ATATÜRK ÜNİVERSİTESİ YAYINLARI
ATATURK UNIVERSITY PUBLICATIONS

Research Article *Araştırma Makalesi* DOI:10.33418/education.1421201

Examining the Methodological Anatomies of Studies on Teaching English as a Foreign Language from a Techno Pedagogical Perspective

Yabancı Dil Olarak İngilizce Öğretimine Yönelik Çalışmaların Metodolojik Anatomilerinin Teknopedaojik Bakış Açısıyla İncelenmesi

Veysel KARSLI[1]
Sinem ÇİLLİGÖL KARABEY[2]
Meva BAYRAK KARSLI[3]
Selçuk KARAMAN[4]

[1] Atatürk University, Kâzım Karabekir Faculty of Education, Department of English Language Teaching Erzurum, Türkiye

[2] Atatürk University, Rectorate , Erzurum, Türkiye

[3] Atatürk University, Kâzım Karabekir Faculty of Education, Department of Computer Education & Instructional Technology, Erzurum, Türkiye

[4] Ankara Hacı Bayram Veli University, Faculty of Economics and Administrative Sciences, Department of Management Information Systems, Ankara, Türkiye

ABSTRACT

Changes in technology and the increase in its potential for language teaching have made it possible to restructure Teaching English as a Foreign Language (TEFL) models today. In this context, the aim of this study is to examine the methodological anatomy of theses on technology integration in TEFL from a techno-pedagogical perspective. In this direction, the descriptive features, methodological features, examined variables, used technological environments, tools, materials and the roles of instructors and students were examined. Within the scope of this study, content analysis was used for 110 graduate theses conducted in Turkey on technology integration in TEFL. According to the results of the study, it has been determined that the effects of different technologies on various skills have been examined with different research methods from past to present in the TEFL processes, and again in this process, studies tried to focus on skills that are almost directly related to the potential of each technology. However, in most of these research processes, it was observed that the potential offered by the relevant technology was utilized at a very basic level and in relation to this, especially students were given passive roles. As a result of the study, research and application suggestions were made that can better reveal the real potentials of related technologies in technology-assisted TEFL processes.

Keywords: Teknoloji destekli yabancı dil öğretimi, Yabancı dil öğretimi, Teknopedagojik öğretim uygulamaları

ÖZ

Teknolojide meydana gelen değişimler ve dil öğretimine yönelik potansiyelin artması, günümüzde İngilizce'nin yabancı dil olarak öğretimine ilişkin modellerin yeniden yapılandırılmasına uygun bir bağlam oluşturmuştur. Bu kapsamda çalışmanın amacı İngilizce'nin yabancı dil olarak öğretiminde teknoloji entegrasyonuna yönelik araştırmaların yöntemsel anatomilerinin teknopedagojik bakış açısıyla ortaya koyulmasıdır. Bu amaç doğrultusunda ele alınan araştırmaların tanımlayıcı özellikleri, yöntemsel özellikleri, incelenen değişkenler, kullanılan teknolojik ortamlar, araçlar ve materyaller ile eğitimci ve öğrencilerin üstlendikleri roller incelenmiştir. Bu amaçla Türkiye'de İngilizce'nin yabancı dil olarak öğretiminde teknoloji entegrasyonuna yönelik yapılan 110 lisansüstü tez içerik analizine tabi tutulmuştur. Araştırma sonuçlarına göre İngilizce'nin yabancı dil olarak öğretimi süreçlerinde geçmişten günümüze farklı araştırma yöntemleri eşliğinde farklı teknolojilerin çeşitli beceriler üzerindeki etkisinin incelendiği, bu süreçte her bir teknolojinin potansiyeli ile hemen hemen doğrudan ilişkili beceriler üzerine odaklanılmaya çalışıldığı tespit edilmiştir. Ancak bu araştırma süreçlerinin büyük bir kısmında ilgili teknolojinin sunmuş olduğu potansiyelden oldukça temel seviyede

Geliş Tarihi/Received 16.12.2022
Kabul Tarihi/Accepted 23.11.2023
Yayın Tarihi/Publication Date 30.06.2024

Sorumlu Yazar/Corresponding author: Veysel KARSLI
E-mail: veysel.karsli@atauni.edu.tr
Cite this article: Karslı, V., Çilligöl Karabey, S., Bayrak Karslı, M., & Karaman, S. (2024). Examining the Methodological Anatomies of Studies on teaching English as a foreign language from a techno pedagogical perspective. *Educational Academic Research, 53*, 80-104.

faydalanıldığı ve bununla ilişkili olarak özellikle öğrencilere pasif olarak nitelendirilebilecek roller verildiği göze çarpmıştır. Araştırma sonucunda teknoloji destekli İngilizce'nin dil olarak öğretiminde ilgili teknolojilerin asıl potansiyellerini daha iyi bir şekilde ortaya çıkarabilecek araştırma ve uygulama önerilerinde bulunulmuştur.

Anahtar kelimeler: Teknoloji destekli yabancı dil öğretimi, Yabancı dil öğretimi, Teknopedagojik öğretim uygulamaları

Introduction

With the introduction of digital technologies into our lives, it has become a necessity to use technology-based teaching methods alongside traditional teaching methods (Kozikoğlu, 2013). For this reason, in recent years, many countries aim to design education programs by integrating them with digital technologies (Akkoyunlu & Kurbanoğlu, 2003). One of the areas where digital technologies are integrated into education is TEFL. Digital technologies can be easily integrated into teaching practices to improve TEFL (Cakici, 2016; Rodinadze & Zarbazoia, 2012), thus making TEFL environments interactive, flexible, and innovative (Gilakjani, 2012).

It is seen in studies that the introduction of digital technologies in TEFL makes learning environments more efficient and fun, and has a positive effect on the learning process by changing it to a large extent (Beatty, 2003; Lee et al., 2005; Gilakjani, 2017; Shyamlee & Phil, 2012; Szendeffy, 2005; Towndrow, 2007). In this context, it is stated in related studies that digital technologies support TEFL in terms of providing alternative materials to students, being able to be adjusted according to the learning speed of the students and thus individualizing the teaching, enabling the student to manage the learning process, keeping the level of motivation and attention high, and making teaching enjoyable and interesting (Baytak et al., 2011; Lee, 2000; İlter, 2015; Kalanzadeh et al., 2014; Panagiotidis, 2018; Uşun, 2013; Woodrow, 2017). In addition, it has also been determined that the use of technology in TEFL increases learners' attention and participation in the lesson, increases the interaction between learners, supports the learning process positively in different aspects such as permanence, and the internet and media applications used provide a broad perspective to the learner and the instructor (Sun vd., 2017; Cetto, 2010; Houcine, 2011; Yaverbaum et al., 1997).

The effects of technology on TEFL become more evident when considered separately in terms of four basic language skills. However, it is inevitable to use different technologies as well as the need to apply different methods in acquiring each language skill (Grabe & Stoller, 2002; Sharma, 2009). For example; It is known that reading journals, articles, and newspapers online via tablets and e-readers attracts students' interest and makes them more willing to read (Zhao, 2008). Similarly, it is stated that the movies and songs have a significant impact on the listening skills (Alemi et al., 2015; Herlina, 2014). The purpose of TEFL is to teach students each language skill at a level that can be used functionally. Therefore, it is very important to use appropriate technologies with appropriate methods (Baz, 2010; Hauck & Guichon, 2011; Hubbard, 2017; Hubbard & Levy, 2006; Zhao & Tella, 2002). For this reason, technology integration in TEFL is a very important field of study in terms of guiding the teaching processes. Therefore, it is very important for researchers to review the studies in this field and examine them from a holistic perspective.

