

**BAŞKENT UNIVERSITY
INSTITUTE OF EDUCATIONAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGES TEACHING
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**INVESTIGATING THE RELATIONSHIP BETWEEN TURKISH EFL
INSTRUCTORS' ATTITUDES TOWARDS THE USE OF WEB 2.0
TOOLS AND THEIR TPACK ABILITY LEVELS**

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DEDICATION

Dedicated to my husband and my daughter. Without their support, this thesis would be impossible.

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Özge İMRE GÜNEY

Ankara, 2022

ABSTRACT

Özge İMRE GÜNEY

Investigating the Relationship Between Turkish EFL Instructors' Attitudes towards the Use of Web 2.0 Tools and Their TPACK Ability Level

**Başkent University
Institute of Educational Sciences
Department of Foreign Languages
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2022**

Technology integration into English Language Teaching (ELT) has become increasingly popular with the recent improvements in education technologies. The present study assessed the Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their Technological Pedagogical Content Knowledge (TPACK) ability levels and aimed to explore whether there is a significant relationship between them. Data were collected by quantitative method. The instruments of this study are the Web 2.0 Tools Attitude Questionnaire developed by Christina Karkoulia (2016) and TPACK Questionnaire developed by Ali Bostancıoğlu and Zoe Handley (2018). This correlational study was addressed to 141 in-service EFL instructors in a private university in Ankara, Turkey in the 2021-2022 academic year and 108 instructors responded to the survey. Data were analysed with SPSS v. 26. The findings of this study revealed that there is a significant relationship between EFL instructors' attitudes towards the use of Web 2.0 tools in EFL teaching and their TPACK ability levels. There aren't many studies to explore the relationship between these two variables in the in-service Turkish EFL context, so this study might enlarge the current study by relating in-service EFL instructors' attitudes towards web 2.0 tools and TPACK levels by examining the relationship between them.

Key words: Technology, Web 2.0 tools, Attitude, Technological Pedagogical Content Knowledge (TPACK), Turkish EFL instructors, ELT

ÖZET

Özge İmre Güney

Türk İngilizce Öğretim Görevlilerinin Web 2.0 Araçlarının Kullanılmasına Karşı Tutumları İle Teknolojik Pedagojik Alan Bilgisi Yetenek Seviyelerinin Arasındaki İlişkinin İncelenmesi

**Başkent Üniversitesi
Eğitim Bilimleri Enstitüsü
İngiliz Dili Öğretimi
Tezli Yüksek Lisans Programı
2022**

İngilizce Öğretimine (ELT) teknoloji entegrasyonu, eğitim teknolojilerindeki son gelişmelerle birlikte giderek daha popüler bir hale geldi. Bu çalışma Türk İngilizce öğretim görevlilerinin Web 2.0 araçlarının kullanımına karşı tutumları ile Teknolojik Pedagojik Alan Bilgisi (TPAB) yetenek seviyelerini ölçmüş ve aralarında belirgin bir ilişki olup olmadığını incelemeyi amaçlamıştır. Veri nicel yöntem ile toplanmıştır. Bu araştırmanın araçları Christina Karkoulia (2016) tarafından geliştirilen Web 2.0 araçları Tutum Anketi ile Ali Bostancıoğlu (2018) tarafından geliştirilen TPAB anketleridir. Bu korelasyonel çalışma Ankara, Türkiye’de bulunan bir vakıf üniversitesindeki 141 hizmet içi İngilizce öğretim görevlisine uygulanmıştır. Araştırma 2021-2022 akademik yılında yapılmış olup, 108 İngilizce öğretim görevlisi ankete cevap vermiştir. Veriler SPSS v. 26 ile analiz edilmiştir. Sonuçlar hizmet içi Türk İngilizce öğretim görevlilerinin Web 2.0 araçlarının kullanımına karşı tutumları ile TPAB yetenek seviyeleri arasında anlamlı bir ilişki olduğunu göstermiştir. Mevcut literatürde Türk İngilizce öğretimi bağlamında bu iki değişken arasındaki ilişkiyi inceleyen çok fazla çalışma bulunmamaktadır, bu nedenle yapılan bu çalışma hizmet içi İngilizce öğretim görevlilerinin Web 2.0 araçlarına karşı tutumları ile TPAB yetenek seviyesi arasındaki ilişkiyi inceleyerek mevcut çalışmaları genişletebilir.

Anahtar Kelimeler: Teknoloji, Web 2.0 araçları, Tutum, Teknolojik Pedagojik Alan Bilgisi (TPAB), Türk İngilizce öğretim görevlileri, İngilizce öğretimi

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LIST OF ABBREVIATIONS

ELT	English Language Teaching
EFL	English as a Foreign Language
TPACK	Technological Pedagogical Content Knowledge
EFL	English as a Foreign Language
SCCS	Social and Cognitive Schemata
ICT	Information and Communication Technologies
TAM 2	Technology Acceptance Model 2
SAMR	Substitution Augmentation Modification Redefinition
RAT	Replace Amplify Transform
TK	Technology Knowledge
TCK	Technological Content Knowledge
CK	Content Knowledge
PCK	Pedagogical Content Knowledge
PK	Pedagogical Knowledge
CALL	Computer-assisted Language Learning
WELL	Web-based Language Learning
LMS	Learning Management Systems
IC	Intercultural Competence
ICA	Intercultural Approach
UICT	Use of Information and Communication Technologies
CAE	Computer-assisted Education

1. INTRODUCTION

1.1. Overview

In chapter one, there is detailed background information about the study, the statement of the problem, the theoretical framework, and the purpose of the study. It includes research questions and hypotheses. Finally, it highlights the significance of the study, limitations, and definition of key terms.

1.2. Background of the Study

With the advancement of technology and its integration into both personal and professional lives, we still question the decision to accept or reject it (Marangunić & Granić, 2015). In definition, technology means using the present knowledge for some functional purposes. It uses ever-changing knowledge. Technology improves the knowledge to adapt and enhance the systems in all areas of life (Hooper & Rieber, 2013). Technological enhancements have changed the lives of individuals of different status. In accord with this change, educational technologies are integrated into the educational context more (Başal, 2016). We are in the time of a rapid shift in foreign language education. In correlation between the aim of enhancing the effectiveness of teaching and learning, the demand to use technology has increased over a decade (Chauhan, 2017). According to Dewi, Lenganawati and Purnavarman (2019), the omnipresence of technology provides promising advantages for its application in the educational context. But we do not know the logic behind instructors' decision in choosing technology in classroom practices. However, adopting a technology tool in education can foster more classroom participation (Wang, 2020).

In the teaching and learning process, how to use technology effectively has been an interest in most educational contexts. Sedoyeka (2012) argues that using technology in education effectively relies on various factors apart from the infrastructure and the available tools. One important factor is the appropriate attitude of the person involved in technology integration. Another essential factor in integrating technology successfully is the necessary qualities of teacher knowledge to integrate technology into pedagogy (Mishra & Koehler, 2006). Mishra and Koehler created a framework for teacher expertise in order to integrate technology properly. This framework is called Technological Pedagogical Content Knowledge (TPACK) framework. It is built on Shulman's (1987) concept of Pedagogical Content Knowledge (PCK) which he acknowledges teaching is a complex process including adjustable and integrated skills (Mishra, Koehler & Henriksen, 2011).

1.2.1. Technology integration theories in education

The 21st century is the era of technology. Nowadays technology has an important place in our lives. The effect of technology is in every aspect of our lives and one of them is education (Raja & Nagasubramani, 2018). Integration of technology into education means using technology meaningfully to achieve learning objectives and there are theories that aid teachers form ideas about the learning and teaching process. The main theories are behaviourism, cognitivism, constructivism, constructionism, and connectivism (Ottenbreit-Leftwich & Kimmons, 2020).

Behaviourism became popular in the mid-20th century. Psychologists carried on studies on how people and animals behave and respond in specific situations (Ottenbreit-Leftwich & Kimmons, 2020). Behaviourism deals with the visible change in behaviour and behaviourists think that learning occurs when the individual is exposed to external stimuli (Zhou & Brown, 2015). However, behaviourists describe learning as acquiring new behaviours only. They do not give importance to thinking and cognitive activities as part of learning because they think these are not observable (Clark, 2018). According to Ottenbreit-Leftwich & Kimmons (2020), in the behaviouristic approach repeating the memorised information to get a reward is important. The teaching and learning process is preparing the students to form appropriate reactions to the stimuli. Technology might enable this kind of training by providing motivation to learn. Activities might include games or other rewards. As Clark mentions, behaviourism rejects any mental activity, but other theorists in the field of education think they are the significant features of learning and cognition. With this controversy, new theories of learning developed (2018).

Cognitivists claim that learning is more than the responses to incentives that come from the environment. Merriam and Cafarella describe the cognitivism and learning notion as the reorganisation of happenings in order to understand and make use of the stimuli (1999). McLeod (2003) explains that a cognitivist sees the learning process as an inner and active cognitive process that develops gradually in the learner. The theory of cognitivism supports that a person must use the prior knowledge structure to compare and utilise new information to achieve learning. Prior knowledge is called schema. To develop knowledge, receiving, keeping, and recalling information is important. In the instructional design, as Blanton suggests (1998), teaching goals should consist of the present and future needs and interests of the individual. According to Sontag, social transformations have an impact on cognitive processes. Contemporary learning theories acknowledge some of these

transformations, but they lack their effect on cognitive processing (2009). Sontag describes her own theory of learning called Social and Cognitive Connectedness Schemata (SCCS). Her theory emphasises the formation of schemata in the learning process as social-connectedness and cognitive-connectedness. Social connectedness refers to a schema that controls and is shaped by the potential and willingness to connect socially with other people. The cognitive connectedness schema shapes the ability and eagerness to know the big picture (Sontag, 2009). She argues that through an instructional model based on SCCS, the increase in learning transfer is visible.

As Saba mentions, technology has a role as a change agent in educational pedagogy. According to research constructivist approaches to education show more success because these approaches are student-centered (2009).

The constructivist approach has had a remarkable role in theory-making and implementations of the international education community (Larochelle, Bednarz, Garrison, & Garrison, 1998). We can see the effect of social constructivism in education in different types of curricula and instructional applications using cooperative and collaborative teaching. These include having students work in teams and groups so that they can exchange ideas and question each other's views (Jones & Brader-Araje, 2002).

Social constructivism is a sociological and communication theory of knowledge that looks at how people form their knowledge and understanding of the world together. Understanding, importance, and meaning, according to this view, are formed in collaboration with other people (Amineh & Asl, 2015).

Collaboration is another theory in Constructivism. Collaboration as a term can be defined as groups of people working together. It entails putting together people and groups for a common goal. Some argue that collaboration is not the same as splitting up the labour. It involves a change in the participants (Clark, Goering, Herter, Lamar, Leonard, Moss, Robbins, Russel, Templin & Wascha, 1996). To quest for ways to enhance practice, build knowledge and change oneself is referred to a science (Goulet, Krenz & Christensen, 2003).

For Tikunoff and Ward (1983), collaboration has important features:

1. at any point of the inquiry process, researchers and practitioners cooperate,
2. along with theoretical problems, the focus of the research is on the "real world".
3. all participants experience mutual development and esteem,
4. from the start of the inquiry process, both study and implementation problems are prioritised (p.466).

As suggested by Goulet, Krenz and Christensen, collaboration can make a space for us to question our assumptions about how we work together and bring about a change in educational practice (2003). Historical roots of collaboration in education can be titled under consultation, collegiality, and cooperation.

Consultation includes talking and listening. It is an important part of collaboration as one looks for or gives information or advice as well as shares knowledge in the specific area. Since listening is also important in the consultation process. It is possible to conclude that it is a style of knowing in which one observes reality and draws conclusions about fact, knowledge, and power. (Belenky, Clinchy, Goldberger & Tarule, 1986).

Collegiality is another essential aspect of collaboration. It suggests a fair and friendly relationship among groups which value colleagues' knowledge and experience. According to Little, there are strong and weak forms of working together. She suggests the strong form of collegiality as "joint work" which involves team teaching, planning, observing, action research and mentoring (1990). For Goulet, Krenz and Christiansen. (2003), "joint work" can be taught as a communal dedication made by all of the people who work together. This was also supported by Belenky et al. (1986), with a belief that the basis of collegiality is "transformative relationships with peers" (p. 38), and "connected knowing" which emerges in relationships where participants are mutually connected to one another. In this relationship caring is important as it is a part of collegiality because it infuses collaborative endeavour (p. 101).

Cooperation is another aspect of collaboration. However, the processes are not the same (Hord, 1986). Consultation and collegiality seem to be at best in cooperative efforts in which participants agree on mutual goals and work together to make them real. However, it is still not collaboration even though cooperation also needs endeavours to understand other's knowledge. Collaboration can be seen as a phenomenon and process that have been identified from the perspective of how individuals build and continue relationships, cooperate with others to fulfil aims, and are changed by processes (Goulet, Krenz & Christiansen, 2003). Collaboration in education has the following features and it can be seen in figure 1.1:

1. Ways of being
 - 1.1 Caring and respect
 - 1.2 Openness

- 1.3 Voluntary participation
- 2. Ways of doing
 - 2.1 Collaborative mentoring
 - 2.2 Work of talk
 - 2.3 Meaning-making
- 3. Ways of becoming
 - 3.1 Social mind
 - 3.2 Equity
 - 3.3 Transformation

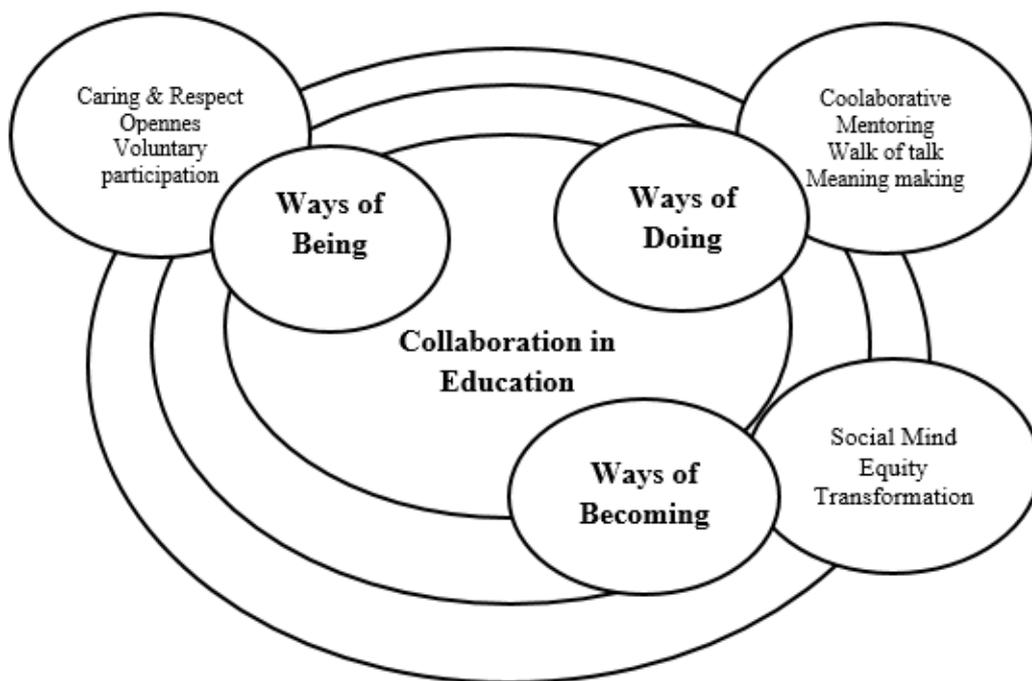


Figure 1.1. Collaboration in education, (Goulet, Krentz & Christiansen, 2003, p. 330)

There are different frameworks to integrate technology into education. Lofström and Nevgi (2007) made a framework that has 8 social constructivist principles. They aimed to integrate new technologies into the education context effectively. The principles of the framework are:

1. Learners build knowledge as a group activity.
2. Learners take the advantage of the mental process of working to achieve a goal.
3. Learners use their background knowledge to construct new knowledge.
4. Learners' mental processes and activities result in enhancement, responsibility, and dedication.

5. Learners set cognitive goal for a purpose actively.
6. Learners collaborate with the other members of the community by sharing knowledge. They take part in conversations and get feedback.
7. Learners reflect on the experience and make out implications.
8. Learners make a connection between learning and the real-world context and they use the knowledge in new applications.

There are theories that emerge from constructivist theory. Constructionism is one of them. It is a constructivist learning theory and instruction theory. This theory indicates that knowledge happens best when one builds concrete and shareable things. It promotes the idea that learning occurs effectively through making things (Ackerman, 2001). Kafai and Resnick (2011) summarise constructionism theory as a powerful relationship between design and learning. This type of learning environment supports different learning styles and various depictions of knowledge. The activities include making, building, or programming, in short, designing activities. Design then provides a full learning context. In this theory the focus is not on the learning process, it is on the product. There are attempts to integrate constructionist theory with technology in education. In “Constructionism in Practice Designing, Thinking and Learning in a Digital World” Yasmin Kafai describes the project that she carried on students. It was a 6-month project. Because the new generation likes playing video games, she asked students to make a video game. She observed the development of project management skills. This project supports the idea that knowledge and truth are created (Ackermann, 1996).

21st-century education theory is connectivism. It is a networked social learning theory for the digital era. Since the change in society is dramatically developing through technology, its establishments and schools are under the pressure of this change. For this reason, new theories emerge (Siemens, 2004). Connectivism is developed by George Siemens and Stephen Downes. It criticises the limits of behaviourism, cognitivism, and constructivism (Duke, Harper & Johnston, 2013). Connectivism is represented as the reflection of a society that transforms quickly. This transformation of society is shaped by developments in technology. The new information is gathered from different opinions, and it changes quickly. This new set of information can be restored outside the individual in a database or other specific information sources. It is more important for an individual to have a connection to the outside knowledge than his or her present knowledge (Siemens, 2004).

Connectivism as a learning theory is still debatable. Chittaro and Ranon claim that it is a school of thought that is relevant to the utilisation of technology in education settings

today. Online learning consists of technological responses to various learning contexts, methods, and motivations. As an example, interactive graphics and 3D web technologies will enable teachers to make interactive and real learning contexts in online environments (2007).

Technology integration into foreign language teaching has always caught the attention of teachers and it has become more and more important and popular in the last two decades. Through the development of technology, different instructional models emerged.

1.2.2. Technology integration models in education

Integration of technology into education is a complex process. It needs teachers to deal with professional requirements that constantly change, with educational technology resources that evolve quickly and with different needs across educational disciplines and environments (Kimmons, Graham & West, 2020). According to Ertmer and Ottenbreit-Leftwich (2010), there are four factors behind a teacher's readiness to integrate Information and Communication Technologies (ICT) into the curriculum. They are 1) teacher's knowledge; 2) teacher's self-efficacy; 3) pedagogical knowledge, and 4) content and the school culture. Technology integration models aid teachers to form understanding of the process and the results of technology integration better. Researchers reviewed various models and the most commonly used technology integration models of the 21st-century are 1) updated Technology Acceptance Model 2 (TAM 2); 2) Substitution Augmentation Modification and Redefinition (SAMR); 3) Replace Amplify Transform (RAT), and 4) Technological Pedagogical Content Knowledge (TPACK).

TAM 2 was developed by Venkatesh and Davis in 2000. They developed TAM to describe the reasons for users' acceptance or rejection of the new information system (Wu, Chou, Weng & Huang, 2011). TAM 2 bases a teacher's eagerness to use new technology on four characteristics: 1) perceived usefulness; 2) intention to utilize; 3) perceived ease of usage, and 4) usage behaviour. TAM 2 suggests that the user's mental judgement of the connection between major aims at work and the result of the task performance using the system is the key point. It acts as a basis for establishing perceptions about the advantages of the system (Venkatesh & Davis, 2000). Figure 2.2 below shows the TAM 2 framework.

