schools and EFL teachers’ low technological knowledge, the application of DynED was failed in almost all schools in Turkey. Another attempt by the Ministry of National Education (MoNE) EBA is a technological and educational platform providing and managing e-content. In EBA, each teacher and learner has profiles and access to a great variety of resources from daily magazines to academic articles. Especially, EBA has supported Turkish education system during the pandemic covid-19 period by presenting online classes. The Covid-19 virus has brought about the need for distance education in education systems. All around the world several countries have taken measures so as to minimize the effects of covid-19. Therefore, distance education applications have taken great attention. However, teachers and learners have had difficulties to get used to online education during this term as the number of the countries in which teachers have got training on distance education is so low. According to Schleicher (2020), because of pandemic, teachers have been imposed to employ for the diverse technologies that they are not familiar with. This pandemic has urged teachers in all

areas to be equipped with technological pedagogical content knowledge so as to overcome the challenging conditions in changing world.

1.4. Technology Use in English Language Teaching

The technology has changed the language learning and teaching practices. In EFL education, keeping students motivated, ensuring EFL learners' interaction, active participation in learning processes are considered to play crucial role to achieve success. According to Ahmadi (2018), technology seems to makes language learning classrooms more student-centered and enhances learner autonomy. Therefore, the effective use of technology in language teaching is an inevitable part of mastering the target language in terms of different language skills.

EFL teachers have frequently used cassettes, overhead projectors, CDs and DVDs to teach foreign language effectively. These tools have provided opportunities for students to be exposed to the native language as much as possible. Especially, for listening and speaking skills, these technological devices are considered to be very important by providing English speaking environments with a wide variety of dialogues and situations. Also, the use of over-head projectors in previous years has turned ELT lessons into more interesting and motivating ones for EFL learners. These advancements in computer technology have been brought about by the introduction of Computer Assisted Language Learning (CALL) into foreign language teaching. Levy (1997) defines it as a concept in which computer applications are studied and employed in the practices of foreign language teaching. Several scholars have conducted studies on the positive sides of CALL. According to Warschauer and Healey (1998), CALL increases individualization in learning, provides opportunities to study in groups or pairs, makes learning enjoyable, and provides various learning materials. Moreover, Lee (2000) emphasizes the advantages of CALL on students' motivation and interactivity of the learning and teaching processes. Later, with the developments in mobile technology, another concept Mobile Assisted Language Learning (MALL) has appeared in foreign language teaching practices. MALL is term in which foreign language learners can benefit from the opportunities that mobile technologies provide in foreign language teaching. MALL provides electronic dictionaries, mobile phones, tablets as language learning tools (Zhao, 2005). It has an important role in language learning and teaching as it supports portability, interactivity, connectivity, and individualization of learning (Abusa'aleek, 2014). Similarly, Ahmadi (2018) proposes that learners can learn better and tend to have higher levels of motivation towards language learning when they learn with technology. He also emphasizes that technology integration into language teaching provide more successful interaction between teacher and learners by increasing learners' autonomy. Furthermore, according to Arifah (2014), the application of technological tools in language teaching activities helps students learn in a communicative learning environment and learn outside the course books with the help of digitally provided authentic materials. According to Azmi (2017), EFL teachers should be aware of technological developments

in language education as technology with its wide range of applications enhances motivation between teachers and learners and leads more participation in EFL classes. Therefore, EFL teachers manage to develop productive skills of language learning students.

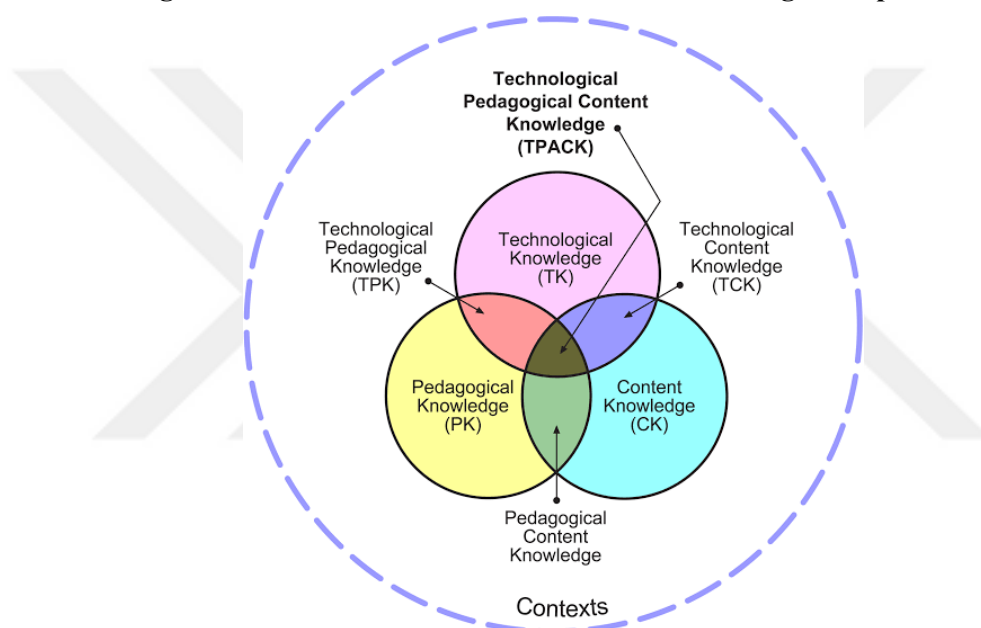
Technological advancements also make EFL teachers, administrators and curriculum designers change the features of teaching procedures. Now, what to teach and how to present it to the learners mainly depends on technological practices. EFL teachers have an important role in effective technology integration into language teaching in that they are supposed to make use of technology effectively as a teaching and learning tool (Raihan, 2012). Furthermore, EFL teachers need to be equipped with the necessary technological information with professional and planned guidance so as to integrate technology into language teaching processes. Especially, during the period of the Covid-19 pandemic, EFL teachers had to apply for technology and improve their technological competencies in a very short period of time so as to manage the online education process. According to Bailey and Lee (2020), they should have trainings on online teaching communications channels. Now, teachers are aware of the fact that having technological knowledge and knowing how to use it effectively during classes is a necessity. According to TED (1999), procedures and classroom practices have been completely changed and it is thought that they will not be the same as before again. Therefore, technological competencies seem to continue to be important for EFL teachers to achieve effective teaching and learning. Pierson (1999) proposes that EFL teachers can teach language effectively when they integrate technology into their teaching activities by using their technological, pedagogical and content knowledge skills effectively.

1.5. The Concept of Technological Pedagogical Content Knowledge

Teachers who constitute a considerable role in applying the teaching procedures have an important place in active use of technology during their classroom practices. As before mentioned, teachers need to get training on how to integrate technology into their teaching effectively (Mishra and Koehler, 2006). It is also emphasized that instead of creating the new technology for education, the main goal should be on how technology can be integrated into teaching practices to meet the students' needs and principles of the curriculum. The framework of Technological Pedagogical Content Knowledge is based on the notion that teaching is a complicated process and blending different kinds of knowledge makes it easy to manage this process (Koehler and Mishra, 2009). According to Shulman (1986), who proposes the concept of pedagogical content knowledge, teachers should have both pedagogical knowledge and content knowledge. Since having content knowledge is not enough to be competent in teaching practices, and also pedagogical knowledge is regarded as a requirement in order to know how a specific content can be presented. With the recent developments in educational technology, Mishra and Koehler point out the impact of technology knowledge on teacher knowledge. That's to say, the Shulman's view of knowledge is

reconceptualized with the combination of technological knowledge and pedagogical content knowledge. The term “Technological Pedagogical Content Knowledge” includes these three different kinds of knowledge as a whole and analyzes the interplay between them. As depicted on Figure 1, Technological Pedagogical Content Knowledge (TPACK) has three main components as content, pedagogical, and technological knowledge. In this model, three main components and their relationships are defined. As seen in the figure 1, interactions between the main components are called as Pedagogical Content Knowledge (PCK), Technological Pedagogical Knowledge (TPK), and Technological Content Knowledge (TCK). The center is called as Technological Pedagogical Content Knowledge (TPACK).

Figure 1: The TPACK Framework and its Knowledge Components



Source: Koehler, M. and Mishra, P. 2009: 60-70

1.5.1. Content Knowledge

Mishra and Koehler (2006) define Content Knowledge as the target subject which is supposed to be learned and taught. From the point of EFL teachers it includes grammar, vocabulary, pronunciation and spelling. According to Koehler and Mishra (2009), Content Knowledge is significant for teachers as they are supposed to have the knowledge of the ideas, theories, and concepts about the subject they are teaching.

1.5.2. Pedagogical Knowledge

Pedagogical Knowledge consists of strategies regarding teaching practices, and also it includes techniques supposed to be employed during lessons. Shin et al., (2009) define it as the methods that teachers need to know in their teaching sessions. For teachers, this knowledge is significant in terms of understanding how students construct and process the knowledge. Pedagogical Knowledge involves the awareness of cognitive, social, and development theories of learning and the practice of these theories into classroom procedures (Koehler and Mishra, 2009). For EFL teachers, pedagogical knowledge refers to knowledge about language teaching methodology. According to Bugueno (2013), EFL teachers are supposed to know how to introduce activities in order to develop the communicative competence of students.

1.5.3. Technological Knowledge

Technological Knowledge (TK) is defined as knowledge and skills necessary for using digital technologies. According to Koehler and Mishra (2009), defining technology knowledge is difficult as technology is improving with each passing day and its definition can change again after a short time. The term TK considering the TPACK framework could be defined as information about technology to employ it in daily routines and work effectively with the purpose of managing different tasks (Koehler and Mishra, 2009). It is a fact that no one can acquire the technology knowledge completely, but one can keep up with the evolving technology so as to take advantage of its benefits.

1.5.4. Technological Content Knowledge

Technology has become a necessity to create suitable technological devices so as to serve educational purposes efficiently (Koehler and Mishra, 2009). According to Cox (2008), technological content knowledge is related to being aware of how to use technologies in a certain branch so as to create new content areas. The selection of the appropriate technological tools has importance for particular course content for teachers so as to create effective learning environments. Technological tools may support flexibility in the presentation procedures of a topic in particular course. Technology can accelerate the transmission of content knowledge. Hence, teachers need to be aware of particular technologies which suit to the presentation of a particular subject matter (Koehler and Mishra, 2009).

1.5.5. Technological Pedagogical Knowledge

Technological pedagogical knowledge is understanding of technologies that can be utilized by teacher in accordance with their pedagogical strategies within a pedagogical context (Cox, 2008).

Pedagogical Knowledge is crucial for teachers because it can direct the teaching and learning process effectively. Koehler and Mishra (2009), state that in order to build Technological Pedagogical Knowledge (TPK), it is a necessity for teachers to understand and criticize the advantages and disadvantages of the technological tools employed in teaching and learning activities. Moreover, it is known that TPK is defined as the way of using technology effectively to create positive and feasible learning environments. Consequently, teachers need to apply for TPK in order to increase student participation in learning activities and achieve effective teaching and learning processes.

1.5.6. Pedagogical Content Knowledge

Shulman (1986) defines the Pedagogical Content Knowledge (PCK) as the transformation of specific content knowledge for a specific context of teaching, when the content knowledge and pedagogical knowledge are mixed together, it means that the representation of a content knowledge is made in a more comprehensible way for the receivers. The combination of these two different kinds of knowledge is crucial for better outcomes of teaching. In general, PCK is defined as the reasonable way of teachers' integration of content information with pedagogy of learners in accordance with learning environment. According to Shulman (1986), PCK is the knowledge which presents the difference between the teachers and the scientists. Although both teachers and scientists have the same content knowledge, the procedure in which they employ the content knowledge is almost different from each other. Teachers' knowledge on a topic is completely directed by teachers' own teaching perspective. This means that such organization of a subject matter constitutes teacher knowledge which includes a great variety of knowledge on how to cope with the diversity of students in various learning environments.

1.6. The Necessity of TPACK for EFL Teachers

Throughout the world, people are learning English for different reasons since English is the language of communication, technology, business and so on. Therefore, it is a necessity for EFL teachers to develop students' speaking and listening abilities by means of digital technologies that bring real life contexts into classrooms where students have the opportunity to practice authentic English (Liu et al., 2014). In order to provide better language learning and teaching environments,

it is essential for EFL teachers to make use of developing educational technologies which increase communicative skills of language students.

Integrating technology in EFL classrooms is of great importance and EFL teachers are supposed to update their professional knowledge in accordance with developing educational technologies (Lin, et al. 2014). EFL teachers need to have a rich understanding of TPACK and TPACK should constitute a considerable part of their professional knowledge so as to create efficient language learning environments (Liu et al., 2014). Especially, Liu et al. (2014) points out significance of Technological Content Knowledge (TCK) and Technological Pedagogical Knowledge (TPK) in language teaching as TCK means utilizing technology that complies with the content, and TPK is to be aware of how to use technology. However, internalizing TPACK is not easy process (Liu et al., 2014). EFL teachers may come across great challenges during teaching practices. According to Mishra and Koehler (2006) developing educational technologies may cause difficulties to teachers who are struggling to employ for more technology in their teaching sessions. Adapting and adjusting new technologies may require independence in performing educational procedures, therefore teachers need to have some flexible space to employ for educational technologies.

1.7. Research on Technological Pedagogical Content Knowledge (TPACK)

In the studies conducted on technological pedagogical content knowledge TPACK, it is seen that the studies have been mostly carried out at universities on pre-service teachers. In the related literature it is seen that experimental studies conducted with pre-service teachers are more common since their TPACK developments after certain processes are monitored.

Conducted by Solak and Çakır (2014), one of the studies explored TPACK levels of pre-service EFL teachers in terms of gender and academic achievement. 137 pre-service teachers participated in the study. The results showed that students could make use of technology for their own purposes. However, their technological knowledge was so low that the study suggested that they needed to develop their skills through workshops or trainings so as to benefit from technology more efficiently. It was also found that there was no significant difference among students in terms of TPACK and academic achievement.

Another study conducted by Erşanlı (2016) tried to investigate the results of a five-week training which lasted for five weeks with 59 pre-service EFL teachers at University. The study employed mixed methods research in which the data were collected via journals and a scale formed by Solak and Çakır (2014). According to the results, pre-service EFL teachers improved themselves remarkably in terms of both TPACK and their knowledge on technological applications

and websites. In the journals, pre-service teachers recognized the development they managed through the training on TPACK and technological applications.

As for the interplay between teacher efficacy and TPACK, Tuncer (2014) explored teacher efficacy beliefs of pre-service EFL teachers. They were highly positive and there was a significant relationship between teacher efficacy and TPACK competence. This proved that teacher efficacy contributed to teachers' TPACK competences to a great extent.

Moreover, Öz (2015) investigated 76 pre-service EFL teachers' TPACK levels. Participants filled out the TPACK scale formed by Schmidt et al. (2009). According to the results, participants had high levels of TPACK for their teaching practices. Furthermore, it was found that educational programs at Universities were successful in terms of equipping pre-service EFL teachers with appropriate skills and technological knowledge to improve their teaching practices. Another study with the similar purpose (Kwangsawad, 2016) explored pre-service EFL teachers' TPACK levels through self-reports, lesson plans and actual practice instead of questionnaires. The findings revealed that teacher education programs were successful in terms of training teachers in terms of integrating technology into their teaching practices efficiently.

Kozikoğlu and Babacan (2019) investigated the relationship between Turkish EFL teachers' technological pedagogical content knowledge skills and attitudes towards technology. The study also investigated the differences in teachers' TPACK levels and their attitudes towards technology in terms of gender, FATİH Project training and professional experience. The study included 721 in-service EFL teachers in Turkey. Both TPACK scale and attitude scale towards technology were employed to gather data. According to the findings of the study, in-service EFL teachers had high TPACK skills and high tendency towards technology. The impact of gender on the relationship was found low. Moreover, the findings showed that male teachers' TPACK skill levels were higher than the female teachers. In connection with the findings, it was stated that the impact of FATİH Project training had a significant role in TPACK levels of teachers.

The study by Nazari et al. (2019), tried to present differences between novice and experienced EFL teachers' TPACK levels. The study was conducted in Iran with 427 EFL teachers. According to the results, experienced teachers' pedagogical content knowledge was higher than inexperienced ones. However, novice teachers were seen as more competent in technological knowledge, technological content knowledge, technological pedagogical knowledge and TPACK. It was underlined that novice teachers might be regarded as digital natives, therefore, they had higher levels of technology knowledge. On the other hand, their content and pedagogical knowledge were relatively low due to having less years of teaching experience. Experienced teachers were found to be proficient enough in terms of their content and pedagogical knowledge,

but their technological knowledge levels were insufficient. It was stated in the study that neither novice nor experienced teachers had idea about TPACK concept (Nazari, et al., 2019).

One more study carried out by İşler and Yıldırım (2018) tried to explore perceptions of Turkish pre-service EFL teachers about their TPACK levels. Their study also aimed to reveal the factors affecting pre-service EFL teachers' TPACK levels and their perceptions of integration of technology in EFL classes. Both a questionnaire and an interview were conducted to gather data. According to the results of the analysis, pre-service EFL teachers have high levels of TPACK. The researchers also emphasized that pre-service EFL teachers appeared to give importance to use of technology in English classes. Participant teachers stated that technology aided them to make EFL classes more enjoyable and motivating for students.

Delen (2016) carried out a study on TPACK in order to present the correlations between teachers' TPACK levels and certain parameters such as age, gender and teaching experience. EFL TPACK questionnaire developed by Bostancıoğlu (2014) was used in the study. It was found that TPACK levels of EFL teachers in Turkey were high but in terms of gender, no difference was seen among teachers' levels. Negative correlation between teaching experience and EFL teachers' TPACK was detected in the research. Moreover, it was stated that more experienced teachers did not prefer to employ technological applications in their classes as much as teachers with less teaching experience.

Another study with in-service EFL teachers was carried out by Tuna (2022). The study investigated the relationship between in-service EFL teachers' attitude towards EBA and their TPACK levels. 372 in-service EFL teachers working in Hatay participated in the study. The data was collected through EBA attitude scale and EFL TPACK survey. The findings revealed that there was a moderate positive correlation between teachers' attitude towards EBA and their TPACK levels. No significant difference was found in terms of gender, type of school and teaching experience.

In searching for TPACK levels of teachers, different survey forms were also developed. Bostancıoğlu and Handley (2018) developed a self-report questionnaire consisting of 36 items on TPACK. It was found that the questionnaire was a valid and reliable tool to explore EFL teachers' TPACK levels. Similarly, Başer (2015) developed a TPACK-EFL survey consisting of 39 items to evaluate technological pedagogical content knowledge TPACK of pre-service teachers.

Recently, Atan (2021) conducted a study exploring effects of TPACK on in-service EFL teachers' technostress levels. A total of 52 in-service EFL teachers participated in the study. The findings revealed that participants had low-level of technostress and high level of TPACK.

Negative correlation was found between TPACK and technostress levels. Also, technostress levels varied in terms of age and years of experience.

Considering all, it is seen that most of the studies conducted on TPACK have been carried out with pre-service EFL teachers. The number of the studies involving in-service EFL teachers is limited. Furthermore, the studies generally employed quantitative research designs. As for the results, both pre-service and in-service teachers seem to have high levels of TPACK but the scores vary in terms of gender, age, teaching experience and school types. Therefore, it is necessary to conduct more studies with different research designs in order to determine EFL teachers' TPACK levels, perceptions from different points and how to improve their recent profile.

1.8. The Concept of Teacher Autonomy

As a recent term, "autonomy" has different definitions from different scholars pointing to the importance of independence in classroom procedures. According to Littlewood (1996) autonomy means taking responsibility for ones' own choices and behaving independently to implement those choices. Another view from Moomaw (2005) points out that being not affected by external and internal forces creates autonomy. Sheerin (2013) defines autonomy as an individual independence in leading ones' own life. Deci and Ryan (2000) explain autonomy as ones' own feelings and desires to put his choices into practice under his responsibility. According to Freidman (1999) autonomous people work independently and tend to change existing events in order to adapt to new situations.