Review studies dealing with technology integration in TEFL have been examined and in some of these studies, it has been seen that the general potentials and usage areas of computer technologies for TEFL (Al-Wasy, 2020), the tools used to teach certain language skills and the effects of these tools on language learning skills (Shadiev & Yang; 2020; Product, 2015) and the effects on instructors and students (Zengin & Aksu, 2017) are emphasized. On the other hand, in some studies, it has been determined that there are studies that focus on the use of technologies in the TEFL process. In this context, it has been observed that in TEFL processes, the effect of technologies on the development of language skills in relation to the method of use (Liu et al., 2002), the appropriate integration of the technologies (Ammad et al., 2018), and the improvement of the use of technology by instructors (Ahmadi & Reza, 2018). In the literature, it has been seen that the relevant studies do not fully focus on how technologies are used pedagogically in TEFL. However, it is stated that it is more important to use the relevant technology together with a specific teaching strategy rather than focusing on technology in technology-supported TEFL processes (Lawless & Pellegrino, 2007), otherwise, it may cause techno-pedagogical negativities (Mishra & Koehler, 2006; Shih & Chuang, 2013). The fact that instructors are away from the pedagogical point of view in technology use processes can lead to various problems such as lack of communication, loss of logical thinking and ignoring details about the course content. It can also cause instructors to face problems such as losing control of the teaching process to technology, moving away from teaching goals, and not being able to establish emotional bonds by ignoring the needs of the students (Dai & Fan, 2012). Therefore, it is important to examine the technology use

processes in TEFL from a techno-pedagogical perspective.

Due to the COVID-19 virus, the limited living conditions we are in have made it necessary to switch to Emergency Remote Teaching (ERT). Therefore, the use of technology in teaching processes has become inevitable. Considering today's education levels, it is seen that instructional technologies, distance education technologies, and various software are frequently used in language education institutions in primary, secondary, higher education, and even non-formal education. This has necessitated the transfer of existing technological knowledge into practice in TEFL, as in other fields. For this reason, it has become more important to determine the technology integration trends that have been revealed so far in current research. Therefore, the main purpose of the study is to reveal the methodological anatomy of studies on technology integration in TEFL from a techno-pedagogical perspective. For this purpose, the descriptive features, methodological features, examined variables, used technological environments/tools/materials and the roles of instructors and students were examined. It is thought that the study will serve as a guide for the use of technology in TEFL both in the pandemic period and in the future teaching processes and will guide researchers and instructors. In this context, answers to the following research questions were sought:

1. What is the distribution of studies by years?
2. Which methods and research designs were used in the studies?
3. What are the sample levels and sizes in the studies?
4. What are the variables examined in the studies and how is their distribution according to years?
5. What are the technological environments/tools/materials used in studies and how is their distribution according to years?
6. What is the relationship between the technological environments/tools/materials used in the studies and the variables examined?
7. What is the relationship between technological environments/tools/materials used in studies and instructor-student roles?

Method

Content analysis method, one of the qualitative research methods, was used in the study. Content analysis is the in-depth analysis of different types of documents such as articles, books, journals, novels, and pictures for specific purposes (McMillan & Schumacher 2010; Fraenkel et al., 2012). Within the scope of this study, the content analysis method was used as the descriptive features, methodological features, examined variables, the technological environments/tools/materials used and the roles of the instructors and students in the TEFL were analyzed in detail from a techno-pedagogical perspective. Since this study is a literature review, ethics committee approval is not required.

Scope of the Study

The scope of the study consists of 110 graduate theses on technology integration in TEFL in Turkey. The reason for choosing graduate theses is that each activity is expressed step by step in detail compared to articles and other scientific researches in terms of their general characteristics (Basturkmen, 2009). This can be seen as an advantage and as well as a limitation. Another reason for choosing these theses is that the researchers have expertise in the fields of English Language Teaching (ELT) and Computer Education and Instructional Technology (CEIT) and have a good knowledge of the terminology in the field. Thus, it will be possible to better understand and evaluate the theses examined within the scope of the study.

The theses included in the study were selected by criterion sampling method among the graduate theses published in the Thesis Center of the Council of Higher Education (TCCHE), a system in which all the theses in Turkey are catalogued. In this context, a search was made based on the departments of "English Teacher Education", "English Teaching" and "English Language Teaching". Since the institutes to which the relevant departments are affiliated may differ on a university basis, a separate search was made for the "Institute of Educational Sciences" and "Institute of Social Sciences". As a result of the search, 822 graduate theses that were made until 2020 and have access were reached.

In order to determine whether the accessed theses are about technology integration in TEFL, the summary and method sections were examined in general. As a result of the examinations, a total of 110 theses, 94 of which were at the master's level and 16 at the doctorate level, were included in the scope of the study, among 822 theses. In 92 of these theses, the effect of any technology on different variables was investigated by integrating it into the teaching process. In the other 18 theses, researches on existing technologies in education processes were conducted. The selection process of the graduate theses included in the study is summarized in Figure 1.

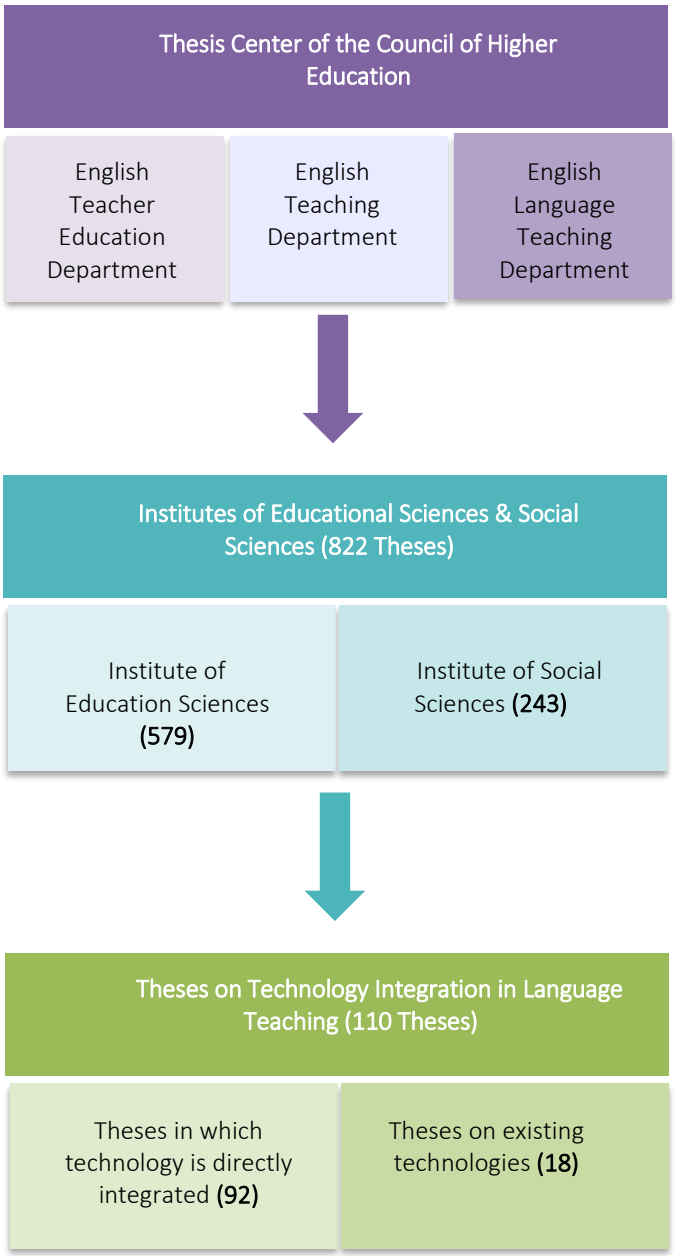

Figure 1.
Selection Process of Graduate Theses

Data Collection Tool Development and Data Analysis

Content analysis method was used in the analysis of the graduate theses within the scope of the study. "Graduate Thesis Review Form" was developed to use in the analysis process. During the development of the form, the "Educational Sciences Publication Classification Form" used in the study of Sozbilir, Kutu and Yasar (2012) was used. The relevant form was rearranged by the researchers in accordance with the purpose of the study. In this context, in addition to the imprint information such as the publication year of the graduate theses, the university where they were made, the type of thesis, the research method and design, the sample type and size, the research subject, the variables and types of variables examined, the technologies and types used, coding areas related to the techno-pedagogical roles of instructors and students in the research processes are included. In order to ensure the validity of the form, three field experts in the field of educational technologies and a field expert in foreign language education were consulted. In line with expert opinions and evaluations, necessary arrangements were made and the form was given its final shape.