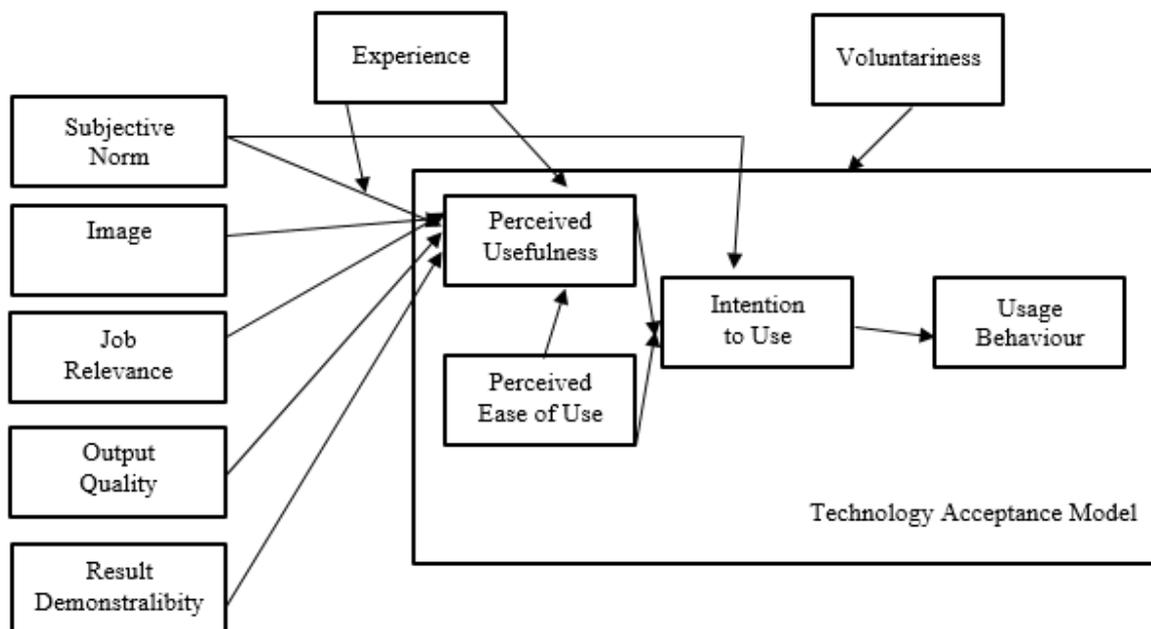


Figure 1.2. Technology Acceptance Model 2, (Gupta, Singh, & Bhaskar, 2016, p.166).

Information technology in educational and pedagogical practices are not separable. Positive attitudes may encourage more effective ICT use in education. A teacher needs personal skills, enough knowledge, and competencies to use ICT in teaching. Without models, ICT integration in the classroom might become a burden (Kihzoza, Zlotnikova, Bada & Kalegele, 2016). Puentedura proposed a new framework in 2006. It is the SAMR model and it is represented as a ladder (2014). Figure 3.1 shows the SAMR model. It has four levels in choosing, utilising, and assessing technology in K-12 settings. The model enables teachers to move from lower levels to higher levels of instruction with technology. In the *Substitution* level, digital technology replaces analog technology. There is no change in function. At the *Augmentation* level, replaced technology changes the function of the task in a positive way. At the *Modification* level, integrating technology needs task redesign. At the *Redefinition* level, technology is used for creating new tasks (Hamilton, Rosenberg & Akcaoglu, 2016). There have been debates over the efficiency of the SAMR model. Reiser claims that this model is not sufficient in enhancing learning outcomes and it does not reflect the features of instructional design. It lacks purpose, repetition, and a systematic process (2012).

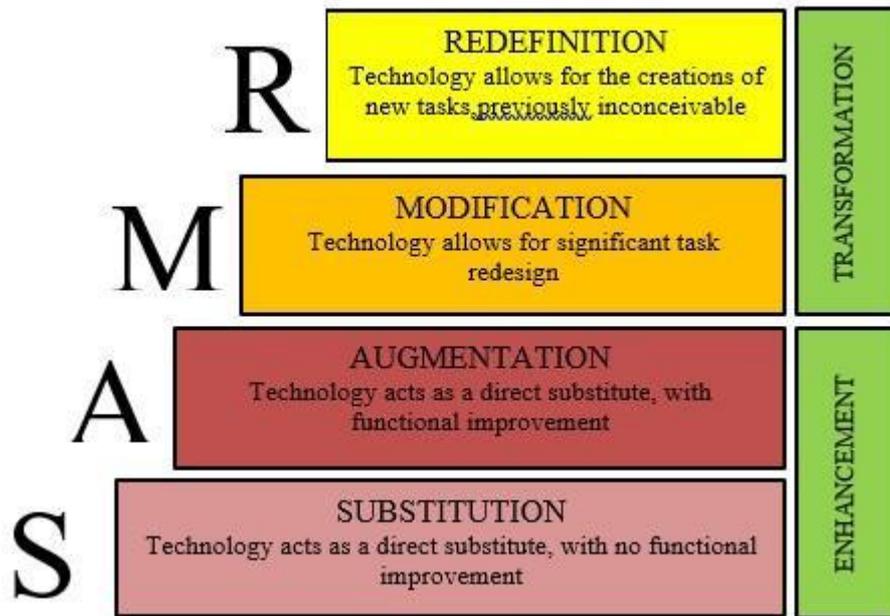


Figure 1.3. SAMR Framework, (Tunjera, N. & Chigona A., 2017, p.674).

The RAT model was introduced in 2006. It is an assessment model for preservice and in-service teachers. The aim is to enable teachers to increase their critical decision-making process in their integration of technology in classrooms (Hughes, Thomas & Scharber, 2006).

The RAT framework is defined in three categories: 1) technology as replacement; 2) technology as amplification and; 3) technology as transformation. *Replacement* involves the technology that acts as various mediums to the same instructional target. The activities are not time fillers and there is no reward at the end. Technology replaces the activities that can be done with a pencil and a worksheet. Pea defines *Amplification* as empowerment (1985). In this stage, the goal is to use technology items to increase the effect and productiveness of teaching, learning, and the curriculum. It resembles Replacement, but amplification involves how the teacher approaches the usefulness of the technology. Replacement and amplification categories do not include the change in instruction method. *Transformation* category involves a change in instruction, the learning, and the content (Hughes et al., 2006). Garner and Gillingham conducted a study with six teachers. Some of them changed their instruction method to change the student learning process. Other teachers used technology in a way that changed the learning practices in the classroom. They conclude that they observed a change in teachers' content objectives (1996).

The fundamentals of teaching have been constituted under a general content, which means the matter of subject, and pedagogical knowledge (Gess-Newsome, 1999). When research in which fields of knowledge a teacher must maintain, were carried out, different categories have been suggested by different researchers. However, knowledge areas proposed by the researchers lacked the use of technology, in other words, technology integration in language teaching, thus a new field called “technological pedagogical content knowledge” was introduced by Mishra and Koehler in 2006 (Harris, Mishra & Koehler, 2009). Technological Pedagogical Content Knowledge, TPACK, framework was created by Misra and Koehler in 2006 which was based on Shulman’s Pedagogical Content Knowledge Framework (PCK). Mishra and Koehler’s TPACK framework was designed in a way that it can assess a teacher in seven knowledge areas. These are “Content Knowledge (CK), Pedagogical Knowledge (PK), Pedagogical Content Knowledge (PCK), Technology Knowledge (TK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPACK)”.

To successfully integrate technology in the classrooms, one should have the necessary knowledge about the dimensions of technology. The TPACK framework which was developed by Mishra and Koehler in 2006 tries to define the knowledge areas and theories needed for the integration of technology. Though all the knowledge constructs are essential in language teaching, the study of TPACK is quite new, specifically to English language teachers. Thus, the TPACK framework and studies related to the technological pedagogical content knowledge framework were tailored to the specific needs of EFL teachers. As Başal suggests the question of the best approach to use when integrating technology in the education context has no right answer because integrating technology is related to the factors such as teachers’ and administrators’ attitudes towards technology, what resources they have, and most importantly, technological pedagogical abilities of language teachers (2016).

1.2.3. Technology integration in foreign language education

In the last twenty years, advancements in technology have changed the lives of individuals from different professions and with this change, technology has been integrated into the educational context more than it was twenty years ago (Başal, 2016). The potential of technology improves language teaching (Zhao, 2003). The development of the Internet has also speeded the evolution of the English language. The growth happened at a time when computers became available to a lot of individuals, not only to the exclusive group of

dedicated teachers (Jarvis, 2005). In foreign language education, principles of the constructivist theory are in line with the assumptions of a successful language learning environment. English teachers try to integrate technology into teaching to enhance their students' communication skills, to increase engagement, and motivate them to think about their learning (Kaya, 2015). The development of technology has brought many benefits to English as a Foreign Language (EFL) teaching. Today English language teachers use technology both in and outside the classrooms to establish interactivity and promote collaboration. Interactivity and collaboration are in the centre of effective learning of a foreign language (Başal, 2016).

There are frequently used technologies in EFL teaching. Computer-assisted language learning (CALL) entails the use of technology with the use of computers, as well as a change process in the institution where it is implemented. As a result, CALL should be viewed as an interdisciplinary issue. It encompasses change management methods as well as an understanding of computer use for educational purposes and language teaching methodologies (Levy, 1997). Serrano indicates that *Computer-based tools*, such as Word, Excel, PowerPoint, and various other editing tools enable teachers to present a topic, create materials, or design any kind of document. These tools may not have an educational aim primarily, but they support the teaching process (2007).

The development of Web 2.0 technology enabled English teachers to use technology effectively in their classrooms. Cong-Lem reviewed Web-Based Technology in Education and classified Web-based Language Learning (WELL) under five categories. They are websites to provide linguistic input, blogging sites, communication tools, task-based learning tools, and Learning Management Systems (LMS). The role of the teacher is important. Web-based applications enable teachers to monitor and give feedback to their students (2018).

There have been attempts to integrate technology tools to foreign language education. Başal and Aytan suggest that teachers can create a more interesting, interactive, and motivating learning environment in their lessons if Web 2.0 tools are effectively integrated into language lessons (2014). From a web page publishing arena, it has become a global community network in which the users can create the content. This makes Web 2.0 a valuable pedagogical tool (Yuen, Yaoyuneyong & Yuen, 2011). According to Clark et. al (1996), learning is seen as a process formulated by Vygotsky's notion of *obuchenie*. In this view, the school as the learning centre interposes multiple learning environments, types of learners, and knowledge domains. It not only promotes building knowledge in different

contexts, such as homes, schools, peer communities and interest groups, also facilitates it in collaborative and contextualised environments. For what purpose, where, and how the learners use web 2.0 technologies is a question of debate. Another question is how these technologies could be integrated into a formal educational context. By looking at the previous research, most teachers do not use these very often and integrate them into the classrooms (Spiris, 2014). When they do, they limit themselves to using only Social Networking Sites or Video Sharing Sites such as Youtube (Spiris, 2014) There are other Web 2.0 tools like Blogs, Wikis, Google Drive, Google Sites, and Skype. Every day a new Web 2.0 tool is added to the list. These tools can also foster Project-based learning and teaching, one of the 21st-century skills a student should acquire. Fleming (2000) says that students taking part in project learning obtain and perform new knowledge through some activities. One of them is research project activities in which students demonstrate their ability to design a research study, find information through technological sources and then become able to communicate the results to an audience. According to Noytim (2010), students see Web 2.0, especially weblogs, as a possibility for them to express themselves in English, writing for both a local and worldwide audience.

1.2.4. Teacher development

In essence, a knowledge base reflects what people must know and be able to do in order to carry out the responsibilities of a certain profession. Three essential topics in L2 teacher education are informed by the knowledge base: 1) L2 teacher education program content, or what L2 instructors should know 2) L2 teacher education programs' pedagogies, or how L2 instructors should teach, and 3) institutional modalities of delivery, or how L2 teachers learn to teach. As a result, by definition, the knowledge base of second language teacher education is the foundation to decide on how to prepare teachers (Johnson, 2009). Many teacher education institutions are focusing on preparing preservice teachers for ICT integration in the classroom (Chai, Koh & Tsai, 2010).

Over the last twenty years, multimodality has taken the attention of both language teachers and learners in the ELT arena. Multimodality means using different channels of communication to communicate meaning (Kress, 2003). Tardy claims that in education various technological tools are becoming common in academic environments. Since these tools necessitate written texts, images, sounds, gestures, and mimic to convey meaning in multi modes, multimodality provides an additional degree for expressing cultural, educational, or linguistic identities (2005). As there is a continuous advancement in

technology, it is debatable which multimodal feature should be integrated into the curriculum. Teachers should take multimodality into account and be careful about in which way they integrate it into their teaching practice (Kessler, 2022).

Teachers must blend technical affordances with pedagogical techniques to teach specific subjects in order to make meaningful use of ICT in the classroom (Mishra & Koehler, 2006). This integrated type of specific knowledge is referred to as the TPACK (Mishra & Koehler, 2006). A lot of research investigating preservice teachers' acquisition of ICT abilities, according to Mishra and Koehler (2006), lacks a well-established theoretical framework. Mishra and Koehler established TPACK as a feasible theoretical framework to strengthen the research of teachers' use of ICT for education, based on the concept of Shulman's Pedagogical Content Knowledge, (PCK).

1.2.5 EFL teachers' attitudes towards Web 2.0 tools

Web 2.0 tools are beneficial in EFL teaching because they support teaching. Teachers have developed different attitudes towards using this new technology. Integrating these technologies into teaching requires a neat consideration because it is a complex process (Karkoulia, 2016).

Positive or negative attitudes towards integrating information and communication technologies known as ICT into teaching might be enabling or disabling factors to integrate technology into EFL teaching successfully (Bullock, 2004). Albirini argues that teachers with positive attitudes use Web 2.0 tools more in their classes (2006). However, the potential of Web 2.0 tools is limited when there is a negative attitude. Teachers become hesitant in using Web 2.0 tools when they think there is not much connection between these technologies and their pedagogical use. Teachers' negative attitudes towards the use of Web 2.0 applications, social media, for instance, might be because of the belief that the teacher is the only provider of data and knowledge. It may also be from the feeling that Web 2.0 technologies distract the learners. Thus, they might use traditional methods of teaching as they think they are more effective (Faizi & El Fkihi, 2016) Through training and experience teachers' attitudes become more positive. Teachers make their abilities better with training and become able to see the benefits of Web 2.0 tools. Hence, they can get their students ready for a demanding, digital world (Deng & Yuen, 2011).

1.3 Statement of the Problem

Using Web 2.0 tools in EFL teaching has become popular among educators. Even some institutions set their education policy on the integration of these new technologies into their context. Solomon and Schrum say that Web 2.0 technologies have been reported to enhance the teachers' ability to address different audiences and gave a way to shape their style of teaching in terms of different needs and skill levels in teaching/learning environments (2007). Balçikanli indicates that there are attempts to integrate Web 2.0 in EFL classes in the Turkish educational system at the tertiary level (2012). This might include common classrooms, and blended or online learning environments

English teachers were among the ones who first endorsed the benefits of Web 2.0 in the English language acquisition process and they have also set up the first communities of practice for ongoing professional development together with the spread of best practices (Pop, 2010). Getting teachers ready to integrate technology into their teaching is a significant goal (Baser, Kopcha & Ozden, 2016). Technological Pedagogical Content Knowledge (TPACK) framework is important because it offers possible solutions to improve the way teachers teach using technology. At this point, teachers' technological pedagogical content knowledge is necessary to integrate technology into their teaching effectively. However, most research about this issue was done to investigate pre-service EFL teachers' or teacher candidates' use of Web 2.0 tools and their TPACK levels. There is inadequate research investigating the relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels. A study to explore correlations between these variables could give the needed information about this issue and fill the gap in the studies done in Turkish tertiary level EFL instructors' context.

1.4 Theoretical Framework

The theoretical framework of this study is Technological Pedagogical Content Knowledge (TPACK) framework.

Shulman (1986) indicated the issue of a lack of focus on content over teaching methods in the mid-1980s. He mentioned that teacher education lacks a paradigm. Later on, educational expertise began to take on greater significance. The content knowledge and the pedagogical knowledge, however, failed to address Shulman's "missing paradigm" properly. As seen below in figure 1.4, Shulman (1987) established the idea of Pedagogical Content Knowledge (PCK):

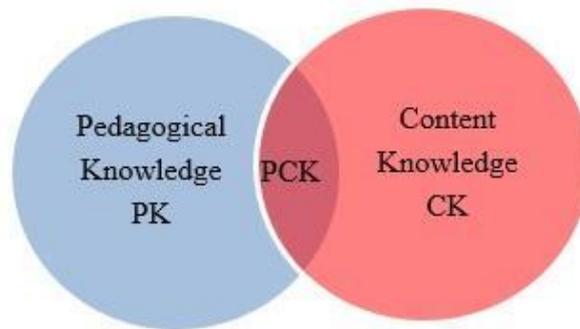


Figure1.4. PCK Framework, (Saad, Barbar, & Abourjeili ,2012, p. 44).

PCK stands for a teacher's ability to select and employ analogies, examples, explanations, and presentation methods to provide clear knowledge of any topic that represents subject-specific concepts in the best way (Shulman, 1987). PCK can also be described as the ability to transmit content knowledge to students. Shulman (1986) describes the PCK as:

PCK represents the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction. Pedagogical content knowledge is the category most likely to distinguish the understanding of the content specialist from that of the pedagogue. (p. 8)

In order to successfully integrate technology in the classrooms, one should have the necessary knowledge about the dimensions of technology. TPACK framework which was developed by Mishra and Koehler in 2006 tries to define the knowledge areas and theories needed for the integration of technology. Mishra and Koehler were the ones who first introduced the Technological Pedagogical Content Knowledge (TPACK) framework. It is a model that was built on Shulman's PCK framework in 1986 by adding technological knowledge (TK) to the PCK (Mishra & Koehler, 2006).

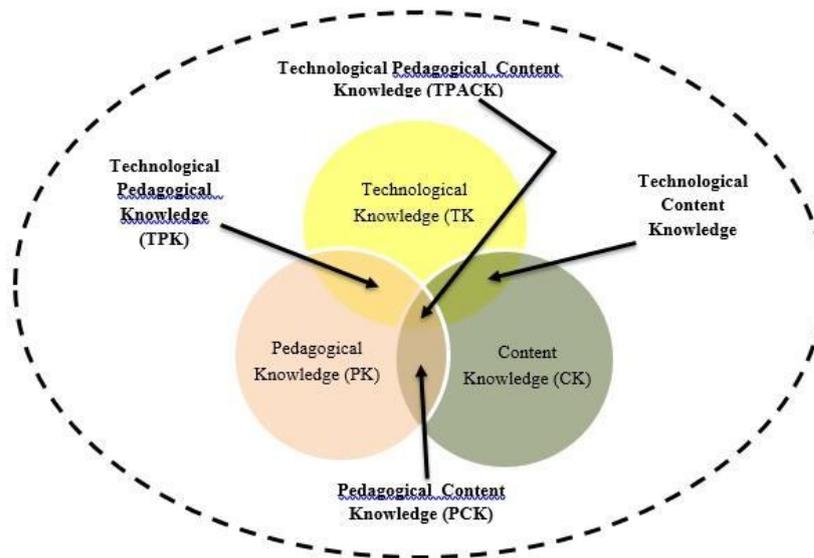


Figure 1.5. TPACK Framework (graphic adapted from <http://tpack.org>)

As Mishra and Koehler insist, studies done in the educational technology field have been criticised since they lack a theoretical foundation, so they propose three essential components of learning environments: content, pedagogy, and technology, and their diverse functions and interplay. This model has a lot to say about technology integration on many levels: theoretical, pedagogical, and methodological (2006).