In the related literature, the definitions of teacher autonomy vary from researcher to researcher. Pearson and Moomaw (2005) define teacher autonomy as teachers' capability to direct their teaching practices teaching environment. Little (1995) relates teacher autonomy with the concepts of freedom, responsibility for the choices and competence to control teaching and learning processes.

According to Friedman (1999) teacher autonomy can be examined at five levels. The first one is a lack of autonomy in which teachers have no right in planning and participating in educational processes. The second one is weak autonomy in which teachers have to be strict to curriculum and there is little freedom for teachers. The third one is partial autonomy in which teachers can put forward new ideas, but for implementation process they have to take necessary permissions from authorities. The fourth one is high level of autonomy in which teachers can develop new curricula and methods by being strict to the general rules and principles. The last one is full autonomy in which teachers have freedom to plan and develop new teaching programs in accordance with the accepted morals and principles. Friedman (1999) emphasizes that the quality of educational

processes can be increased by enabling teachers to take their own decisions and implement these decisions independently and therefore this attitude will lead teacher empowerment.

Öztürk (2011) states that in order to reach high motivation and job satisfaction in education teachers need to express their personal decisions and put them into practice without feeling any pressure. Webb (2002) suggests that teachers should take responsibility even in the situations in which they have no control or authority. Therefore, it can be said that different scholars support teacher autonomy from different points in educational processes.

1.9. Benefits of Being Autonomous Teacher

Today, it is accepted that autonomous teachers make several contributions to education with their different perspectives. According to Devries and Kohlberg (1987), autonomous teachers are the ones who know what they are doing and for which purposes they are struggling. They do not rely on the determined curriculum strictly; however, their perspectives on the curriculum in terms of its efficiency vary in practice in accordance with student needs and school environments. Therefore, autonomy gives opportunity to teachers to create their own curriculum instead of obeying the determined rules. Moreover, Little (1995) suggests that being autonomous is an important qualification of successful teachers who are responsible for their own teaching procedures. Another characteristic proposed by Littlewood (1996) states that autonomous teachers are those who have independent competence to take their own decisions on their actions in classroom management. Freidman (1999) points that being autonomous urges teachers to participate in new activities, and help them to adapt to changing situations. However, with limited autonomy, teachers cannot take autonomous decisions and only decide on practical terms.

Anderson (1997) puts forward four benefits of being autonomous teacher. The first benefit of teacher autonomy is providing each teacher a right to choose his way of teaching. The second benefit is urging teachers to cope with different student profiles by coming up with different teaching methods. The third benefit is getting peoples' trust by proving teacher expertise with the decision's teachers take responsibility. And, the last benefit is providing teachers opportunities to plan their own time and solve interpersonal problems efficiently. Also, Graves (2009) believes that being autonomous is the capability to be after self-directed professional growth. Therefore, she proposes five features of being autonomous teachers: desire to learn, self-confidence, reflection on their profession, negotiating with students and colleagues, taking decisions accordingly. This means that autonomous teachers are willing to join in workshops, put forward new ideas, and come up with new techniques and activities that meet student needs and comply with their abilities.

Furthermore, being autonomous plays a crucial role in teachers' job satisfaction (Kreis and Brockopp, 1986; Emo, 2015) because teachers may lose motivation and become dissatisfied when

they do not have the ability to manage their own teaching sessions (Javadi, 2014). Similarly, Dörnyei (2001) supports that limitations on teachers' teaching processes may result in demoralization of teachers. Therefore, the more opportunities teachers are provided in decision-making processes the more motivated they will feel in their professions. Additionally, White (1992), suggests that being autonomous increases teachers' happiness and minimizes stress in schools by making teachers feel competent in their teaching practices. Yıldırım (2017) points out that one of the benefits of being autonomous teacher is its close connection with learner autonomy. Autonomous teachers tend to develop autonomous students who can manage to regulate their own learning environment and be independent learners (Varatharaj et al., 2015). Little (1995) supports that being autonomous in class practices enhances learner autonomy to a great extent. According to Çubukçu (2016) autonomous teachers create learning environments which urges students to take part in decision-making processes and foster autonomy growth, and also it is stated that autonomous teachers have the competence to take responsibility of their students' progress and they try to create a constructivist classroom, and they do not accept the curriculum as it is presented.

Being autonomous helps teachers create fruitful learning atmospheres in which they take individual differences into consideration and meet changing needs and talents of students by adapting teaching materials and curriculum (Nelson and Miron, 2005; Ozturk, 2011; Prichard and Moore, 2016). According to Ozturk (2011) being autonomous can not only be associated with the idea of designing classroom practices, but it is also including a desire to develop the teaching profession, work satisfaction, and teacher motivation in creating autonomous environments.

Considering the benefits of being an autonomous teacher, Olorunsola and Olayemi (2011) suggest that teachers should be given opportunities in decision making processes so as to increase their commitment, job satisfaction and productivity in answering individual differences as well as fostering learner autonomy in a wide range of learning environments.

1.10. The Relationship between Autonomous Teacher Support and Learner Autonomy

It is seen that the studies conducted on autonomy are mostly related to learner autonomy (Little, 1995; Smith, 2003). Since student-centered education has gained importance in schools, the emphasis on learner autonomy has increased too. Also, in order to understand the term of teacher autonomy, the concept of learner autonomy should be internalized. According to Benson (2010) learner autonomy is feeling responsible in deciding the goals, choosing the learning ways and being aware of ones' own deficiencies and strengths so as to evaluate his learning. Moreover, Little (1995) states that learner autonomy is being responsible for ones' own learning. Cotteral (1995) states that the concept of learner autonomy has gained importance when students started to

participate actively in their learning planning processes and take decisions about their own learning willingly.

However, Little (1995) puts forward that autonomy is not limited to student learning on his own, nor does it mean that the teacher ignores his responsibilities in his classroom. In the classroom, teacher support has a significant role for students to learn to learn and become autonomous learners (Trebbi, 2008). Therefore, in order to create autonomous learners, autonomous teachers who are responsible of their teaching are needed. According to Freidman (1999), research on teacher autonomy plays crucial role in developing education from different points. In the literature, it is seen that the research on teacher autonomy is not considered apart from learner autonomy in foreign language teaching. In fact, diversity in student-centered practices makes it a necessity for teachers and students to display autonomous behavior.

In the related literature, it is observed that there is a strong connection between teacher autonomy and learner autonomy. The interdependence of these two concepts are studied by many scholars. Little (2003) emphasizes the fact that it is obligatory for teachers to be autonomous so as to help their students gain autonomy for their own learning processes. According to the study conducted by Smith (2003) teacher should have the potential to direct and control their own teaching processes in order to promote learner autonomy. And also, Huang (2007) underlines that there is a close mutual effect between autonomy as language learner and autonomy as language teacher for the same individual. In his research, he explores how language learner autonomy influences the gain of language teacher autonomy for the same individual student throughout the four-year education. Furthermore, throughout the literature, several studies discover the ways of supporting teachers in becoming more autonomous so as to develop their own learners' autonomy. In the study written by Stefano, Perencevich, DiCintio and Turner (2004), it is put forward that providing opportunities for students to exercise a level of control over their environment and their thinking will create motivated and independent students. By encouraging students to manipulate ideas, negotiate meanings or to share experiences, teachers can make them discover how to extend their knowledge and construct their autonomy. In the study by Dağ Akbaş (2011) it is proved that there is a relationship between students' academic achievement and their autonomy levels. In the study, the students who are autonomous are also more conscious about their potential. The study suggests that teachers' attitude should encourage learner autonomy and teacher support is necessary to increase autonomy levels of the students.

In their study, Reeve and Jang (2006) it is tested to find out which instructional behaviors of teachers have a positive effect on the development of students' autonomy or which ones affect students negatively. Moreover, in another study carried out by Yu, et al. (2016) it is proposed that the support of teacher autonomy reduces anxiety and depression among learners, on the other hand it increases satisfaction and school engagement. It is also suggested that teacher autonomy supports

student's needs for autonomy and this make students involve in daily school activities. Student autonomy relies on teacher autonomy, and if students manage to improve the autonomous studying skills, teaching turns out to be a research and research turns into a teaching process. Therefore, teachers become gainers by studying on autonomous learning. Therefore, teachers should be given more rights to manage and take control of their teaching behavior and this enables them reach self-development for both themselves and their students. Another study conducted by Nicolaides (2008) in Brazil highlights that the future teachers of English are aware of being in charge of classroom management and making their own choices about what happens in or out-of-class learning. It is emphasized that students can make use of reflecting on the relationships and such an awareness may also urge them to reflect on their own experiences as future language teachers, and ultimately, they can construct a sense of responsibility among their own learners. However, Shaw (2008) claims that learner autonomy as an aim can be an obstacle on teacher autonomy, as it may restrain a teacher from being flexible and professional in certain situations in which learner choices direct teachers in a different way aimed beforehand. Therefore, there is a need for further research to analyze the interplay between teacher autonomy and student autonomy.

Consequently, an environment that provides opportunities teachers to make their own decisions and to implement these decisions effectively in accordance with students' needs and differences will support learner autonomy in foreign language teaching. In such a supportive environment that promotes both teacher and learner autonomy, learners can take decisions for their own learning and direct their language learning processes.

1.11. Teacher Autonomy in EFL context

Today, learning English is considered as one of the necessary skills that 21st century students must have in order to manage communication with the people from all over the world. Especially, for the last ten years, teaching a foreign language has gone through great changes which put learners at the center of teaching practices and turn teachers into guide rather than a dominant figure in classes. Therefore, the focus of language teaching has changed from traditional methods to communicative ones which satisfy learners of modern age who have different goals for different purposes. Even though common goals are defined to increase generality, each learner comes up with different intentions to learn English. Therefore, in order to accomplish different aims and objectives of learners, EFL teachers need freedom to employ different strategies and teaching practices in their classes.

Throughout the world, in general learning a foreign language consists of four basic skills, reading, writing, listening and writing, EFL teachers need to create suitable opportunities to develop these skills and support students in terms of language learning strategies. According to Dam and Legenhausen (1999) in language teaching EFL teachers can employ certain educational

methods that support individual creativity, develop individual and group skills for their students. Benson (2010) states that in language teaching, being creative increases degree of autonomy, which helps teachers to address individual differences of students. Little (1995) emphasizes that language learning cannot be achieved through a determined curriculum or course books but rather it requires to catch every occasion to use it in an efficient way. Therefore, without being strict to determined rules or curriculum teacher autonomy plays its crucial role to make use of different language learning activities for the benefits of learners who have different goals, skills and profiles.

Moreover, there is a wide range of language learning applications, web 2 tools, websites, English groups to interact in EFL context. However, curriculums, course books or other sources cannot provide such a great variety in a limited time and environment. Therefore, at this point, teachers who are autonomous are also willing to take responsibility for their actions and decisions make use of unlimited English sources which address to individual differences of each student and develop their language learning skills in a far better way.

1.12. The Impacts of Parameters on Teacher Autonomy in Different Researches

So far, researchers have defined several factors which have an influence on teacher autonomy. Mostly, these factors are job satisfaction, stress, burnout, motivation, professionalism, empowerment, curriculum, level and characteristic of teachers. They can be categorized as extrinsic and intrinsic factors. It is also indicated that intrinsic elements are more effective on teacher autonomy than extrinsic factors.

Internal Factors

In a study carried out by Moomaw and Pearson (2005) it is highlighted that in order to develop teacher autonomy it is essential to see teaching as a profession and hence, teachers should be given opportunities to prescribe the most suitable treatment for their students as doctors or lawyers do for their patient or clients. They explore the relationship between teacher autonomy and professionalism with a total of 300 teachers working in state schools in Florida. In general, it is concluded that the more autonomous teachers develop the more professional skills and strategies they practice in their own classroom environment. The study also put forward that there is high a degree of connection between professionalism and job satisfaction. Actually, it can be said that happy teachers create happy atmosphere for their students by being volunteer to be in charge of their classes. Also, in the research conducted by Javadi (2014) the relationship between teacher autonomy and feeling of burnout in EFL teachers in an Iranian context is explored. The study indicates that teacher autonomy is closely influenced by the feeling of burnout, so it supports the other researchers pointing out the negative impacts of teachers' dissatisfaction and demotivation on teacher autonomy. One more study on the interplay between teacher autonomy and intrinsic

factors, Fatemi, et. al. (2014) focuses on the connections between emotional intelligence, autonomy intelligence and job burnout among EFL teachers. The researchers also indicate close relationship between EFL teachers' emotional intelligence and their autonomy. The results of the study are important from the point of detecting psychological traits of language teachers in EFL contexts and proposing possible solutions in order to get away with job burnout by making use of several effective strategies.

External Factors

There are several extrinsic elements that influence teacher autonomy, they can be listed as school, curriculum, exam, syllabuses, textbooks, student and socio-cultural factors. All these elements influence teacher autonomy in one or another way.

In the study conducted by Smith (2000) displays how teachers' perceptions on external responsibilities affected their choices in school environment. Teachers seem too afraid of losing autonomy and control over both curriculum and their school procedures; however, they are also concerned about spending so much time in order to prepare students for exams which make teachers neglect individual needs of students; so, teachers who are under the pressure of increasing test scores feel threatened with the fear of losing autonomy and try to defend their programs. The study carried out in Turkey by Bizmiye (2021) presents that teachers 0-10 years' experience have higher dependency on curriculum than the teachers 20+ experience. Therefore, it is seen that dependency on curriculum as an external factor diminishes in time. Furthermore, the study carried out by Slipp, Killeen and Monk (2004) explores how teachers applied to different strategies depending on which group or groups of students they teach. It is found that beliefs, learning experiences, learning preferences and styles, personalities, attitudes towards learning, physiological needs, and past learning experiences play important roles in making use of autonomy. This study emphasizes that teaching and learning are interactional. Individual differences influence students' learning as well as teacher autonomy. The research indicates that students can vary in learning a second language due to different reasons and teachers' autonomy can change student's learning in a positive way which will help them develop their own autonomy in learning as well.

Lamb (2000) points out that teachers should realize the constraints upon their practice, but rather than feeling disempowered, they ought to empower themselves by creating the spaces and possibilities to practice autonomously. A study on the multi-cultural classes Choi and Mao (2021) put forward that multi-cultural classes also affect teacher autonomy but with implementation of professional development in multi-cultural education in the world, teachers can recognize individual differences of students from different cultures and meet students' needs through their autonomous practices. In another study, the role of teacher supervisors on teacher autonomy is studied by Agheshteh and Mehrpur (2021). The study indicates that Iranian language teacher

supervisors have imperious approaches to supervision which is determined by teachers' lack of autonomy and professionalism while the teachers need more reflective and collaborative attitude which enable them to share power together and create more comfortable atmosphere for both sides. It is well known that if teachers are professionally autonomous, they can have the capability and enthusiasm to voluntarily search for the ways to get over challenges against their autonomy. There are suggested ways to develop autonomy and manage to get along with external factors such as reading books and articles, attending talks and seminars, or simply speaking to friends and colleagues about ways to get over the pressure of external factors and develop their own strategies and methods so as to meet students' needs and make them aware of their own autonomy.

When looking at the studies conducted on the impacts of those elements, the study carried out by Benson (2010) draws readers attention to the fact that the constraints organized around Schemes of Work and school-based supervision in Hong Kong may prevent teachers from practicing in their own way, but again the study underlines that the participant teachers tries to create spaces to meet students' needs and to experience a degree of professional satisfaction.

1.13. The Studies on the Promotion of Teacher Autonomy in Education

It is common to the thoughts of several scholars about teacher autonomy that teacher autonomy is the ability to teach independently, have the ability, freedom or responsibility to choose the teaching topics in accordance with students' needs and student diversity. Teachers are required to present a strong responsibility for controlling their teaching practice through reflection and analysis, and they should take over the control of the teaching process emotionally and cognitively. Thus, in order to gain such an insight and manage long lasting learning processes, promoting teacher autonomy both in teacher education and practice has become an inevitable necessity in today's world. There are several studies conducted on improving autonomy among pre-service and in-service teachers.

One of the studies by Genç (2009) was conducted on how six in-service teachers at different schools developed autonomy and decision-making skills after critically reflecting on the classroom processes. She studied with six in-service teachers at different schools. The critical reflective teaching processes in the study was found useful in improving the teachers' vision through the analyses of teaching processes and also the teachers began to take more reasonable and effective decisions on every aspect of teaching. Therefore, the study reveals the fact that if teachers are given opportunities to gain a different view to go beyond limits or if they are encouraged and equipped with the skills to be able to analyze or reflect on teaching processes, they can be more autonomous to carry out reflective teaching and decide what is best for their students. In the study conducted by İpek (2017), it was found that there was significant positive correlation between teacher reflection and teacher autonomy. Teacher reflection helps teachers to discover their strong and weak sides

during teaching process and direct their own teaching processes. In a similar way, Atkinson (2011) conducted a longitudinal study with high school teachers. The teachers in the study were required to read scholarly journals or published books. The purpose of the study was to make observations on teachers' readings and interpretations about the selected books based on their experiences. The analysis of a selected reading's depiction of reflection revealed similarities among the teachers' critical thoughts. The findings of the study suggest that there is a need to study collaboratively and develop teachers as members of critical thinking groups and also emphasize the importance of the role of reflection so as to help teachers to behave autonomously in their own contexts. One more study on teacher autonomy development through reflection was conducted by Izumi (2009). The focus of the study is based on an in-service teacher training which especially pointed on lesson improvement via action research. In general, results showed that almost all of the teachers managed to develop their lessons practices through extensive reflection and analysis of their techniques and the students' needs and all in the end lead to the development of teacher autonomy.

In another comprehensive study conducted by Guo and Wang (2021) critical thinking was addressed with the use of collaboration and teacher autonomy. The data was acquired through teaching and international survey with a total of 12,968 participants in Australia, America, Singapore. The results revealed that while teachers in Asian countries were working under the influence of the curriculum in schools with low autonomy but high collaboration, the teachers in US and Australia were practicing with high autonomy but low collaboration. As a result, the attitudes of these teachers in terms of autonomy affect critical thinking skills of their students in classroom activities. The other study relating to critical thinking came from Dikilitaş and Mumford (2019) who tried to highlight the need to promote teacher autonomy through reading teacher research. The study focused on pre-service teachers' interactions with teacher research articles and aimed to gain an insight development of teacher autonomy from teachers' reflections during the process. The study used Think Aloud Protocol (TAP) and Focus Group Discussions (FGD) as research tools in order to investigate critical reading in teacher education. The study ended with a point that reading tasks provided opportunities for participants to improve perspectives on autonomy in terms of their various individual needs. Critical reading about conducting research, drawing conclusions and making interpretations or comparing practices made participants develop their skills to become in charge of their own engagements.

Yıldırım (2013) explored the influence of portfolios on improvement of teacher autonomy. The findings of the study revealed that using portfolios enabled pre-service teachers to develop autonomy and evaluate their ongoing experiences in a positive process. The other study with pre-service teachers by Sert (2006) investigated language learning autonomy in pre-service students in Turkey. With the help of observations, interviews, it was found that pre-service teachers who were 1th grade lacked the capacity to make self-assessments so as to make reflections on their own learning processes. The study put forward several suggestions according to students' needs to make

students aware of autonomous learning as this may create positive effect on their autonomous teaching practices in future.

In a different context for English as a foreign language, in Malaysia, Thaliah and Hashim (2008) conducted a study relating to professional development of teacher autonomy. The aim of the study was to understand how teachers' perceptions about autonomy would influence classroom practices. The results of the study uncovered the fact that autonomous teachers who were aware of their teaching experiences had a positive sense on their cognitive and behavioral engagement with their students in classroom settings. In an action research conducted by Genç (2021) it was found that self-awareness for professional development and self-directed professional action had positive effect on participant teachers' attitude towards teacher autonomy.