During the data analysis process, each researcher analyzed different graduate theses. However, in order to ensure coder consistency among researchers, 20 rand2omly selected theses were analyzed separately by the researchers. A consensus was reached by comparing the analysis results obtained, and the subsequent analyzes were carried out individually by ensuring consistency between the codings. In the analysis process, the thesis number in TCCHE was used for each thesis, and control was ensured by easily returning to the relevant thesis in case of any problems that may be encountered later.

During the data analysis process, the Bloom taxonomy Model was taken as a basis while classifying the variables examined in the studies (Anderson & Krathwohl, 2001). In this model, Bloom (1956) classified learning domains under three titles as cognitive, affective and psychomotor domains. It was seen that some of the variables discussed in the research were cognitive skills and some of them were affective skills. It was seen that some of the variables were related to the psychomotor learning area and these variables were classified under the title of technical skills. In the data analysis process, the technologies used in the studies were classified by the researchers, taking into account the basic and common features of each technology. When the instructor and student roles in the studies were analyzed from a techno-pedagogical perspective, it was seen that instructors or researchers assigned various roles to students related to technological skills, pedagogical activities or language learning, while instructor roles were more basic and general. In this context, the Technological Pedagogical Content Knowledge (TPACK) Model was taken as a basis while classifying the roles assigned to students in the studies. The TPACK model was explained by Pierson (1999) as a combination of technological knowledge, content knowledge and pedagogical knowledge. According to the TPACK model, instructors know that they should have full knowledge of these three areas; knowing how to use certain technologies in the most appropriate way in teaching, knowing how to solve potential problems, and knowing how teaching and learning should be organized according to technological possibilities (Margerum-Lays & Marks, 2002). Therefore, in the data analysis process, it was aimed to evaluate from a broad perspective both instructors and researchers who plan the research process in the

integration of the relevant technologies into the education process. The data analyzed by content analysis were grouped according to the themes based on the above-mentioned theoretical structures, converted into numbers by giving percentage (%) and frequency (f) values, and presented in the findings section as tables and graphics.

Results

The studies examined within the scope of the study were analyzed and the results were presented below.

Distribution of Studies by Years

The findings obtained as a result of the descriptive analysis to determine the distribution of studies on technology integration in TEFL by years are presented in Figure 2.

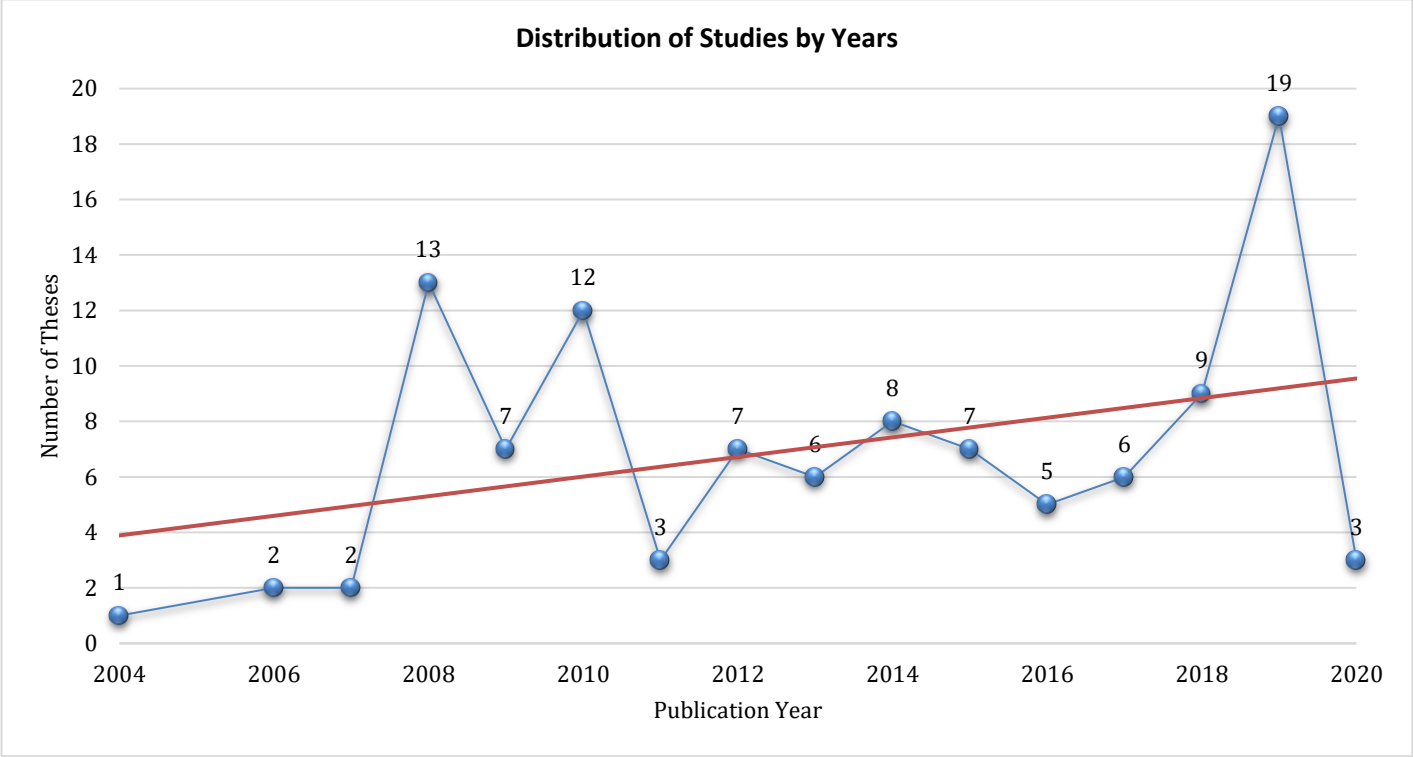

Figure 2.
Distribution of Studies by Years

When Figure 2 is examined, it is seen that studies on technology integration in TEFL have started to be carried out since 2004. When the distribution of studies by years is examined in detail, it can be seen that although the increase and decrease in the number of studies are not regular, they increase in certain periods (2008-2010, 2012-2015, 2017-2019). On the other hand, the number of studies varies between 1-19 on a yearly basis, and with an increasing trend, an average of 7 studies are conducted each year.

Research Methods and Designs Used in the Studies

Content analysis was conducted to determine the research methods and designs used in the technology integration process in TEFL. The findings were grouped as quantitative, qualitative and mixed, and presented in Table 1.

Table 1.
Methods and designs used in the studies

Method	Research design	*f*	%
Quantitative	Quasi-experimental	36	
	Descriptive survey	17	
	Experimental	11	
	Pre-experimental	2	
	Total	**66**	**60.0**
Mixed	Explanatory	16	
	Triangulation	14	
	Exploratory	4	
	Embedded mixed	2	
	Total	**36**	**32.7**
Qualitative	Case study	4	
	Ethnographic research	1	
	Action research	1	
	Phenomenological research	1	
	Content analysis	1	
	Total	**8**	**7.3**
Overall		**110**	**100**

It is seen in Table 1 that quantitative research methods were used in 60% of the studies, mixed research methods were used in 32.7% of the studies, and qualitative research methods were used in a very limited number (N=8). On the other hand, Table 1 shows that mostly (N=36) quasi-experimental design was used in studies using quantitative research method. In the studies using mixed research method, it was observed that mostly (N=16) explanatory design was used. It was determined that the case study design was mostly used (N=4) in the studies in which qualitative research methods were used.

Sample Levels and Sizes in the Studies

The findings obtained as a result of the content analysis to determine the sample levels in the technology integration process in TEFL in the studies examined are presented in Table 2.

Table 2.
Sample levels in the studies

Sample Level	*f*	%
Primary education	14	11.6
High school	11	9.1
Undergraduate	66	54.5
Graduate	1	0.8
Teacher	16	13.2
Adult/ Course student	8	6.6
Faculty member/ Instructor	5	4.1
Total	**121**	**100.0**

Table 2 shows that most of the studies (N=66) on technology integration in TEFL were conducted with undergraduate students. However, the studies conducted with Adult/ Course students (N=8) and Faculty members/ Instructors (N=5) are limited in number. In addition, only one study was conducted with graduate students. In some of the studies, more than one sample level was studied.

The findings obtained as a result of the content analysis to determine the sample sizes studied in studies on technology

integration in TEFL are presented in Table 3.