The development of TPACK is essential in teaching effectively with technology. The TPACK framework is defined as a complex interaction among three areas of knowledge: Content, pedagogy, and technology. These are represented as CK (Content knowledge), PK (Pedagogical knowledge), PCK (pedagogical content knowledge), TCK (technological content knowledge), TPK (technological pedagogical knowledge), and TPACK (technological pedagogical content knowledge). TPACK framework can be seen in figure 1.5. The interaction between them, both in theory and in practice, develops the types of adaptable knowledge to integrate technology use into teaching effectively (Harris, Mishra & Koehler, 2009). The knowledge areas that constitute the TPACK framework can be summarised as:

1.4.1. Content knowledge

Mishra and Koehler define Content Knowledge (CK) as what teachers know about the subject they learn or teach. It is very important for teachers since there is a difference between knowledge and the nature of exploration in terms of disciplines. Thus, a teacher should have an understanding of the fundamentals of their disciplines (2006).

1.4.2. Pedagogical knowledge

Pedagogical Knowledge (PK) exists when teachers have a broad sense of knowledge of the processes, practices, and methods of teaching and learning. It includes all educational purposes, aims and values. Understanding how students learn, classroom management, lesson planning, and assessment are all part of it. It involves being aware of the procedures and methods employed in the classroom. Another crucial part is the students' profiles, as well as knowing how to apply specific methodologies to assess performance (Koehler & Mishra, 2009).

As Koehler and Mishra argue, a broad pedagogical knowledge enables teachers to understand how students form knowledge, acquire skills, and how build habits of mind and positive attitudes towards learning. Pedagogical knowledge needs the knowledge of social and developmental theories in education and how they are connected to the students in the classroom (2009).

1.4.3. Pedagogical content knowledge

Pedagogical Content Knowledge (PCK) includes the fundamental areas such as teaching, learning, curriculum, assessment, and reporting. They are the conditions that facilitate learning. It is a synthesis of how teachers relate their knowledge and beliefs about teaching with the context in which they are teaching (Koehler & Mishra, 2009).

1.4.4. Technological knowledge

The definition of Technology Knowledge (TK) is how teachers comprehend information technology to integrate successfully into teaching. It makes it possible to manage a variety of tasks using information technology and a variety of ways of finishing a task successfully. The concept of TK is not static but developmental. It evolves over time through interaction with technology.

1.4.5. Technological content knowledge

Technological Content Knowledge (TCK) used in the TPACK framework is how technology and content affect and limit one another. Teachers have to know more about what to teach; they should also know the way the subject matter can be altered by applying specific

techniques. It is important to know which technologies are best suitable for the subject matter to be taught and how the content controls and alters the technology, or the opposite.

1.4.6. Technological pedagogical knowledge

Technological Pedagogical Knowledge (TPK) is when teachers understand how teaching and learning may transform when certain technologies are applied in certain ways. It means the knowledge about the pedagogical benefits or limitations of several technological tools because these tools have pedagogical designs and strategies which are developmentally appropriate in different disciplines.

1.4.7. Technological pedagogical content knowledge

Koehler and Mishra (2009) indicate that Technological Pedagogical Content Knowledge (TPACK) is beyond the fundamentals of content, pedagogy, and technology. It is a concept that comes out from the relationships among the knowledge in these areas. TPACK is unlike the understanding of the concepts separately when meaningful and thoroughly successful teaching with technology is considered deeply. It is the foundation of teaching effectively via technology. Mainly, it refers to the understanding of the complex relationship between technology, pedagogy and content that enables teachers to build suitable and specific-to-content teaching strategies.

1.5. Purpose of the Study

The main purpose of this study was to examine the relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels. Many innovative training tools and educational approaches have emerged in the field of education. These tools and approaches have paved the way for integrating technology into learning and teaching processes (Kassim & Ali, 2007). In this digital age, students are required to adopt several skills and various literacies to meet the requirements of the world that is changing. (Karkoulia, 2016). EFL instructors should realise this new reality and they should be prepared, trained, or confident to teach English using Web 2.0 tools.

The need to use technology with an aim to enhance teaching and learning effectiveness has increased over the ten years (Yenkimaleki & van Heuven, 2019). In EFL teaching, what decides the technology needed to be used is related to teachers' collaboration (Kárpáti, 2009) and their positive attitudes towards teaching (Aydin, 2013). However, this adoption of new

technologies and positive attitudes towards using Web 2.0 tools in EFL teaching may not always reflect how confident and knowledgeable the EFL instructors are when using these new technologies. In other words, the successful integration of Web 2.0 tools into teaching English might be directly linked to TPACK levels.

1.5.1. Research questions

The research questions for this study are:

1. What are Turkish EFL instructors' attitudes towards the use of Web 2.0 tools?
2. What are Turkish EFL instructors' TPACK ability levels?
3. Is there a significant relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels?

1.5.2. Research hypothesis

Null hypothesis: There is no statistically significant relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels.

1.6. Significance of the Study

The relationship between the variables, instructors' attitudes towards the use of Web 2.0 tools in EFL, and their TPACK levels might be related to the successful implementation of technology in EFL teaching. The research has been done to explore the pre-service EFL instructors' attitudes towards technology integration into EFL teaching and their TPACK levels separately. However, research has not explored these variables together in an in-service EFL context. As Sariçoban, Tosuncuoğlu and Kırmızı suggested, such a study on the TPACK levels of experienced teachers could be experimented as a variable (2019).

The significance of this study, therefore, is to understand ELF instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels and see if these two variables have an effect on each other. This study could enlarge the current study by relating in-service EFL instructors' attitudes towards technology use and TPACK levels by examining the relationship between them.

1.7. Limitations and Delimitations

The aim of this research was to investigate the relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK level and there are

some limitations as it is a correlational study. The first limitation is the variables. Since correlational studies are limited to investigating the relationship between two variables, the current study also has a limit in its variables. The second limitation is that the correlational study cannot reveal the cause-and-effect relationship between the variables. The last limitation is the data gathered is limited. It only explores the relationship between variables statistically. There are some delimitations of this study. It was applied to 108 English instructors who were teaching at a foundation university in Ankara. Therefore, they might not reflect the whole population. Moreover, two Likert-type questionnaires were applied in this study and the answers ranged from “strongly agree” to “strongly disagree”, thus the participants chose the closest alternative to their way of thinking. Except for the choices in the questionnaires, the participants were not able to give any different answers. Another delimitation was this research was addressed to the EFL instructors who had some training in using the technology in their classes. Also, the data was gathered during the 2021-2022 academic year, a time when English instructors sought ways to integrate technology in their teaching because of the pandemic online teaching period. This research was conducted in a foundation university in Ankara, in both departments: 1) Department of Basic English (Prepschool), and 2) Department of Modern Languages (Departmental English courses). Although the questionnaires were addressed to 141 instructors working in both departments, 108 of them responded. Therefore, the results of this research cannot be generalised to the whole population of EFL instructors. The last delimitation is this questionnaire was addressed to in-service EFL instructors. It could have been addressed to pre-service teachers, as well.

1.8. Definition of Key Terms

1.8.1. Definition of Web 2.0

1.8.1.1. Theoretical definition

Web 2.0 was first defined by O'Reilly as important and exciting new applications and websites.

1.8.1.2. Operational definition

In this study Web 2.0 is an educational tool that can be integrated into EFL teaching.

1.8.2. Definition of attitude

1.8.2.1. Theoretical definition

The word attitude is described as the way you think and feel about someone or something and a feeling or way of thinking that affects a person's behaviour (Merriem-Webster, n.d.).

1.8.2.2. Operational definition

In this study attitude stands for EFL instructors' opinions about using Web 2.0 tools in EFL context.

1.8.3. Definition of TPACK

1.8.3.1. Theoretical definition

TPACK has been described by Mishra and Koehler as a framework for teacher knowledge for technology integration.

1.8.3.2. Operational definition

In this research TPACK is EFL instructors' ability in using WEB 2.0 tools successfully in teaching

1.8.4. Definition of EFL instructor

1.8.4.1. Theoretical definition

The word instructor is described as a person who instructs. Especially, a college teacher below professional rank. (Merriem-Webster, n.d.).

1.8.4.2. Operational definition

EFL instructor is a term used to describe English language instructors, a person who teaches English at university. In this context, it describes the English instructors working at Atılım University in Ankara, Turkey.

2. REVIEW OF LITERATURE

2.1. Overview

In this section related studies on EFL instructors' attitudes towards the use of Web 2.0 tools, EFL instructors' TPACK levels and examples of correlational studies are discussed.

2.2. EFL Teacher's Attitudes Towards the Use of Web 2.0 Tools

Various studies have been done to measure EFL teachers' attitudes towards the use of Web 2.0 tools in the EFL context. Başöz (2016) conducted research to assess pre-service EFL teachers' attitudes towards language learning through social media. There were 120 participants and the researcher found that preservice EFL teachers accept social media as a systematic component of language learning experience. He recommends teacher training programs include some of the elements of how to integrate social media to enhance EFL students' interaction and communication. Web 2.0 tools also provide students with a real-life environment. In Cephe and Balçıkanlı' research on Web 2.0 tools in language teaching, they found out that the participants, who were student teachers, believe authentic language and real-life experiences are some of the benefits of Web 2.0 technology. Cephe and Balçıkanlı said that web technologies provide exposure to authentic language, *which is much too difficult in EFL contexts* (2012).

Karkoulia analysed "EFL teachers' attitudes towards the integration of Web 2.0 tools in EFL teaching" (2016). The researcher found out that teachers hold positive attitudes towards the integration of Web 2.0 tools in English language teaching.

Waycott, Clerehan, Gray, Hamilton, Richardson, Sheard, and Thompson researched how university lecturers use web 2.0 activities in university evaluation tasks (2010). They listed current web 2.0 assessment techniques in the first stage of the project by conducting a survey and interviews with lecturers across Australia who teach in various disciplines. The project's preliminary findings are provided with an emphasis on using examples from the interviews to highlight the potential and challenges that web 2.0 benefits present for learning, teaching, and evaluation in higher education. Traditional academic writing responsibilities can be considerably different from student authoring in web 2.0 environments. Students can broadcast their work to an open audience, use diverse communication styles and texts, draw on their unique personal identities and experiences, co-create content with other students, and manage their content outside of the university using web 2.0 technology.

In another research by Yaprak and Tüm, EFL teachers' self-efficacy beliefs and attitudes towards web 2.0 tools were analysed (2021). The findings revealed that EFL teachers have positive attitudes towards the web 2.0 tools when they are easy to use. The participants in the research stated that:

“Web 2.0 tools provide amusing, easy, helpful, innovative, effective, valuable, collaborative, cooperative, time-saving, engaging, autonomous, motivating, fostering, and facilitating learning”.

Coskun and Marlowe did a study on the EFL teachers' attitudes towards the use of Web 2.0 tools (2015). They used two Web 2.0 tools, Animoto and Fotobabble in their research. Findings revealed that teachers mostly held positive attitudes towards integrating these platforms into their teaching. They also illustrated in their research that Animoto and Fotobabble are effective in teaching and learning English since the teachers' and students' creative ideas about the ways to implement and use them in the curriculum is practically limitless. The teachers who participated in the survey had positive attitudes suggesting some possible, creative ideas to make use of these platforms. The researchers then concluded that using technology in teaching is important, particularly along with integrating Web 2.0 tools that will maximise the teaching and the learning process of students who face the newest computer technologies every day. Above mentioned tools are suitable to be incorporated in the teaching and learning process as fun and useful tools that can be used for enlarging on the learning opportunities, as well as enhancing them.

Faizi (2018) did research on teachers' attitudes towards using Web 2.0 technologies in language learning and teaching. The research shows that teachers have positive attitudes towards the integration of Web 2.0 tools, and they said that Web 2.0 tools help learners to stimulate their both language and communication skills of listening, reading, writing and speaking. Although the results illustrate that teachers gave higher ranks to receptive skills rather than productive skills, it can still be seen that they believe four language skills can be fostered through Web 2.0 applications.

Development of 21st-century skills via web 2.0 tools might be considered important. Tsourapa (2018) studied EFL teachers' attitudes towards the development of 21st-century skills in EFL teaching. The results revealed that teachers who have high attitudes towards the development of 21st-century skills tend to use technology tools to foster these skills more. The teachers think that “critical thinking, collaboration, creativity, and effective communication” are crucial skills to be built in the 21st-century EFL context. These educational pedagogies are enhanced using technology tools. In addition, the teachers view

the promotion of Multiple Intelligences and New Literacies as important. They employ different technology tools to provide the development of 21st century skills in foreign language teaching and these tools highly include blogs, social networks and wikis. In addition, Velasco found that shy students found blogging to be a more comfortable medium for expressing themselves (2018).

We live in a digital era in which culture can also be accepted as part of the curriculum. Many studies were done to highlight the importance of cultural competence in EFL teaching and one of them is by Bouslama and Benaissi (2018). Their study examined teachers' knowledge, views, and comprehension of the concepts of culture, intercultural competence (IC), and the intercultural approach (ICA), to identify any potential flaws that could obstruct effective intercultural competence instruction. Their study's major goal was to assist teacher educators in developing training programs that better suit the needs of specific teachers in the area of IC teaching. Data was collected using semi-interviews with eight teachers, which were then thematically evaluated. Many EFL teachers showed a lack of theoretical grasp of the ICA and its objectives, which could have a negative impact on their IC teaching practices, according to the findings.

2.3. EFL Teachers' TPACK Ability Levels

Literature shows that the attitude of the teachers results in successful technology integration. However, English teachers might not be able to form a positive attitude towards the use of technology in EFL classes if they are not motivated to integrate it. The most effective prediction tool to integrate technology in teaching is technological pedagogical content knowledge, TPACK framework, which should be considered for better technology use in classrooms. Teachers can become more comfortable and content with technology if they have adequate TPACK levels (Raygan & Moradkhani, 2020)

Lai, Wang & Huang, (2022) say that various internal and external characteristics that predict teachers' technology adoption have been identified in previous studies. Only a few studies have looked at how these internal and environmental elements interact to determine how teachers use different types of technology. Therefore, they conducted research. Their study examined how two essential external elements (school culture and professional development) interact with two core internal components (knowledge/skill and belief) to identify three types of technology use in teaching and learning (i.e., technology for content delivery, technology for learning enrichment, and technology for changed education towards

self-directed learning) using the responses of 280 English as a foreign language (EFL) teachers. In deciding on technology use, it was found that school culture, professional development, and TPACK are more important than teaching and learning principles. It was also discovered that these elements had a different impact on the three forms of technology use. The findings point to a more tailored approach to teacher technology adoption research and assistance.

Literature suggests that studies done on EFL teachers' TPACK are limited in the Turkish context. As Ekmekçi (2018) said *TPACK development, competency, gender and achievement effects, perceptions*, and comparison of TPACK among pre-, and in-service teachers in Turkey are the general research trends in terms of study objectives. EFL teachers' TPACK levels may vary due to various factors. Sarıçoban, Tosuncuoğlu and Kırmızı did quantitative research to assess the TPACK of pre-service EFL teachers who were learning to teach English (2019). A survey, devised and validated by Başer, Kopcha and Özden (2016), was used to collect data. Technical knowledge (TK), content knowledge (CK), pedagogical knowledge (PK), pedagogical content knowledge (PCK), and a fifth component that includes technological content knowledge (TCK), technological pedagogical knowledge (TPK), and TPACK elements were the five sections of the survey. The purpose of this survey was to evaluate the pedagogical and technological competencies of pre-service EFL teachers. A total of 77 pre-service EFL teachers took part in the study. The findings show that pre-service EFL teachers have a reasonable level of technological pedagogical content knowledge yet, there are some areas where they need to improve.

Köse did research to look into in-service English language teachers' perceptions of Technological Pedagogical Content Knowledge (TPACK) in the context of teaching EFL (2016). The study's participants were 127 language instructors who taught English at various levels at several Turkish state colleges. Data was gathered using the TPACK-EFL Survey (Baser, Kopcha & Ozden, 2016). It contained some demographic questions as well as questions added by the researcher to get more in-depth information about technology use in the classroom. According to the study's findings, English language teachers believe they are the most knowledgeable about their subject, the English language. They do not believe, however, that they are highly proficient in integrating technology into their content teaching in pedagogically sound way.

In today's educational context, the promotion of 21st-century skills is important. According to Wang (2022), TPACK research that looks into how to help instructors teach 21st-century competencies or thinking skills has flourished. Wang conducted research to

develop a two-dimensional TPACK scale, allowing EFL teachers to assess their TPACK in combining technology and cognitive abilities. A total of 525 EFL teachers completed the online survey. This scale's scores were gathered in order to evaluate and confirm its validity, and reliability. The statistical evidence revealed that this instrument has a good level of reliability and validity, and that it is useful for determining technological integration levels. The findings revealed that EFL teachers were less confident in their ability to teach higher-order thinking skills using TPACK. EFL teachers from different cultures indicated different degrees in TPACK and thinking skills. High TPACK self-efficacy was indicated by high-achieving EFL teachers. Wang thinks this TPACK survey might assist EFL teachers in determining their TPACK growth in terms of integrating technology and thinking abilities in the classroom. As Aniq and Draji mentioned, the successful integration of ICT in the classroom necessitates EFL instructors' consideration in order to be able to expand their knowledge, which emphasises a grasp of how technological advancements today may assist language learning progress and may modify professional teachers' responsibilities and practices (2019). The purpose of their study was to see how EFL teachers' perceptions of competencies influenced their TPACK development. As a result, they employed a case study because it was the most appropriate method for performing the research. The information was gathered from 20 EFL teachers via online semi-structured interviews. Most EFL teachers ranked their domain knowledge for CK, PK, and PCK higher than for domains involving technological knowledge, such as TK, TCK, TPK, and TPACK, according to the data. The result of this study might show that EFL teachers will have a better comprehension of the TPACK framework. In the future, it might contribute to the TPACK development of EFL teachers in order to improve the quality of the teaching-learning process.

2.4. Correlational Studies

As seen in sections 2.2 and 2.3, there are various studies on teachers' attitudes towards the use of Web 2.0 tools and TPACK separately. However, in the literature correlational studies are not frequently seen. Generally, correlational studies circle around the relationship between ICT, technology integration, self-efficacy, perceptions and TPACK in and out of the EFL context. There is not enough research investigating the relationship between EFL teachers' attitudes towards the use of Web 2.0 tools and their TPACK ability levels.

Saraç did research and investigated the relationship between TPACK and teachers' attitudes towards Interactive White Board use in his thesis (2016). The findings revealed that Turkish EFL in-service teachers have high levels of TPACK. In addition, the participants expressed enthusiasm for using Interactive Whiteboards in their classes. Correlation analysis revealed a statistically significant positive association between TPACK levels and teacher attitudes. More research was done into the effects of gender and teaching experience on TPACK and attitude. Gender and TPACK, as well as gender and attitude, were found to have no significant association. The investigation of the association between teaching experience and TPACK, as well as the relationship between teaching experience and attitude, revealed statistically significant relationships.

In another thesis, Alazcıoğlu (2016) examined the relationship between preservice teachers' TPACK (Technological Pedagogical Content Knowledge) efficacy stages and Web 2.0 applications usage situations. According to the research findings, there is a positive and high relationship between preservice teachers' TPACK efficacy stages and the stage of Web 2.0 application usage for research and production, but a positive medium-level relationship between the stage of Web 2.0 application usage for entertainment. Furthermore, the efficacy stages of technological knowledge are higher in preservice teachers than in other domains, according to the findings. Facebook and Twitter are the most commonly used Web 2.0 applications, although Google search engine and Wiki are other widely used Web 2.0 applications by preservice teachers.

Zhang and Chen (2022) studied interactions among three teacher internal variables (i.e., Technological Pedagogical Content Knowledge (TPACK), affective and evaluative attitudes towards technology) and two technology usage variables (i.e., technology use for face-to-face and online instruction). Teachers' TPACK, which is linked to their evaluative attitudes, was found to have a favourable impact on their actual technology use for both face-to-face and whole online instruction. Their evaluative attitudes also influenced the use of technology for face-to-face training in a beneficial way. Affective attitudes, on the other hand, had no effect on the use of either form of technology.