Furthermore, the study carried out in by Pineda and Trodden (2008) examined experiences of a new English teacher in order to reveal what made her take control of her teaching practices. The study focused on problems encountered and the approach of the study was to develop learner and teacher autonomy. Researchers came up with the results indicating how reflection, collaborative work and critical thinking urged the teacher to find new solutions in her teaching, to gain a new insight, and ultimately develop teacher autonomy. Similarly, Kennedy and Pinter (2007) studied with a number of teachers to uncover how the support given to the teachers turned them into more autonomous teachers. In the study, during the interviews with the participant teachers, the researchers recognized the fact that teachers developed teacher autonomy through teamwork by collaborating with other teachers in order to create various tools for teaching the process of teamwork to design materials or tools, teachers made use of each other's experiences and their reflections on almost every types of teaching processes. In an important research relating to teacher development through collaboration Xu (2015) studied with novice EFL teachers in order to show how collaboration in lesson preparation could make them recognize the value of becoming autonomous that encourage them to take control of actions concerning their teaching processes and experiences. The results revealed that the collaboration provided opportunities for teachers to create a complete, effective teaching resources and to develop their autonomous teaching skills, which may also reduce teacher anxiety triggered by unexpected challenges. Actually, professional development for teacher autonomy relies on the fact that teachers need to explore more strategies and techniques to make better their teaching processes.

1.14. The Recent Related Studies on Teacher Autonomy and TPACK in Turkish Context

This study was the first study to analyze the relationship between teacher autonomy and TPACK levels of in-service EFL teachers in Turkey, however, there were other studies which

examined the relationship between TPACK, teacher autonomy and other variables from different points in different contexts.

The study conducted by Bal (2021) investigated the effects of applications of TPACK based Web 2.00 tools on TPACK competency of pre-service English teachers. Pre-test and post-test comparison test results showed that there was no significant difference between the groups. However, it was found that there was significant difference only in pedagogical content knowledge (PCK) dimensions of experimental group and control groups. The study suggested that technology had impact on every area of our lives, therefore teachers need to update their technological knowledge year by year.

The current study by Pehlivan (2023) examined the relationship between digital literacy and TPACK levels of pre-service English teachers. The analysis showed that there was a statistically significant positive relationship between Digital Literacy and TPACK. Regression analysis results showed that digital literacy was predictor of TPACK. The study suggested that the ways of how to benefit from outside sources to develop digital competence need to be shown in teacher education. At this point the importance of teacher education in terms of TPACK was emphasized. While pointing teacher education, with her study Güney (2022) presented the relationship Turkish EFL instructors' attitudes towards the use of web 2.00 tools and their TPACK ability. The findings revealed that there was a significant relationship between EFL instructors' attitudes towards the use of web 2.00 tools in EFL teaching and their TPACK ability. It was found that TPACK scores were positively correlated with overall attitude scores. Therefore, it was seen that EFL instructors strongly supported TPACK in teacher education.

The other related study conducted by Özdemir (2022) investigated EFL teachers' TPACK self-efficacy beliefs, web 2.00 competence and perceptions towards web 2.00 tools. The results revealed that EFL teachers had high level of content knowledge, pedagogical knowledge, pedagogical content knowledge but they implied relatively low level of self-esteem when the knowledge of technology was included. However, a positive high level of correlation was found between TPACK self-efficacy of EFL teachers and their self-perceptions towards web 2.00 tools. However, semi-structured interviews revealed that despite of participants' favorable perceptions towards the use of web 2.00 tools, these tools were not utilized efficiently by the participants in their teaching practices due to their inadequate technological knowledge. Although teachers had motivation to integrate technology into their teaching practices, they had insufficient technological knowledge.

Furthermore, in terms of teacher autonomy, a related study by Kuloğlu (2023) revealed relationships among the curriculum autonomy, teacher autonomy, curriculum literacy, curriculum fidelity and TPACK. According to the findings the participants' curriculum autonomy, teacher

autonomy, curriculum literacy levels were high and their curriculum fidelity and Tpack levels were very high. The correlational analysis showed that all variables had moderately significant relationship except the teacher autonomy and curriculum fidelity, which had low level of relationship with each other. Another study conducted by Ertay (2022) analyzed teacher self-efficacy and teacher autonomy in relation to new distance learning era. The findings revealed that teacher self-efficacy and teacher autonomy have significant role in teacher EBA proficiency and usage. The study emphasized that teacher education system need to give importance teacher autonomy while designing curriculums. The study suggested that thanks to the support of the universities in terms of technological education, teachers improve their autonomy levels.

In general, the recent related studies supported the view that the teacher education systems needed to give required technological information. The studies implied that the more competent teachers became in terms of technological knowledge, the more autonomous they became to take their own decisions in their teaching practices.

1.15. Summary

In the reviewed studies, the researchers emphasize the importance of being an autonomous teacher in teaching practices. While some teachers manage to get over external factors such as curriculum or text books and create spaces to respond students' levels and needs, other teachers feel the necessity to follow curriculum despite the initiatives they get involved in to develop their autonomous teaching skills. Therefore, whether being autonomous or not is a personality trait which shows itself differently in different EFL teachers may be investigated or which personality traits such as patient, courageous, generous, increase or decrease teacher autonomy can be studied. Another factor that put challenges in front of teacher autonomy is migrant students of different countries, therefore, the influence of multi-cultural classes on teacher autonomy should be addressed to enable teachers to be able to respond different needs of students from different cultures. Also, beliefs play an important role in practicing teacher autonomy and teachers' beliefs can change over time. Therefore, there is a need for further research on how experienced teachers continue to practice their autonomy or whether they lose interest and follow a different attitude towards teaching processes to meet individual differences of students and meet their needs. Moreover, teacher educators at universities should be required to take an autonomous attitude to create autonomous future teachers as it is well known that teacher and learner autonomies are interrelated and influence each other from different points. Therefore, there is a need to conduct research to investigate teacher educators' perspectives on autonomy, as teacher educators are no longer transmitters of information but facilitator and counsellor. On the other hand, for in-service teachers, the studies came up with different perspectives by exploring different points of teacher autonomy, the common tendencies the researchers dealt with are reflective and collaborative

teacher autonomy development initiatives in order to make in-service or pre-service recognize the value of teacher autonomy. For this reason, researchers employed diaries, portfolios, questionnaires for reflection on teaching-learning processes. In addition to the reflection, the studies emphasize self-regulation, collaboration, cooperation, self-direction all of which are essential conditions for teacher autonomy. Although these studies shed light on important issues relating to teacher autonomy, there is still a need for further research to investigate the effectiveness of teacher autonomy on different topics. All in all, the concept of teacher autonomy in education ultimately enable teachers and learners to manage long lasting teaching and learning processes.

In terms of the studies on TPACK, it was observed that the studies related TPACK to a wide range of variables to present how teachers benefit from technology efficiently in their teaching procedures. In the studies, TPACK levels can change in terms of different demographic variables. Moreover, there were other studies conducted with pre-service teachers in order to reveal their competency. In the studies, it was stressed that teacher education programs should provide opportunities for pre-service English teachers to improve their TPACK through meaningful integration of technology in teaching and learning activities. This can be achieved by designing specific courses that focus on integrating technology in language teaching, allowing pre-service English teachers to explore and experiment with different digital tools and resources. Moreover, for the benefit of pre-service teachers, teacher educators can be seen as role models by demonstrating effective ways to integrate technology into English language teaching. By incorporating technology in their own teaching practices, they can inspire and motivate pre-service teachers to explore and adopt technology tools and strategies. On the other hand, the studies involving in-service teachers emphasize the fact that although teachers have high level of TPACK, they can not utilize technology efficiently in their teaching practices due to different reasons such as paper work, curriculum or exams. Therefore, it is necessary to conduct more studies with different research designs in order to determine EFL teachers' TPACK levels, perceptions from different points and improve their recent TPACK profile.

CHAPTER TWO

2. METHOD

2.1. Presentation

This chapter presents detailed information on methodology employed in this study. Firstly, it gives a brief information on the research methods applied. It explains which methods and how these methods are employed. Later, the research population and sampling are presented. Finally, data instruments and data analysis are described.

2.2. Research Design

This study focused on the correlation between Teacher Autonomy and Technological Pedagogical Content Knowledge (TPACK) levels of in-service EFL teachers in Turkish context. In order to reveal the relationship between the Technological Pedagogical Content Knowledge levels and teacher autonomy levels of the in-service EFL teachers, mixed methods research was conducted in the relational survey model. Coleman (1958) stated that survey methods had the potential of gathering a large volume of data at a relatively low cost in time and effort. In addition to the relational survey model, employing mixed method enabled the study to utilize advantages of both quantitative and qualitative research so as to reach deeper insights on the issue. Mixed-methods provide data from a large number of people, and it also allows the researcher to get individuals' voices and points that would not be obtained only through quantitative data (Dawadi et al., 2021).

According to Dörnyei (2007) mixed methods included combinations of qualitative and quantitative data and analysis processes. The variables; gender, age, educational status, teaching experience, and type of school were examined whether they had any significant effect on both teacher autonomy and TPACK levels. Certain variables such as the cities and locations where teachers were working, teachers' graduation departments, gender, educational status, teaching experience, and type of school were considered in the analysis of the data. In order to answer research questions regarding different parameters, the correlational research could be applied to determine the relationship between two or more variables to find their connection considering cause and effect relationship (Fraenkel et al., 2012). Correlational study involved quantitative data analysis as it aims to find the coefficient correlation index between two variables (Atmowardoyo,

2018). Quantitative data was obtained with two survey forms in this study. The first one was conducted to collect data about teacher autonomy of in-service EFL teachers and the second questionnaire aimed to collect information about EFL teachers' Technological Pedagogical Content Knowledge (TPACK) levels. Moreover, data about demographic features such as participant teachers' age, gender, educational status, years of teaching experience and type of school where they teach were collected. However, Dörnyei (2007) stated that the questionnaire survey is practical way of collecting data, it can provide a large amount of data in a short time, but this technique could be shallow in order to reach deep and complex perceptions of participants. Therefore, qualitative section of this study can be complementary in terms of providing deep insights related to the correlation between TAS and TPACK levels of in-service teachers. For the qualitative section, semi-structured interviews were conducted with 10 volunteer in-service EFL teachers in order to obtain EFL teachers' perceptions on the correlation between TAS and TPACK. In order to analyze interviews thematic analysis was employed under four main topics on which the participant teachers focused mostly. Thematic Analysis is a method for determining analyzing patterns in a qualitative data and it is suitable for different research aims and theoretical perspectives (Braun and Clarke, 2006). It is fairly accessible method that requires no sophisticated analysis for the researchers who are inexperienced (Braun and Clarke, 2006). According to the perceptions of the participants on the correlation between TAS and TPACK, four themes were determined and frequently uttered issues were presented through quotations.

To sum up, the present study was a combination of quantitative and qualitative research traditions with the purpose of analyzing the correlation between technological pedagogical content knowledge and teacher autonomy levels of in-service EFL teachers in Turkish context.

2.3. Research Sample

The research sample of this study consisted of 221 in-service EFL teachers in Turkey. Convenience sampling was employed in this study. Participating in both questionnaires and semi-structured interviews was constructed on willing basis. Since finding suitable and potential participants could impose practical limitations for researcher, the researcher should connect to a sample that would be helpful for the aim of the study and would fill in the questionnaires sincerely. Therefore, willing in-service EFL teachers in Turkey were invited to participate in this study by employing convenience sampling method. According to Etikan et al. (2016), convenience sampling method was a nonrandom sampling method in which the members of the population were easily accessible to participate and it was affordable.

For the qualitative part, teachers were determined by criterion sampling. In this sampling method, teachers with expected criteria were chosen. Criterion sampling included a set of pre-determined criteria which direct the sampling process. According to Dörnyei (2007) the researcher

can create a criterion for research sampling or previously prepared criteria can be applied. In this study, the criteria was in-service EFL teachers' scores in both TPACK and TAS questionnaires. The ten EFL teachers who had the highest points in both questionnaires were invited to participate in semi-structured interviews. However, not all the teachers who had highest scores answered the mails to participate in the interviews. Therefore, the researcher invited other teachers who had high points in both questionnaires.

2.4. Data Collection Instruments

In this study, quantitative and qualitative data collection tools were used to analyze data related to the research questions. Three main tools were used as follows Technological Pedagogical Content Knowledge (TPACK) questionnaire, Teacher Autonomy Scale (TAS), and semi-structured interviews.

2.4.1. EFL TPACK Scale

In this study, in order to find EFL teachers' TPACK levels, a questionnaire created by Bostancıoğlu and Handley (2018), was employed. As stated by Bostancıoğlu Handley (2018), the questionnaire was developed in three different development stages. At first, a total of 76 items were prepared. After the evaluation of the content validity, 20 items were eliminated from the pool. With the opinions from the experts, 9 more items were added. Later, 542 EFL teachers were invited to fill in 65-item questionnaire. After Exploratory Factor Analysis and Confirmatory Factor Analysis, the last form of EFL TPACK questionnaire appeared (see Appendix 3). After measuring the internal consistency of the original scale, Cronbach's alpha value was found respectively with the sub factors of the questionnaire:

Technology Knowledge (0.82), Content Knowledge (0.84), Technological Pedagogy Knowledge (0.87), Technological Content Knowledge (0.85), Pedagogical Content Knowledge (0.85), and Technological Pedagogical Content Knowledge (0.89). In this study, Cronbach's Alpha values were measured as the following: Technology Knowledge (0.91), Content Knowledge (0.88), Technological Pedagogy Knowledge (0.85), Technological Content Knowledge (0.89), Pedagogical Content Knowledge (0.88), and Technological Pedagogical Content Knowledge (0.84) (Bostancıoğlu and Handley, 2018).

2.4.2. Teacher Autonomy Scale

In this research, the Teacher Autonomy Scale (TAS) developed by Çolak and Altinkurt (2017) was administered to assess teacher autonomy levels of in-service teachers in Turkish context. For the construct validity of the measurement tool, exploratory and confirmatory factor

analysis was performed on the data by the researchers. According to factor analysis, the scale had 4 dimensions and 17 items. Each statement was measured on a five-point Likert type scale. The reliability of the scale in the study was $r=.85$.

2.4.3. The Section of Demographic Information

In order to answer the research questions related to the certain variables, the questionnaire form started with demographic information section. This section asked certain characteristics of in-service EFL teachers which included teaching grade, teaching experience, gender, age, department of graduation, educational statues. In the quantitative data analysis process, the research explored the correlations between these variables, TPACK and TAS levels of in-service EFL teachers in Turkey.

2.4.4. Semi Structured Interviews

After administering the quantitative data collection tools, the teachers who would be interviewed were determined according to the highest score criteria. Therefore, emails were sent to the teachers who had high scores in TPACK and TAS. The volunteer teachers who had high points participated in semi-structured interviews through online channels. According to Mackey and Gass (2005) in semi-structured interviews the researcher can compare and contrast different opinions and perspectives by asking guiding questions or follow-up questions. In such interviews, the researcher directs the participant to answer research questions in accordance with the research aims, however in some situations or in certain sections the researcher makes necessary clarifications for the participant (Dörnyei, 2007). After the quantitative data collection process, semi-structured interviews including 7 open-ended questions were conducted with 10 volunteer ELT teachers who had the highest scores in both questionnaires. Each interview was recorded with a smart phone and these recordings were transcribed (Appendix 4) and translated. The seven open-ended questions were asked to determine participants' perceptions on the relationship between TPACK and teacher autonomy in ELT practices.

2.4.3.1. Semi-Structured Interview Questions

After expert opinion and revisions, the piloting with two teachers was employed and three questions were revised accordingly. Finally, the following questions were asked to the participants.

1. Have you ever heard about teacher autonomy?

Teacher autonomy is defined as freedom to make decisions on matters related to their profession and so it is defined as their participation in planning and management formations besides the implementation of education (Pearson and Hall, 1993).

1.1. What do you think about this concept of teacher autonomy?

2. How do you make your decisions in your teaching?

2.1. How do you choose your teaching methods and techniques?

2.2. How do you choose your materials? Do you use only course books as the only materials for learners?

3. Have you ever heard about technological pedagogical content knowledge?

TPACK has been defined as the knowledge that the teachers need for effective technology integration (Koehler and Mishra, 2009).

4. What do you think about this concept of TPACK?

5. How do you as an EFL teacher adapt your teaching style to different technological applications?

6. What do you think about the importance of integration of technology in English language education?

7. Do you think is there any relationship between teacher autonomy and technological pedagogical content knowledge?

7.1. Considering teacher autonomy and TPACK concepts, how do you see yourself?

2.5. Data Collection Procedures

The data collection process started with a pilot study including responses of eight teachers in two schools. Later, in-service EFL teachers around Turkey were invited to participate in the study through online channels (WhatsApp, Facebook, Instagram, Telegram) on 28 January 2023. The researcher waited for this date especially for the reason that the schools were closed due to semester holiday and teacher could be free to fill in the forms efficiently. Moreover, in the first section of the online forms, all the participants were informed about the purpose of the research and privacy of their participation. Furthermore, the necessary explanations were given by the

researcher. Teacher participation in this study was voluntary and their information was kept anonymously. The two forms, TPACK questionnaire and TAS scale, were sent to the participants in the same Google form. The participants were expected to fill in the forms approximately in ten minutes.

After the analysis of the quantitative data, interview participants were determined according to the criteria which required highest scores in terms of teacher autonomy levels and TPACK levels. The interviews with ten selected participants who volunteered to participate in the interview part of the study were carried out through online tools, and recorded. The recordings were transcribed and thematic analysis was employed considering related instances of TPACK and teacher autonomy in EFL classes. Briefly, the steps which were taken during study were presented in the Table 1st.

Table 1: The Procedures Followed in the Current Research

The acceptance of thesis proposal	05/09/2023
Receiving permissions from the authors of the questionnaires	12-29/09/2023
Getting approval from Human Subjects Ethics Committee	22/12/2023
Piloting process for the data collection instruments	02-18/01/23
Administration of the questionnaires	28/01-04/2023
Analyzing questionnaires	29/04/2023
Having semi-structured interviews	02-05/05/2023
Analyzing the interview data	05-15/06/2023
Reporting research results	20/06/2023

2.6. Data Analysis Procedures

A total 221 teachers participated in this study. The data was collected through two questionnaires which were Teacher Autonomy Scale and EFL TPACK Survey and analyzed by using SPSS (Statistical Package for the Social Sciences) 25.0 data analysis software. At first, internal consistency levels were measured by using Cronbach's alpha values for the questionnaires were as the following: TAS: 0.853 and TPACK: 0.956. High internal consistency levels were found and it was inferred that both of the questionnaires were reliable.