Table 3.
Sample sizes in studies

Sample size	*f*	%
1-10	1	0.9
11-30	19	17.3
31-100	65	59.1
101-300	21	19.1
1000+	3	2.7
Total	**110**	100.0

It is seen in Table 3 that most of the studies (N=65) on technology integration in TEFL were studied with 31-100 people. It was revealed that only 1 study was conducted with 1-10 people, and 3 studies were conducted with 1000+ people.

Variables Examined in Studies and Distribution by Years

Content analysis was conducted to determine the variables examined in studies on technology integration in TEFL. The findings were grouped under variables related to cognitive skills, variables related to affective skills and variables related to technical skills and presented in Table 4.

Table 4.
Variables examined in studies

Variable type		Variable name	f
Variables related to cognitive skills	Cognitive variables related to language learning	Vocabulary learning skill	25
		Writing skill	21
		Speaking skill	12
		Grammar skill	10
		Reading comprehension skill	9
		Listening skill	8
		General course success (foreign language)	8
		Total	**93**
	Other cognitive variables	Learner autonomy	8
		Readiness	2
		Reflective thinking skills	1
		Awareness	1
		Critical thinking skill	1
		Kinesthetic intelligence	1
		Self-assessment	1
		Total	**15**
Variables related to affective skills		Attitude	25
		View	15
		Perception	14
		Motivation	12
		Anxiety	3
		Self-efficacy belief	2
		Self-confidence	1
		Total	**72**
Variables related to technical skills		ICT usage level	5
		ICT usage frequency	4
		Internet usage level	1
		Web 2.0 usage level	1
		Total	**11**
Overall			**191**

According to Table 4, the variables related to cognitive skills (N=108) are the mostly examined variables in the studies on technology integration in TEFL. In addition, the variables related to affective skills (N=72) and variables related to technical skills (N=11) were also examined and in almost all of the studies, more than one variable was examined.

In Table 4, it is seen that the variables related to cognitive skills are grouped under two groups; variables related to language learning and other variables. Cognitive variables related to language learning focus on "Vocabulary learning skill (N=25)" and "Writing skill (N=21)". Other cognitive variables especially focus on “Learner autonomy (N=8)”. When the variables related to affective skills are examined, it is seen that the focus is mainly on “Attitude (N=25)”, “View (N=15)”, “Perception (N=14)” and “Motivation (N=12)”. On the other hand, when the variables related to technical skills are examined, it is seen that "Information and Communication Technologies (ICT) usage level (N=5)" and "Information and Communication Technologies (ICT) usage frequency (N=4)" were studied.

The findings obtained as a result of the descriptive analysis in order to determine the distribution of the variable types in studies examined within the scope of the study by years are presented in Table 5.

Table 5.
Distribution of variable types examined in studies by years

Variable Type / Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Variables related to cognitive skills	1	-	2	3	12	8	8	3	7	4	6	9	6	5	7	23	4
Variables related to affective skills	-	-	1	-	5	5	9	1	4	4	6	6	4	1	7	16	3
Variables related to technical skills	-	-	-	-	3	-	3	-	-	-	-	1	1	3	-	-	-
Total	**1**	**-**	**3**	**3**	**20**	**13**	**20**	**4**	**11**	**8**	**12**	**16**	**11**	**9**	**14**	**39**	**7**

Table 5 shows that the distribution of the variables examined in the studies by years does not progress in a certain order and that different types of variables are focused on in each period. However, the increase and decrease in the number of examinations of the variables related to cognitive skills and affective skills have changed partially parallel to each other.

Technological Environment/Tool/Materials Used in Studies and Distribution by Years

Content analysis was conducted to determine the technological environment, tools and materials used or examined in studies on technology integration in TEFL. The findings are grouped according to the basic and common characteristics of the relevant technological environment, tools and materials and presented in Table 6.

Table 6.
Technological environment, tools and materials used in studies

Technology Type	Technological Environment/Tool/Material	*f*
Multimedia materials	Video-based materials (video, film, documentary, etc.)	18
	Audio materials (anecdote, story, question, song, etc.)	10
	Computer games	4
	Visually supported texts	4
	Presentations	3
	Animations / Cartoons	3
	Pictures	2
	Total	**44**
Web 2.0 applications	Blog platforms (Blogger, Wordpress, etc.)	11
	Collaborative authoring tools (Wiki, Google docs, etc.)	6
	Social media (Facebook, Twitter)	6
	Evaluation platforms (Edpuzzle, Socrative etc.)	3
	Podcast platforms	3
	Research platforms (WebQuest)	2
	E-portfolio platforms	2
	Discussion platforms	2
	Total	**35**
Language teaching software	Software for vocabulary learning skills	9
	Software for grammar skills	5
	Software for general language education	4
	Software for translation skills	3
	Software for listening skills	1
	Software for reading skills	1
	Total	**23**
Technological tools	Information and communication technologies (general)	7
	Internet	4
	Computer	3
	Mobile Phone / Tablet	3
	Interactive board	1
	Total	**18**
Other technological applications	Learning management systems	10
	Virtual classroom platforms / Video conferencing tools	3
	3D virtual learning environments	2
	Online support programs	1
	Total	**16**
Overall		**136**

According to Table 6, the technological environments, tools, and materials used or examined in studies on technology integration in TEFL are respectively multimedia materials (N=44), Web 2.0 applications (N=35), educational software (N=23), technological tools (N=18) and other technological applications (N=16). In some of the studies, it was determined that more than one technological environment tools and materials were used or examined.

When Table 6 is examined, it is seen that the majority of

multimedia materials are “Video-based materials (N=18)” in different types such as educational videos, films, and documentaries, and “audio materials (N=10)” such as anecdotes, stories, and songs. It can also be seen that Web 2.0 tools are mostly different “Blog platforms (N=11)” such as Blogger and WordPress, “Collaborative authoring tools (N=6)” such as Wiki and Google documents, and “Social media environments (N=6)” such as Facebook and Twitter.

In addition, according to Table 6, it is seen that educational software developed especially for certain language skills was used in studies. It was determined that this educational software is mostly "Software for vocabulary learning skills (N=9)" and "Software for grammar skills (N=5)". It is seen that the technological applications examined in the studies mostly consist of "Information and communication technologies (N=7)" and "Internet (N=4)". Moreover, it was revealed that other technological applications used in the research were mostly “Learning management systems (N=10)”.

The findings obtained as a result of the descriptive analysis carried out to determine the distribution of the types of technological environments, tools, and materials used in the studies within the scope of the study by years are presented in Table 7.

Table 7.
Distribution of technological environments/tools/materials used in research by years

Technology Type / Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Multimedia materials	1	-	-	1	7	3	2	5	2	2	4	2	-	1	3	1-	1
Web 2.0 applications	-	-	1	-	3	2	2	1	3	5	2	4	2	5	1	4	-
Language teaching software	-	-	1	1	2	-	4	-	2	1	2	-	1	-	1	6	2
Technological tools	-	-	-	-	2	3	4	-	-	1	-	1	1	2	2	2	-
Other technological applications	-	-	-	-	1	-	-	1	1	1	3	-	2	2	2	2	1
Total	**1**	**-**	**2**	**2**	**15**	**8**	**12**	**7**	**8**	**10**	**11**	**7**	**6**	**10**	**9**	**24**	**4**

According to Table 7, it is seen that the distribution of the technological environments/tools/materials used in the studies by years does not progress in a certain order and different types of technological environments/tools/materials were used in each period. On the other hand, it is seen that multimedia materials were used in almost every period in studies, and although Web 2.0 applications rose for a period, they showed a similar pattern as other tools. In addition, although it is seen that the use of language teaching software has decreased with the tendency to Web 2.0 applications, language teaching software started to be studied again in the following years.

The Relationship Between the Technological Environments/Tools/Materials Used in the Studies and the Examined Variables

Content analysis was conducted to examine the relationship between the technological environment, tool, and material types used in the studies within the scope of the study and the variables examined. The findings are presented in Table 8.