Raygan and Moradkhani did research and concluded that EFL teachers' attitudes, TPACK level, and educational climate are all factors that influence technology integration in an EFL context (2020). The findings of a series of Pearson correlations revealed a significant link between instructors' TPACK and attitude, as well as their usage of

technology. Furthermore, a link was discovered between school climate and teacher attitudes. Structural equation modelling was used to evaluate the link between the variables (school climate, TPACK, attitude, and technology integration), taking into account direct and indirect relationships. TPACK and attitude were found to be significant predictors of technology integration in this phase. It was confirmed, using indirect path coefficients, that school atmosphere predicts technological integration, which is mediated by teachers' attitudes.

Azhar and Hashim investigated TPACK skills and attitudes towards technology among ESL teachers in Malaysia (2022). The results suggest that ESL teachers have an incredibly high TPACK level. Furthermore, it demonstrates that instructors' attitudes about technology are equally promisingly important. Aside from that, the data revealed that there is a link between ESL teachers' TPACK skills and their attitudes towards technology. According to the authors, future research studies should include the administration of the questionnaire to examine attitudes before and after the adoption of a long-term professional development plan for technology integration.

Dinh (2015) explored Factors influencing EFL teachers' use of information and communication technology in the classroom. The researcher found that EFL teachers used a mix of generic and language-specific ICT applications as tools for their classroom teaching, drawing on a large body of research on teacher use of ICT (including EFL teachers) and factors influencing their use (including TPACK), as well as two theoretical models, the Diffusion of Innovations Theory by Rogers in 2003 and the ecological perspective by Zhao and Frank in 2003. The teachers believed that the influencing elements had various degrees of impact during this procedure. The most crucial aspect is the teacher. The use of ICT by teachers was found to be positively correlated with their TPACK. Some demographic variables among teachers, such as age, gender, major area of specialisation, teaching experience, and highest qualification, had favourable connections with their usage of ICT, their perceptions about the effect of the factors, and TPACK.

Habibi, Yusop and Razak examined how Indonesian pre-service language teachers use ICT in their teaching (2019). They developed a TPACK instrument by validating and doing exploratory factor analysis. They came to the conclusion that interactions between TPACK components are complex, involving nine hypotheses. The model has also proven statistically

valid and trustworthy in terms of its effects on the UICT during instructional practices, indicating that TPACK as a component is the best predictor, followed by TPK and PCK.

Joo, Park and Lim (2018) studied factors which influence preservice teachers' intention to use technology and their TPACK, self-efficacy, and technology acceptance. They looked into the structural relationships among each other. The results showed that preservice teachers' TPACK was found to have a substantial impact on teacher self-efficacy and perceived ease of using technology. The teachers' TPACK also had a favourable impact on their perceptions of how easy it was to use technology and how effective it was in the classroom. Finally, instructors' intentions to utilise technology were influenced by their self-efficacy, perceived ease of use, and perceived utility of using technology. TPACK, on the other hand, had no effect on their desire to use technology.

Baturay, Gökçearsan and Şahin conducted research on Teachers' Attitudes towards Computer-Assisted Education (CAE) and TPACK Competencies (2017). According to the findings, teachers' attitudes towards CAE scores are significantly higher than their TPACK scores. Their TPACK competencies and their attitudes towards CAE have a low-level positive correlation. When compared to other skills, teachers' Technology Knowledge (TK) and Technological Pedagogical Knowledge (TPK) competencies have a considerably stronger relationship with their attitude towards CAE. Gender differences in attitudes towards CAE have been reported. TK and Technological Content Knowledge (TCK) are two TPACK competencies that differ by gender. Twenty percent of attitudes towards CAE are explained by the TPACK framework. The construct TK has the greatest impact on explaining how teachers feel about using CAE.

Finally, Koziklioğlu and Babacan investigated the relationship between Turkish EFL teachers' technological pedagogical content knowledge skills and attitudes towards technology (2019). In this study, a correlational survey model was applied. Data were collected using the "TPACK Implementation Scale" and the "Attitude Scale towards Technology." The data was analysed using the arithmetic mean, standard deviation, T-test, ANOVA, and Pearson Product Moment Correlation Coefficient. As a consequence of the research, Turkish EFL teachers' TPACK skills and attitudes towards technology were found to be very high. While there were no significant differences in attitudes towards technology among Turkish EFL teachers based on gender, FATİH project training, or professional experience, female teachers and those who received FATİH project training had stronger

TPACK skills. However, it was discovered that teachers' TPACK skills did not change significantly based on their professional experience. Furthermore, it was discovered that teachers' TPACK skills and attitudes towards technology have a low, positive, and significant relationship.

3. METHODOLOGY

3.1. Overview

Chapter 3 first describes the methodological steps in this research. Then, the research population and the sampling were discussed. The data collection tools that were used in this study are presented. Finally, the data analysis procedure is given.

3.2. Research Design

The method used in this research is a quantitative, correlational survey design. As Creswell states a quantitative research design gives a quantitative description of the population through studying the sample population (1999). The research design enables teachers to answer three types of questions: 1) descriptive; 2) relationship between variables; 3) the anticipated relationship between variables over a period of time (Creswell & Creswell, 2017). The questions surveyed in this research are descriptive.

3.2.1. Research population and sampling

The population in this study is EFL instructors working in the School of Foreign Languages (SFL) at Atılım University in the 2021-2022 academic year in Ankara, Turkey. The entire population consists of 141 EFL instructors and the sample size is 108. In this study about 50 participants ensure the coefficients are significant because the studies done in the L2 context show correlations in academic journals as low as 0.30 and 0.40 (Dörnyei, 2002). Since sample size is 108, which is more than 50, it is appropriate for this study.

A researcher must be careful about the decision on the procedure of sampling. Because the study represents the entire population, the procedure must be designed carefully to achieve the objectives of the study (Dörnyei, 2002). In this research, a non-probability type, convenience sampling was used. Participants in the population of this study were chosen in

order to fulfil the expectations of the research and to investigate the attitudes and ability levels of the population (Dörnyei, 2002). In this case, the convenience sampling from a foundation university would be appropriate.

3.2.2. Data collection instruments

In this thesis, two quantitative data collection tools were used to address the research questions. The first questionnaire, Attitudes Towards Web 2.0 Tools, was designed by Christina Karkoulia (2016) after she did a literature review. The questionnaire was pilot tested in order to increase its reliability, validity, and practicability (Dörnyei, 2003). It was administered to 135 EFL teachers all around Greece using a non-probability sampling. According to Cohen, Manion and Morrisson (2017), a non-probability sample intentionally represents a specific group, it represents a specifically named unit of a wider population. Karkoulia measured the reliability of the attitude questionnaire as 0.889 Cronbach's Alpha, which shows that the items in the questionnaire have high internal consistency.

The second questionnaire is TPACK. It was developed and validated by Ali Bostancıoğlu, and Zoe Handley (2018). It is a self-report questionnaire to assess TPACK for EFL teachers. They developed the questionnaire in three phases: 1) generate the pool of items; 2) do content validation; and 3) do construct validation. For content validity, the researchers consulted a panel of international CALL experts. The scale consists of 36 items. Subscales are CK (5 items), TK (6 items), PCK (7 items), TCK (6 items), TPK (6 items), and TPK (6 items). For construct validity, they used Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). They administered the survey to 542 EFL teachers in and abroad. Bostancıoğlu and Handley found the overall reliability factor of the questionnaire as .94 Cronbach's alpha (2018). This questionnaire was used in various academic articles and thesis.

3.3. Data Analysis Procedure

This research has been designed as quantitative method research. The researcher used two questionnaires in order to collect quantitative data from EFL instructors. To collect the data Google forms, an online survey system was chosen. The form was sent to the participants' email addresses, and it included the survey link.

There are three parts in the questionnaire: demographic questions part, questions for assessing attitudes of instructors towards Web 2.0 tools part and questions for assessing instructors' TPACK levels part.

SPSS, Version 26 was used to analyse the data.

Demographic data including gender, age, teaching experience, academic background and teaching certificates of participants was analysed using descriptive statistics.

Since the aim of this research is to investigate the relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels, attitude questionnaire by Karkoulia (2016) and TPACK scale by Bostancıoğlu and Handley (2018) were used.

For research questions one and two, descriptive statistics calculating the mean and standard deviation were applied in order to investigate attitude and TPACK levels.

To analyse the third research question, in order to investigate the relationship between two variables, Pearson Correlation Test was used.

4. RESULTS

4.1. Overview

In this chapter, there is information about the data analysis procedure. First, the researcher talks about the validity and reliability, normality test results, descriptive analysis of demographics, descriptive analysis of the Web 2.0 attitude questionnaire, and descriptive analysis of the TPACK questionnaire. Finally, the data analysis of the relationship between instructors' attitudes towards Web 2.0 tool use in EFL and their TPACK ability levels are discussed.

4.2. Reliability of The Research Instruments

Table 4.1. Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0,803	0,909	9

After collecting the data, in order to measure the reliability factors of the instruments, the researcher calculated Cronbach's Alpha on SPSS v. 26. The findings illustrated that the questionnaires used in the study were reliable since the Cronbach Alpha factor is 0.803.

4.3. Normality Test Results

As the size of the sample was 108 ($N=108$), Kolmogorov-Smirnova and Shapiro-Wilk normality tests were conducted. The results show that there is no indication of non-normality occurring in the data.

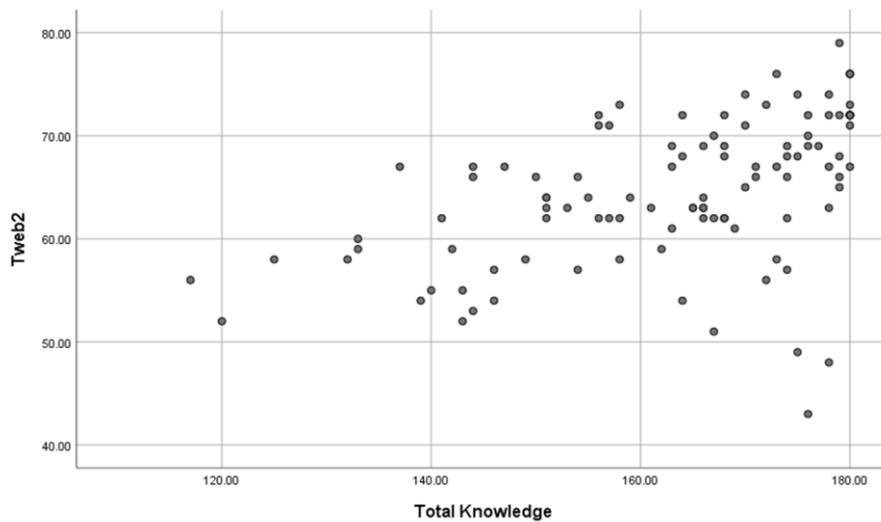


Figure 1.6. Test of normality

The results indicate that there is a significant relation between questionnaire 1 and questionnaire 2. This means that there is a significant correlation between instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels since Pearson Correlation was found .497. Table 4.2 shows the correlation between the variables.

Table 4.2. Pearson correlation test

		Tweb2	Total Knowledge
Tweb2	Pearson Correlation	1	.497**
	Sig. (2-tailed)		0,000
	N	108	108
Total Knowledge	Pearson Correlation	.497**	1

	Sig. (2-tailed)	0	
	N	108	108

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

4.4. Descriptive Analysis

In this section, the descriptive analysis of demographics, research questions 1,2, and 3 variables were described.

4.4.1. Descriptive analysis of demographics

Table 4.3. Participants' age groups

		age			
		Frequency	Percent	Valid Percent	Cumulative Percent
	23-30	14	13	13	13
	31-35	28	25,9	25,9	38,9
	36-40	27	25	25	63,9
	40+	39	36,1	36,1	100
Valid	Total	108	100	100	

Table 4.3. above illustrates the demographic variables of participants' age groups. Findings reveal that age distribution is as follows; 14 (13%) participants are between the age of 23-30, 28 (25.9%) participants are between the 31-35, 27 (25%) participants are between the 36-40 and 39 (36.1%) of them are over the age of 40.

Table 4.4. Participants' gender

		gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	27	25,0	25,0	25,0
	Female	81	75,0	75,0	100,0

Total	108	100,0	100,0
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Results in Table 4.4. show that 27 (25%) are male and 81 (75%) are female.

Table 4.5. Participants' field of graduation

	Frequency	Percent	Valid Percent	Cumulative Percent
BA in English Language Teaching	52	48,1	48,1	48,1
BA in English Language and Literature	28	25,9	25,9	74,1
BA in American Culture and literature	11	10,2	10,2	84,3
BA in Linguistics	9	8,3	8,3	92,6
BA in Translation an interpretation	4	3,7	3,7	96,3
Other	4	3,7	3,7	100
Total	108	100	100	

According to the education fields of the sample in Table 4.5., 52 (48.1%) have BA in English Language Teaching, 28 (25.9%) have a BA in English Language and Literature, 11 (10.2%) have a BA in American Culture and Literature, 9 (8.3%) have a BA in Linguistics, 4 (3.7%) have a BA in Translation and Interpretation, and 4 (3.7%) have a BA in other departments.

Table 4.6. Participants' teaching certificates

		certificate			
		Frequency	Percent	Valid Percent	Cumulative Percent
	Yes	66	61,1	61,7	61,7
Valid	No	41	38	38,3	100
	Total	107	99,1	100	
Missing	System	1	0,9		
Total		108	100		

Out of 108 participants, 66 (61.1%) of them have various teaching certificates. However, 41 (38%) participants do not have any certificates and 1 (0.9%) is missing on the system. The data is given in Table 4.6.

Table 4.7. Participants' teaching experience

		experience			
		Frequency	Percent	Valid Percent	Cumulative Percent
	1-4 Years	8	7,4	7,4	7,4
	5-10 Years	23	21,3	21,3	28,7
	11-15 Years	32	29,6	29,6	58,3
Valid	16-20 Years	13	12	12	70,4
	20+ Years	32	29,6	29,6	100
Total		108	100	100	

Last demographic variable is participants' experience in English language teaching. The distribution from the sample is as follows; 8 (7.4%) participants are between 1-4 years of experience, 23 (21.3%) of them are between 5-10 years, 32 (29.6%) of them are between 11-15 years, 13 (12%) of them are between 16-20 years and finally 32 (29.6%) participants have experience of 30 years and above. Data can be seen in Table 4.7.

4.4.2. Descriptive analysis of research question 1

Table 4.8. Descriptive statistics of Web 2.0 tools attitude questionnaire

	Mean	Std. Deviation	N
Tweb2	64,7778	7,02510	108

The first research question is: What are Turkish EFL instructors' attitudes towards the use of Web 2.0 tools? According to the data collected via the Web 2.0 Attitude Questionnaire, participants have a high attitude towards the use of Web 2.0 tools in EFL classes with a value of 64,77. Table 4.8. above shows the descriptive statistics of Turkish EFL instructors' attitudes towards the use of Web 2.0 tools.

4.4.3. Descriptive analysis of Web 2.0 attitude questionnaire

Table 4 1. Descriptive statistics of Web 2.0 tools attitude questionnaire

	<i>M</i>	<i>SD</i>	5*		4*		3*		2*		1*		
			%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	
Q 1	4,44	0,7	55,56	60	34,26	37	9,26	10	0,93	1	0,00	0	
Q 2	4,53	0,75	63,89	69	28,70	31	4,63	5	1,85	2	0,93	1	
Q 3	4,44	0,7	54,63	59	35,19	38	9,26	10	0,93	1	0,00	0	
Q 4	4,26	0,81	44,44	48	40,74	44	12,04	13	1,85	2	0,93	1	
Q 5	4,2	0,84	44,44	48	34,26	37	18,52	20	2,78	3	0,00	0	
Q 6	4,44	0,66	52,78	57	39,81	43	6,48	7	0,93	1	0,00	0	
Q 7	4,05	0,85	36,11	39	34,26	37	27,78	30	1,85	2	0,00	0	
Q 8	4,57	4,05	0,64	64,81	70	28,70	31	5,56	6	0,93	1	0,00	0
Q 9	4,44	0,67	51,85	56	41,67	45	4,63	5	1,85	2	0,00	0	
Q 10	4,26	0,8	44,44	48	40,74	44	11,11	12	3,70	4	0,00	0	
Q 11	4,1	0,91	41,67	45	31,48	34	22,22	24	4,63	5	0,00	0	
Q 12	4,26	0,8	47,22	51	32,41	35	19,44	21	0,93	1	0,00	0	
Q 13	4,17	0,89	45,37	49	29,63	32	21,30	23	3,70	4	0,00	0	
Q 14	4,06	0,96	40,74	44	32,41	35	20,37	22	5,56	6	0,93	1	
Q 15	2,4	1,16	4,63	5	14,81	16	22,22	24	32,41	35	25,93	28	
Q 16	2,16	1,17	5,56	6	9,26	10	15,74	17	34,26	37	35,19	38	

*5=Total of "Strongly agree", *4="Agree", *3="Neither agree nor disagree, *2="Disagree" and *1="Strongly disagree"

Frequency analysis results of the Web 2.0 attitude questionnaire revealed that question number 8, "Since we live in a digital world, education should equip students with 21st-

century skills and develop New Literacies through blended learning” ($M=4.57$) was found higher than question number 7, “Web 2.0 tools challenge all forms of intelligences so that all learners can take advantage of their own strengths” ($M= 4.05$) by the English instructors. In the following, the results of the Web 2.0 attitude questionnaire are given one by one.

As seen in Table 4.9, regarding question 1, “The use of Web 2.0 tools creates a more interesting and fun learning environment” ($M=4.44$), more than half of the participants (55.56%, $n=60$) strongly agreed and agreed (34.26%, $n=37$). However, 9.26% ($n=10$) were hesitant and said neither agree nor disagree. Only (0.93%, $n= 1$) did not believe that “web 2.0 tools create a more interesting and fun learning environment” by saying disagree. Strongly disagree was not observed.

In question 2, “Web 2.0 tools promote sharing, collaboration, interaction, creativity and socialisation” ($M=4.53$), more than half of the participants (63.89%, $n=69$) strongly agreed and (28.70%, $n= 31$) agreed. 4.63% of them ($n=5$) neither agreed nor disagreed. 1.85%, $n=2$ of the participants disagreed that “web 2.0 tools promote sharing, collaboration, interaction, creativity, and socialisation”. 1 participant (0.93%, $n=1$) strongly disagreed with the idea.

59 participants (54.63%, $n=59$) strongly agreed and agreed (35.19%, $n=38$) to question number 3, “Organising authentic tasks with the help of Web 2.0 tools motivates students” ($M=4.44$). 10 participants (9.26%, $n=10$) neither agreed nor disagreed and 1 disagreed (0.93%, $n=1$). None of the participants strongly disagreed.

For “Web 2.0 tools encourage students to actively construct knowledge” ($M=4.26$), question number 4, more than half of the participants (44.44%, $n=48$) strongly agreed and agreed (40.74%, $n=44$). In this question 13 participants (12.04%) neither agreed nor disagreed. 2 participants disagreed (1.85%) and 1 participant strongly disagreed (0.93%).

Regarding question number 5 ($M=4.2$), “Web 2.0 tools enhance learner autonomy”, most participants strongly agreed (44.44%, $n=48$) and agreed (34.26%, $n=37$). 20 participants (18.52%) neither agreed nor disagreed and some disagreed (2.78%, $n=3$). None of the participants strongly disagreed with question 5.

In question 6, “Communicating with a real audience makes students more creative and thoughtful in content and structure of an assignment” ($M=4.44$), almost half of the participants strongly agreed (52.78%, $n=57$) and 43 of them agreed (39.81%). 7 of them neither agreed nor disagreed (6.48%, $n=7$) and 1 of them disagreed (0.93%). Strongly disagree was not observed.