In the analysis process, descriptive statistics about the demographic features of the participants related to the variables were obtained. Descriptive statistics about teacher autonomy levels of in-service EFL teachers and their TPACK levels were measured. Normality tests showed that the data did not show normal distribution. Then, Skewness and Kurtosis tests were applied in order to check the normality of the distribution. Tabachnick and Fidel (2013) stated that values between -1.5 and +1.5 are considered as normal distribution. Normality tests' results did not show normal distribution for both TAS and EFL-TPACK Survey. Because of this, nonparametric tests

were carried out to find out the relationships between the variables and EFL teachers' TPACK levels and teacher autonomy levels. Mann-Whitney U test was applied for the gender variable, and Kruskal-Wallis test was applied for age, teaching experience, educational status, and school type variables. Furthermore, Mann-Whitney U test was applied within the groups to reveal the differences within the groups. In order to investigate the relationship between teacher autonomy of in-service EFL teachers and their TPACK levels Spearman's rho correlation analysis was applied. Spearman's correlation is a nonparametric test which is employed for measuring the level of association between two variables (Hauke and Kossowski, 2011)

The following table describes the analysis of the research questions

Table 2: The Analysis Tests of Research Questions

Research Question 1. What are teacher autonomy levels of the in-service EFL teachers in Turkish context?	Descriptive Statics	Kruskal Wallis Test, Mann Whitney U test.
Research Question 2. What are TPACK levels of the in-service EFL teachers in Turkish context?	Descriptive Statics	Kruskal Wallis Test, Mann Whitney U test.
Research Question 3. Is there a significant difference in teacher autonomy levels in terms of certain variables? (gender, experience, department of graduation)	Descriptive Statics	Kruskal Wallis Test, Mann Whitney U test.
Research Question 4. Is there a significant difference in TPACK levels in terms of certain variables? (gender, experience, department of graduation)	Descriptive Statics	Kruskal Wallis Test, Mann Whitney U test.
Research Question 5. Is there any relationship between teacher autonomy levels and technological pedagogical content knowledge (TPACK) levels of the in-service EFL teachers in Turkish context?	Correlational Analysis	Spearman's rho correlation analysis
Research Question 6. Is there significant relationship between subscales of teacher autonomy scale and TPACK questionnaire?	Correlational Analysis	Spearman's rho correlation analysis
Research Question 7. How do in-service EFL teachers perceive the relationship between teacher autonomy and technological pedagogical content knowledge (TPACK)?	Qualitative thematic analysis Semi-structured interviews	Seven open-ended questions

As for the qualitative analysis, the data was transcribed and prepared for the analysis. The researcher read the data extensively to find recurrent words, ideas and key words. Relevant words and ideas about the topic were coded by the researcher. Coding means diving selected parts of a text and giving a label to each part (Creswell and Clark, 2017). In some parts, more than one code was elicited from same insights which the participants elicited. Taking research questions into consideration, the ideas were grouped, relevant codes were decided. After determining the units of analysis, recurrent themes were highlighted. Thematic analysis was employed to determine recurring issues the data based on the semi-structured interviews. By summarizing data, inferences from the responses of the participants were made and four themes appeared. By giving extracts and statements in quotations, these four themes were analyzed. As the quantitative data was dominant and first, qualitative data was complementary.

2.7. Validity and Reliability

Reliability and validity are the essential issues of a study and they prove that the study is stable and consistent (Creswell, 2005). According to Creswell (2005), validity allows researcher to draw conclusions from the sample population being studied. To ensure that both issues are satisfied, the pilot test was administered to two different school where respondents were not involved in actual research. Moreover, reliability values close to 1.00 indicate that the investigated factors can be measured. Frankel and Wallen (1996) stated that the reliability item can be accepted if the alpha is .70 to .99. The reliability of the questionnaires was calculated using SPSS 25. The alpha values of TAS and TPACK questionnaire are stated below.

Table 3: The Alpha Values of TAS and TPACK Questionnaire

	Cronbach Alpha
TAS Total	0.853
TPACK Total	0.956
TKN	0.825
PCKN	0.838
CKN	0.781
TCKN	0.897
TPKN	0.892
TPCKN	0.887

The statistical analysis indicated that the instruments had satisfactory level of reliability. After piloting process, the results were shared so as to take experts' final opinion. Based on the experts' evaluation, the design of the instruments was finalized. Thus, piloting process helped to test the validity and reliability of the data collection instruments.

For the qualitative part, there were seven pre-prepared guiding questions which were seeking more information and insights on the correlation between EFL teachers' autonomy and TPACK levels. The interview questions were prepared in parallelism with the items in the TAS and TPACK questionnaires. Therefore, this parallelism in the current study provided a framework. The prepared questions for semi-structured interviews were analyzed with the supervisor. Based on the feedback received, the questions were revised in terms of instructions, wording and the language used. The interviews were conducted after determining the teachers who had the highest points in each questionnaire and taking their consent for the participation. The interviews were conducted in the following week after getting the results of the questionnaires. The participants were from different cities and the researcher had no relationship with them beforehand. In order to prevent the impact of bias, no private questions were discussed during the interviews. Each of the interview lasted about 10-15 minutes. Each interview included about 1100 – 1300 words of the participants in total. Interviews were recorded in full through a mobile phone in order to revise data again and were

transcribed. In order to control reliability in recording the researcher took notes as notes provided for the inter-rater reliability in the coding of responses for the analysis process. During the interviews, the researcher paid attention reliability, validity, and consistency of the answers by making clarifications, formulating questions carefully and asking participants to summarize their thoughts. To ensure reliability and validity, a second rater, who had MA degree in Applied Linguistics and has been an English teacher for 10 years coded and evaluated data. Under the evaluation and remarks of the second rater the codes, the key words and themes were reviewed again. The quotes which represented the themes were selected under four different themes.

2.8. Ethical Considerations

The researcher started data collection procedures by getting permissions from the owners of the questionnaires who created the technological pedagogical content knowledge questionnaire (TPACK) and teacher autonomy scale so as to obtain data. After getting permissions from the authors via e-mails, the data collection procedure went on with taking the necessary permission from Karadeniz Technical University for the approval of Human Subjects Ethics Committee (Appendix 5).

Later, in order to employ the pilot study for both TAS and TPACK questionnaires, ten teachers in two different schools were invited to fill in the TPACK questionnaire and Teacher Autonomy Scale which were prepared through google forms and sent to the participants on online channels (WhatsApp and Facebook). According to the feedbacks from ten teachers and expert opinion obtained about the questionnaire forms, the part on demographic information was revised and new items were added to reach reliable results on certain variables. After taking final expert opinion, the final versions of the forms were prepared and administered. All the teachers were informed about the purpose of the study and their consent was taken to participate in the study. It was also ensured that the participants answers would be kept confidential.

CHAPTER THREE

3. RESULTS

3.1. Presentation

In this part, the quantitative and qualitative data results obtained through questionnaires and semi-structured interviews are presented. At first, the descriptive findings of both questionnaires are given. Later, the findings of inferential statistics concerning the correlation between TPACK and TAS scales are presented. The findings are listed and organized in accordance with the order of research questions. At the end of this part, the qualitative findings obtained through semi-structured interviews are presented.

3.2. Quantitative Findings

3.2.1. Demographic Parameters of Participants

As presented on Table 3, 49.3% of participants were female, and 50.7% were males. 46.6% of participants had ages between 20 and 35, 46.2% had ages between 36 and 50 and 7.2% participants had ages 51 or higher. When it comes to teaching experience, the distribution was 41.2% were 0-10 years, 41.6% were 11-20, 17.2% were 21 years and higher. 92.7% of participants had Bachelor's and 7.3% had Master's degree. 60.6% of participants graduated from English language and teaching, 25.3% of participants from English language and literature, 5.0% of participants from American language and literature and 9.0% of participants from other departments. 88.7% of participants were from state schools, and 11.3% were from private schools. 38.9% of participants were from city center schools, 53.4% of participants were from town schools, and 7.7% of participants were from village schools. The distributions about the level of institutions were 14.0% primary school, 31.7% secondary school and 54.3% were high school.

Table 4: Demographic Parameters of Participants

		Count (n)	Percent (%)
Gender	Female	109	49.3
	Male	112	50.7
Age	20-35	103	46.6
	36-50	102	46.2
	51 and higher	16	7.2
Experience	0-10	91	41.2
	11-20	92	41.6
	21 and higher	38	17.2
Current academic status	Bachelor's degree	202	92.7
	Master's degree	16	7.3
	PhD degree	0	0.0
Graduated department	English Language and Teaching	134	60.6
	English language and literature	56	25.3
	American Lang. and Literature	11	5.0
	Other	20	9.0
School type	State school	196	88.7
	Private school	25	11.3
School location	City center	86	38.9
	Town	118	53.4
	Village	17	7.7
Institutions	Primary school	31	14.0
	Secondary school	70	31.7
	High school	120	54.3

In terms of the geographical locations, according to the Table 4 more than half of the participants were from Black Sea and Marmara Regions. While East Anatolian Region, Central Anatolian and Aegean Regions have almost equal number of the participants, South East Anatolian and Mediterranean Regions have the least number in total. Therefore, the distribution of the participants all around the Turkey is not equal, this means that the study does not represent each part of Turkey equally. Since there was a big earthquake in the South East Anatolian of Turkey at that time, the participation rate was low and the distribution was not equal to represent each part of Turkey.

Table 5: Geographical Distribution of the Participants

Regions	Number of Participants
Black Sea Region	95
Marmara Region	37
Central Anatolian Region	29
East Anatolian Region	22
Aegean Region	28
Mediterranean Region	5
South East Anatolian Region	3

3.2.3. Normality of Scale Scores

Before research question analysis, Kolmogorov Smirnov test was used for normality tests of scale scores. Results were given in the Table 6.

Table 6. Kolmogorov Smirnov Test for Normality of Scale Scores and Reliability Analysis Results

	Cronbach Alpha	Normal Parameters		Test Statistic	p value
		Mean	Std. Deviation		
TAS Total	0.853	69.73	8.18	0.108	0.000
TPACK Total	0.956	152.60	16.46	0.098	0.000
TKN	0.825	26.47	3.22	0.136	0.000
PCKN	0.838	29.73	3.47	0.095	0.000
CKN	0.781	21.32	2.59	0.128	0.000
TCKN	0.897	25.26	3.66	0.139	0.000
TPKN	0.892	24.98	3.51	0.137	0.000
TPCKN	0.887	24.84	3.64	0.132	0.000

TKN: Technology Knowledge; PCKN: Pedagogical Content Knowledge; CKN: Content Knowledge; TCKN: Technological Content Knowledge; TPKN: Technological Pedagogical Knowledge; TPCKN: Technological Pedagogical Content Knowledge; TAS: Teacher Autonomy Scale.

Kolmogorov Smirnov test results showed that all scale score distributions did not have normal distribution ($p < 0.05$). Thus, nonparametric tests (Mann Whitney U, Kruskal Wallis and Spearman's rho) were used for the analysis of research questions.

The first research question was related to autonomy levels of teachers and differences between institutions as follows:

“1. What are teacher autonomy levels of the in-service EFL teachers in Turkish context?”

1.1. Are there any differences between high schools, secondary, primary schools and other institutions in terms of teacher autonomy levels?”

Table 7: Teacher's Autonomy Levels and Differences Between Institutions

Institutions/TAS	Mean	Std. Deviation	X ² value	p value ^a	Post Hoc ^b
Primary school	66.90	9.15	9.820	0.007	High > Primary High > Secondary
Secondary school	68.51	7.82			
High school	71.17	7.89			
Total	69.73	8.18			

a. Kruskal Wallis Test, b. Mann Whitney U test.

The mean values regarding autonomy levels of the in-service EFL teachers in Turkish context was 69.73 ± 8.18 . Kruskal Wallis test results showed that the differences between institution groups were statistically significant ($p < 0.05$). Post Hoc Mann Whitney U test results showed that high school TAS mean score was significantly higher than primary and secondary school groups ($p < 0.05$). The differences between primary and secondary school teacher's TAS scores were statistically insignificant ($p > 0.05$).

Figure 2: TAS Score Means and Differences Between Institution Groups

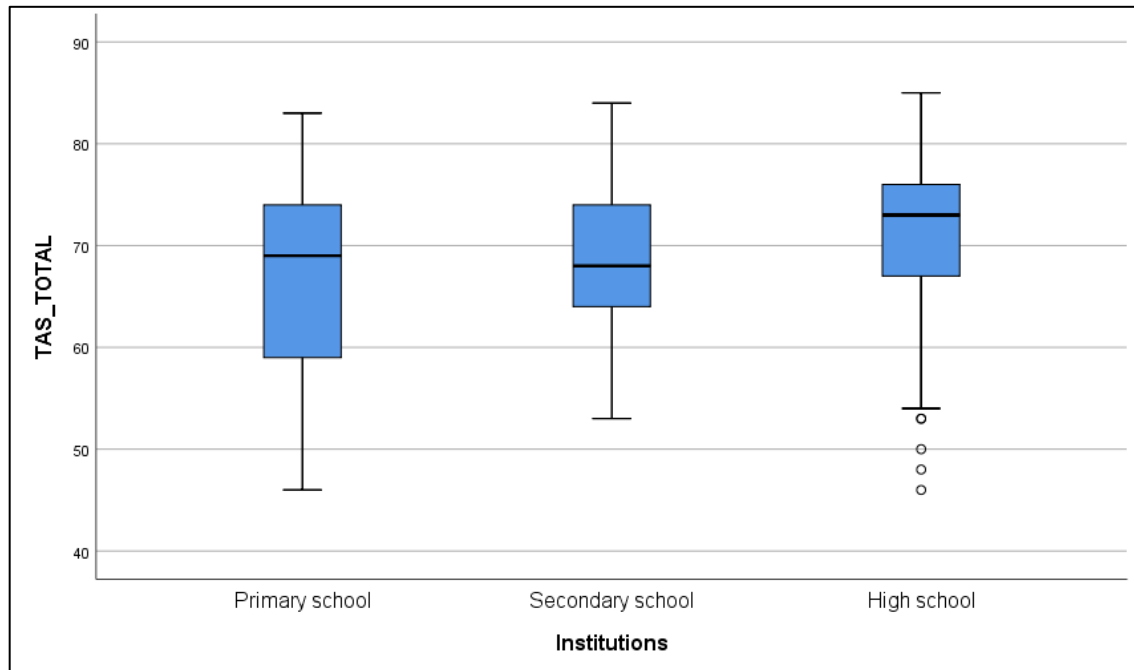


Figure 2 Teacher's Autonomy Levels and Differences between Institutions. As presented in the figure 2 teacher autonomy level of high school EFL teachers is higher than secondary and primary school teachers.

The second research question and its sub-question were related to the technological pedagogical content knowledge (TPACK) levels of teachers and differences between institutions as follows:

2. What are technological pedagogical content knowledge (TPACK) levels of the in - service EFL teachers in Turkish context?

2.1 Are there any differences between high schools, secondary schools, primary schools and other institutions in terms of TPACK levels?

Table 8: Teacher's Pedagogical Content Knowledge (TPACK) Levels and Differences Between Institutions

Institutions/TPACK	Mean	Std. Deviation	X ² value	p value ^a	Post Hoc ^b
Primary school	146.55	25.08	2.880	0.237	Not Applicable
Secondary school	154.66	15.32			
High school	152.97	13.93			
Total	152.60	16.46			

a. Kruskal Wallis Test, b. Mann Whitney U test.

The total mean regarding TPACK level of participants was 152.60±16.46. Although the highest TPACK score was found in secondary school teachers followed by high school teachers and primary school teachers, the differences between groups were statistically insignificant ($p>0.05$). Thus, Post Hoc and further sun dimension analysis were not performed.

Figure 3: TPACK Score Means and Differences Between Institution Groups

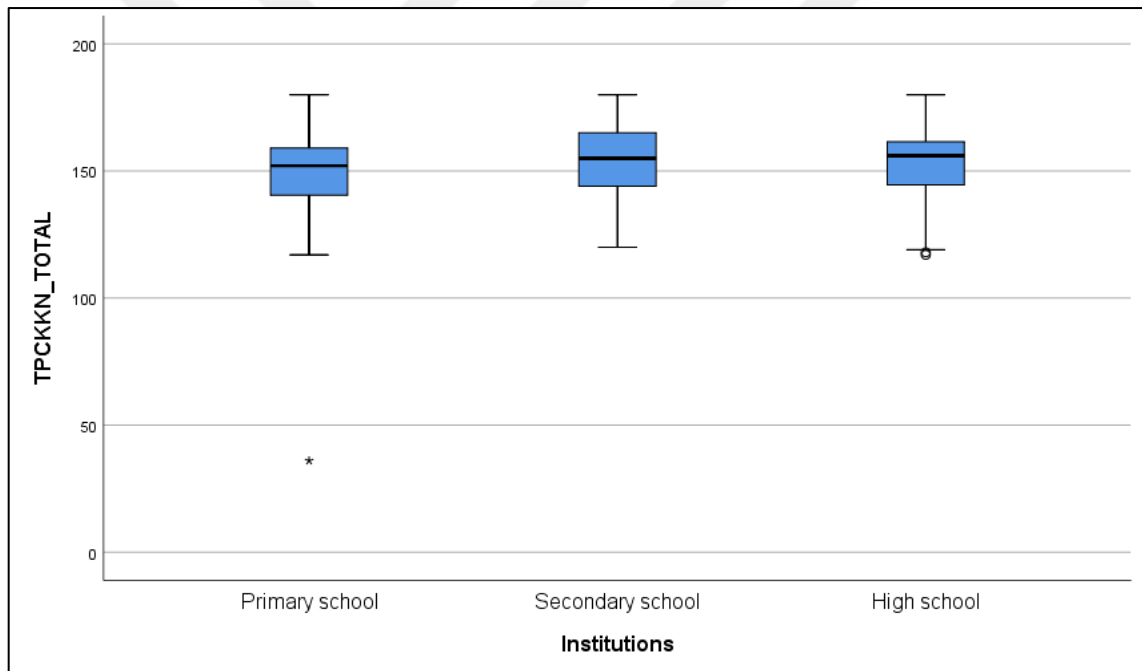


Figure 3 Teacher's Pedagogical Content Knowledge (TPACK) Levels and Differences between Certain Variables. In the figure 3, it was seen that the TPACK levels of secondary school teachers were slightly higher than the levels of high and primary school teachers.

The third research question was related with pedagogical content knowledge (TPACK) levels of teachers and differences between certain variables as follows:

3. Is there a significant difference in technological pedagogical content knowledge (TPACK) scores in terms of certain variables? (gender, teaching experience, department of graduation)

As indicated on the Table 8, TPACK levels of males, 0-10-year experienced teachers and “English Language and Teaching” graduate teachers were the highest ones. However, the difference analysis results showed that TPACK level differences between gender, experience and teaching grade were statistically insignificant ($p>0.05$).

Table 9: Teacher’s Pedagogical Content Knowledge (TPACK) Levels and Differences between Certain Variables

		TPACK Total		Test value	p value
		Mean	Standard Deviation		
Gender	Female	150.58	18.80	5203.500	0.058 ^a
	Male	154.57	13.60		
Experience	0-10	154.01	19.54	4.940	0.085 ^b
	11-20	152.52	13.94		
	21 and higher	149.42	13.74		
Department of Graduation	English Language and Teaching	153.89	17.37	5.866	0.118 ^b
	English language and literature	149.04	15.64		
	American Lang. and Literature	153.27	17.68		
	Other	153.60	10.11		

a. Mann Whitney U Test, b. Kruskal Wallis Test.

The fourth research question was related with autonomy levels of teachers and differences between certain variables as presented in the following sections:

4. Is there a significant difference in teacher autonomy scores in terms of certain variables? (Gender, experience, department of graduation)

As indicated on the table 9. TAS level was the highest at males, 21 and higher aged teachers and teachers having “other” grade. The difference analysis indicated that only gender differences were statistically significant ($p<0.05$). experience and teaching grade differences were statistically insignificant ($p>0.05$).

Table 10: Teacher’s Autonomy Levels and Differences Between Certain Variables

		TAS Total		Test value	p value
		Mean	Standard Deviation		
Gender	Female	67.39	8.97	4154.000	0.000 ^a
	Male	72.01	6.62		
Experience	0-10	68.44	7.83	5.724	0.057 ^b
	11-20	70.12	8.73		
	21 and higher	71.87	7.26		
Department of graduation	English Language and Teaching	69.22	7.71	6.067	0.108 ^b
	English language and literature	69.39	9.86		
	American Lang. and Literature	70.91	6.47		
	Other	73.45	6.16		

a. Mann Whitney U Test, b. Kruskal Wallis Test.

The fifth research question related to relationship between TAS and TPACK was as follows:

5. Is there any relationship between teacher autonomy levels and technological pedagogical content knowledge (TPACK) levels of the in-service EFL teachers in Turkish context?

As stated in the methodology chapter, normality tests' results did not show normal distribution for both TAS and EFL-TPACK Survey. Because of this, nonparametric tests were carried out to find out the correlation between in-service EFL teachers' TPACK levels and their teacher autonomy levels.

The regarding analysis is as follows:

Table 11. Spearman's Rho Correlation Analysis Results for the Relationship Between TAS and TPACK

	TAS	
	r	P
TPACK	0.452	0.000*
*p<0.01		

The Spearman's rho Correlation analysis for the relationship between TAS and TPACK showed that there was a significant and positive correlation ($r=0.452$; $p<0.01$).