Table 8.
The relationship between the technological environments/tools/materials used in the theses and the variables examined

Type of Technology	Technological Environment/ Tool/ Material	Variables Related to Cognitive Skills														Variables Related to Affective Skills							Variables Related to Technical Skills			
		Cognitive Variables Related to Language Learning							Other Cognitive Variables																	
		Vocabulary learning skill	Writing skill	Speaking skill	Grammar skill	Reading comprehension skill	Listening skill	General course success (foreign language)	Learner autonomy	Readiness	Reflective thinking skills	Awareness	Critical thinking skill	Kinesthetic intelligence	Self-assessment	Attitude	View	Perception	Motivation	Anxiety	Self-efficacy belief	Self-confidence	ICT usage level	Frequency of use of ICT	Internet usage level	Web 2.0 usage level
Multimedia materials	Video-based materials (video, film, documentary, etc.)	5	1	5	2	2	3	1	1	-	1	-	-	-	-	3	2	3	1	-	-	-	-	-	-	-
	Audio materials (anecdote, story, question, song, etc.)	1	-	3	1	1	3	2	-	-	-	-	-	-	-	3	-	-	2	1	-	-	-	-	-	-
	Computer games	3	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-
	Visually supported texts	2	-	-	-	3	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
	Presentations	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Animations / Cartoons	1	-	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-
	Pictures	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Web 2.0 applications	Blog platforms (Blogger, Wordpress, etc.)	1	6	-	-	1	-	1	2	-	-	1	-	-	1	2	-	3	3	-	-	-	-	1	-	1
	Collaborative authoring tools (Wiki, Google docs, etc.)	-	5	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	-
	Social media (Facebook, Twitter)	1	2	-	-	1	-	-	2	-	1	-	-	-	-	1	-	-	1	-	-	-	-	1	-	-
	Evaluation platforms (Edpuzzle, Socrative etc.)	-	1	-	1	-	1	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
	Podcast platforms	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
	Research platforms (WebQuest)	-	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-
	E-portfolio platforms	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-
	Discussion platformları	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-

Language teaching software	Software for vocabulary learning skills	7	-	2	-	1	1	-	2	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
	Software for grammar skills	-	3	-	2	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	1	-	-	-	-
	Software for general language education	1	-	-	1	-	-	-	1	-	-	-	-	-	-	1	2	-	-	1	-	-	-	-	-	-
	Software for translation skills	1	2	-	1	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
	Software for listening skills	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Software for reading skills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Technological tools	Information and communication technologies (general)	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	3	2	-	1	2	-	3	1	-	-
	İnternet	1	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	1	-
	Computer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	1	1	-	-
	Mobile phone / Tablet	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-
	Interactive board	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-
Other technological tools	Learning management systems	3	1	-	3	-	-	-	1	-	-	-	-	-	-	5	-	3	-	-	-	-	1	-	-	-
	Virtual classroom platforms / Video conferencing tools	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	-
	3D virtual learning environments	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
	Online support programs	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Overall		**31**	**23**	**13**	**14**	**9**	**9**	**10**	**14**	**2**	**2**	**1**	**1**	**1**	**1**	**32**	**15**	**17**	**17**	**4**	**2**	**1**	**6**	**6**	**1**	**1**

In Table 8, it is seen that the relationship between the technological environments/tools/materials used in the studies and the variables examined differ in terms of technology type and variable type. It is notable that in studies using multimedia materials, Web 2.0 applications and language teaching software, cognitive variables related to language learning and variables related to affective skills were generally examined. In studies examining technological tools, it is seen that variables related to affective skills and technical skills were generally examined.

When Table 8 is examined in detail, it is seen that the effects of some technological environments/tools/materials such as video-based materials and audio materials on a wide variety of variables were investigated. However, it is notable that the studies focused on investigating the effect of some technological environment/tool/material, such as blog platforms and collaborative authoring tools, specifically on a single variable.

The Relationship Between Technological Environments/Tools/Materials Used in Studies and Instructor-Student Roles

The findings obtained as a result of the content analysis conducted to determine the relationship between the technological environments, tools, and materials used in the studies within the scope of the study and the roles of the instructors and students are presented in Table 9.

When Table 9. is examined, it is seen that the roles of instructors differ at certain points according to the technological environments/tools/material types used in the studies. It has been revealed that the role of instructors in almost every research, except those in which technological tools are examined, is to provide the material/platform to be presented to the students and to guide/monitor the students regarding the use of the relevant materials/platforms. It was also seen that another notable role of instructors was to express opinions/attitudes/perceptions, etc., especially regarding technological tools and Web 2.0 applications. In the limited number of studies that used multimedia materials, it was seen that instructors took active roles such as material development.

Again in Table 9, it is seen that the roles given to the students were grouped as "roles related to the field/language learning", "roles related to pedagogical activities" and "roles related to technical skills". When the roles of students related to language learning in the studies are examined, it is seen that speaking and listening roles were generally more common in studies using multimedia materials, and reading and writing roles were more common in studies using Web 2.0 applications. It was determined that these roles related to language learning changed in parallel with the characteristics of the related software in studies using language teaching software. On the other hand, in the studies on technological tools, it is noteworthy that the students were generally in the role of expressing their views on the use of related technologies in language education.

When the roles given to the students in the pedagogical activities carried out in the studies are examined, it was seen that the roles of watching/examining the material presented to them were mostly more common in the studies using multimedia materials, and they also took on different roles such as practicing and playing games in some studies. In studies using Web 2.0 applications, it was seen that, within the possibilities offered by the applications used, the roles of receiving feedback, giving feedback, evaluating/correcting, and working in cooperation were common, albeit limited.

Table 9.
The relationship between the technological environments/tools/materials used in the theses and instructor-student roles

Type of Technology	Technological Environment/ Tool/ Material	*f*	Instructor Roles				Student Roles																	
							Roles related to the field/language learning					Roles related to pedagogical activities											Roles related to technical skills		
			Providing Material / Platform	Guiding/ Following the student	Express View / Attitude / Perception	Material development	Reading	Writing	Speaking	Listening	Translating	Watching / Examining	Expressing View / Attitude / Perception etc.	Doing exercise	Doing research	Getting feedback	Give feedback / Making comment	Evaluation / Correction	Discussion	Collaboration	Gaming / Role playing	Creating platforms	Material development	Material sharing
Multimedia materials	Video-based materials (video, film, documentary, etc.)	18	17	5	-	1	-	-	3	-	-	17	-	1	-	1	1	1	-	-	2	-	3	2
	Audio materials (anecdote, story, question, song, etc.)	10	9	2	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Computer games	4	3	3	-	-	-	-	2	-	-	1	-	1	-	1	-	-	-	-	1	-	-	-
	Visually supported texts	4	4	1	-	4	4	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
	Presentations	3	-	-	-	3	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Animations / Cartoons	3	3	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
	Pictures	2	2	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Web 2.0	Blog platforms (Blogger, Wordpress, etc.)	11	-	9	2	-	7	9	-	-	-	-	-	-	-	6	6	4	2	-	-	9	-	9
	Collaborative authoring tools (Wiki,	6	5	5	1	-	3	5	-	-	-	-	-	-	-	4	4	3	-	5	-	-	-	5

	Google docs, etc.)																							
	Social media (Facebook, Twitter)	6	5	5	1	-	3	4	-	-	-	2	-	-	-	1	1	1	1	-	-	-	-	4
	Evaluation platforms (Edpuzzle, Socrative etc.)	3	3	3	-	-	-	1	-	-	1	-	-	3	-	2	-	-	-	-	-	-	-	-
	Podcast platforms	3	2	2	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Research platforms (WebQuest)	2	2	2	-	-	2	1	-	-	-	-	-	1	2	1	-	1	-	-	-	-	-	1
	E-portfolio platforms	2	2	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
	Discussion platformları	2	2	2	-	-	2	2	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Language teaching software	Software for vocabulary learning skills	9	9	9	-	-	5	2	2	4	-	-	-	4	1	2	-	-	1	-	2	-	-	-
	Software for grammar skills	5	5	5	-	-	1	4	-	-	-	-	-	2	-	4	-	4	-	-	-	-	-	-
	Software for general language education	4	1	1	2	-	-	-	-	1	-	1	1	1	-	1	-	-	-	-	-	-	-	-
	Software for translation skills	3	1	3	-	-	-	2	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-
	Software for listening skills	1	1	1	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-
	Software for reading skills	1	1	1	-	-	1	-	-	1	1	-	-	1	-	1	-	-	-	-	-	-	-	-
Technological tools	Information and communication technologies (general)	7	-	-	5	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
	İnternet	4	-	-	3	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-
	Computer	3	-	-	3	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
	Mobile phone / Tablet	3	1	1	1	-	-	-	-	-	-	-	2	1	-	1	-	-	-	-	-	-	-	-
	Interactive board	1	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Other technological	Learning management systems	10	8	8	2	-	3	1	-	4	-	3	1	2	-	2	1	-	2	1	-	-	-	2
	Virtual classroom platforms / Video conferencing tools	3	3	3	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3D virtual learning environments	2	2	2	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
	Online support programs	1	1	1	-	-	-	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Overall		**136**	**92**	**76**	**22**	**11**	**31**	**33**	**14**	**28**	**5**	**30**	**11**	**20**	**3**	**28**	**13**	**16**	**8**	**6**	**5**	**11**	**4**	**26**