The participants who strongly agreed with question 7, “Web 2.0 tools challenge all forms of intelligences so that all learners can take advantage of their own strengths” ($M=4.05$), made up only 36.11% of the population (36.11%, $n=39$). This question has the lowest overall mean score among the other questions. 37 participants agreed (34.26%, $n=37$). 30 participants were hesitant. They neither agreed nor disagreed (27.78%, $n=30$) and 2 of them disagreed with question 7. None of them strongly disagreed.

Question number 8 has the highest mean score ($M=4.57$) in the questionnaire with 70 participants strongly agreeing that “since we live in a digital world, education should equip students with 21st-century skills and develop New Literacies through blended learning” (64.81%, $n=70$), 31 participants agreed (28.70%, $n=31$). Neither agree nor disagree was 5.56%, $n=6$ and 1 participant disagreed (0.93%, $n=1$). None of the participants strongly disagreed with question 8.

Participants responded to question number 9 “Research skills could be developed through the use of Web 2.0 tools and project-based learning” ($M=4.44$) as (51.85%, $n=56$) strongly agree and (41.67%, $n=45$) agree. 5 participants (4.63%, $n=5$) responded as neither agree nor disagree. 2 of them disagreed (1.85%, $n=2$). Strongly disagree was not observed.

48 participants strongly agreed with question 10 (44.44%, $n=48$) “Web 2.0 tools give students the opportunity to express their own voice” ($M=4.26$). 44 of them agreed (40.74%, $n=44$). 12 participants neither agreed nor disagreed (11.11%, $n=12$) and 4 disagreed (3.70%, $n=4$). None of the participants strongly disagreed.

Question number 11, “The openness and collaborative nature of Web 2.0 tools could offer possibilities to promote Cultural Pluralism ” has one of the lowest overall mean scores ($M=4.1$). Strongly agree and agree was 41.67%, $n=45$ and 31.48%, $n=34$. Neither agree nor disagree got one of the highest mean scores among the questions (22.22%, $n=24$). 5 participants disagreed (4.63%, $n=5$). However, strongly disagree was not observed.

In question number 12, “Web 2.0 based lessons increase L2 input and promote the integration of all the four language skills” ($M=4.26$), strongly agree was 47.22%, $n=51$ and agree was 32.41%, $n=35$. 21 participants neither agreed nor disagreed (19.44%, $n=21$). 1 participant disagreed (0.93%, $n=1$) and strongly disagree was not observed.

In question number 13 ($M=4.17$), 49 participants think that “Web 2.0 tools develop a sense of community where students communicate meaningfully in real contexts” (45.37%, $n=49$) and 32 of them agreed (29.63%, $n=32$). 23 of them neither agreed nor disagreed (21.30%, $n=23$) and 4 of them disagreed (3.70%, $n=4$). None of the participants strongly disagreed.

Question number 14 is another question with lowest scores ($M=4.06$). 44 participants strongly agreed (40.74%, $n=44$) and agreed (32.41%, $n=35$) that “Web 2.0 tools encourage shy students to communicate”. 24 participants neither agreed nor disagreed (20.37%, $n=24$). 6 participants disagreed (5.56%, $n=6$) and 1 strongly disagreed (0.93%, $n=1$).

5 participants strongly agreed to question 15 ($M=2.4$), “The use of Web 2.0 tools distracts students” (4.63%, $n=5$) and agreed (14.81%, $n=16$). 24 of them neither agreed nor disagreed (22.22%, $n=24$). 35 disagreed (32.41%, $n=35$) and 28 strongly disagreed (25.93%, $n=28$). More than half of the instructors do not think that Web 2.0 tools create distraction among students.

In the last question of the web 2.0 attitude questionnaire, “I am hesitant to use Web 2.0 technologies because I believe that conventional methods of teaching and learning are more effective” ($M=2.16$), 6 participants responded as strongly agree and 10 agreed (5.56%, $n=6$; 9.26%, $n=10$). 17 neither agreed nor disagreed (15.74%, $n=17$). More than half of the participants prefer Web 2.0 technologies over conventional methods. 37 of them disagreed and 28 of them strongly disagreed (34.26%, $n=37$; 35.19%, $n=38$).

4.4.4. Descriptive analysis of research question 2

Table 4.2. Descriptive statistics of TPAC questionnaire

	Mean	Std. Deviation	N
Total Knowledge	163,3333	15,05007	108

The second research question is: What are Turkish EFL instructors’ TPACK ability levels? The data revealed that the participants’ TPACK ability levels are high with a value of 163,33. Table 4.10. above illustrates the descriptive statistics of participant’s overall TPACK.

4.4.5. Descriptive analysis of TPACK questionnaire

Table 4.3. TPACK item statistics

Item Statistics

	Mean	Std. Deviation	N
Tweb2	64,7778	7,0251	108
Total Knowledge	163,3333	15,05007	108
Total TK	28,4259	2,7179	108
Total PK	18,3981	2,01369	108
Total PCK	13,8981	1,50972	108
Total CK	23,713	1,93855	108
Total TCK	26,6389	3,55059	108
Total TPK	26,4444	3,55552	108
Total TPCK	25,8148	3,93201	108

As seen on Table 4.11, the total mean of the TPACK questionnaire is 163.33 ($M=163.33$, $SD=7.02$). In Technology Knowledge, the highest mean score was observed as $M=28.42$, $SD=2.71$. Pedagogical Knowledge was measured $M=18.39$, $SD=2.01$, which was the second lowest mean score in the results and the lowest mean score was seen in the Pedagogical Content Knowledge as $M=13.89$, $SD=1.50$. Content Knowledge was $M=23.71$, $SD=1.93$. Technological Content Knowledge was $M=26.63$, $SD=3.55$, and Technological Pedagogical Knowledge was $M=26.44$, $SD=3.55$. Technological Pedagogical Content Knowledge domain was $M=25.81$, $SD=3.93$.

4.4.6 Descriptive analysis of research question3

Table 4.12 Descriptive statistics of Web 2.0 attitude and TPACK questionnaire's correlation

Correlations			
		Tweb2	Total Knowledge
Tweb2	Pearson Correlation	1	.497**
	Sig. (2-tailed)		0
	N	108	108
Total Knowledge	Pearson Correlation	.497**	1
	Sig. (2-tailed)	0	
	N	108	108

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

The third research question is: Is there a significant relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels? The

data reveals that there is a significant relationship between instructors' attitudes and their TPACK levels. As it can be seen in Table 4.12, the correlation is .497.

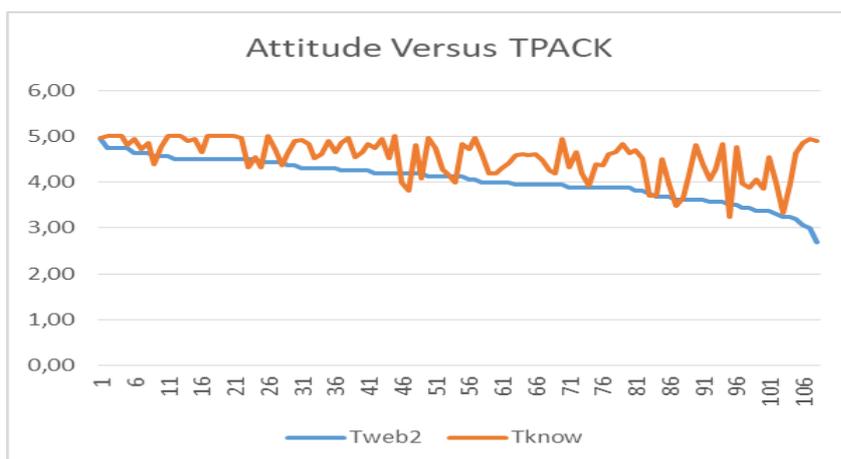


Figure 1.7. Relationship between Web 2.0 attitude and TPACK

Figure 4.2 above illustrates EFL instructors' attitudes towards Web 2.0 tools levels and their overall TPACK. It is observed that as the attitude lowers, so does the TPACK. In the other domains, it was seen that as the attitude goes down, their TK, PK, PCK, CK, TCK, TPK, and TPACK go down. The figures illustrating the relationship between attitudes and TPACK domains can be seen in Appendices.

4.5. Inferential Statistics

The procedure of conducting a Pearson correlation coefficient analysis of variables to investigate the relationship between them i.e., EFL instructors' attitudes towards the use of web 2.0 tools and their TPACK ability levels is given below.

4.5.1. Pearson correlation test

The relationship between the EFL instructors' attitudes towards the use of web 2.0 tools (as measured by Karkoulia in Web 2.0 tools attitude questionnaire) and their TPACK ability levels (as measured in TPACK scale by Bostancıoğlu and Handley) was investigated using Pearson correlation coefficient. Preliminary analyses were conducted to make sure the assumptions of normality and linearity were not violated. There was a strong, positive correlation between the two variables as $r=1$, $n=108$.

4.5.2. Hypothesis testing

Table 4.13. Inter-item correlations

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	0,526	0,146	0,9	0,754	6,182	0,033	9

A set of Pearson correlations were used to see if there was a significant relationship between the variables. The correlation between EFL instructors' attitudes towards the use of web 2.0 tools and their TPACK ability levels is .497; this is significant at the 0.01 level. The null hypothesis is rejected. Table 4.13 also shows the inter-item correlations.

4.5.3. T-Test

According to the result of the variance analysis, it was observed that the differences between instructors' attitudes towards the use of web 2.0 tools and TPACK levels are statistically important as p was measured as 0 ($p=0$) (Mendes, Subaşı & Başpınar, 2005).

5. CONCLUSION

5.1. Overview

This study tried to examine the relationship between attitudes towards the use of Web 2.0 tools and TPACK ability levels of English language instructors who work at a foundation university in Turkey. In this section, findings are discussed under 1) teacher attitudes; 2) TPACK level and 3) the relationship between attitude and TPACK levels.

5.2. Conclusion and Discussion

The 21st century has been the era in which technology plays a role in every aspect of our lives. As Raja and Nagarasubramani say, one of the aspects is education (2018). Integrating technology into education necessitates utilising technology meaningfully to achieve learning goals (Ottenbreit-Leftwich & Kimmons, 2020). To achieve this, teachers' attitudes towards using new technologies are important. Teachers' positive and negative

attitudes towards using ICT in their teaching might become an enabling or disabling factor of the integration of technology in English language teaching (Bullock, 2004). One of the technologies that is commonly used in classes is Web 2.0. According to Karkoulia (2016), Web 2.0 tools are useful in EFL teaching since they are a supporting factor. Teachers have different attitudes towards the use of this new technology. Because it is a complex process to integrate this new technology into teaching, teachers need training and experience. With training and experience, teachers' attitudes towards the use of Web 2.0 tools could become positive (Chen, Wan &, Son, 2008).

Ertmer and Ottenbreit-Leftwich argue that teachers' knowledge, self-efficacy, pedagogical knowledge and content as well as school culture are four factors that affect their readiness to integrate technology into the curriculum. Integration of technology needs integration medals because they help teachers to integrate it better (2010). There are various technology integration medals and one of them is TPACK. It is a framework created by Koehler and Mishra (2009). It was created to aid teachers integrate technology better since the framework involves three types of knowledge that interact with each other; technology, pedagogy and content (Koehler & Mishra, 2009). As Başal indicates there is no right answer to which approach is best when integrating technology into education. It depends on teachers' and administrators' attitudes towards technology, the resources they have, and language teachers' technological and pedagogical abilities (2016). Hence, the TPACK framework might act as a fundamental tool for the overall understanding of how to teach with technology.

This study investigated the relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels. This study might be a predictor of the impact of TPACK on instructors' attitudes towards the use of Web 2.0 tools in English language teaching.

In the present study, the analysis of data revealed that Turkish EFL instructors hold positive attitudes towards the use of Web 2.0 tools. Moreover, the participants obtained high scores in TPACK subdomains. The researcher found that the relationship between attitudes towards Web 2.0 technologies and overall TPACK scores are positively correlated. Lastly, the data revealed that subdomains related to technology in the TPACK framework might predict Turkish EFL instructors' positive attitudes towards the use of Web 2.0 tools.

Even though the present study is limited to a small sample of participants, the results illustrated that TPACK, and attitudes have an impact on each other. Moreover, it should be considered that the context of the research is an institution where Turkish EFL instructors

had training during the shift to online teaching due to COVID-19 pandemic. Therefore, this study is limited to the present time. This study seems to be the first study to investigate the relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and TPACK ability levels in and abroad.

5.3. EFL Instructors' Attitudes Towards the Use of Web 2.0 Tools.

The results of the frequency analysis conducted to answer the first research question revealed that English instructors who completed the questionnaire had overall high attitudes towards the use of Web 2.0 tools in EFL teaching. The majority of the instructors held positive attitudes with a mean of 64.77 ($M=64.77$, $SD=7.02$). According to Karkoulia (2016), EFL teachers have a high, positive attitude towards the integration of Web 2.0 tools in their teaching, which is consistent with this research.

Regarding the first question in the attitude questionnaire in this research, EFL instructors believe that “the use of web 2.0 tools creates a more interesting and fun learning environment” ($M=4.44$; 55.56%, $n=60$). This is supported by Coskun and Marlowe (2015) who did research on EFL teachers' attitudes towards the use of Web 2.0 tools by studying Animoto and Fotobable. They are two of the web tools used in their study. Their results revealed that teachers think these web tools can be incorporated into the teaching and learning process as a fun element.

More than half of the participants think that “Web 2.0 tools promote sharing, collaboration, interaction, creativity, and socialisation” with a mean of 4.53 ($M=4.53$; 63.89%, $n=69$). In the research on EFL teachers' self-efficacy beliefs and attitudes towards Web 2.0 tools by Yaprak and Tm, the findings illustrate EFL teachers have positive attitudes and they said Web 2.0 tools enable amusing, easy, helpful, innovative, effective, valuable, collaborative, cooperative, timesaving, engaging, autonomous, motivating, fostering, and facilitating learning (2021). In research by Baz (2016), he implied that social media enhances EFL students' interaction and communication. These findings are consistent with this study.

“Organising authentic tasks with the help of Web 2.0 tools motivates students” was the third question in the attitude questionnaire. This result might be justified by the research by Karkoulia's (2016) since in this study the result has a mean of 4.44 ($M=4.44$), which is one of the highest means in the questionnaire. The result in this context is higher. This might

be because in this research most of the participants had training in the use of Web 2.0 tools. This might have affected their attitude in a more positive way.

In the 4th question, “Web 2.0 tools encourage students to actively construct knowledge”, the mean is 4.2 ($M=4.2$). 48 participants strongly agreed with this statement. However, there were 13 participants who were unsure. This might be because their TPACK mean is low ($M=3.97$) and the TC, TPK, and TPCK domains are also low ($M=3.88$; $M=3.86$; $M=3.67$). The results might show that their attitude might have been affected by their TPACK ability.

Regarding question number 5, “Web 2.0 tools enhance learner autonomy”, participants think positively with a mean of 4.2 ($M=4.2$). 48 of them strongly agreed and Yaprak and Tm also support the idea that Web 2.0 tools enable autonomous learning (2021).

In this research EFL instructors highly believe that “communicating with a real audience makes students more creative and thoughtful in content and structure of an assignment”. Participants who strongly agreed with this question were 52.78%, $n= 57$. Waycott et al. (2010) also reveal that university teachers believe students can broadcast their work to an open audience, use different communication styles and texts, draw on their unique personal identities and experiences, co-create content with other students, and manage their content outside of the university using web 2.0 technology, which is consistent with this study.

Question 7, “Web 2.0 tools challenge all forms of intelligences so that all learners can take advantage of their own strengths”, got one of the lowest mean scores ($M=4.05$). Although the majority of EFL instructors strongly agree and agree with this statement, there are 30 participants who were hesitant, and 2 participants disagreed. In Tsourapa’s study, teachers see the promotion of Multiple Intelligences via Web 2.0 tools as important. In this research, 27.78% of instructors were unsure about the potential of Web 2.0 tools to promote intelligences, which might contradict with Tsourapa’s research (2018).

Question number 8 has the highest mean score in the questionnaire with a mean of 4.57 (64.81%, $n=70$). ELF instructors in this study highly believe that “since we live in a digital world, education should equip students with 21st-century skills and develop New Literacies through blended learning”. Tsourapa’s study also supports that the teachers view the promotion of New Literacies as important. They said they use different technology tools to enable the development of 21st-century skills in foreign language teaching (2018).

“Research skills could be developed through the use of Web 2.0 tools and project-based learning”, which is question number 9 has also a high mean ($M=4.44$). Most instructors

in this research strongly agreed with this statement (51.85%, $n=56$). This is consistent with Karkoulia (2016). The researcher said 43% of the participants believe that research skills can be promoted via Web 2.0 tools and project-based learning. Fleming (2000) also supports this idea that project-based learning provides knowledge through research project activities using technological sources.

Regarding question number 10, “Web 2.0 tools give students the opportunity to express their own voice”, 44.44% of the participants strongly agreed. This contradicts with Karkoulia (2016). The participants who agreed with this statement were 36.3% and 35.6% were unsure. However, in this study, the majority of EFL instructors think as positively as the student participants in Noytin’s study (2010).

Question number 11, “the openness and collaborative nature of Web 2.0 tools could offer possibilities to promote Cultural Pluralism”, has a mean of 4.1 ($M=4.1$), which is one the lowest means in the attitude questionnaire. 24 participants were unsure, and 5 participants disagreed with the statement. This result is consistent with Bouslama and Benaissi since their findings revealed that most English language teachers showed a lack of theoretical understanding of the ICA and its objectives, which might have a negative impact on their IC teaching practices (2018).

51 participants in this study strongly agreed that “Web 2.0-based lessons increase L2 input and promote the integration of all four language skills”, which is question number 12. According to the findings of the research by Faizi, the participants think that Web 2.0 tools assist learners in fostering their language and communication skills of listening, reading, writing, and speaking (2018). They believe four language skills can be fostered via Web 2.0 tools. However, 21 participants in the current study were unsure.

In question 13, “Web 2.0 tools develop a sense of community where students communicate meaningfully in real context”, 49 participants strongly agreed. This is consistent with the research by Cephe and Balçıkanlı. In the research, they revealed that student teachers believe real-life experiences and authentic language is important and can be fostered via Web 2.0 technologies (2012). In this research 23 participants were unsure, and 4 participants disagreed.

44 participants strongly agreed that “Web 2.0 tools encourage shy students to communicate”. This one is consistent with the research by Velasco who illustrated that shy students felt comfortable in expressing themselves via Web 2.0 tools (2018). In the current research, 22 participants were hesitant and 6 of them disagreed, which is the highest number in the questionnaire.

“The use of Web 2.0 tools distracts students”, the 15th question has a mean of 2.4 ($M=2.4$) 24 participants disagreed and 28 participants strongly disagreed (32.41%; 25.93%). However, 24 (22.22%) participants were unsure. This is almost consistent with Karkoulia (2016) since in her study 39.3% of participants disagreed with the statement and a significant number of participants were unsure (31.1 %). This is consistent with Crook, Fisher, Graber, Harrison, Lewin, Cummings, Logan, Luckin, Oliver and Sharples, (2008). They say that teachers think students are distracted by the internet and sometimes fear that technology has a negative effect on both education and society (2016).

The last question in the attitude questionnaire was that “I am hesitant to use Web 2.0 technologies because I believe that conventional methods of teaching and learning are more effective”. 37 participants disagreed and 38 participants strongly disagreed. 17 participants were unsure. 10 agreed and 6 strongly agreed. This might be because these participants might have failed to see the connection between Web 2.0 tools and its pedagogical benefits because Albion argues that if teachers find no link between technology and its pedagogical usage, they are hesitant to employ Web 2.0 tools and believe that traditional teaching methods are more effective (Albion, 2008, in Kale & Goh, 2014).