The sixth research question related with Relationship between TAS and TPACK was as follows:

6. Is there significant relationship between subscales of teacher autonomy scale and TPACK questionnaire?

Table 12. Relationship Between TAS and TPACK Subscales

	TAS	
	r	p
TKN	0.129	0.056
PCKN	0.399**	0.000
CKN	0.363**	0.000
TCKN	0.308**	0.000
TPKN	0.421**	0.000
TPCKN	0.471**	0.000
TKN: Technology Knowledge; PCKN: Pedagogical Content Knowledge; CKN: Content Knowledge; TCKN: Technological Content Knowledge; TPKN: Technological Pedagogical Knowledge; TPCKN: Technological Pedagogical Content Knowledge.		

The Spearman's rho correlation analysis results showed that TAS was positively and significantly correlated with Pedagogical Content Knowledge ($r=0.399$; $p<0.01$), Content Knowledge ($r=0.363$; $p<0.01$), Technological Content Knowledge ($r=0.308$; $p<0.01$), Technological Pedagogical Knowledge ($r=0.421$; $p<0.01$) and Technological Pedagogical Content Knowledge ($r=0.471$; $p<0.01$).

3.3. Qualitative Findings

In order to answer the 7th research question, a semi-structured interview protocol was used. Seven open ended questions were asked to ten voluntary participants who had the highest scores in TPACK and TAS questionnaires. The teachers had the choice to speak in any language they felt comfortable, 8 of the teachers preferred to express themselves in Turkish and 2 of the teachers preferred to speak in English. Four of the teachers were high school teachers. Two of them were primary school teacher and the other four were secondary school teachers. 8 of the teachers graduated from ELT department, one teacher was from English Language and Literature and another was from American Language and Literature Department. Each interview took about 10 minutes and each interview was recorded and transcribed.

Table 13. The Demographic Features of Teachers and Their Scores in the Questionnaires

Participants	Department of Graduation	Teaching Grades	Scores
Teacher 1	ELT	Primary School	TPACK:170 TAS:78
Teacher 2	ELT	Primary School	TPACK:64 TAS:137
Teacher 3	ELT	Secondary School	TPACK:178 TAS:63
Teacher 4	American Language and Literature	High School	TPACK:159 TAS:76
Teacher 5	ELT	High School	TPACK:178 TAS:84
Teacher 6	English Language and Literature	High School	TPACK:166 TAS:66
Teacher 7	ELT	High School	TPACK:157 TAS:70
Teacher 8	ELT	Secondary School	TPACK:172 TAS:76
Teacher 9	ELT	Secondary School	TPACK 159 TAS:70
Teacher 10	ELT	Secondary School	TPACK:64 TAS:156

Research Question 7: How do in-service EFL teachers perceive the relationship between teacher autonomy and technological pedagogical content knowledge (TPACK)?

In this part, the results were obtained through thematic analysis in order to reveal teachers' perceptions on the correlation between teacher autonomy and TPACK. According to Clarke and Braun (2006) thematic analysis could be employed for different types of research questions which includes peoples' experiences and perceptions on certain situations in terms of particular contexts.

The semi-structured interviews were the main data of the qualitative part of the research. Since the seven interview questions were related with each other, certain themes were formed. The

themes which were directly or indirectly emphasized or often repeated by the participants were determined. The most common themes the participants mentioned were individual differences, exams, inter-culturalism of English, in-service training courses. These themes included certain determinant clues about the relationship between teacher autonomy and technological pedagogical content knowledge of in-service ELT teachers. In accordance with the questions, participants expressed their reasons for being autonomous and integrating technology into their teaching practices. These themes were supposed to form the basic correlations between teacher autonomy and TPACK. Therefore, in this part, the interviews were analyzed by focusing on the key words, word patterns which were written in quotations in each dialogue and certain expressions which were associating certain themes with TPACK and teacher autonomy were put in quotes. The data was analyzed and results showed that teachers considered teacher autonomy and technological pedagogical content knowledge related under four main themes.

a. Individual Differences in ELT

First of all, all the teachers in the interviews supported the view that they needed to be autonomous as they had to consider individual differences of their students. They thought that they could not behave in the same way in all classes in accordance with the curriculum. Some classes had low levels in English, some had high level, on the other the same classes' students had different needs, interest, and abilities. Therefore, teachers thought that in order to meet different needs and answer different interest and abilities, they needed to be autonomous and they could not be strict to curriculum. The interviewed teachers thought that curriculum did not answer individual differences of their students sufficiently. Therefore, they needed to take their own decisions and make reductions or additions to the curriculum in accordance with individual differences. At this point, teachers stated that technology played crucial role in answering individual differences through a wide range of applications, web 2 tools and other instruments which the current curriculum did not include.

As a response to the interview question "How do you make your decisions in your teaching? How do you choose your materials? Do you use only course books as the only materials for learners?" The teachers stated that:

Teacher 10:

I employ student-centered methods, I must choose my materials in accordance with my student's needs. I have to take student profiles into consideration. I don't use only course books but sometimes I follows the curriculum in them. I use smart board in each lesson. I want to support my students' abilities in language teaching with a wide range of visual applications thanks to smart board.

Teacher 1:

I consider students' interests towards to English. I try to draw their attentions to different activities, so at this point, I need to be autonomous. I must skip some parts in course book and I try to develop their language skills with different books and worksheets. In order to answer different needs of all students, I try to put forward multiple materials from which each student can benefit. Sometimes, I supports my teaching practices with videos and dialogues from smart board. I think, being free make students take pleasure in learning English.

Teacher 9:

In primary schools, smart board applications constitute %90 of our teaching. Without smart board, it is impossible for us to teach a foreign language to the students who has just started to reading and writing in their own language. Videos or language applications make our teaching more meaningful for our students. There is no pressure on me to use technology in my teaching practices, this is my own choice and my own decision to integrate it into my teaching so as to keep up with the levels of my kids. Therefore, my teaching will be more fertile for my children. My autonomy is completely responsible for choices I do for my students.

Teacher 7:

Sometimes, I think that curriculum is not sufficient in terms of students' profiles and levels. Sometimes, I thinks there several things or few things that must be taught in accordance with students' levels. Therefore, being autonomous is an advantage for a teacher in terms of adding or reducing necessary parts in teaching practices.

In the answers, it was seen that the teachers felt a need to be autonomous to teach English to the students who have different profiles in terms of their needs, interests, levels, in the same classes. Therefore, in order to teach English effectively technology plays crucial role to appeal to different profiles of students. All of the ten teachers interviewed had similar opinions on teacher autonomy and TPACK.

Moreover, the key words and word patterns in quotations emphasized the reasons uttered by the teachers to behave autonomously in their teaching practices. While being autonomous, they expressed how they made use of technology so as to increase student participation in classroom activities.

Especially, according to the teacher 9 in primary schools the impact of TPACK was undeniable so as to draw kids' attention to the language which is completely foreign to them. Teacher 9 also mentioned that in primary school, kids had so low attention that without technology they could not make students focus on the topics. Therefore, being autonomous helped them to integrate technology in different classroom activities by taking students' levels into consideration. In the answer, the primary school teacher 9 supported the view that studying with kids who had low attention made TPACK necessary in their teaching practices. But, she also added that only TPACK

was not enough to have effective teaching. Her autonomy always had big part in making use of TPACK in order to provide productive teaching processes.

The Influence of High School Exams and University Exams

Another point was that the teachers working in high schools and secondary schools had different opinions in terms of autonomy. While the teachers in secondary school had to follow curriculum so as to help their students to pass LGS exam, the teachers in high schools could be more autonomous so as to help students to master in four skills of English. Therefore, high school teachers tended to take their own decisions considering students' needs and interests but LGS exam hindered teacher autonomy in secondary schools. Although the teachers in secondary schools wanted to integrate technology into their teaching processes, because of the limited time for the preparation for the LGS exam, they could not behave autonomously and at some points they had to be strict to curriculum.

As a response to the interview question: "What do you think about this concept of teacher autonomy? How do you make your decisions in your teaching?" The teachers stated that:

Teacher 3

I am not free for eight grades. LGS exam plays an important role. As English teachers, we have very limited time. Our time is so limited that we cannot teach what we want or what they need. I have to teach necessary vocabulary and basic skills to solve those multiple-choice questions. LGS takes most of the time. And also, our administration wants us to do in this way.

Teacher 4

In high school, especially for language classes, we generally focus on the university exam (YDT). Our aim is to pass YDT exam which completely consists of reading passages, advanced vocabulary and grammar. So, we do not have any speaking or listening activities. This exam is very important for my students and me. So, I need to develop my student's foreign language deeply and I cannot depend on only any course book or something else. So, I can follow my own way and this provides me the opportunity to use technology which it will be fruitful for my students whenever they need.

Teacher 7

I can't say that I definitely follow the curriculum, so I think that I am an eighth-grade teacher, for example, an eighth grader comes across test questions in the exam, so I have to teach them the topics in the curriculum. In this sense, I think that I am restricted and I am not free enough."

In these answers, it was seen that the high-stake exams such as the tests (LGS and YDT) directed teachers to behave freely or not. While the secondary school teachers had to follow course

book to help students to pass LGS exam, the high school teachers needed to be autonomous to improve their students' language in more advanced way. It was clear that LGS test had an important place in terms of teaching practices in teaching environments for both students and teachers. Teacher 3 emphasized that he had to present everything in course book to his students in his teaching activities without changing the determined content or reducing activities and texts. This impact of LGS exam was named wash back effect. While this effect increased dependency on curriculum and course books, it reduced teacher autonomy in their teaching practices. This was a negative wash back effect in terms of educational processes for students. In expressions, it was clearly seen that the secondary school teacher had no choice rather than being strict to curriculum and course books. On the other hand, by being free the high school teacher could employ technological tools whenever they were necessary for students. Moreover, the quantitative part of this study also supported their expressions. According to the results of teacher autonomy in terms of teaching grade, high school teachers were more autonomous than secondary school teachers.

In-service Training Courses

In the interview, some teachers believed the importance of in-service training programmers to develop their technological pedagogical content knowledge. They thought that in such seminars their awareness in terms of technological applications and web 2 tools increased and also, they thought technological pedagogical content knowledge provided them with spaces to be autonomous in different sessions of teaching practices. They also thought that being autonomous encouraged them to be in search of different training programmers which developed those teachers from different points. Therefore, they supported the view that teacher autonomy and technological pedagogical content knowledge might contribute each other positively.

As a response to the interview question: "Considering teacher autonomy and TPACK concepts, how do you see yourself?" The teachers stated that:

Teacher 10

I think, all ELT teachers should have training so as to make the target language more feasible for students in their daily lives. And also, we should have seminars on how to integrate technology into our teaching practices efficiently. Several teachers do not know anything about web 2 tools and different technological language applications. Several ELT teachers employ traditional methods in their lessons, and we also had the same traditional education when we were students. Yes, we use technology but how we can make use of it for our teaching practices. Therefore, we need to develop ourselves in terms of TPACK. At that point, teacher autonomy helps us to make reflections on our teaching so we determine our weak points and find best ways to develop ourselves in terms of both TPACK and other points.

Teacher 1

As language teachers, being autonomous provide us spaces to develop ourselves. At present, in-service trainings program named English Together for English teachers are held in Turkey so as to inform them about a wide range of different technological applications and web 2 tools. We are participating in these seminars and the advantages of these seminars are quite important for us as they provide us technological pedagogical content knowledge. Therefore, we can employ the technological applications we learnt in those seminars in our teaching practices. These seminars help us to integrate technology into our classroom procedures efficiently.

Teacher 2

I also try to improve myself. For example, there are web 2 tools in in-service training, which are currently used in training. In other words, there are tools that need to be known and something that we need to learn constantly. These attract the attention of children more.”

Teacher 7

For example, in Ankara these days, a project called “English together” is being carried out with our colleagues. In this seminar, we, as teachers, come together once a month or once every 2 months, we have an instructor, and we do some exercises with him. In this sense, for example, there are some technological applications that I learned there. Here's like Pad Let, we can give students advanced applications that can convey their ideas, such as using the smart board by making use of these, or for homework, for example, I send a question to them and they write answers to those questions for me. I also need to have technological knowledge to be able to make use of such applications.

In these excerpts, it was clearly seen that the teachers thought that technology and autonomy were interrelated. Being autonomous helped them to be free to develop themselves in term of technology and also TPACK supported their autonomy by integrating technology to their teaching practices to manage effective classroom processes. Moreover, the word patterns in quotations revealed the advantages of in-service training courses for the teachers in terms of TPACK and teacher autonomy. They emphasized that being autonomous encouraged them to participate in such training courses and such training courses developed their TPACK efficiently. Therefore, their expressions showed the relation between teacher autonomy and TPACK.

The Interculturality of English

One more issue the teachers stated that teaching English as an intercultural language made technology integration necessary as technology brings a wide range of different real-life situations into classroom environment through videos, films, dialogues and several applications. The students who had never gone out of the borders of the villages or towns could have difficulties learning a foreign language with its foreign cultures. Therefore, thanks to technology, teachers thought that they could make students walk through the streets where English was spoken as native language and students find themselves in different speaking and listening situations. The teachers also stated

that all those activities could develop students' speaking and pronunciation skills in a better way and hinder fossilization during teaching practices. Therefore, the teachers supported that in order to make use of technological pedagogical content knowledge in classroom environment, they felt need to be autonomous to integrate different English language applications or web 2 tools into our teaching practices in accordance with students' needs and interests.

As a response to the interview question: "Do you think is there any relationship between teacher autonomy and technological pedagogical content knowledge? Considering teacher autonomy and TPACK concepts, how do you see yourself?" The teachers stated that:

Teacher 6

We are not native speakers and English is intercultural language. There are several different spellings or pronunciation of the same words in different parts of the world. We do not always pronounce the words correctly. In order to prevent fossilization, we certainly need technology to make students come together with native speakers. So, for this reason we need to be autonomous to make use of technology freely to meet our students' shortcomings.

Teacher 5

English is international language, it is used all over the world so we should introduce our students to the world of English and its culture. Language and culture are indispensable parts. We cannot teach a language without its culture. At this point, we cannot depend on our course books or the curriculum, they do not provide us enough knowledge, they do not draw students' attention to learn a foreign language. So, I need to determine my own way in my lessons to integrate technological applications in accordance with the topics, goals and objectives of my teaching practices."

Teacher 7

In my opinion, technology is indispensable in language teaching. As an English teacher, I don't speak English as a mother tongue, of course. I need to use technology to be able to do these visually and audibly. I want students to improve their pronunciation. This can be achieved through the internet, there are sites, applications and so on. We use technology together with students for all of these to improve both vocabulary and pronunciation.

Teacher 2

We can listen to foreign conversations related to English in daily conversations in foreign countries, we need to listen to listening texts from the smart board or from any other place. We have to integrate it somehow.

In these statements, it was seen that English could not be separated from technology. All of the ten teachers implied the view that they were not native speakers but students needed to hear native speakers. Also, students needed to see the cultures where English was spoken. Therefore,

TPACK constituted the most important part of their teaching practices. Moreover, in order to integrate technology to their teaching processes, they felt to behave autonomously.

Considering the answers of the participants throughout the semi-structured interview, it can be seen that the findings of qualitative part are consistent with the findings of quantitative part. Both reveal that there is a relationship between teacher autonomy and TPACK in that the teachers who tend to behave autonomously have the highest scores in both questionnaires. Also, the interviewed teachers who think TPACK is a necessity to learn English efficiently support autonomy to make use of TPACK in teaching procedures. All in all, the current study suggests that these two concepts may have correlation as shown in the findings of the study.



CHAPTER FOUR

4. DISCUSSIONS

4.1. Presentation

In this section, the results of this research are discussed in detail by giving references from different studies in related literature. Both the quantitative and qualitative findings are discussed in terms of their consistency in supporting each other. This chapter also provides comparisons for each question investigated in this study with the findings of earlier researches.

4.2. Discussion of the Results

This research aimed to analyze the correlation between teacher autonomy and technological pedagogical content knowledge (TPACK) of the in-service teachers in Turkish context. The study aimed to reveal the relationship between the sub-scales of both TPACK and TAS. Also, the study aimed to indicate whether there was a difference in TPACK and TAS scores of the participants from the point of experience, teaching grade, gender and department of graduation. In addition, the qualitative part of this study which included semi-structured interviews with ten volunteer teachers supported the findings of the quantitative part from different points. Therefore, the study came up with the results which interested EFL teachers and ELT practitioners to a great extent in terms of teacher autonomy and TPACK. According to the results that were analyzed in this study, a statistically significant correlation between teacher autonomy and technological pedagogical content knowledge of the in-service teachers was found in Turkish context. The study also revealed the strong relationship between sub-scales of both questionnaires. Moreover, both teacher autonomy scores and TPACK scores differed according to gender and teaching experience. In the following parts, each result was discussed in detail.

4.2.1. Results Related to the Correlation Between Teacher Autonomy and Technological Pedagogical Content Knowledge

The correlational analysis revealed a significant relationship between teacher autonomy and technological pedagogical content knowledge of the in-service teachers in Turkish context. This was a significant positive correlation ($r = .45$), which means ELT teachers who were more autonomous in their language teaching practices tended to have higher technological pedagogical

content knowledge in their teaching practices. In other words, being autonomous helped ELT teachers to develop their technological pedagogical content knowledge and vice versa. In the qualitative part of this study, the participants also supported the same result with their statements. They emphasized that being autonomous provided them spaces to integrate technology into their teaching practices efficiently. Moreover, they believed that technological pedagogical content knowledge helped them to take their own decisions related to teaching procedures in order to meet different needs of students.

According to Ramos (2006) autonomous teachers possess important characteristics such as continuous learning desire, promoting learner autonomy and negotiating qualities in changing situations. Therefore, teacher autonomy encourages teachers to develop themselves in terms of TPACK and other areas which contribute their professions. Furthermore, Sehrawat (2014) emphasizes that autonomous teachers have desire to embrace career development, and independent teachers are the ones who always try to catch opportunities to improve their careers. Therefore, it is seen that teacher autonomy has strong relationship with teacher development in terms of Technological Pedagogical Content Knowledge. For this reason, in order to have high level of Technological Pedagogical Content Knowledge (TPACK) the impact of teacher autonomy is undeniable.

4.2.2. Results Related to the Correlations between Subscales of Technological Pedagogical Content Knowledge (TPACK) and Subscales of Teacher Autonomy

All of the subscales of TPACK in this study were significantly and positively correlated with teacher autonomy. Spearman's rho correlation analysis results showed that TAS is positively and significantly correlated with Pedagogical Content Knowledge ($r=0.399$; $p<0.01$), Content Knowledge ($r=0.363$; $p<0.01$), Technological Content Knowledge ($r=0.308$; $p<0.01$), Technological Pedagogical Knowledge ($r=0.421$; $p<0.01$) and Technological Pedagogical Content Knowledge ($r=0.471$; $p<0.01$).

According to Mishra and Koehler (2006) developing educational technologies may cause difficulties to teachers who are struggling to employ for more technology in their teaching sessions. Adapting and adjusting new technologies requires independence in classroom procedures, therefore teachers need space to employ for educational technologies. Therefore, it can be said that teachers need to be free to employ for more technology in their teaching sessions. Autonomy provides teachers opportunities to make use of their technological pedagogical content knowledge in an efficient way in their teaching practices.

Moreover, in a study carried out by Moomaw and Pearson (2005) it is highlighted that in order to develop teacher autonomy it is essential to see teaching as profession and teacher should

be given opportunities to prescribe the most suitable treatment for their students as doctors or lawyers do for their patient or clients. Therefore, the diverse needs, profiles and interests of students urge teachers to behave independently in each step of their teaching procedures. In each step of English teaching, teachers need to make use of technological pedagogical content knowledge (TPACK) so as to be able to answer individual differences of all the students in the same classes. At this point, teachers need independence and autonomy to create opportunities so as to employ for TPACK in the situations where they can practice suitable treatment for their students as doctors or lawyers do for their patient or clients.