Discussion

The aim of this study is to determine the methodological anatomy of studies on technology integration in TEFL from a techno-pedagogical perspective. The descriptive features, methodological features, examined variables, used technological environments/tools/materials and the roles of students and instructors in the studies were examined. The results obtained from the study are limited to 110 graduate theses on technology integration in TEFL in Turkey.

According to the results, it can be said that technology integration in TEFL in graduate theses has been maintained with an increasing trend since 2004. This can be explained by the increasing impact of related technologies on the development of different language skills with the increase in the educational potential of digital technologies in recent years (Ghanizadeh et al., 2015; Golonka et al., 2014; Shadiev et al., 2017) and the widespread use of these technologies (Bordbar, 2010; Hooker, 2009; Shadiev & Yang, 2020).

When the methods of the theses are examined, it was identified that quantitative research methods were used in most of the studies and mostly quasi-experimental research design was used. The intensity of experimental research is also evident in studies using mixed research methods. In addition, it was also determined that there was a high tendency for experimental studies focusing on the effects of various technologies on different language skills in the presence of different conditions and methods in the studies on TEFL (Ahmadi & Reza, 2018; Ürün, 2015; Zengin & Aksu, 2017). It is stated that comparative processes in experimental research provide some advantages in research on TEFL (Lin, 2015; Stickler & Hampel, 2015; Toy & Tosunoğlu, 2007). Therefore, testing different technological tools and applications with different conditions and pedagogical approaches ensures that the results obtained are more guidance (Dewaele & Li, 2020; Veglis, 2013; Zhou, 2020). In addition, the widespread use of quantitative research methods in the field of social sciences may also have an impact on this result. On the other hand, it is seen that mixed research methods are also preferred in TEFL research (Gong et al., 2020; Mahmud & Nur, 2018). As in this study, it was seen that qualitative methods were also included in the research processes, especially for the purpose of in-depth examination and explanation of experimental research results.

When the selected sample levels are examined, it is seen that the studies were mostly conducted with undergraduate student groups. This result is generally thought to be related to the researchers' use of convenience sampling methods. Because undergraduate and graduate students are more accessible to academics (Toy & Tosunoğlu, 2007) and this may lead to bias in sample selection (Chang & Hung, 2019). In addition, due to the fact that undergraduate students have acquired basic language skills, it can be thought that the effect of technology use in TEFL processes can be revealed more clearly in studies conducted with this sample level (Johnson et al., 2015). Another important result of this study is that there are no studies conducted with preschool students. However, when the literature is examined, it is emphasized that technological applications such as digital games are good tools that can be used in language education with their entertainment and motivational aspects (Agudo et al., 2010; Albaladejo et al., 2018; Cojocariu & Boghian, 2014; Güngör, 2018). Therefore, researchers can be advised to conduct research to reveal the effect of including different technological applications in the TEFL process on preschool students.

It has been observed that the variables examined in the theses on technology integration in TEFL can be classified under the name of cognitive, affective and technical skills according to Bloom's Taxonomy Model. It has been seen that the technologies used in the studies consist of multimedia materials, Web 2.0 applications, educational software, technological tools and other technological applications. The variables and technologies covered in the study were examined in relation to each other. In addition, the roles of instructors and students in the integration of different technologies into educational processes were also examined relationally. According to the results; It was determined that most of the cognitive variables were related to language learning and some of them consisted of basic cognitive variables. Cognitive variables related to language learning focused on vocabulary learning skills and writing skills. The large number of studies on vocabulary learning skills with technology integration can be explained in different ways. The fact that vocabulary learning skills form the basis of other language skills (Schmitt, 2000) may be a reason why it was frequently discussed in studies. In addition, the potential of multimedia materials that are frequently used in research to increase vocabulary learning skills (Cetinkaya & Sutcu, 2019; Dai & Fan, 2012; Özel, 2013) may have caused biased variable selection in research. Similarly, in this study, it was found that multimedia materials consisting mainly video materials of different types (Natalia & Julia, 2018) which are stated to be effective on the acquisition of all language acquisitions such as educational videos, films, and documentaries, were used in studies examining vocabulary learning skills. In addition, when the language teaching software used in the studies was examined, it was seen that the software for vocabulary learning skills was used more. In the literature, it is emphasized that the use of field-specific language teaching software in the teaching of vocabulary and grammar offers

various advantages such as enabling students to progress at their individual learning speeds, making learning permanent by reducing cognitive load, and making the education process interesting and fun (Peregoy & Boyle, 2012; Schmitt, 2000). Similarly, the large number of studies on writing skills with technology integration can be explained in different ways. In this respect, the reason why writing skills were frequently discussed may be related to the increasing popularity of Web 2.0 applications that support the development of active language skills (Arifah, 2014; Barrot, 2016; Grant, 2016). Also, in this study, it was determined that writing skills were examined using blogs and collaborative writing tools, and the number of these studies increased compared to the first years.

It has been determined that affective variables, which are another type of variable that was mostly examined in theses, especially focused on attitude, perception, motivation and view. These affective variables are considered to be important variables, especially in terms of the technology acceptance process. According to the Technology Acceptance Model, affective variables such as perceived usefulness, perceived ease of use, attitude and intention to use are very important components for the acceptance of technological opportunities/tools offered to individuals in educational environments as in daily life (Davis, 1989). Therefore, it can be thought that researchers focus on such studies in order to facilitate the adaptation process by identifying the affective elements that affect the technology integration process in TEFL, and thus to benefit from the educational potentials of technology at a higher level. Similarly, in this study, it was determined that the researchers included affective variables regardless of the type of technology used. In the study, it was seen that the variables related to technical skills, which were examined less than other variables, focused on the level and frequency of use of various technologies such as computers and the internet. It is thought that the studies that deal with these variables are very important in terms of determining the readiness for the technology integration process in TEFL (Mollaei & Riasati, 2013) and therefore the number of such studies should be increased. When the changes in the variables discussed in the studies are examined according to the years, it is seen that the increase and decrease of the variables related to cognitive skills and affective skills have changed in parallel with each other. This situation can be explained by the examination of both cognitive and affective variables in the same study.

In this study, technologies used in theses on technology integration in TEFL and the roles of instructors and students in the use of these technologies were examined. In this regard, it was determined that instructors generally assumed the roles of providing materials/platforms to students in technology use processes, providing guidance by guiding students, and reporting opinions/attitudes/perceptions towards the use of various technologies in TEFL. In line with this result, it is emphasized in the literature that in the process of technology use, instructors should guide the implementation process on many issues such as explaining the learning objectives by giving technology information to students before the activities (Chu vd., 2019), ensuring and maintaining their motivation (Zeng & Takatsuka, 2009), ensuring equal participation of all students (Kennedy & Miceli, 2013), determining tasks and giving feedback (Ernest vd., 2013), and providing timely and appropriate support. Otherwise, it is stated that students may develop negative perceptions about the related technologies (Shadiev et al., 2018). On the other hand, it was seen in the studies that, although very limited, instructors were also involved in the roles of developing multimedia materials such as visually supported texts, presentations and videos, which require higher level of technical knowledge and can be described as more active. Considering that technology in TEFL has positive aspects in favor of learners in most cases, in order to integrate technology into their lessons and to continue this successfully, educators should be offered learning processes that provide practical experience in undergraduate education or in-service training (Celik, 2013; Hubbard, 2017; Kuru Gönen, 2019) that are linked to the real classroom environment, and that encourage reflective practices (Sert & Li, 2017).