According to the findings, Turkish EFL instructors have positive attitudes towards the use of Web 2.0 tools. Their attitude might be affected by the training they got, which helped to develop their TPACK ability levels. School facilities might be another factor. Instructors who have lower attitude scores might have lower TPACK ability levels, which was discussed in the third part of this section.

5.4. EFL Instructors' TPACK Ability Levels

EFL instructors in the current study demonstrated overall high TPACK levels with a mean of 163.33 ($SD=15.05$). Since the participants in this study had training in technology integration and they had the adequate equipment to teach with technology, this might have affected their TPACK in a positive way. In addition, in the research base, the education policy is to teach English via tablet PCs. This result is consistent with Hung, Lai, and Wang's research where they studied how school culture and professional development interact with knowledge, skill and beliefs to identify technology uses in teaching and learning. They found that school culture and professional development and TPACK had an effect on technology use (2021).

In this research, the researcher found that participants' Technology Knowledge subdomain has the highest mean as $M=28.42$. However, the Pedagogical Knowledge subdomain was $M=18.39$ and the Pedagogical Content Knowledge domain was $M=13.89$. These results are slightly lower than the other TPACK subdomains Sarıçoban, Tosuncuoğlu and Kırmızı found in their research that pre-service EFL teachers have a reasonable level of PCK, yet there are some areas that they need to improve (2019). The findings in this research support that EFL instructors have a high TPACK level but there are some subdomains they need to improve. The reason for the low PK and PCK scores might be the content of the training they got.

Köse (2016), found that in-service English teachers believe they are more proficient in their subject, so their content knowledge is higher. However, they think they are not very knowledgeable in integrating technology into content teaching pedagogically. This contradicts the current research. In this research EFL instructors have a reasonable level of content knowledge ($M=23.71$) and their technological pedagogical content knowledge domain was also high with a mean of $M= 25.81$. This result might show that participants in this research have become able to interrelate content, technology, and pedagogy after the training given to them.

Instructors in this research believe that 21st-century skills can be promoted via Web 2.0 tools. This was the 8th question in the attitude questionnaire in which participants demonstrated the highest mean score. This might show that instructors believe in the promotion of higher-order thinking skills through technology. Data revealed that their overall TAPCK ability level is high ($M=168.5$) and their TCK, and TPK subdomains are also high ($M=27.51$; $M=27.54$). This contradicts Wang who did research in combining technology with cognitive skills. The researcher found that the participants in the research did not feel confident in teaching higher-order thinking skills using the TPACK (2022). Participants from different cultures reported different TPACK levels. The participants in the current study might know about the pedagogical aspect of teaching through technology and another reason might be the promotion of 21st-century skills has become very popular and most training programs focus on this issue. The last reason could be the culture aspect since this study was directed only to Turkish EFL instructors.

Aniq and Drajeti did research to see how EFL teachers' perceptions of competencies influenced their TPACK development. It was a case study. Most EFL instructors ranked their domain knowledge for CK, PK, and PCK higher than for domains involving technological knowledge, such as TK, TCK, TPK, and TPACK, according to the data (2019). In the current

research, the result is the opposite. Participants reported their TPACK development as TK, TCK, TPK and TPCK higher, PK, PCK and CK as lower. Their educational backgrounds might have an effect on their TPACK subdomains since 56 of the participants were non-ELT department graduates.

5.5. The Relationship Between EFL Teachers' Attitude Towards the Use of Web 2.0 Tools and Their TPACK Ability Levels.

The results of the present study indicated that overall TPACK scores are positively correlated with overall attitude scores. Considering the positive correlation between instructors' TPACK and their attitude towards the use of Web 2.0 tools, it can be expected that the higher the attitude scores, the higher the TPACK scores. This result is in accordance with the study which was done by Saraç (2016). In the research, the findings revealed a significant positive relationship between TPACK levels and teacher attitudes.

Alazcıoğlu conducted research on preservice teachers' TPACK efficacy stages and their Web 2.0 usage situations (2016). The research findings revealed that there is a positive relationship between instructors' TPACK self-efficacy stages and their Web 2.0 usage situations, especially their Web 2.0 application usage for research and production. The findings also revealed that instructors' TK domain is higher than the other TPACK domains. These results are in accordance with the present study. In the attitude questionnaire, question number 9, "Research skills could be developed through the use of Web 2.0 tools and project-based learning", has a mean of 4.44, one of the highest means and overall TPACK is $M=4.54$. This might illustrate that EFL instructors' attitude to question number 9 is affected by their TPACK. Another finding is also in accordance with Alazcıoğlu. In this research EFL instructors' TK domain is $M=4.74$, which is the highest score among TPACK domains.

The highest score in the attitude questionnaire is 4.57, question number 8, "Since we live in a digital world, education should equip students with 21st-century skills and develop New Literacies through blended learning". The ones who have a high score in this question also have a high TPACK score. This might mean that their TPACK has an impact on their attitude towards the use of Web 2.0 tools in online and face-to-face teaching. According to Zang and Chen (202) teachers' TPACK was found to have a favourable impact on their actual technology use for both face-to-face and whole online instruction. This might support that attitude towards blended learning is affected by TPACK.

As Raygan and Moradkhani (2020) found in their research, school climate is a predictor of attitudes of teachers' integration of technology and their TPACK. In the institution where the present study was conducted, professional development is an important part, is a policy. Instructors had training on technology integration. They are provided with the necessary equipment, and they have technical support. This might also explain their positive attitudes and high TPACK ability levels. However, more research should be done in the future to reveal this. As Azhar and Hashim concluded in their research, there is a relationship between teachers' attitudes towards technology and their TPACK skills, they also mentioned that future research studies should include the administration of the questionnaire to investigate attitudes before and after the adoption of a long-term professional development plan for technology integration (2022). Dinh (2015) also found out that teachers' use of ICT is positively correlated with their TPACK. Koziklioğlu and Babacan also investigated the relationship between Turkish EFL teachers' technological pedagogical content knowledge skills and attitudes towards technology (2019). They calculated Turkish EFL teachers' TPACK skills and attitudes towards technology and the results were very high. These are in accordance with the present study.

Habibi, Yusop and Razak investigated how Indonesian pre-service language teachers use ICT in their teaching (2019). They developed a TPACK to predict teachers' UICT. According to the results TPACK is the strongest predictor. This is consistent with the present study since the results might show that high and lower TPACK can be a predictor for Turkish EFL teachers' positive and negative attitudes towards the use of Web 2.0 tools as there is a significant correlation between the two variables. However, EFL teachers' attitudes to question 16, "I am hesitant to use Web 2.0 technologies because I believe that conventional methods of teaching and learning are more effective", has an overall mean of 2.16 ($M=2.16$). Participants who strongly agreed, agreed and neither agreed nor disagreed were $n=6$; 10 and 17. Their TPACK score was calculated $M=4.41$. These participants' negative attitude towards Web 2.0 technologies, and their effectiveness may not be explained by their TPACK. TPACK does not seem to have an effect on their attitude. This is in accordance with Joo, Park and Lim (2018) who found in their research that teachers' intentions to utilise technology were affected by their self-efficacy, perceived ease of use, and perceived utility of using technology. They also concluded TPACK had no effect on their desire to use technology.

Unlike Baturay, Gökçearslan and Şahin (2017), in this research, there is a positive and significant relationship between instructors' attitudes towards the use of Web 2.0 tools and

their TPACK ability levels. They found a medium-level positive relationship between the two variables. However, Baturay, Gökçearsan and Şahin illustrated that TK and TPK have a strong relationship with teachers' attitudes to CAE (2017). This is consistent with the present study as in this study the results show that Turkish EFL instructors' TK and TPK domain scores are high. This might show that their attitude is positively affected by their knowledge in technology and technological pedagogy.

5.6. Implications and Suggestions of the Study

Integrating technology into teaching successfully might depend on various factors. Attitudes towards the use of technology and how well a teacher knows about integrating technology are two important factors. Nevertheless, there is a need to study the relationship between these two variables. The current study aimed to investigate the relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPACK ability levels. There are three research question in this study. First two questions aimed to assess instructors' attitudes and TPACK ability levels separately. The third question addressed the relationship between these two variables. The findings revealed a significant relationship between the variables. Participants have high attitudes and their TPACK is high. However, although participants have high attitudes and TPACK, there are still some areas that should be studied. Thus, this study suggests some implications for in-service EFL instructors and policymakers.

5.6.1. Implications and suggestions for EFL instructors

Although instructors have high attitudes towards the use of Web 2.0 tools and high TPACK scores, there are instructors whose attitudes are lower in two specific areas. One of them is the culture issue. Attitude towards Web 2.0' s openness and collaborative nature to promote cultural pluralism is measured as low in the questionnaire. In the TPACK the related question was also calculated lower than the questions in the other TPACK domains. This might be because of the content of the training program the instructors received. It might lack training in language teaching and the culture factor. In this case, instructors might be losing the chance to benefit from the knowledge of how teaching English can be facilitated with cultural aspects. In addition, in the context of the present study, classes are multicultural classes.

EFL instructors should know that in the 21st century, culture is a popular issue in EFL teaching and learning. Also, during the Covid 19 pandemic, most institutions shifted to online teaching for a long period of time. Online teaching enabled the classrooms to become independent from time and place. Thus, institutions accepted international students more than before. EFL instructors can look for development programs that offer courses about facilitating intercultural communication, multimodality and diversity in EFL classrooms using web tools.

The second one is EFL instructors' attitudes towards Web 2.0 tools and intelligences were calculated low. Some instructors might not feel positive about how Web 2.0 can foster multiple intelligences so that a learner can become autonomous by discovering his or her strong sides in learning. Thus, ELF instructors who have low attitudes in this concept should observe their students closely and read more about technology and multiple intelligences.

5.6.2. Implications and suggestions for policymakers

This study investigated the relationship between Turkish EFL instructors' attitudes towards the use of Web 2.0 tools and their TPAC ability levels. There is a positive relationship between them. Therefore, it can be concluded that a teacher development program could raise instructors' attitudes towards technology by supporting their technology knowledge in different domains. A needs analysis could be conducted to reveal in which areas EFL instructors feel inadequate and a training program can be prepared using the results of the analysis. As an example, Web 2.0 tools and multiculturalism and Web 2.0 tools and multiple intelligences could be part of the training program because these two have the lowest mean scores in the questionnaire.

5.6.3. Implications and suggestions for school administrators

Successful technology integration of EFL instructors might depend on the sources the institution has. Administrators should note that inefficient equipment might affect instructors' intentions to use technology and it might also affect their attitudes towards it. Therefore, administrators should provide instructors with enough technological equipment and technical support.

5.7. Suggestions for Further Research

The present study has some limitations and shortcomings. First of all, this study should be conducted nationwide with more participants. Secondly, since this is a quantitative study, the opinions of EFL instructors about the factors influencing their attitude towards technology were missing in the study. In the future, this study might be conducted using qualitative study methods. This study is limited to a school of foreign languages in Ankara. It did not include other types of schools, so it would be good to see the difference between state schools and private schools.

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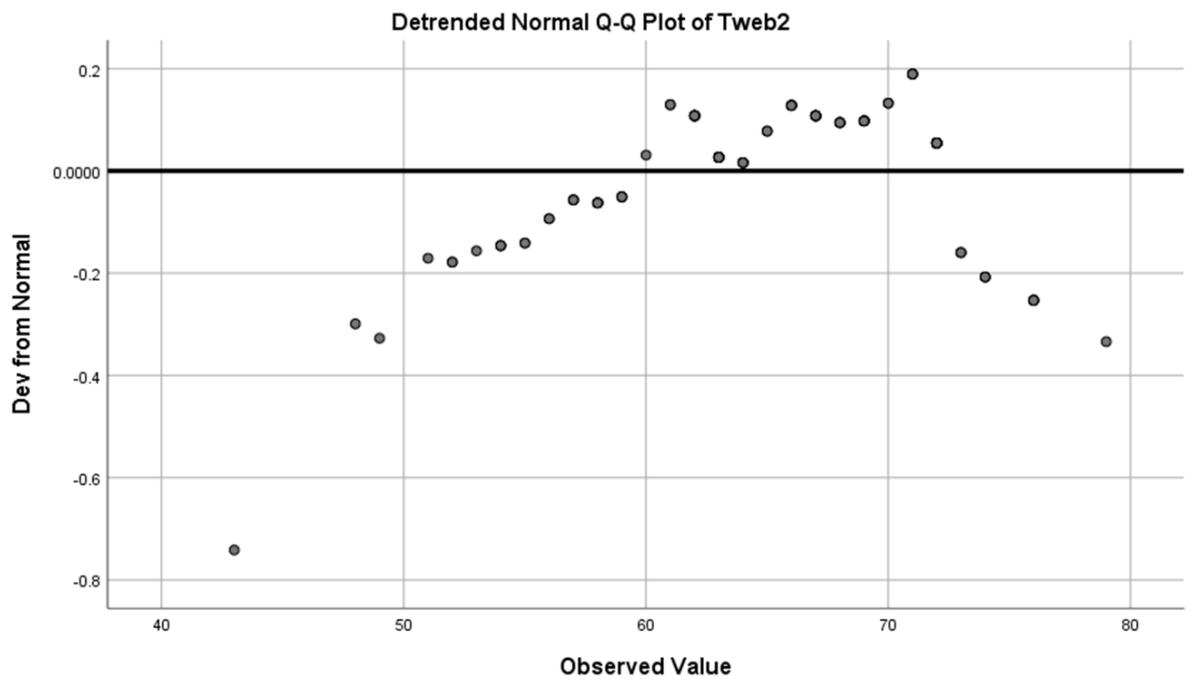
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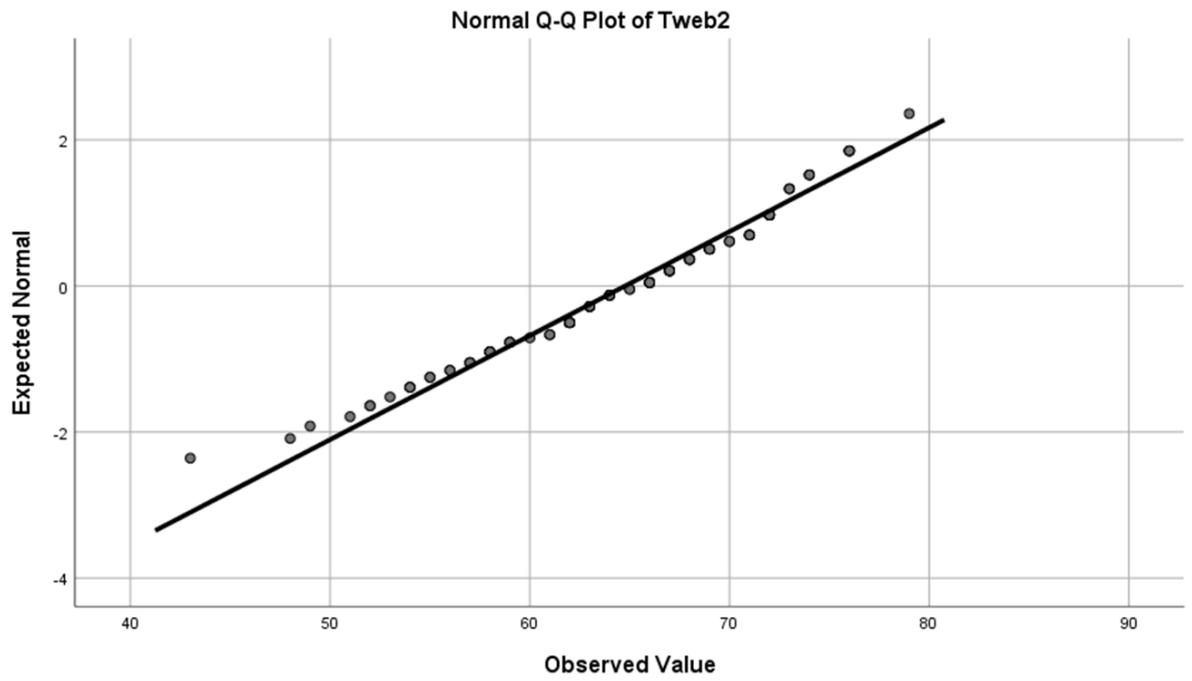
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APPENDICES

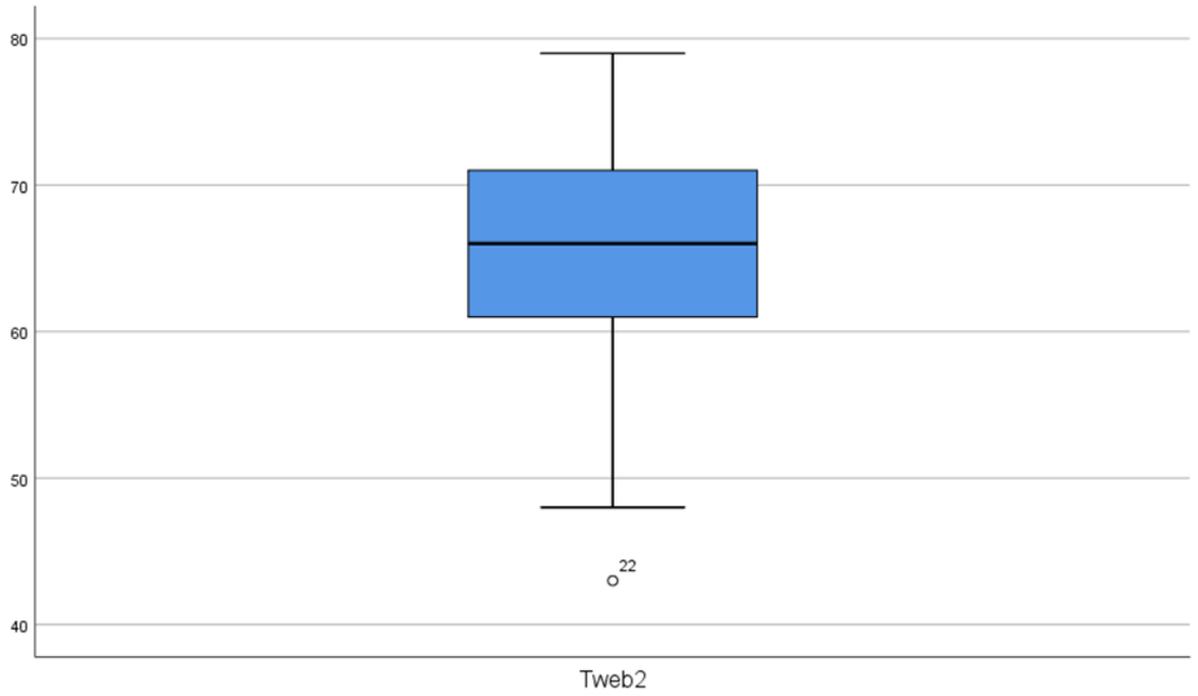
APPENDIX 1: Detrended normal q-q Plot of Web 2.0 attitude questionnaire