4.2.3. Results of Technological Pedagogical Content Knowledge (TPACK) from the point of Gender Teaching Experience, Teaching Grade, Department of Graduation

In this study, significant difference between TPACK and gender was found. TPACK levels of male teachers, 0-10 years experienced were the highest. The findings of this study showed parallelism with the relevant study by Delen (2016) stated that male teachers had higher levels for TPACK sub-factor. Kozikoğlu and Babacan (2019) found that male teachers had higher levels of TPACK, too. Tiryaki (2018) also revealed in her study that male teachers had higher levels of technology knowledge than female teachers. This result might indicate that male teachers had more tendency to using technology in their teaching practices and they were more competent in technological knowledge compared to female teachers.

As for the teaching grade, in this study more than half of the participant EFL teachers were working in high schools. Therefore, the distribution of the participants might have affected the results as well. On the other hand, the highest TPACK score was found in secondary school teachers followed by high school teachers and primary school teachers, the differences between groups were statistically insignificant ($p>0.05$). This might be because of the fact that the curriculum of secondary school English lessons made teachers use technology more while teaching English compared to the other grades.

Furthermore, from the point of other demographic variables such as years of experience and department of graduation, there was no significant difference in terms of TPACK scores. Also, the finding related to years of experience in this study was supported by the findings of the study conducted by Delen (2016) in his study that there was no statistically significant difference between teachers' TPACK levels and teaching experience. The researcher also stated that more experienced teachers had lower levels of TPACK. Kozikoğlu and Babacan (2019) found no relationship in terms of teaching experience. Saraç (2015) found a negative relationship between TPACK and teaching experience. This result may indicate that teachers who had less years of teaching experience used technology more and they tended to follow technological developments

more than the teachers who had more years of teaching experience. Teker (2019) revealed in her study that teachers with 6-10 years of teaching experience had higher levels of TK than teachers with 26 and more years of teaching experience. As stated by the researcher that teachers who had 11-15 years of teaching experience had higher levels of TCK than teachers who had 21-25 years of teaching experience and for TPACK, teachers with 11-15 years of teaching experience had higher levels than 21-25 years of teaching experience. Tiryaki (2018) found that teachers with 1-10 years of teaching experience had higher levels of TPACK than other groups. Department of graduation variable and its relation to the teachers' TPACK levels was not examined in the previous studies. This study was the first to investigate this variable in this context. 0-10-year experienced teachers and "English Language and Teaching" graduate teachers had the highest TPACK scores. This might be because of the fact that pre-service teachers of English Language Teaching department are more exposed to the language applications and web 2 tools to use in their future classes during their education processes. However, future studies can be helpful to reach more comprehensive results.

4.2.4. Results of Teacher Autonomy from the Point of Department of Graduation, Teaching Experience, Teaching Grade and Gender

According to the results of teacher autonomy scale, it was found that male teachers were more autonomous than female participants. However, there are several studies with different findings in related literature. While the study conducted by Pearson and Hall (1993) indicated that there was no difference between genders in terms of teacher autonomy, another study conducted by Vasile (2013) found that male teachers were more autonomous than female counterparts.

The findings related to years of experience indicated that no significant difference was found from the point of years of experience. Therefore, this result shows that being an autonomous teacher does not have any connection with the years spent in teaching. Moreover, the study conducted by Pearson and Hall (1993) supported this finding by revealing that teacher autonomy did not correlate with years of experience. However, another study carried out by Evelein et al. (2008) found a different result which indicated that experienced teachers were considerably more autonomous than student teachers. This means teaching experience may have an impact on behaving autonomously in classroom practices.

From the point of teaching grades, the results of this study revealed significant differences. High school teachers were more autonomous than secondary and primary school teachers. The qualitative part of this study also supported this result as the high school teachers stated that they took decisions on their own according to needs and interests of students however secondary school teachers said that they were not free and they had to follow curriculum because of the LGS exam. The study carried out by Pearson and Hall (1993) supported this result between teacher autonomy

and teaching grades. They found significant relationship between teacher autonomy and teaching grades at which teachers were working.

According to the results related to the department of graduation, there was no significant difference in terms of teacher autonomy scores. Therefore, it can be said that graduation from different department may not have an impact on teacher autonomy during teaching processes.



CONCLUSIONS AND RECOMMENDATIONS

The primary aim of this master's thesis was to investigate the correlation between teacher autonomy and technological pedagogical content knowledge of in-service EFL teachers in Turkish context. The research also aimed to present whether there were any relationships between teacher autonomy and some variables such as their age, gender, teaching grades, department of graduation, and teaching experience in years. Based on the research framework and problem statement, seven research questions were specifically determined to investigate in this study. The research aims to study the relationship between TAS and TPACK. The necessary permissions and approvals were obtained in each setting. Participants were volunteer in-service English teachers with different academic background teaching at different levels across Turkey. This study included a total of 221 respondents, 109 females (49,3%) and 112 males (50,7%). The study participants took part in filling out the questionnaire which was sent to them through online channels (WhatsApp, email, telegram, Facebook and Instagram). In this study, quantitative and qualitative data collection tools were used to analyze the data related to research questions. Therefore, different data collection tools were used in the study. The data was collected through three main tools, which consisted of TAS, TPACK questionnaires and semi-structured interviews. After taking expert opinions and piloting process, the participants were informed of the significance of the study, voluntariness and credibility measures during the collection process. After TAS and TPACK questionnaires were applied, the semi-structured interviews were conducted with 10 volunteer participants who had the highest TPACK and TAS scores of all. In order to obtain data regarding certain variables in the research scope, the varied demographic features of the participants were collected. Normality tests (Kolmogorov-Smirnov and Shapiro-Wilk) were applied both for TAS and EFL TPACK Survey with their sub-factors. Moreover, Skewness and Kurtosis tests were applied. Normality tests' results did not show normal distribution for both TAS and TPACK Survey. For this reason, nonparametric tests were carried out to find out the relationships between the variables. Mann-Whitney U test and Kruskal-Wallis test were employed in the analysis of EFL-TPACK Scale. In order to investigate the relationship between teacher autonomy and their TPACK levels Spearman Correlation test was applied.

As for the qualitative data analysis part, the interview data was analyzed via thematic analysis. All the interviews were recorded and transcribed. One of the language teachers interviewed had a master's degree in Applied Linguistics. Others had Bachelor's degrees. The results showed that the teachers considered their autonomy and technological pedagogical content

knowledge related under four main themes which were individual differences, in-service training courses, the impact of exams and the interculturality of English as language.

In general, teaching profession consists of planning, practicing and assessing instructional activities. During these processes' teachers need independence to take decisions on determining materials and organizing teaching activities in accordance with the needs and interests of their students. At this point, teacher autonomy plays crucial role so as to manage teaching processes for the students who have different learning profiles. According to Benson (2012) EFL teachers tend to develop autonomy more compared to other teachers from different branches because they have to present language learning activities in classes where students with different purposes, needs, levels, interests are attending. Therefore, such a variety in student profiles urges teachers to behave autonomously. In order to support language learning at different levels EFL teachers need to provide opportunities which will meet individual differences of students and strengthen different language learning skills of learners. However, several factors such as being aware of the needs of learners, taking responsibility for their choices, thinking critically in evaluating themselves have impact on the degree of being autonomous teacher (Cotterall 1999). Therefore, it can be said that developing teacher autonomy has significant correlations with different factors.

In the 21st century, rapid technological advancement in education has increased the need for teachers who can integrate technology into teaching practices efficiently. In order to answer this need TPACK formed by Mishra and Kohler (2009) appeared for integrating technology successfully into teaching activities. In educational processes, the framework of TPACK has had significant part as it combines technology, pedagogy, content and explains the interaction between these three types of important knowledge. According to Misra and Kohler (2009), TPACK provides teachers with a basis on how to teach with technology efficiently in order to address a wide range of student profiles. However, teachers need spaces and freedom to integrate technology into teaching practices efficiently, in this research, the purpose was to examine the correlation between in-service EFL teachers' TPACK and their teacher autonomy levels in Turkish context. Besides, the demographic features including gender, age, years of teaching experience, department of graduation and teaching grades of in-service EFL teachers were analyzed in terms of TPACK and teacher autonomy levels.

Furthermore, the analysis mainly revealed that there was a significant and positive correlation ($r=0.452$; $p<0.01$) between teacher autonomy and technological pedagogical content knowledge levels of in-service English teachers in Turkish context. Moreover, the qualitative part of the study supported the same result. All the teachers in the semi-structured interviews emphasized the crucial role of technology to teach a foreign language and they also stated that they needed to be autonomous in order to integrate technology into their teaching practices efficiently. The inferences from the interviews implied that in-service ELT teachers were aware of the fact that having

technological pedagogical content knowledge helped them to take their own teaching responsibility and make decisions in accordance with students' needs and interests. A current related study conducted by Kuloğlu (2023), supported the results of this study in terms of the correlation between teacher autonomy and TPACK. Although the study was not carried out in EFL context, both TPACK and teacher autonomy levels of participants were high in the study too. The study suggested that in teaching practices, teacher autonomy should be supported to increase TPACK levels of teachers. As an EFL teacher I experience benefits of being autonomous in order to answer the needs of my students and improve their language skills with the help of a wide range of web 2 tools and technological applications which are not presented in curriculums or course books in my teaching practices.

The research results also concluded that high school teachers were more autonomous than secondary and primary school teachers. At this point, the qualitative part of this study supported this result too. While secondary school teachers in the interviews claimed that they were not free and they had to be strict to curriculum because of the LGS exam in which all 8th grade students had to participate, high school teachers said that they could take their own decisions and implement their own teaching practices in accordance with students' interests and needs. The study conducted by Ertay (2022), suggested that teacher education system need to emphasize the importance of autonomy while designing curriculums. Curriculums should provide spaces for teachers to take charge of their own teaching practices. From my past experiences I can say that when I was a teacher at a secondary school I tried to be autonomous by taking charge of my own classroom procedures with different sources and smart board applications to develop my students' language skills deeply however at that year my students got low marks in LGS exam as I did not teach necessary vocabulary and grammar in their coursebooks for which my students were responsible. Later, I tried to be strict to course book, therefore my students got highest points in LGS exam. Now I am at high school, I feel free to choose my own way and I am autonomous by taking decisions in accordance with my students' profiles in order to develop their language skills and provide long lasting teaching and learning sessions. Therefore, I believe that each teacher feels the effect of teaching grades on their autonomy and TPACK in their teaching practices. On the other hand, according to TAS results, teaching experience and department of graduation differences were statistically insignificant ($p>0.05$). Having teaching experience over ten years, I can say that my autonomy does not increase or decrease in years. However, there are several EFL teachers who may develop their autonomy or their TPACK through years.

As for the result regarding TPACK level of males, 0-10-year experienced teachers and "English Language and Teaching" graduated teachers were the highest one. The qualitative part of the study supported this result in that two of the participants in the interviews were male and they graduated from ELT Department. They both had the highest TPACK scores among ten participants. Throughout the interviews, they touched the importance of technology in every step of

their teaching practices. However, the quantitative results of difference analysis showed that TPACK level differences between gender, experience and teaching grade were statistically insignificant ($p>0.05$). Moreover, in the related study carried out by Pehlevan (2023), no significant differences in TPACK scores between female and male teachers were found. At that point, I can say that different factors can affect EFL teachers' TPACK levels. Participants' background, their experience with technology or the courses they attended in may affect the results. However, I believe that having high level of autonomy encourages teachers to be more willing to make use of different web 2 tools and technological applications.

The results regarding the sub-scales of both TAS and TPACK questionnaires indicated that they were positively and significantly correlated. In the semi-structured interviews, it was seen that all the ten participants agreed on the fact that being autonomous helped them in every step of their teaching practices to make use of technological pedagogical content knowledge in different stages of their teaching English as a foreign language. Also, they emphasized that technological pedagogical content knowledge helped them to catch the opportunities to make decisions on different classroom procedures so as to answer different needs and interests of students. I believe that teaching a foreign language requires to be aware of opportunities for the advantage of developing students' language abilities. In a technology era, TPACK opens us as language teachers the gates of efficient and permanent language teaching practices. However, at that point I need to be autonomous so as to develop my TPACK level and employ a wide range of sources and technological applications which both answer my student' needs and develop their language skills efficiently.

Recommendations

From the results of this research, some insights were drawn for future studies. Firstly, the current study was conducted in a period when Turkey had a devastating earthquake, therefore the participation in questionnaires was lower than the expected rate. In another study a larger sample can be achieved to represent generalizability in more reliable way. Secondly, TPACK and teacher autonomy can be analyzed in terms of other parameters such as class sizes, school environments or attitudes of head masters so as to reach a better understanding of teachers' teaching practices in actual teaching environments. Thirdly, this study was carried out with in-service ELT teachers, however another study may be conducted with instructors working for universities and teacher educators. And lastly, employing different research methods to be able to catch different perspectives of EFL teachers may bring about new changes in education system in terms of both TPACK and teacher autonomy.

Implications

In this study, it was found that in general EFL teachers were not aware of TPACK as TPACK was a new term and the integration of technology into education system has gained importance for especially the last decade in Turkish context. For this reason, while new EFL teachers were more willing to integrate new innovations in technology into their teaching practices, the experienced teachers appeared not to care about the importance of technological applications in language education as their knowledge on TPACK was found low and they were not aware of the wide range of technological applications which were useful in terms of four skills of language teaching. It is implied that they need to learn about such technological innovations and language applications through in-service trainings. During semi-structured interviews, almost all ten teachers emphasized that they needed to participate in in-service trainings to improve their knowledge on TPACK. In the study conducted by Özdemir (2022), it was observed that although teachers had high level of content knowledge, pedagogical knowledge, pedagogical content knowledge, they showed considerably low self-esteem when technological knowledge was mentioned. Another study conducted by BAL (2021), revealed that in interviews English teachers thought how to use web 2.00 tools and other technological applications in their teaching practices. Therefore, The Ministry of Education can organize projects, seminars on TPACK and create more opportunities for EFL teachers to develop themselves.

Moreover, another point which can be suggested through this study is that the programmers of different teaching grades should take TPACK concept into consideration. The curriculums of different teaching grades should include different technological language applications which can be utilized in teaching English at different levels. Especially, in foreign language education, there is a wide range of language teaching applications, therefore the curriculum, the materials or resources in use can be planned in accordance with these language learning applications. For example, while studying a vocabulary section of a unit, the resources can lead the practitioners so that their students can make use of technological language applications such as Word Wall or Kahoot. Only presenting seminars on TPACK and such technological applications may not accomplish the determined goals of education, therefore, such applications should be integrated into teaching processes in accordance with students' needs and interests. At this point, being autonomous encourages EFL teachers to develop themselves in terms of both TPACK and other technological innovations which provide opportunities to students to increase their success in language learning processes.

One more suggestion is that it seems that high school exams hinder both the promotion of teacher autonomy and technology integration into class activities. Especially, at 8th grade both teachers and students feel themselves in a race. Therefore, their sole struggle is to get high points in

high school entrance exam. In terms of English, in order to get high point both students and teachers have to follow the course book, in accordance with the content of this book, all English questions in LGS are determined. In order to cover all the necessary vocabulary and grammar structures in the book, EFL teachers may not act autonomously. They cannot take their own decisions on language teaching procedures because of the heavy reliance on the coursebook. Therefore, they do not appear to have the freedom to integrate technology into their language teaching practices. In order to increase both the level of teacher autonomy and awareness on TPACK, the curriculum of different teaching grades should have flexible teaching units in which teachers feel freedom and have the opportunity to integrate technology into their teaching practices autonomously.

The last suggestion that can be drawn from this study is that head of schools at different levels and intuitions should support teacher autonomy and encourage them to take responsibility for their teaching practices. Especially, in language teaching, some headmasters do not allow EFL teachers to use different sources in English language teaching. They want EFL teachers to use only the course book given by the Ministry of Education and never encourage their students buy other sources. However, only using course books may not provide effective language teaching processes for teachers and students. Furthermore, the current course books may not include new technological language applications from which students can benefit to develop their English productively. At this point, rather than preventing teachers from making decisions regarding their language teaching materials, headmasters should lead teachers to bring new innovations and technologies into teaching environments. Therefore, they should liberate teachers to use their autonomy and provide teachers more spaces where teachers decide to take their own teaching decisions and act their role in their teaching in accordance with individual differences of their students. It is a fact that as the same drug is not cure for different diseases, the same course book may not meet diverse needs and interests of students with different profiles.

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APPENDIX

APPENDIX 1

Dear participant,

The purpose of this study is to analyze the correlation between teacher autonomy and the technological pedagogical content knowledge of the in-service Turkish EFL teachers in Turkish context. The participation is completely based on your willingness. You have a right to withdraw from this study at any time. The participation lasts approximately 10 minutes. There is no correct or wrong answer and your answers will be kept confidential, and the data will be analyzed by the researcher. Please choose the best options that best reflect your opinions.

Thank you very much for your participation.

Nurtaç KARAOSMANOĞLU

Applied Linguistics Graduate Student

Karadeniz Technical University

APPENDIX 2

TEACHER AUTONOMY SCALE							
Please indicate how often the following behaviors are displayed by putting a cross (X) on the appropriate option on the scale.						1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
At my school,							
1	I decide for myself how much time I will spend for activities in the lessons.	☐	☐	☐	☐	☐	1
2	I rearrange the curriculum (in terms of subject, content, achievement, etc.) according to the needs of the students.	☐	☐	☐	☐	☐	2
3	I choose the teaching methods and techniques that I will use in the lessons.	☐	☐	☐	☐	☐	3
4	I decide on my own assessment and evaluation methods that I will use in my lessons.	☐	☐	☐	☐	☐	4
5	While planning the lesson, I choose the subject according to the student's needs.	☐	☐	☐	☐	☐	5
6	I make additions to the curriculum according to student needs.	☐	☐	☐	☐	☐	6
7	I make reductions in the curriculum according to student needs.	☐	☐	☐	☐	☐	7
8	I use different resources in addition to the textbook.	☐	☐	☐	☐	☐	8
9	I include current topics that are not included in the curriculum in my lessons.	☐	☐	☐	☐	☐	9
10	I assign students homework on the subjects I want.	☐	☐	☐	☐	☐	10
11	I decide for myself how to reward students.	☐	☐	☐	☐	☐	11
12	I determine the appropriate time for the in-service trainings I will attend.	☐	☐	☐	☐	☐	12
13	I decide on my own which topics are suitable for me in the in-service trainings I will attend.	☐	☐	☐	☐	☐	13
14	I attend the scientific meetings I want related to my field.	☐	☐	☐	☐	☐	14
15	I freely express my thoughts in the school meetings.	☐	☐	☐	☐	☐	15
16	The school administration does not interfere with my communication with my colleagues.	☐	☐	☐	☐	☐	16
17	The school administration does not interfere with my communication with the parents.	☐	☐	☐	☐	☐	17

The dimensions of the scale:

- Teaching autonomy: 1,3,4,9,10,11
- Curriculum autonomy: 2,5,6,7,8
- Professional development autonomy: 12,13,14
- Communication autonomy: 15,16,17

There are no reverse items in the scale.

APPENDIX 3

Technological Pedagogical Content Knowledge (EFL-TPACK) Questionnaire

For the following items, please circle the answers that best show your opinion.