When the roles given to the students in the studies were analyzed in terms of the technological environments/tool/materials used, it was determined that they were grouped as roles related to the field/language learning, pedagogical activities and technical skills. In the theses conducted using multimedia materials, it was noted that the students only listened to the audio materials and were subjected to various evaluations at the end of the process. On the other hand, in the use of video materials, it was seen that the students were mostly given the passive audience role, however, active roles such as speaking about the video were given in a very limited number of theses. However, in the literature, the significance of using multimedia materials with various pedagogical activities is emphasized (Cakir, 2006; DeHaan et al., 2010; Nguyen, 2021). For example; it is recommended to expand the use of video materials with applications that can make students more active, such as drill and practice, question-answer, interpretation, completion, and association with interactive processes. Again, it was observed that the focus was on

writing activities in the use of blogs, one of the Web 2.0 applications that were frequently examined in the theses and that students shared by writing articles in this process, read the articles written by their peers, and made corrections based on comments and feedback made by their peers and their instructors. Therefore, it can be said that blog usage processes are enriched with various pedagogical activities (Hamad, 2017) as well as roles related to field/language learning (Arslan & Şahin-Kızıl, 2010; Poonpon, 2017). It was noted that students also took part in roles based on technical skills, such as creating related platforms and sharing different types of materials on this platform. However, in studies examining other Web 2.0 applications, it was observed that the variety of pedagogical activities provided to students was quite limited. However, the integration of such applications and tools into educational environments supports the student-centered education approach and offers students the opportunity to practice real-life skills, develop products and engage in social interaction (Drayton, 2010; Parvin & Salam, 2015). At this point, it is emphasized that Web 2.0 application has the potential to support different skills related to language learning (Faizi, 2018), but it is important to use it together with various pedagogical activities (Paily, 2013) such as cooperation (Williams & Chinn, 2009), discussion, gamification, drill and practice in order to reveal this potential (McLoughlin & Lee, 2010). On the other hand, it is emphasized in the literature that the use of technologies is directly related to the pedagogical approaches of instructors (Liu et al., 2017).

In studies using language teaching software, mainly software for vocabulary learning skills, it was observed that the roles of doing exercises and receiving feedback for target language acquisition related to the purpose of creating this software were remarkable. It was seen that because of their potential, video conferencing and virtual live classroom environments were used to improve the speaking skills of students. Again, it was observed that the LMSs, which were frequently used in the theses, were used for the purpose of reading, listening, examining the materials uploaded to the system, etc., and that the potentials of applications such as forums, especially for the development of active skills such as writing, were utilized at a very limited level. Today, LMS platforms, whose features are being developed gradually, offer the opportunity to transfer almost all of the pedagogical activities carried out in face-to-face education environments to online platforms (Quansah & Essiam, 2021). Various technical possibilities such as material sharing, forum applications, collaborative authoring tools, synchronous-asynchronous communication tools, individual and peer assessment modules provided in these environments offer the opportunity to practice pedagogical activities (Lee, 2004; Kapsargina & Olentsova, 2019; Shalatska et al., 2020). Therefore, in order to used these systems effectively in TEFL processes, it is important to include and evaluate the various tools offered in the implementation processes (Alsied & Pathan, 2013). Therefore, considering this situation, it can be said that researchers can better reveal the real potential of technologies with research designs in which students take an active role. In the theses that examined the technological tools used in the TEFL process, it was noted that both instructors and students were in the role of expressing their views on the relevant technology. It is thought that such studies are very important in terms of determining the readiness for the technology integration process in TEFL (Mollaei & Riasati, 2013) and therefore the views of instructors and students, who are important stakeholders of this process, thus further studies are needed.

Conclusion and Recommendations

Changes in technology and the increase in its potential for language teaching have created an appropriate context to reconstruct and explore TEFL models in the new age (Chun et al., 2016; Kalasi, 2014; Sitthirak, 2013). The use of different materials or environments in TEFL processes to support students with different learning styles not only provides rich course content but also allows students to make various choices by managing their individual learning processes (Hamilton, 2013; Little & Thorne, 2017). When the results obtained from the study are evaluated in general; in TEFL processes, it has been observed that the effects of different research methods and different technologies on various skills have been examined from past to present. In this process, it has been determined that researchers have tried to focus on the skills that are almost directly related to the potential of each technology. However, in most of these research processes, it was observed that the potential offered by the relevant technology was utilized at a very basic level and in relation to this, especially students were given roles that could be described as passive. However, it is emphasized in the literature that the benefits can become more concrete when technological applications are included in learning environments at a level that allows students to actively solve a problem, comprehend meanings and reflect

on their learning (Cutrim Schmid, 2008; Liu et al., 2017; Nami et al., 2016). Therefore, it is of great importance for both researchers and instructors to consider this situation in TEFL processes.

The results obtained from the study were evaluated in general and the following suggestions were made for the researchers:

- In-depth research based on qualitative research methods for technology integration can be designed in TEFL processes.
- Researches can be designed to reveal the effects of different technological applications on the TEFL processes of preschool students.
- In educational environments supported by technology integration, applied researches in which students take an active role can be designed to better reveal the real potentials of technologies in TEFL processes.
- In this study, the variables examined in the studies were categorized according to the learning domains in Bloom's Taxonomy Model. In future studies to be designed, the potential of technologies used in the TEFL process can be examined in more detail based on the levels of learning domains in Bloom's Taxonomy Model.
- Researches can be designed for the use of technological applications such as virtual learning environments and video conferencing tools, which are increasingly used in online education processes, as support systems in TEFL processes.

Etik Komite Onayı: Derleme türünde bir makale olduğu için etik kurul onayı alınmamıştır.
Katılımcı Onamı: Derleme türünde bir makale olduğu için katılımcı onay formlarına gerek yoktur.
Hakem Değerlendirmesi: Dış bağımsız.
Yazar Katkıları: Fikir - V.K., S.Ç.K., M.B.K, S.K.; Tasarım - V.K., S.Ç.K., M.B.K, S.K.; Denetleme - V.K., S.Ç.K., M.B.K, S.K.; Kaynaklar - V.K., S.Ç.K., M.B.K, S.K.; Veri Toplanması ve/veya İşlemesi - V.K., S.Ç.K., M.B.K, S.K.; Analiz ve/ veya Yorum - V.K., S.Ç.K., M.B.K, S.K.; Literatür Taraması - V.K., S.Ç.K., M.B.K, S.K.; Yazıyı Yazan - V.K., S.Ç.K., M.B.K, S.K.; Eleştirel İnceleme - V.K., S.Ç.K., M.B.K, S.K.
Çıkar Çatışması: Yazarlar, çıkar çatışması olmadığını beyan etmiştir.
Finansal Destek: Yazarlar, bu çalışma için finansal destek almadığını beyan etmiştir.

Ethics Committee Approval: Ethics committee approval was not received for this study as it was a review type.
Informed Consent: Informed consent forms was not received for this study as it was a review type.
Peer-review: Externally peer-reviewed.
Author Contributions: Concept - V.K., S.Ç.K., M.B.K, S.K.; Design - V.K., S.Ç.K., M.B.K, S.K.; Supervision - V.K., S.Ç.K., M.B.K, S.K.; Resources - V.K., S.Ç.K., M.B.K, S.K.; Data Collection and/or Processing - V.K., S.Ç.K., M.B.K, S.K.; Analysis and/or Interpretation - V.K., S.Ç.K., M.B.K, S.K.; Literature Search - V.K., S.Ç.K., M.B.K, S.K.; Writing Manuscript - V.K., S.Ç.K., M.B.K, S.K.; Critical Review - V.K., S.Ç.K., M.B.K, S.K.
Conflict of Interest: The authors have no conflicts of interest to declare.
Financial Disclosure: The authors declared that this study has received no financial support.

References

Agudo, J. E., Sánchez, H., & Rico, M. (2010, July). Playing games on the screen: Adapting mouse interaction at early ages. In *2010 10th IEEE International Conference on Advanced Learning Technologies* (pp. 493-497). IEEE.