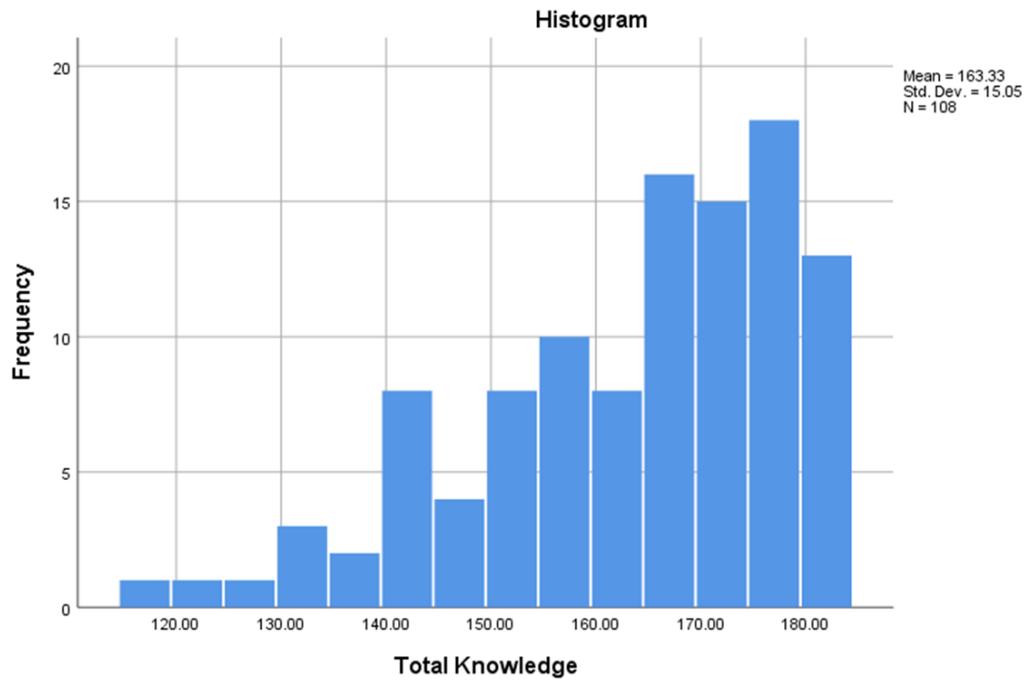
APPENDIX 2: Linearity graph of Web 2.0 attitude questionnaire



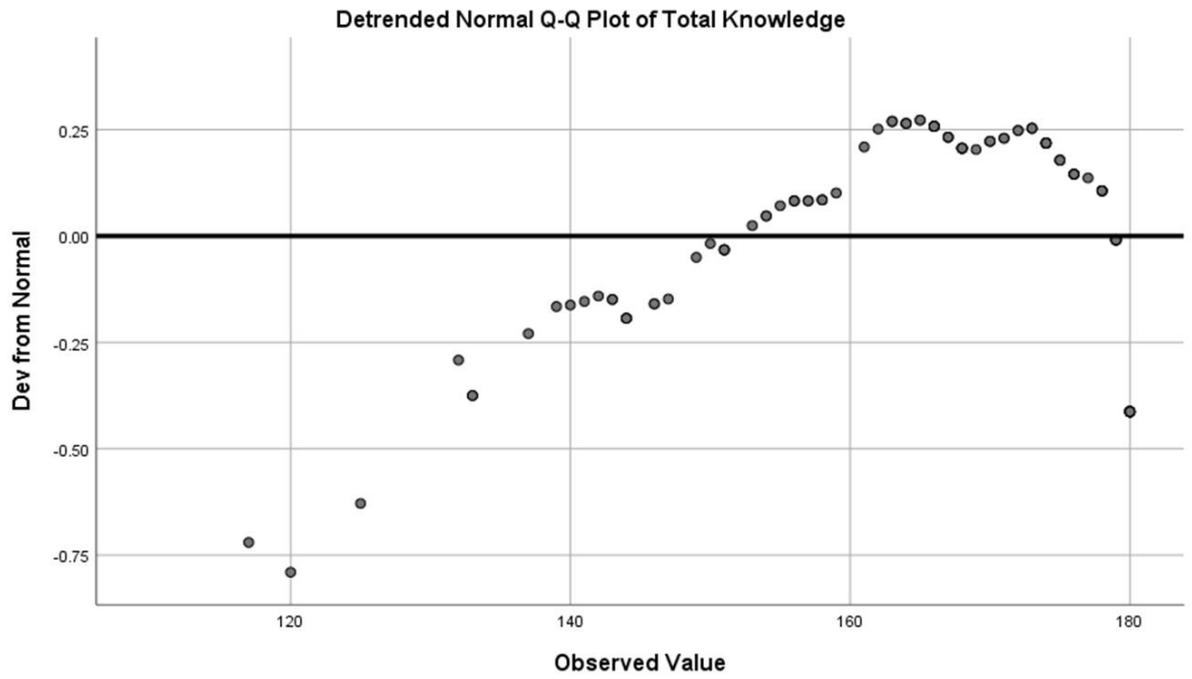
APPENDIX 3: Extreme values of Web 2.0 attitude questionnaire



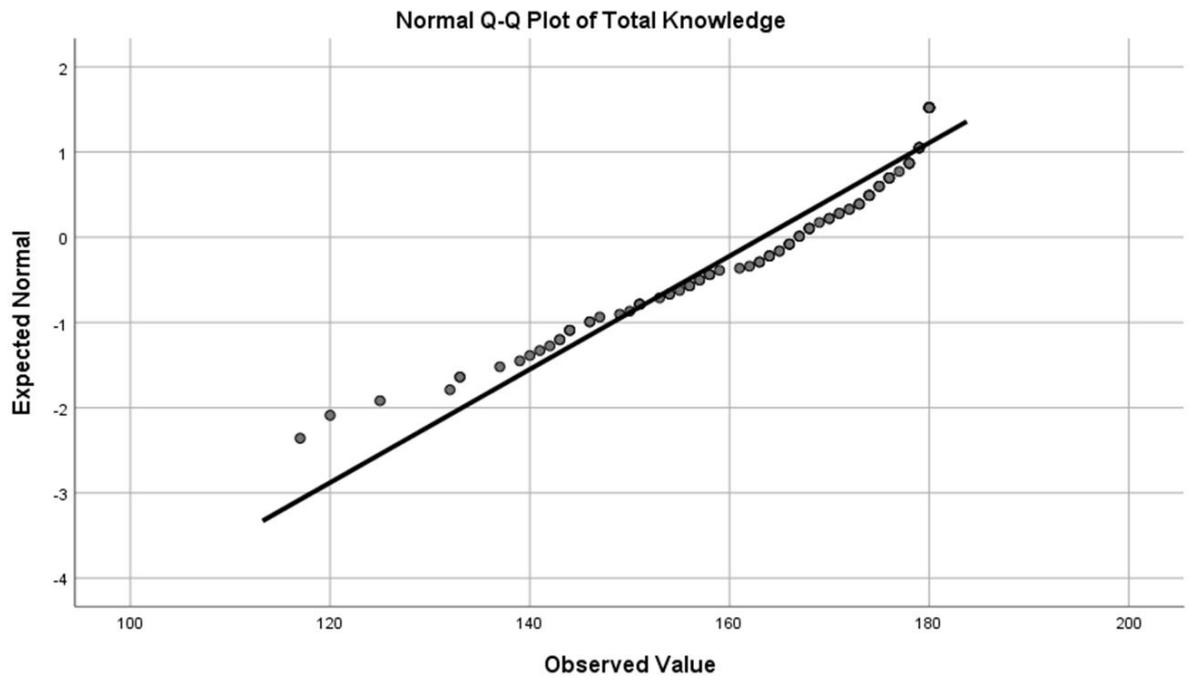
APPENDIX 4: Normality graph of TPACK questionnaire



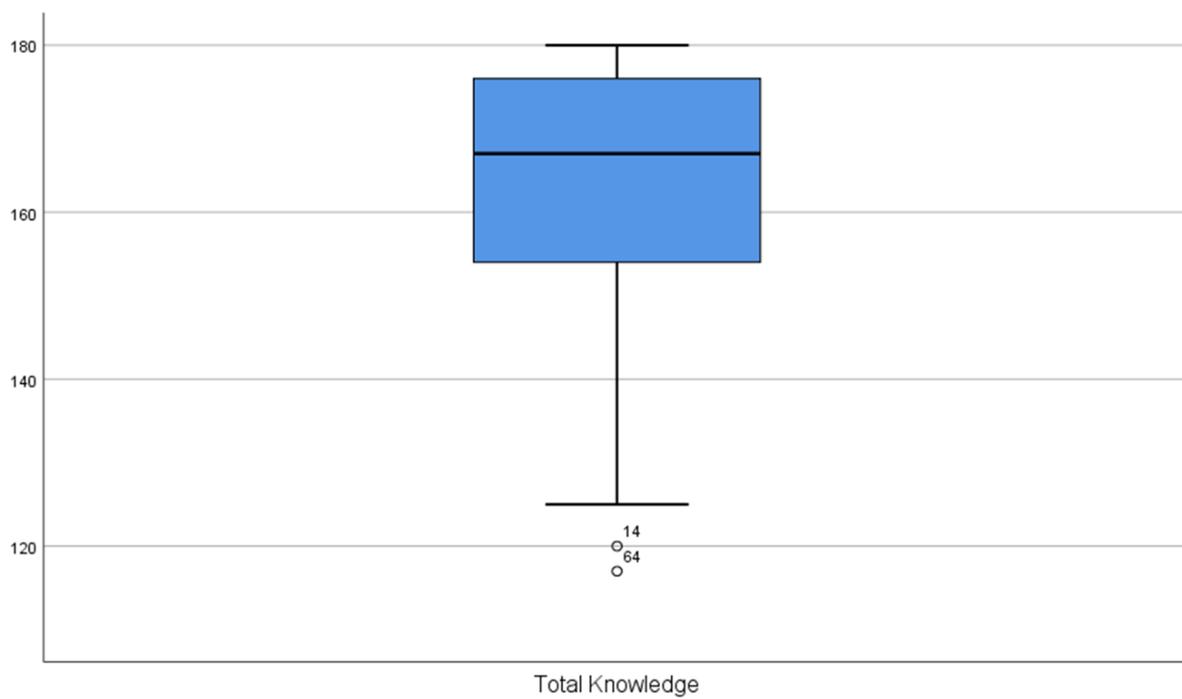
APPENDIX 5: Detrended normal q-q Plot of TPACK questionnaire



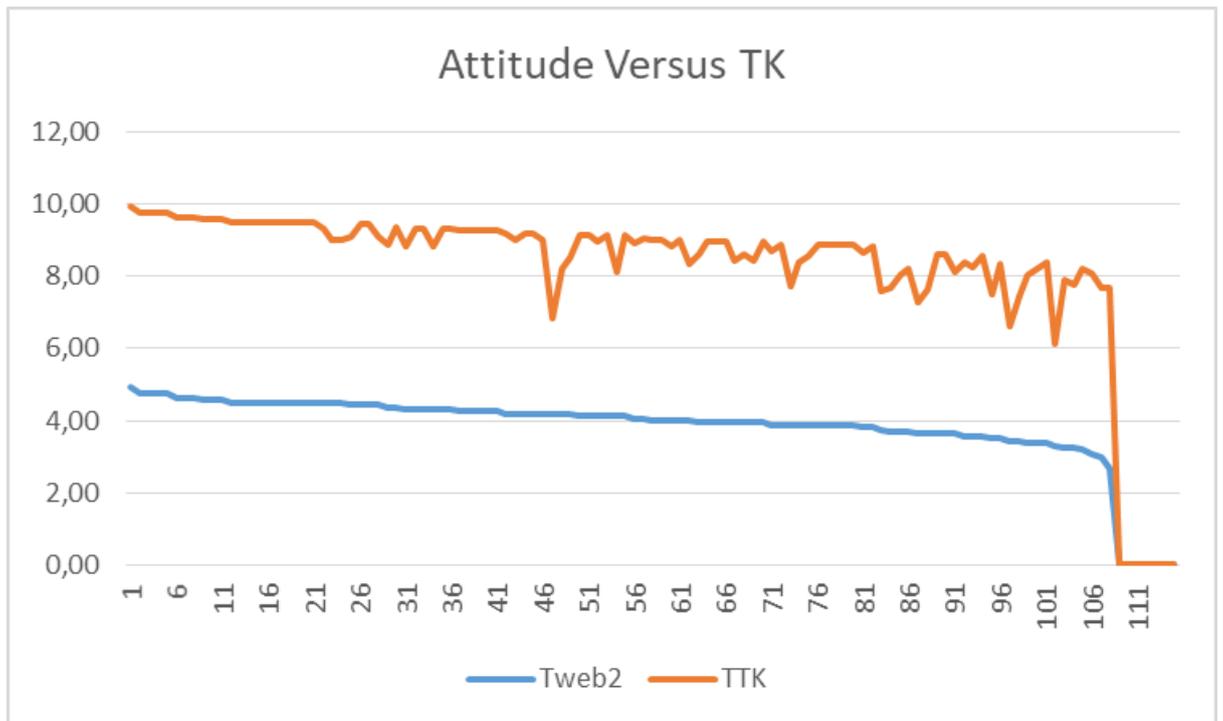
APPENDIX 6: Linearity graph of TPACK questionnaire



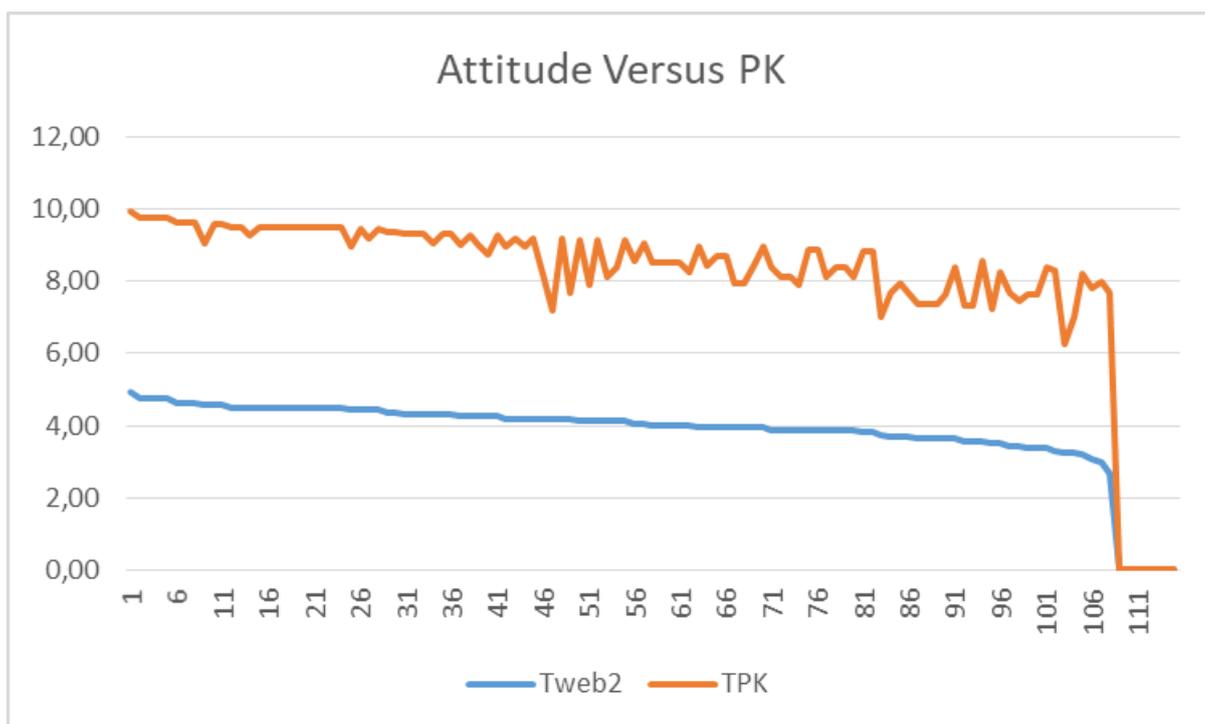
APPENDIX 7: Extreme values of TPACK questionnaire



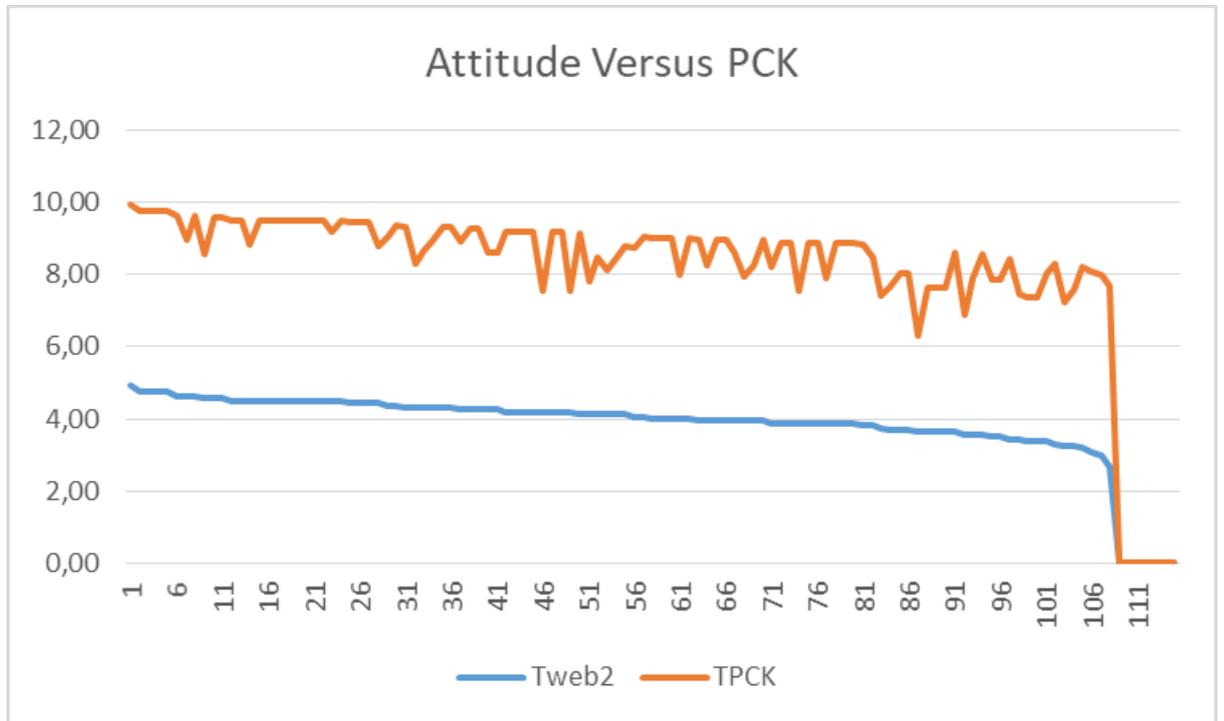
APPENDIX 8: Web 2.0 tools attitude levels and technology knowledge levels



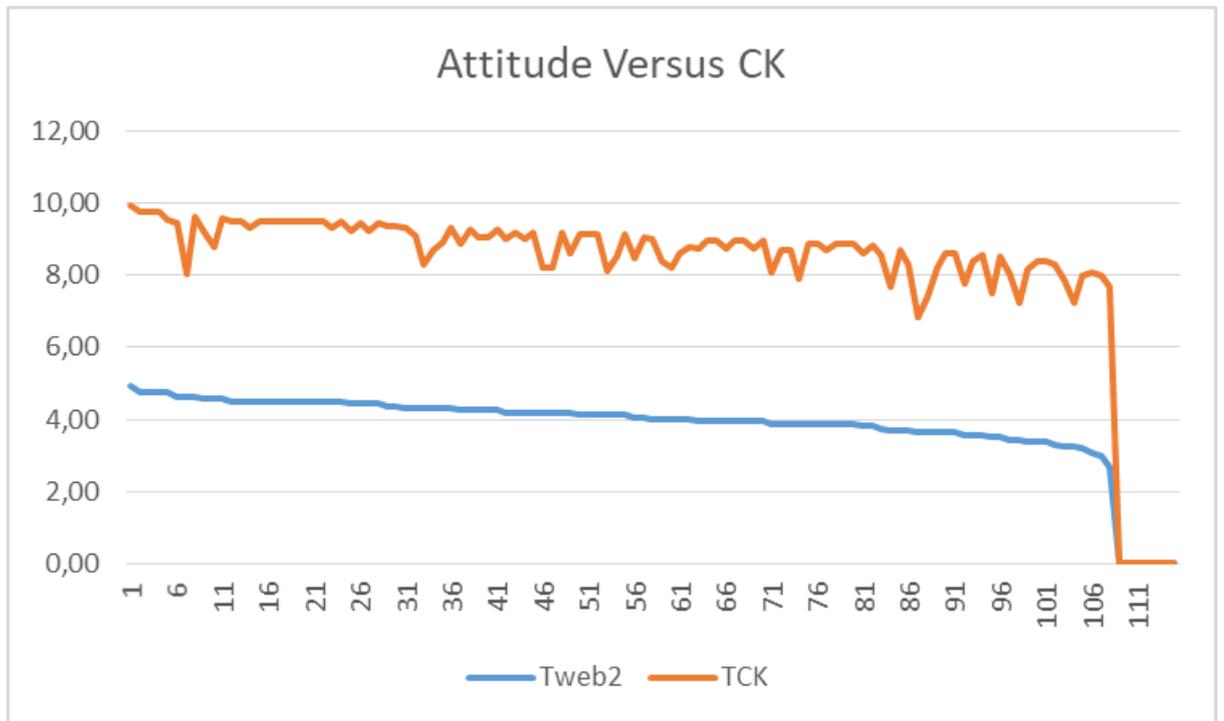
APPENDIX 9: Web 2.0 tools attitude levels and pedagogical knowledge levels