1=Strongly disagree 2=Disagree 3=No idea 4=Agree 5= Strongly agree

	Technology Knowledge					
1	I know how to save data into/from a digital device (i.e. flash disk, USB stick, CD)	1	2	3	4	5
2	I know how to play audio and video files on my computer.	1	2	3	4	5
3	I know how to use computer mediated communication (CMC) technologies (e.g. email, chat)	1	2	3	4	5
4	I know how to record video files (i.e. using a video camera)	1	2	3	4	5
5	I know how to use generic office applications (i.e. Word, Powerpoint, Excel)	1	2	3	4	5
6	I know about basic computer hardware (i.e. CD-Rom, mother-board, RAM) and their functions.	1	2	3	4	5
	Pedagogical Content Knowledge					
1	I can assess student learning in multiple ways	1	2	3	4	5
2	I can choose an appropriate approach to teach learners (i.e. communicative approach, direct method)	1	2	3	4	5
3	I can facilitate learning through individual, partner, group, and whole class activities	1	2	3	4	5
4	I can plan when and how to use the target language, including meta-language I may need in the classroom	1	2	3	4	5
5	I can keep students on task	1	2	3	4	5
6	I can identify linguistic problems experienced by learners (i.e. phonological, lexical or grammatical problems)	1	2	3	4	5
7	I can react supportively to learners' interaction	1	2	3	4	5

	Content Knowledge					
1	I can monitor my own writing for accuracy	1	2	3	4	5
2	I can monitor my own speech for accuracy	1	2	3	4	5
3	I can comprehend English speech accurately	1	2	3	4	5
4	I can comprehend English texts accurately	1	2	3	4	5
5	I am familiar with the culture(s) of target language communities	1	2	3	4	5
	Technological Content Knowledge					
1	I know about technologies that I can use to teach English language Grammar	1	2	3	4	5
2	I know about technologies that I can use to teach reading in English	1	2	3	4	5
3	I know about technologies that I can use to teach writing in English	1	2	3	4	5
4	I know about technologies that I can use to teach English vocabulary	1	2	3	4	5
5	I know about technologies that I can use to teach pronunciation of English words	1	2	3	4	5
6	I know about technologies that I can use to teach listening in English	1	2	3	4	5
	Technological Pedagogical Knowledge					
1	I can choose technologies that enhance students' learning for a lesson.	1	2	3	4	5
2	I can adapt the use of the technologies that I am learning about to different teaching activities	1	2	3	4	5
3	I can choose technologies that enhance the teaching approaches for a lesson	1	2	3	4	5
4	I can design relevant learning experiences to promote student learning, using technology	1	2	3	4	5
5	I can choose technologies to be used in assessment	1	2	3	4	5
6	I can engage students in solving authentic problems using digital technologies and resources	1	2	3	4	5
	Technological Pedagogical Content Knowledge					
1	I can use technology effectively to communicate relevant information to students and peers	1	2	3	4	5
2	I can use a range of technologies that enable students to become active Participants	1	2	3	4	5
3	I can select technologies to use in my classroom that enhance what I teach, how I teach, and what students learn	1	2	3	4	5
4	I can use a range of technologies to help students pursue their individual curiosities	1	2	3	4	5
5	I can facilitate intercultural understanding by using technology to engage students with different cultures	1	2	3	4	5
6	I can provide equitable access to digital language learning tools and Resources	1	2	3	4	5

APPENDIX 4

YARI YAPILANDIRILMIŞ MÜLAKAT- 1

İngilizce Öğretmenlerinin Öğretmen Özerkliği ve Teknolojik Pedagojik Alan Bilgisi Arasındaki İlişkiye İlişkin Algıları

“İngilizce öğretmenlerinin öğretmen özerkliği ile Teknolojik Pedagojik Alan Bilgisi arasındaki ilişkinin Türkiye bağlamında analizi” başlıklı bu bilimsel araştırma, Karadeniz Teknik Üniversitesi Batı Dilleri ve Edebiyatı Anabilim Dalı'nda yüksek lisans tezi hazırlamakta olan Nurtaç KARAOSMANOĞLU ve tez danışmanı Yrd. Doç. Dr. Raşide DAĞ AKBAŞ tarafından yapılmaktadır. Bu yarı yapılandırılmış görüşmenin amacı, Türkiye bağlamında öğretmen özerkliği ile teknolojik pedagojik alan bilgisi arasındaki ilişkiye ilişkin algılarınızı ve bakış açılarınızı araştırmaktır. Araştırmaya katılım gönüllülük esasına dayanmaktadır. Bu yarı yapılandırılmış görüşmede herhangi bir kişisel bilgi istenmemektedir. Yarı yapılandırılmış görüşmeler sırasında, yanıtlarınız ses kaydına alınacak ve veriler analiz edildikten sonra silinecektir. Sözlü yanıtlarınız isimsiz tutulacak ve sadece araştırma için kullanılacaktır. İstedığınız zaman bu çalışmaya katılmaktan vazgeçebilirsiniz. Bu çalışmaya katılımınız için şimdiden teşekkür ederiz.

Araştırmacı: Bu çalışmaya katılmayı kabul ediyor musun?

Öğretmen 7: Evet, kabul ediyorum. Bu çalışmanın amacının farkındayım ve gönüllü olarak katılıyorum. İstedğim zaman katılmaktan vazgeçebileceğimin farkındayım. Ayrıca sözlü yanıtlarımın gizli tutulacağını ve sadece çalışma için kullanılacağını da biliyorum. Verdiğim bilgilerin bilimsel amaçlarla kullanılmasına onay veriyorum.

Araştırmacı: Sen hiç “öğretmen özerkliği” ifadesi hakkında bir şey duydun mu? Sen bu ifadeyi ne olarak algılıyorsun?

Öğretmen 7: Daha önce duymadım ama öğretmen özelliğinden öğretmenin hani öğretmek istedikleri şey ya da işte kullanacağı materyaller konusunda özerk olduğunu özgür olduğunu anlıyorum.

Araştırmacı: Peki! Ben sana şöyle diyeyim, öğretmen özerkliği: öğretmenin dersleriyle ilgili, alanıyla ilgili kendine ait kararlar alması, ders planlamada, ders yönetiminde katımlı olmasıdır. Yani dersin planlanmasına katılmasıdır ya da müfredat dersi yönetmesine katılmasıdır. Başka bir deyişle tamamen müfredata bağlı olmamasıdır. Sen bu cümle hakkında ne düşünüyorsun yani kendi kararları alması, kendi kafasına göre hareket etmesi konusunda ne düşünüyorsun?

Öğretmen 7: Şöyle avantajları olabileceği gibi dezavantajları da olabileceğini düşünüyorum şöyle ki mesela bazen öğrettiğimiz kademe işte öğretim verdiğimiz kademe dolayısıyla takip etmemiz gereken bir müfredat ya da işte vermemiz gereken kazanımlar var. Ben bazen çocukların seviyeleri ya da çocukların öğrenim durumları ile ilgili bazen müfredatın tıklandığını düşünüyorum ya da işte vermem gereken şey o çocukların aslında fazla olduğunu da düşünüyorum ya da bazen çocukların seviyesi fazla oluyor onun yetersiz olduğunu düşünüyorum. Dolayısıyla bu anlamda öğretmenin özerk olması yani bazı şeyleri de kendi iradesiyle mesela eklemek istiyorsa eklemesi ya da çıkarmak istiyorsa çıkarması konusuna avantaj olarak görebiliyorum. Ama diğer taraftan da bir şeyi planlamak ya da işte onu hazırlamak düzenlemek ya bu konuda tamamen özgür olmak da aslında biraz handikap da getirebilir diye düşünüyorum. Çünkü öğretmenin yeterince donanımlı yeterince bilgi sahibi olması gerekiyor diye düşünüyorum.

Araştırmacı: Güzel, tamam peki sen kararlarını dersinde nasıl alıyorsun? Yani kendin mi alıyorsun yoksa müfredata bağlı mısın?

Öğretmen 7: %100 müfredata bağlı değilim tabi ki müfredat neyi istiyorsa onun üzerinden takip etmeye çalışıyorum ama atıyorum şöyle mesela ben çocuklara tarihleri öğretmek istiyorum ama öğrencilerde şunu görüyorum işte derste ki ön hazırlıkta mesela sayılarda eksikleri olduğunu görüyorum müfredat bunu vermeme istemese bile sayılarda eksikliği varsa onu veya verdikten sonra tarihleri anlatmaya çalışıyorum.

Araştırmacı: Anladım! peki, metot ve teknik olarak yine kendi kendine öğrencilerine göre mi yoksa müfredatın belirlediği metot teknikleri mi kullanıyorsun?

Öğretmen 7: Şöyle, benim çalıştığım okul bir devlet okulu fakat okulumuzda akıllı tahtalar var akıllı tahtalar tabii ki bu anlamda işimizi kolaylaştırıyor işte kullandığımız teknikler materyaller o buna göre de

aslında şekil alıyor. Görsel materyal çok fazla kullanabiliyoruz sadece ders kitabını kullanmıyoruz. Tabi ki de bu anlamda çeşitlilik arz ediyor bize yardımcı oluyor.

Araştırmacı: Peki, sadece ders kitabına mı bağlısın ya da farklı materyal farklı materyaller ekliyor musun?

Öğretmen 7: Kendim çoğaltarak çocuklara veriyorum işte bazen işte bir belki konu tekrarı gibi ya da belki bir oyun işte öğrencileri oynayabileceğim bir oyun şeklinde işte kartlar falan dağıtarak veriyorum konuyu öğretmek istediğim zaman işte hangisinin onlara uygun olduğunu düşünüyorsam bazen bir ön video izleterek işte akıllı tahtayı kullanarak yapıyorum. Bazen de işte oyun kartları falan dağıtarak yapıyorum.

Araştırmacı: Tamam, peki teknolojik pedagojik alan bilgisi hakkında ne duydun? Teknolojik pedagojik alan bilgisi nedir? Böyle bir kavram duydun mu? “Öğretmenlerin teknolojiyi etkili bir şekilde derse entegre etmesidir” (Koehler and Mishra, 2009). Bu cümle hakkında ne düşünüyorsunuz?

Öğretmen 7: Kesinlikle şöyle düşünüyorum bir öğretmenin teknolojiden uzak olma ihtimali yok yani biz bir şeyleri öğretirken artık teknoloji çağında yaşadığımız için verdiğimiz eğitsel içeriklerin de mutlaka teknolojiyle alakalı olması gerektiğini düşünüyorum çünkü artık dijital çağ herkesin elinde internet var işte bilgiyi o şekilde ulaşabiliyor o yüzden teknolojiyi kesinlikle hayatımızın öğretim kısmının bir parçası diye düşünüyorum.

Araştırmacı: Peki, sen İngilizce öğretmeni olarak nasıl teknolojiyi adapte ediyorsun derslerine?

Öğretmen 7: Şöyle, mesela Ankara’da bu sıralar bizim meslektaşlarımızla birlikte “English together” diye bir proje yürütülüyor. Onunla birlikte biz öğretmenler olarak işte ayda bir kez ya da 2 ayda bir kez bir araya geliyoruz bir eğitimimiz var onunla birlikte bazı çalışmalar yapıyoruz. Bu anlamda da mesela orada öğrendiğim bazı teknolojik uygulamalar var. İşte Padlet gibi ya da işte öğrencilere verebileceğimiz işte yine fikirlerini aktarabilecek ileri uygulamalar gibi işte bunlardan da faydalanarak akıllı tahtayı kullanarak ya da ev ödevlerinde mesela işte bir soru gönderiyorum onlara onlar da o sorulara cevaplar yazıyorlar bana. Bu gibi işte Padlet üzerinden bunları kullanıyorum ama bunlar için tabii ki de teknolojik bilgiye sahip olmam gerekiyor. Açabilmek için uygulamaları kullanabilmek için.

Araştırmacı: Anladım! peki sence dil öğretiminde İngilizcenin dil öğretiminde teknoloji olmazsa olmaz mıdır?

Öğretmen 7: Dil öğretiminde bence olmazsa olmazdır. İngilizce öğretmeni olarak ben bir ana dil İngilizce konuşmuyorum elimden geldiğince tabi ki konuşuyorum dersimde ama anadili çocuğa vermek için teknolojiye ihtiyacım var yani bir video açabiliyor olmam gerekiyor ya da işte bir dinleme metnini çocuklara verebiliyor olmam gerekiyor. Görsel olarak da işitsel olarak da bunları yapabilmek için teknoloji kullanmam gerekiyor. Ben bunu yapamıyorsam açamıyorsanız ya da öğrencilerim mesela proje ödevi hazırlıyorlar onun sunumunu yapıyorlar sunumlarını işte kullandıkları programlar üzerinden yapıyorlar bunlar için hepsi için teknoloji ihtiyacım var diye düşünüyorum sadece kendim değil de öğrencilere de geliştirmek için ya mesela öğrencilerin atıyorum işte telaffuzunu geliştirmek için hepsi için tek yani işte bu aynı zamanda internet üzerinden kullanılan işte siteler uygulamalar vesaireler var işte hem kelime bilgisini hem telaffuzu geliştirmek için bunların hepsi için öğrencilerle birlikte teknolojiyi kullanıyoruz.

Araştırmacı: Peki, son olarak sence öğretmen özerkliği ile teknolojik pedagojik alan bilgisi arasında bir ilişki var mıdır? Yani özerk olan öğretmenin teknolojik pedagojik alan bilgisi yüksektir ya da teknolojik pedagojik alan bilgisinin yüksek olması öğretmene özerklik sağlar diyebilir misin?

Öğretmen 7: Öncelikle ben benim fikrim yani bu ben diyebilirim çünkü öğretmenin özgür olması demek aslında çeşitli alanları kullanabiliyor yani teknolojiyle ilgili çeşitli alanları kullanabiliyor olması demektir. Çünkü hani öğretmen kısıtlandığı zaman işte bir müfredat yetiştirme peşine düşüyor işte kazanımları verme peşine düşüyor bu sefer aslında diğer tarafta kaçırdığı işte konuşma olsun dinleme olsun kısımları eksik kalıyor diye düşünüyorum işte öğretmen kısıtlanmadan zamanda aslında öğrenciyi işte beceri bazında daha çok şey verebilir diye düşünüyorum bunu da teknolojiyle mümkün olacağına inanıyorum.

Araştırmacı: Anladım. Peki sen İngilizce öğretmeni olarak kendini bu konuda yani sen hem otonomi hem de TPACK açısından kendini nasıl görüyorsun? yani ben hem özerkim hem de TPACK’i çok güzel şekilde kullanabiliyorum yani hem özerk hem de teknolojik pedagojik yani alan bilgim iyidir diyebilir musun? Kendini burada nasıl görüyorsun?

Öğretmen 7: %100 iyiyim diyemem şöyle diyemem ben kesinlikle müfredat takip ediyorum yani şöyle ediyorum mesela bir sekizinci sınıf öğretmeni olduğumu düşünün sekizinci sınıf öğrencisi işte sınavda işte

test sorularına muhatap oluyor dolayısıyla ben bu çocuğa onları vermek zorundayım bu anlamda kısıtlandığını ve yeterince özgür olmadığını düşünüyorum. Diğer taraftan da işte teknolojik anlamda da işte içsel bilgi işte teknolojik eğitsel bilgileri verirken de tam olarak kendimi yeterli görmüyorum açıkçası çok daha fazla öğrenebileceğim şey olduğunu düşünüyorum zaten ki çok iyi olduğumuzu düşünürsek de gelişemeyeceğimize inanıyorum. Yani arada sıkı bir ilişki olduğunu düşünüyorum.

SEMI-STRUCTURED INTERVIEW - 1

EFL Teachers' Perceptions on the correlation between Teacher Autonomy and Technological Pedagogical Content Knowledge

Dear participant,

This scientific research titled “ The analysis of the correlation between teacher autonomy and Technological Pedagogical Content Knowledge of in-service EFL teachers in Turkish context” is conducted by Nurtaç KARAOSMANOĞLU, who is preparing her master's thesis at the Department of Western Languages and Literature at Karadeniz Technical University, and her thesis supervisor Asst. Prof. Dr. Raşide DAĞ AKBAŞ. The aim of this semi-structured interview is to investigate your perceptions and perspectives on the relationship between teacher autonomy and technological pedagogical content knowledge in terms of your teaching practices in the classroom. Participation in the study is based on voluntary. No personal information is required in this semi-structured interview. During the semi-structured interviews, your responses will be audio-recorded and deleted after analyzing and transcribing the data. Your verbal responses will be kept anonymous and used for only the study. You can quit participating in this study at any time you want. Thank you in advance for your participation in this study.

Do you agree to participate this study?

Teacher 7: Yes, I agree.

Researcher: Have you ever heard about teacher autonomy?

Teacher 7: I have never heard before but I think teacher autonomy is to be free in terms of deciding on the materials that will be used in lessons and on the subject matter that will be taught.

Researcher: OK! I will explain that teacher autonomy is defined as freedom to make decisions on matters related to their profession and so it is defined as their participation in planning and management formations besides the implementation of education (Pearson and Hall, 1993). In other words, completely not depending on curriculum. What do you think about this sentence? I mean, what do you think about taking decisions on his own or behaving on his own?

Teacher 7: I think there are both advantages and disadvantages. I mean, for example there are certain objectives that must be taught and a pre-determined curriculum that must be followed at the grades we are teaching. Sometimes, I think that curriculum is not sufficient in terms of students' profiles and levels. Sometimes, I think there several things or few things that must be taught in accordance with students' levels. Therefore, being autonomous is an advantage for a teacher in terms of adding or reducing necessary parts in his teaching practices. However, I think, making plans for each lesson or preparing extra materials may pose a handicap for teachers while using their autonomy. At this point, teachers need to be proficient and equipped with the necessary knowledge.

Researcher: Fine, ok so how do you make your decisions in your class? So, do you take it yourself or are you bound by the curriculum?

Teacher: Of course, I does not depend on curriculum completely. However, I try to follow curriculum, for example; I want to teach dates but I realize that some students have missing points in terms of numbers but the curriculum does not include the numbers but after teaching numbers, I go on with teaching dates.

Researcher: I understand! well, do you use method and technique according to your students or do you use method techniques determined by the curriculum?

Teacher 7: Well, the school I work at is a public school, but there are smart boards in our school, of course, smart boards make our work easier in this sense, the techniques we use, the materials, and accordingly, they actually take shape. We can use a lot of visual material, we don't just use the textbook. Of course, diversity helps us in this sense.

Researcher: How do you choose your materials? Do you use only course books as the only materials for learners?

Teacher 7: By delivering copies of different sources to the students, sometimes as a repetition of the topic or maybe as a game that students can play or by handing out cards or something. When I want to teach the subject, I sometimes watch a preview video and use the smart board. Sometimes I do it by handing out playing cards or something.

Researcher: Have you ever heard about technological pedagogical content knowledge? TPACK has been defined as the knowledge that the teachers need for effective technology integration (Koehler and Mishra, 2009). What do you think about this sentence?

Teacher 7: I definitely think that it is not possible for a teacher to be away from technology as we live in the age of technology while teaching something, I think that the educational content we provide must also be related to technology, because now everyone has the internet in their hands, so they can access the information that way, so we definitely use technology as part of the teaching part of our lives. I think technology constitutes an essential part of our teaching.

Researcher: How do you as an EFL teacher adapt your teaching style to different technological applications?

Teacher 7: For example, in Ankara these days, a project called "English together" is being carried out with our colleagues. In this seminar, we, as teachers, come together once a month or once every 2 months, we have an instructor, and we do some exercises with him. In this sense, for example, there are some technological applications that I learned there. Here's like Padlet, we can give students advanced applications that can convey their ideas, such as using the smart board by making use of these, or for homework, for example, I send a question to them and they write answers to those questions for me. I also need to have technological knowledge to be able to make use of such applications.

Researcher: What do you think about the importance of integration of technology in English language education?

Teacher 7: In my opinion, it is indispensable in language teaching. As an English teacher, I don't speak English as a mother tongue, of course. I need to use technology to be able to do these visually and audibly. If I can't do this, if you can't open it, or my students, for example, they prepare a project assignment, they make their presentations, they make their presentations through the programs they use at school. I think that I need technology for all of them, not only for myself but also for the students, for example, I want students to improve their pronunciation. This can be achieved through the internet, there are sites, applications and so on. We use technology together with students for all of these to improve both vocabulary and pronunciation.

Researcher: Well, finally, do you think there is a relationship between teacher autonomy and technological pedagogical content knowledge? In other words, can you say that the autonomous teacher has high technological pedagogical content knowledge or high technological pedagogical content knowledge provides autonomy to the teacher?