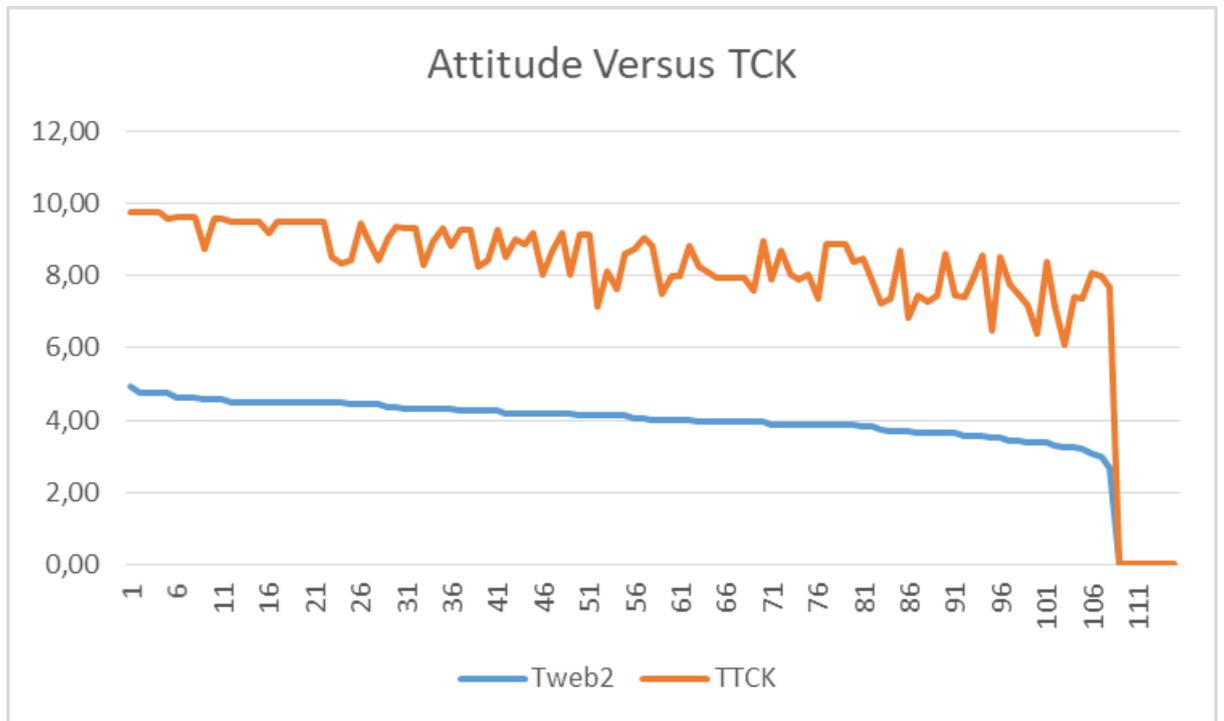
APPENDIX 10: Web 2.0 tools attitude levels and pedagogical content knowledge levels



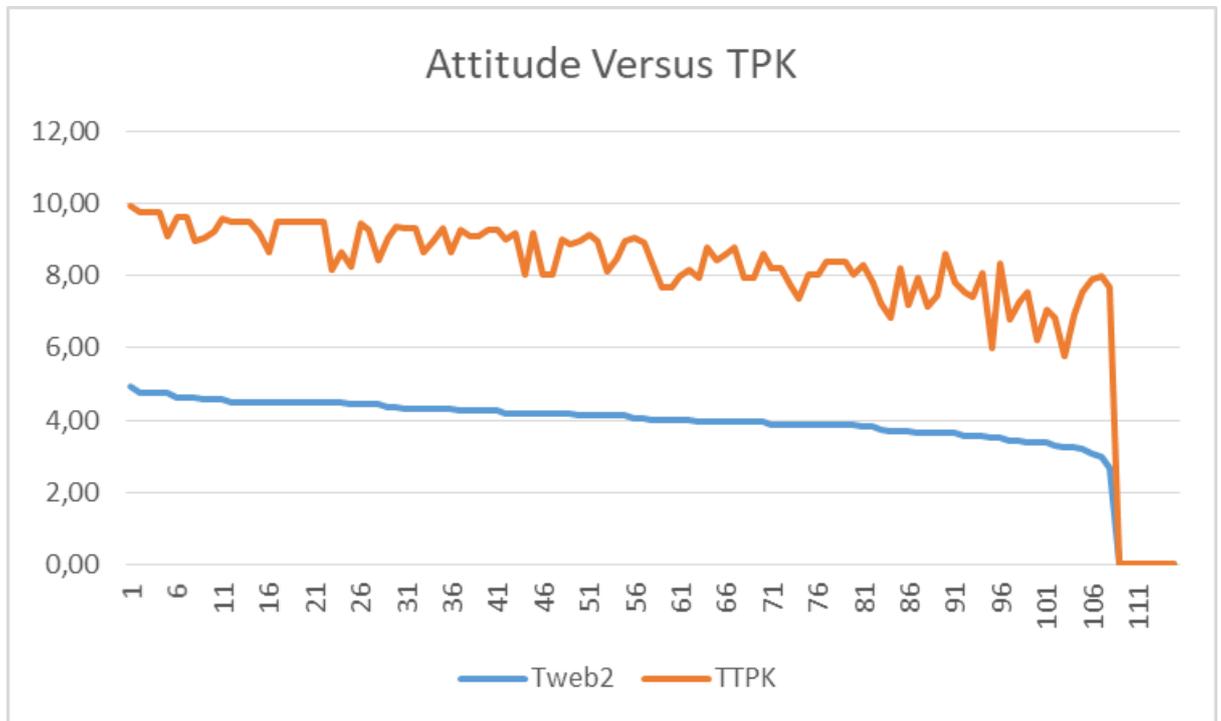
APPENDIX 11: Web 2.0 tools attitude levels and content knowledge levels



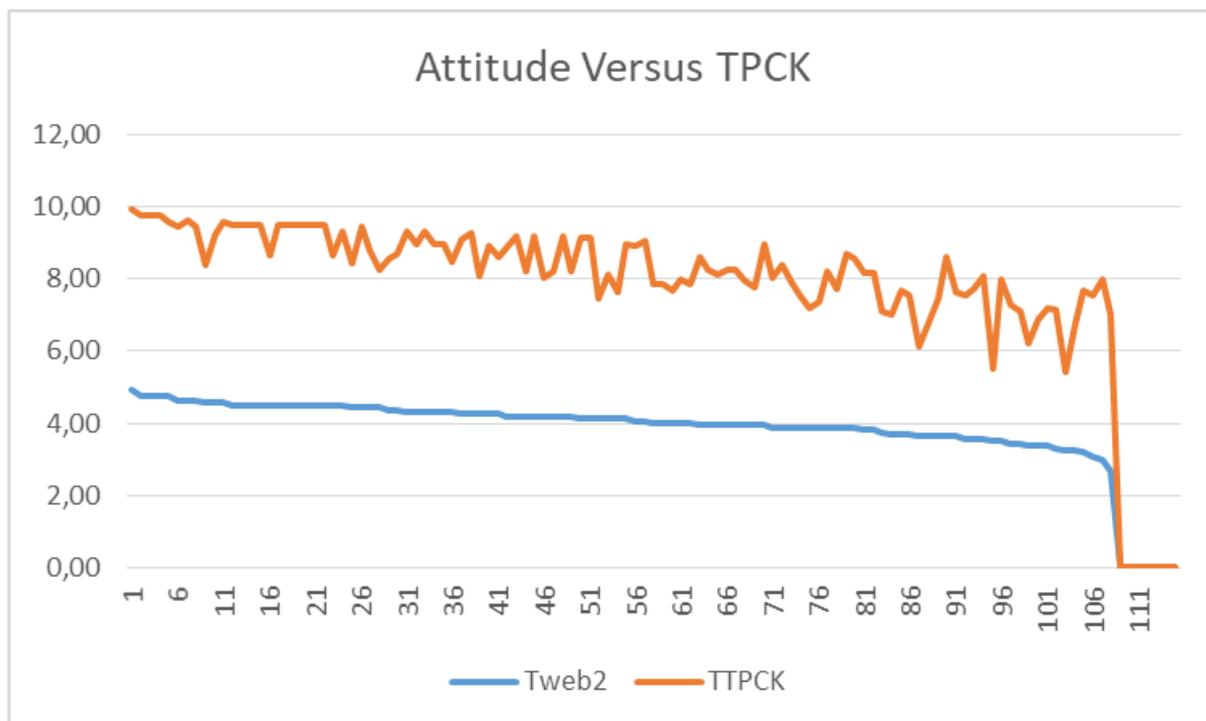
APPENDIX 12: Web 2.0 tools attitude levels and technological content knowledge levels



APPENDIX: 13 Web 2.0 tools attitude levels and technological pedagogical knowledge levels



APPENDIX 14: Web 2.0 tools attitude levels and technological pedagogical content knowledge levels



APPENDIX 15: Questionnaires

17.03.2022 17:06

EFL TEACHERS' ATTITUDES TOWARDS THE USE OF WEB 2.0 TOOLS AND TECHNOLOGICAL PEDAGOGICAL CONT...

EFL TEACHERS' ATTITUDES TOWARDS THE USE OF WEB 2.0 TOOLS AND TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE ABILITY LEVELS

Dear Colleagues,

This study has been designed to investigate the relationship between Turkish EFL teachers' attitudes towards the use of Web 2.0 tools in English language teaching (e.g. padlet, wikis, blogs, Youtube, GoogleDocs, Google Forms etc.) and their Technological Pedagogical Content Knowledge Levels known as TPACK.

This questionnaire consists of 52 questions and it may take approximately 10 minutes to complete. Your answers will not be shared and will be used for this study only. Thank you very much for your participation and your kindness. Please do not hesitate to contact me should you have any concerns about the survey.

Özge İmre Güney

*Required

Demographic Questions

Please answer the following questions.

1. What is your age? *

Mark only one oval.

23-30

31-35

36-40

40 +

2. What is your gender? *

Mark only one oval.

Female

Male

3. What is your department of graduation? *

Mark only one oval.

- BA in English Language Teaching
- BA in English Language and Literature
- BA in American Culture and Literature
- BA in Linguistics
- BA in Translation and Interpretation
- Other: _____

4. Do you have any teaching certificates? If "Yes" please specify. (E.g. Pedagogical Formation Certificate, Delta, Celta Etc.) *

5. How long have you been teaching English? *

Mark only one oval.

- 1-4 Years
- 5-10 years
- 11-15 Years
- 16-20 Years
- 20 + Years

Web 2.0 Tools and Tpack Questionnaire

To what extent do you agree with the following statements in terms of Web 2.0 tools use in EFL teaching?
Please click on the appropriate answer in questions 1-16 (Strongly disagree=1, Disagree=2, Neither agree nor disagree=3, agree=4, Strongly agree=5) and To what extent do you rate your Technological Pedagogical Content Knowledge in EFL teaching? Please click on the appropriate answer in questions in 17-52 (Strongly disagree=1, Disagree=2, Neutral=3, Agree =4, Strongly agree=5).

6. 1. The use of Web 2.0 tools creates a more interesting and fun learning environment. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

7. 2. Web 2.0 tools promote sharing, collaboration, interaction, creativity and socialization. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

8. 3. Organising authentic tasks with the help of Web 2.0 tools motivates students. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

9. 4. Web 2.0 tools encourage students to actively construct knowledge. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

10. 5. Web 2.0 tools enhance learner autonomy. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

11. 6. Communicating with a real audience makes students more creative and thoughtful in content and structure of an assignment. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

12. 7. Web 2.0 tools challenge all forms of intelligences so that all learners can take advantage of their own strengths. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

13. 8. Since we live in a digital world, education should equip students with 21st century skills and develop New Literacies through blended learning. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

14. 9. Research skills could be developed through the use of Web 2.0 tools and project-based learning. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

15. 10. Web 2.0 tools give students the opportunity to express their own voice. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

16. 11. The openness and collaborative nature of Web 2.0 tools could offer possibilities to promote Cultural Pluralism. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

17. 12. Web 2.0 based lessons increase L2 input and promote the integration of all the four language skills. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

18. 13. Web 2.0 tools develop a sense of community where students communicate meaningfully in real contexts. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

19. 14. Web 2.0 tools encourage shy students to communicate. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

20. 15. The use of Web 2.0 tools distracts students. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

21. 16. I am hesitant to use Web 2.0 technologies because I believe that conventional methods of teaching and learning are more effective. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

22. 17. I know how to use computer mediated communication (CMC) technologies (e.g. email, chat) *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

23. 18. I know about basic computer hardware (i.e. CD-ROM, mother-board, RAM) and their functions. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

24. 19. I know how to save data into/from a digital device (i.e. flash disk, USB stick, CD). *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

25. 20. I know how to use generic office applications (i.e. Word, PowerPoint, and Excel). *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

26. 21. I know how to play audio and video files on my computer. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly agree

27. 22. I know how to record video files (i.e. using a video camera). *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

28. 23. I can react supportively to learners' interaction. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

29. 24. I can assess student learning in multiple ways. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

30. 25. I can keep students on task. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

31. 26. I can facilitate learning through creating opportunities for individual, partner, group and whole class work. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

32. 27. I can choose an appropriate approach to teach learners (i.e. communicative approach, direct method). *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

33. 28. I can plan when and how to use the target language, including meta-language I may need in the classroom. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

34. 29. I can identify linguistic problems experienced by learners (i.e. phonological, lexical or grammatical problems). *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

35. 30. I can comprehend English texts accurately. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

36. 31. I can comprehend English speech accurately. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

37. 32. I can monitor my own writing for accuracy. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

38. 33. I can monitor my own speech for accuracy. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

39. 34. I am familiar with the culture(s) of target language communities. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

40. 35. I know about technologies that I can use to teach listening in English. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

41. 36. I know about technologies that I can use to teach reading in English. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

42. 37. I know about technologies that I can use to teach writing in English. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

43. 38. I know about technologies that I can use to teach English language grammar.

*

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

44. 39. I know about technologies that I can use to teach English vocabulary. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

45. 40. I know about technologies that I can use to teach pronunciation of English words. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

46. 41. I can evaluate the appropriateness of a technology for teaching a lesson. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

47. 42. I can choose technologies that enhance students' learning for a lesson. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

48. 43. I can adapt the use of the technologies that I am learning about to different teaching activities. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

49. 44. I can design relevant learning experiences to promote student learning, using technology. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

50. 45. I can choose technologies to be used in assessment. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

51. 46. I can engage students in solving authentic problems using digital technologies and resources. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

52. 47. I can select technologies to use in my classroom that enhance what I teach, how I teach, and what students learn. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

53. 48. I can use technology effectively to communicate relevant information to students and peers. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

54. 49. I can use a range of technologies to help students pursue their individual curiosities. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

55. 50. I can use a range of technologies that enable students to become active participants. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

56. 51. I can provide equitable access to digital language learning tools and resources. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

57. 52. I can facilitate intercultural understanding by using technology to engage students with different cultures. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

APPENDIX 16: Permission from Christina Karkoulia

24.12.2020

(331) Atılım Üniversitesi Webmail :: Σχετ.: A reques for MA Thesis Study

The screenshot shows a webmail interface for Atılım Üniversitesi. At the top left is the university logo and name. Navigation tabs include Mail, Address Book, Calendar, Notes, Settings, and Logout. A search bar is located at the top right. Below the navigation is a 'Move to...' dropdown menu. The main content area displays an email with the subject 'Σχετ.: A reques for MA...'. The sender is redacted, and the recipient is Christina Karkoulia. The email text is in Greek and discusses a request for permission to use a questionnaire for a thesis. A timestamp indicates the email was received on December 24, 2020, at 11:30 AM. Below the main text, there is a second email body starting with 'Dear christina Karkoulia ,', which is the original request from Özge İmre Güney. The interface includes a vertical scrollbar on the left and an 'About' link at the bottom right.

24.12.2020 (331) Atılım Üniversitesi Webmail :: Σχετ.: A reques for MA Thesis Study

ATILIM ÜNİVERSİTESİ

Mail Address Book Calendar Notes Settings Logout

Move to...

Σχετ.: A reques for MA... Message 1 of 4413

From [Redacted]
To Christina Karkoulia
Date Today 15:16

Dear Özge İmre Güney,

Thank you for your email. I would be glad to contribute.

You can refer to my article. You can use my questionnaire and adapt it to your own research questions.

Good luck!

Best wishes,
Christina Karkoulia

Στις Πέμπτη, Δεκεμβρίου 24, 2020, 11:30 πμ, ο χρήστης [Redacted]

Dear christina Karkoulia ,

My name is Özge İmre Güney. I'm a Master student in English Language Taching Department at Başkent University in Ankara, Turkey. Currently I am working on my thesis with a title "Investigating the Relationship Between Turkish EFL Teacher's Attitudes towards Using Web 2.0 Tools and Their TPACK Ability Levels."

I've read your article named "Teachers' attitudes towards the integration of Web 2.0 tools in EFL teaching" and I also want to cite from you. Is it possible for me to use the "Teachers' attitudes towards the integration of web 2.0 tools in EFL teaching" questionnaire in my thesis?

I am looking forward to your reply.

With gratitude,
Özge İmre Güney

About

1/1

APPENDIX 17: Permission from Ali Bostancıođlu

12.06.2022 21:51 Atılım: Re: TPACK Anketinizi Kullanma İzni Hakkında

Kapat Yanıtla Tümüne Yanıt Ver İlet Sil İstenmeyen Posta İşlemler

Re: TPACK Anketinizi Kullanma İzni Hakkında 23 Mart 2021 15:05

 Kimden:
Kime:

Özge Hanım merhabalar,
Tabiki EFL-TPACK'ı kullanabilirsiniz. Çalışmalarınızda başarılar dilerim.
İyi günler dilerim
Ali

Ali Bostancıođlu

1/1

APPENDIX 18: Research Permission

(YUDN 7DULK YH 6D\ V



T.C.
ATILIM ÜNİVERSİTESİ REKTÖRLÜĞÜ

Sayı : E-59394181-605.99-24865
Konu : Araştırma İzni (Özge İmre Güney)

04.01.2022

BAŞKENT ÜNİVERSİTESİ REKTÖRLÜĞÜNE

Üniversiteniz Eğitim Bilimleri Enstitüsü, İngiliz Dili Öğretimi Tezli Yüksek Lisans programı öğrencisi Özge İmre Güney'in, "Türk İngilizce Öğretmenlerinin Web 2.0 Araçlarının Kullanımına Yönelik Tutumları TPAB Yetenek Seviyeleri Arasındaki İlişkinin İncelenmesi" başlıklı tezi kapsamında yapmayı planladığı anket çalışması ilgili akademik birimimize iletilmiş olup çalışmaya katkı vermek isteyen personelimiz tarafından katılım sağlanabilecektir.

Saygılarımla,

Prof.Dr. M. Yıldırım ÜÇTUĞ
Rektör

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