Teacher 7: First of all, it's my opinion, I can say the fact that the teacher is free means that he can use various fields, that is, he can use various fields related to technology, however when the teacher is limited, he has to keep up with a curriculum at school, he tries to reach pre-determined objectives of the lesson, this time actually on the other side he misses certain points whether it's speaking or listening. I think that the teacher can actually give the student more on the basis of skills without being restricted, I believe that this will be possible with technology.

Researcher: I understand So, how do you see yourself as an English teacher in terms of both autonomy and TPACK? I mean, can you say that I am both autonomous and I can use TPACK very well? How do you see yourself here?

Teacher 7: I can't say I'm fine, I can't say that I definitely follow the curriculum, so I think that I am an eighth-grade teacher, for example, an eighth grader comes across test questions in the exam, so I have to give them. In this sense, I think that I am restricted and I am not free enough. On the other hand, I don't see myself as fully competent in providing both technological and educational information, and frankly, I think that there is much more that I can learn. So, I think there is a close relationship between them.

YARI YAPILANDIRILMIŞ MÜLAKAT - 2

İngilizce Öğretmenlerinin Öğretmen Özerkliği ve Teknolojik Pedagojik Alan Bilgisi Arasındaki İlişkiye İlişkin Algıları

“İngilizce öğretmenlerinin öğretmen özerkliği ile Teknolojik Pedagojik Alan Bilgisi arasındaki ilişkinin Türkiye bağlamında analizi” başlıklı bu bilimsel araştırma, Karadeniz Teknik Üniversitesi Batı Dilleri ve Edebiyatı Anabilim Dalı'nda yüksek lisans tezi hazırlamakta olan Nurtaç KARAOSMANOĞLU ve tez danışmanı Yrd. Doç. Dr. Raşide DAĞ AKBAŞ tarafından yapılmaktadır. Bu yarı yapılandırılmış görüşmenin amacı, Türkiye bağlamında öğretmen özerkliği ile teknolojik pedagojik alan bilgisi arasındaki ilişkiye ilişkin algılarınızı ve bakış açılarınızı araştırmaktır. Araştırmaya katılım gönüllülük esasına dayanmaktadır. Bu yarı yapılandırılmış görüşmede herhangi bir kişisel bilgi istenmemektedir. Yarı yapılandırılmış görüşmeler sırasında, yanıtlarınız ses kaydına alınacak ve veriler analiz edildikten sonra silinecektir. Sözlü yanıtlarınız isimsiz tutulacak ve sadece araştırma için kullanılacaktır. İstedığınız zaman bu çalışmaya katılmaktan vazgeçebilirsiniz. Bu çalışmaya katılımınız için şimdiden teşekkür ederiz.

Araştırmacı: Bu çalışmaya katılmayı kabul ediyor musun?

Öğretmen 2: Evet, kabul ediyorum. Bu çalışmanın amacının farkındayım ve gönüllü olarak katılıyorum. İstedğim zaman katılmaktan vazgeçebileceğimin farkındayım. Ayrıca sözlü yanıtlarımın gizli tutulacağını ve sadece çalışma için kullanılacağını da biliyorum. Verdiğim bilgilerin bilimsel amaçlarla kullanılmasına onay veriyorum.

Araştırmacı: Sen “öğretmen özerkliğini” hiç hayatında duydun mu?

Öğretmen 2: Öğretmen özerkliğini şu şekilde duydum yani onun hakkında olan bilgiler şu: çocukların seviyelerine, ilgilerine göre müfredatı kendi sınıfına göre uyarlama ya da öğrencilerle birlikte o programı düzenleyebilme.

Araştırmacı: Şimdi burada bir tane tanım var diyor ki tanım da öğretmen özerkliği, öğretmenin okulla ilgili, kendi mesleğiyle ilgili aldığı özgür kararlarıdır. Ayrıca planlamaya, sınıf yönetimine katılmasıdır. Sen bu konuda ne düşünüyorsun?

Öğretmen 2: Sınıf açısından düşünecek olursak öğretmen çok böyle yani absürt kararlar almadığı sürece bence girdiği sınıflara göre müfredatı düzenleyebilmelidir. Mesela girdiğimiz sınıflardan birinin algı seviyesi daha düşüktür, geçmişten getirdiği seviye kısıtlıdır. Buna göre program daha basite indirgenebilir. Programa ama, diğer girdiğimiz bir sınıfta da seviyeleri üst düzeydedir. Bu sınıfta müfredatın üstüne de çıkabilirim hani çok fazla aşmadan o şekilde düzenleyebilirim. Bence, müfredatın bütün sınıflarda aynı şekilde uygulanmaması gerekiyor. Sınıfta öğrenciden öğrenciye fark ediyor.

Araştırmacı: Sen ders esnasında, kendi eğitim öğretim eğitimini esnasında nasıl kararlarımı neye göre alıyorsun?

Öğretmen 2: Mesela, benim bugün işleyeceğim konu geçmiş zamanla ilgili, onunla ilgili parçalar var ama ne yapıyorum ben geçen haftadaki konuyu hani dersin başında bir tekrar ediyorum hani hatırlatılıyor mu ne kadar anlaşılmış sorular soruyorum eğer anlaşılmadı oysa tekrar o konu üzerinde odaklanıp hani biraz daha soru çözüp biraz daha biraz daha pekiştirme yapıp ondan sonra yeni konuya geçiyorum. Yani, demiyorum ki bugün illa bu konuyu işlemem gerekiyor. O konunun üzerine yani iyi anlaşıldıktan sonra yeni konuya geçiyorum bu şekilde düzenleme yapabiliyorum.

Araştırmacı: Peki materyallerini nasıl seçiyorsun? Sadece course book mu kullanıyorsun yoksa ek materyalin mi var mı? Sınıfa neler getiriyorsun ya da hiçbir şey getirmiyor musun?

Öğretmen 2: Genelde getiriyorum. Flash kartları oluyor ilkökul seviyesinde hani ben çalıştığım için daha çok görsel ağırlıklı pekiştirmek amaçlı. Akıllı tatlıdan çok yararlanıyorum. Yeni programlardan örneğin “Dialog” diye bir platform oluşturuldu bizim İngilizce öğretilimi adına onu da bayağı bir beğendim. Onu uygulamaya başladım. Şu an çocukların ilgisini çekiyor.

Araştırmacı: Yani materyal olarak sadece course book a bağlı değilsin. Tamam peki hiç hayatında teknolojik pedagojik alan bilgisi kavramını duydun mu? Teknolojik pedagojik alan bilgisi kavramı ne çağırıştırıyor sana?

Öğretmen 2: Teknolojik pedagojik alan, yani tam o ifade duymadım ama teknolojinin hani eğitime daha çok entegre edilmesi şeklinde hani biliyoruz. Günümüz çocukları teknolojik çocuklar hani daha çok böyle teknolojiyle internetle haşır neşir olan çocuklar ve ilgilerini çekebilmek adına onların seviyelerini hani biraz da onların yaşam tarzına ayak uydurmak gerekiyor. Şimdi z kuşağı dersine girip de sürekli course

book'tan işlemek ilgilerini çekmiyor, daha böyle teknolojik aletlerle işte görsellerle, şarkılarla, interaktif oyunlarla daha çok çocukları bence aktif kılıyor.

Araştırmacı: Peki sen teknolojinin eğitime entegre edilmesi üzerine ne düşünüyorsun? Sen İngilizce öğretmeni olarak kendi öğretme stilini nasıl teknolojiye ayarlıyorsun ya da teknolojik uygulamalara nasıl ayarlıyorsun?

Öğretmen 2: Şöyle yapıyorum ben teknolojiyi daha çok pekiştirme hani konuyu öğretiyorum konuyu veriyorum çocukların hani sorularını alıyorum konuyla ilgili onlara cevaplandırıyoruz, en son pekiştirme amaçlı teknolojiden yararlanıyorum, yani oyunlarla şarkılarla oldu konunun oyunları şarkılarını neşeden açılırsun açık işte aynen ha bu sefer hani öğrenim kısmından sonra eğlence kısmına geçiyoruz ben pekiştirme açısından da iyi oluyor.

Araştırmacı: Anladım! peki sence dil öğretiminde İngilizcenin dil öğretiminde teknoloji olmazsa olmaz mıdır?

Öğretmen 2: Büyük ölçüde %80 yani bence entegre edilmelidir. Yani, sadece course book üzerinden sadece ilerlersek belli bir noktaya kadar hani öğretmiş oluyoruz. Ama teknolojiye işte günlük konuşmalar yabancı ülkelerde geçen İngilizceyle alakalı yabancı konuşmalar dinleyebiliyoruz, dinleme metinlerini yine akıllı tahtadan veya herhangi başka bir yerden hani dinlememiz gerekiyor. Bir şekilde bizim entegre etmemiz gerekiyor.

Araştırmacı: Son sorum sence öğretmen özerkliği ile teknolojik pedagojik alan bilgisi arasında ilişki var mıdır? Sence, teknolojik pedagojik alan bilgisi bilginizin olması bizi daha özerk yapar mı? Ya da sınıfta daha özerk davranmamız bizim teknolojik pedagojik alan bilgisinde daha gelişmemizi sağlar mı, bize yer açar mı? Yani bu ikisi arasında bağlantı var mı

Öğretmen 2: Bence teknoloji bilgisi olan öğretmenler, teknolojik açıdan kendini daha da geliştirmiş öğretmenler bence sınıfta daha özgür öğretmenlerdir. Eğitim konusunda kendini geliştiremeyen öğretmenler teknolojiyi bilmiyor, sadece kitaba bağlı kalıyor. Belki, daha çok şey vermek istiyor ama hani bir yeterliliği olmadığı için ders kitabıyla sınırlı kalıyor. Ama teknolojik açıdan işte programla bilgisayar programlarını çok iyi bilen ondan sonra hani böyle dille ilgili programlarda haber programlardan haberdar olan o programlarda kendini geliştirenler kendine göre daha çok sınıfta müfredatı düzenleyip hani nasıl verebileceğini nasıl entegre edebileceğini daha iyi biliyor. Öğretmen bakıyor ki çocuklar bu konuda anlamadılar yetersiz kaldılar ben ne yapıyorum teknolojiyle de hani aram iyi hangi programları kullanmam gerektiğini ondan sonra İngilizceyle alakalı hangi platformlar var hani nasıl geliştirebilirim bu konuyu onların zihinlerinde düşünüp, o şekilde entegre edip daha çok böyle hani müfredatta daha böyle özerklik sağlayabilirim sınıfta o şekilde yapabilirim.

Araştırmacı: Yani diyorsun ki teknoloji bir nevi öğretmene özerklik sağlıyor, öğretmen daha çok sınıfa kaynak getiriyor daha çok alan açıyor sınıfta. Peki, sen teknolojik pedagojik alan bilgisi açısından ve öğretmen özerkliği açısından kendini nerede görüyorsun

Öğretmen 2: Ben orta seviyede olduğumu düşünüyorum ama kendimi geliştirmek adına da çalışıyorum. Mesela hizmet içi eğitimlerde web 2 araçları var şu an eğitimde de kullanılıyor. Yani bilinmesi gereken araçlar ve sürekli öğrenmemiz gereken bir şey çıkıyor. Bunlar, çocukların daha dikkatleri çekiyor. Yani bir şekilde sınıfa getirmeye çalışıyorsun teknolojiyi, bu sayede de özerkliğini kullanmış oluyorsun.

SEMI-STRUCTURED INTERVIEW – 2

EFL Teachers' Perceptions on the correlation between Teacher Autonomy and Technological Pedagogical Content Knowledge

Dear participant,

This scientific research titled “ The analysis of the correlation between teacher autonomy and Technological Pedagogical Content Knowledge of in-service EFL teachers in Turkish context” is conducted by Nurtaç KARAOSMANOĞLU, who is preparing her master's thesis at the Department of Western Languages and Literature at Karadeniz Technical University, and her thesis supervisor Asst. Prof. Dr. Raşide DAĞ AKBAŞ. The aim of this semi-structured interview is to investigate your perceptions and perspectives on the relationship between teacher autonomy and technological pedagogical content knowledge in terms of your teaching practices in the classroom. Participation in the study is based on voluntary. No personal information is required in this semi-structured interview. During the semi-structured interviews, your

responses will be audio-recorded and deleted after analyzing and transcribing the data. Your verbal responses will be kept anonymous and used for only the study. You can quit participating in this study at any time you want. Thank you in advance for your participation in this study.

Do you agree to participate this study?

Teacher 2: Yes, I agree.

Researcher: Have you ever heard of “teacher autonomy” in your life?

Teacher 2: This is how I heard about teacher autonomy, so what I know about it is: adapting the curriculum according to the level and interests of the children according to their own class or organizing that program together with the students.

Researcher: Now, there is one definition here, which says that teacher autonomy is the teacher's free decisions about the school and his/her profession. It is also participating in planning and classroom management. What do you think about this?

Teacher 2: If we think in terms of the classroom, I think the teacher should be able to organize the curriculum according to the classes he/she attends, as long as he/she does not make absurd decisions. For example, the perception level of one of the classes we entered is lower, the level it brought from the past is limited. Accordingly, the program can be simplified. But, in another class we entered, their level is at a high level. In this class, I can go above the curriculum, you know, I can arrange it that way without going too far. In my opinion, the curriculum should not be applied in the same way in all classes. It differs from student to student in the classroom.

Researcher: How do you make your decisions during the lesson, during your education and training?

Teacher 2: For example, the topic that I will cover today is about the past tense, there are parts about it, but what am I doing, I repeat the topic of last week at the beginning of the lesson, you know, I reminded how well-understood questions are, but if it is not understood, I focus on that topic again and ask some more questions. I solve it, do some more reinforcement and then move on to a new topic. So, I'm not saying that I have to deal with this issue today. After I understand that subject well, I move on to a new subject, so I can edit it.

Researcher: So how do you choose your materials? Do you just use the course book or do you have additional material? What do you bring to class or nothing?

Teacher 2: I usually bring it. There are flash cards at the primary school level, because I work, mostly for visual reinforcement purposes. I make great use of smart boards. One of the new programs, for example, a platform called “Dialog” was created, and I liked it very much for our English teaching. I started to apply it. It's getting kids' attention right now.

Researcher: So, you don't depend only on the course book as material. Okay, have you ever heard of the concept of technological pedagogical content knowledge in your life? What does the concept of technological pedagogical content knowledge mean to you?

Teacher 2: Technological pedagogical field, I have not heard that expression, but we know that technology is more integrated into education. Today's children are technological children, you know, they are mostly children who are busy with such technology and the internet, and in order to attract their attention, it is necessary to keep up with their level, you need to keep up with their lifestyle. Now, the Z generation doesn't seem to be interested in taking the course and working from the course book all the time, I think we make children more active with such technological tools, visuals, songs and interactive games.

Researcher: What do you think about integrating technology into education? As an English teacher, how do you adjust your teaching style to technology or to technological applications?

Teacher 2: What I do is to reinforce technology more, I teach the subject, I give the subject, I take the questions of the children, we answer them about the subject, I use the latest technology for reinforcement purposes, so I use the latest technological applications so the games of the subject are with songs, you open the songs of the subject with joy. We move on to the entertainment part, I am also good in terms of reinforcement through web 2 tool and language applications.

Researcher: Got it! So, do you think technology is indispensable in language teaching of English?

Teacher 2: Mostly 80%, so I think it should be integrated. In other words, if we only progress through the course book, we teach up to a certain point. But in technology, we can listen to foreign conversations

related to English in daily conversations in foreign countries, we need to listen to listening texts from the smart board or from any other place. We have to integrate it somehow.

Researcher: My last question, do you think there is a relationship between teacher autonomy and technological pedagogical content knowledge? Do you think having our technological pedagogical content knowledge makes us more autonomous? Or, does our being more autonomous in the classroom enable us to develop more in technological pedagogical content knowledge, does it make room for us? So, is there a connection between these two?

Teacher 2: In my opinion, teachers with technological knowledge, teachers who have improved themselves in terms of technology are more liberal teachers in the classroom. Teachers who cannot improve themselves in education do not know technology, they just stick to the book. Maybe he wants to give more, but because he has no qualifications, he is limited to the textbook. But in terms of technology, those who know very well about programs and computer programs, then those who are aware of news programs in such language programs, who develop themselves in those programs, know better how to organize and integrate the curriculum in more classrooms. The teacher sees that the children did not understand this issue, they were insufficient. What am I doing, I am good with technology, you know what programs I should use, and then what platforms are there related to English, you know, how can I develop this issue in their minds, I can integrate it in that way, and I can provide more autonomy in the curriculum. I can do that in class.

Researcher: So, you are saying that technology provides a kind of autonomy to the teacher, the teacher brings more resources to the classroom, opens more space in the classroom. Well, where do you see yourself in terms of technological pedagogical content knowledge and teacher autonomy?

Teacher 2: I think I am at the intermediate level, but I also try to improve myself. For example, there are web 2 tools in in-service training, which are currently used in training. In other words, there are tools that need to be known and something that we need to learn constantly. These attract the attention of children more. In other words, you are trying to bring technology to the classroom in a way, and in this way, you use your autonomy.

APPENDIX 5

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Sn. Nurtaç KARAOSMANOĞLU

KTÜ-Sosyal Bilimler Enstitüsü Batı Dilleri ve Edebiyatı Yüksek Lisans Programı öğrencisi Nurtaç KARAOSMANOĞLU'nun "**Analysis of the Correlation Between Teacher Autonomy and Technological Pedagogical Content Knowledge of in-Service EFL Teachers in Turkish Context (Türkiye'de Çalışan İngilizce Öğretmenlerinin Öğretmen Özerkliği ile Teknolojik Pedagojik Alan Bilgileri Arasındaki İlişkinin İncelenmesi)**" adlı çalışmada yüksek lisans tezi için gerekli Etik Kurul incelemesi yapılmış ve başvurunuz onay verilmiştir. Bilgilerinize ve gereğini rica ederim.

Prof. Dr. Akif CİNEL
Rektör Yardımcısı

Ek: Nurtaç KARAOSMANOĞLU'nun Etik Kurul Kararı

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REKTÖRLÜK MAKAMINA
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KTÜ – Sosyal Bilimler Enstitüsü Batı Dilleri ve Edebiyatı Anabilim Dalı öğretim üyesi Dr. Öğr. Üyesi Raşide DAĞ AKBAŞ'ın akademik danışmanlığında, Batı Dilleri ve Edebiyatı Yüksek Lisans Programı öğrencisi 408459 numaralı **Nurtaç KARAOSMANOĞLU**'nun yürüttüğü "Analysis of the Correlation Between Teacher Authonomy and Technological Pedagogical Content Knowledge of in-Service EFL Teachers in Turkish Context (Türkiye'de Çalışan İngilizce Öğretmenlerinin Öğretmen Özerkliği ile Teknolojik Pedagojik Alan Bilgileri Arasındaki İlişkinin İncelenmesi)" başlıklı yüksek lisans tezi kapsamında "Etik Kurul Belgesi" ile ilgili olarak kurulumuza yaptığı başvuru değerlendirilerek **uygun bulunmuş** ve sonucu ekte gönderilmiştir.

İlgili öğrencinin bilgilendirilmesi hususunda gereğini arz ederim.

Prof. Dr. Mustafa Naci KAYAOĞLU
Başkan

CURRICULUM VITAE

She went to Yolgören Yelişova Primary School and Yılmaz Çebi Secondary School. She graduated from Sürmene Anatolian High School in 2005 and she attended to the Department of Deutsch Language and Teaching at 19th May University in Samsun. Following the second year, she left the Department and entered the University entrance exam again. This time she won the Department of English Language and Teaching at the same University. She graduated from the Department of English Language Teaching in 2012 and was appointed to Yılmaz Çebi Secondary School as an English teacher in the same year. She started to do her MA degree in Applied Linguistics at Karadeniz Technical University in 2020. She is married and has two children. She is currently working at Araklı Mehmet Akif Ersoy Project School. She speaks English and German at advanced level.