Ahmadi, D., & Reza, M. (2018). The use of technology in English language learning: A literature review. *International Journal of Research in English Education*, *3*(2), 115-125.

Al-Wasy, B. Q. (2020). The effectiveness of integrating technology in EFL/ESL writing: a meta-analysis. *Interactive Technology and Smart Education, 17* (4), 435-454. http://doi.org/10.1108/ITSE-03-2020-0033

Akkoyunlu, B., Kurbanoğlu S. (2003). Öğretmen adaylarının bilgi okuryazarlığı ve bilgisayar öz-yeterlilik algıları üzerine bir çalışma. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 24, 1-10.

Albaladejo, S. A., Coyle, Y., & de Larios, J. R. (2018). Songs, stories, and vocabulary acquisition in preschool learners of English as a foreign language. *System, 76*, 116–128. https://doi.org/10.1016/j.system.2018.05.002

Alemi, M., Meghdari, A., & Ghazisaedy, M. (2015). The impact of social robotics on L2 learners' anxiety and attitude in English vocabulary acquisition. *International Journal of Social Robotics*, *7*(4), 523-535. http://doi.org/10.1007/s12369-015-0286-y

Alsied, S. M., & Pathan, M. M. (2013). The use of computer technology in EFL classroom: Advantages and implications. *International Journal of English Language & Translation Studies (IJ-ELTS)*, *1*(1), 61-71.

Ammade, S., Mahmud, M., Jabu, B., & Tahmir, S. (2018). Integrating technology in English language teaching: global experiences and lessons for Indonesia. *International Journal of English Linguistics*, *8*(6), 107-114. https://doi.org/10.5539/ijel.v8n6p107

Anderson, L. W., Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives: Complete edition. New York, NY: Longman.

Arifah, A. (2014). Study on the use of technology in ELT classroom: Teachers' perspective. M.A. Thesis, Department of English and Humanities, BRAC University, Dhaka, Bangladesh.

Arslan, R. Ş., & Şahin-Kızıl, A. (2010). How can the use of blog software facilitate the writing process of English language learners?. *Computer Assisted Language Learning, 23*(3), 183-197. https://doi.org/10.1080/09588221.2010.486575

Barrot, J. (2016). Using Facebook-based e-portfolio in ESL writing classrooms: impact and challenges. *Language, Culture and Curriculum, 29*(3), 286–301. https://doi.org/10.1080/07908318.2016.1143481

Basturkmen, H. (2009). Commenting on results in published research articles and masters dissertations in Language Teaching. *Journal of English for Academic Purposes, 8(*4), 241-251. https://doi.org/10.1016/j.jeap.2009.07.001

Baz, F. Ç. (2010). *Bilgisayar destekli yabancı dil eğitim yazılımı olan Dyned Programının öğretmen ve öğrenci görüşleri açısından değerlendirilmesi*. (Publication No. 292843) [Master thesis, Cukurova University]. YÖK Tez Merkezi. https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Baytak, A., Tarman, B., & Ayas, C. (2011). Experiencing technology integration in education: children's perceptions. *International Electronic Journal of Elementary Education*, *3*(2), 139-151.

Beatty, K. (2003). Teaching and Researching Computer-Assisted Language Learning (Applied Linguistics in Action). New York: Pearson ESL.

Bordbar, F. (2010). English teachers' attitudes toward computer-assisted language learning. *International Journal of Language Studies, 4*(3).

Cakici, D. (2016). The use of ICT in teaching English as a foreign language. *Participatory Educational Research (PER)*, *4*(2), 73-77.

Cakir, I. (2006). The use of video as an audio-visual material in foreign language teaching classroom. *Turkish Online Journal of Educational Technology-TOJET*, *5*(4), 67-72.

Celik, S. (2013). Internet-assisted technologies for English language teaching in Turkish universities. *Computer Assisted Language Learning*, *26*(5), 468-483. https://doi.org/10.1080/09588221.2012.692385

Cetinkaya, L., & Sutcu, S. S. (2019). Students' success in English vocabulary acquisition through multimedia annotations sent via Whatsapp. *Turkish Online Journal of Distance Education, 20*(4), 85-98. https://doi.org/10.17718/tojde.640517

Cetto, M. (2010). Technology and second language teaching. *Brujula, 8,* 119-121.

Chang, M. M., & Hung, H. T. (2019). Effects of Technology-Enhanced Language Learning on Second Language Acquisition. *Journal of Educational Technology & Society*, *22*(4), 1-17.

Cojocariu, V. M., & Boghian, I. (2014). Teaching the relevance of game-based learning to preschool and primary teachers. *Procedia-Social and Behavioral Sciences*, *142*, 640-646. https://doi.org/10.1016/j.sbspro.2014.07.679

Chu, H. C., Wang, C. C., & Wang, L. (2019). Impacts of concept map-based collaborative mobile gaming on English grammar learning performance and behaviors. *Journal of Educational Technology & Society, 22*(2), 86-100.

Chun, D., Kern, R., & Smith, B. (2016). Technology in language use, language teaching, and language learning. *The Modern Language Journal*, *100*(S1), 64-80. https://doi.org/10.1111/modl.12302

Cutrim Schmid, E. (2008). Potential pedagogical benefits and drawbacks of multimedia use in the English language classroom equipped with interactive whiteboard technology. *Computers & Education*, *51*(4), 1553-1568. https://doi.org/10.1016/j.compedu.2008.02.005

Dai, W., & Fan, L. (2012). Discussion about the pros and cons and recommendations for multimedia teaching in local vocational schools. *Physics Procedia, 33*, 1144-1148. https://doi.org/10.1016/j.phpro.2012.05.188

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly, 13*(3), 318-340.

DeHaan, J. Reed, W., & Kuwada, K. (2010). The effect of interactivity with music video games on second language vocabulary recall. *Language Learning & Technology, 14*(2),74-94.

Dewaele, J. M., & Li, C. (2020). Emotions in second language acquisition: A critical review and research agenda. *Foreign Language World, 196*(1), 34-49.

Drayton, B., Falk, J. K., Stroud, R., Hobbs, K., & Hammerman, J. (2010). After installation: Ubiquitous computing and high school science in three experienced, high-technology schools. *Journal of Technology, Learning, and Assessment*, *9*(3), 1-57.

Ernest, P., Guitert Catasús, M., Hampel, R., Heiser, S., Hopkins, J., Murphy, L., & Stickler, U. (2013). Online teacher development: Collaborating in a virtual learning environment. *Computer Assisted Language Learning, 26*(4), 311-333.

Faizi, R. (2018). Teachers' perceptions towards using Web 2.0 in language learning and teaching. *Education and Information Technologies, 23*(3), 1219-1230. https://doi.org/10.1007/s10639-017-9661-7

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). How to design and evaluate research in education.

Ghanizadeh, A., Razavi, A., & Jahedizadeh, S. (2015). Technology-Enhanced Language Learning (TELL): A Review of Resourses and Upshots. *International Letters of Chemistry, Physics and Astronomy*, *54*, 73. https://doi.org/10.18052/www.scipress.com/ILCPA.54.73

Gilakjani, A. P. (2012). The significant role of multimedia in motivating EFL learners' interest in English language learning. *International Journal of Modern Education and Computer Science*, *4*(4), 57.

Gilakjani, A. P. (2017). A review of the literature on the integration of technology into the learning and teaching of English language skills. *International Journal of English Linguistics*, *7*(5), 95-106. http://doi.org/10.5539/ijel.v7n5p95

Golonka, E. M., Bowles, A. R., Frank, V. M., Richardson, D. L., & Freynik, S. (2014). Technologies for foreign language learning: a review of technology types and their effectiveness. *Computer assisted language learning*, *27*(1), 70-105. https://doi.org/10.1080/09588221.2012.700315

Gong, Y. F., Gao, X. A., & Lyu, B. (2020). Teaching Chinese as a second or foreign language to non-Chinese learners in mainland China (2014–2018). *Language Teaching*, *53*(1), 44-62.

Grabe, W., & Stoller, F.L. (2002). *Teaching and researching reading*. Harlow, Essex: Pearson Education.

Grant, S. (2016). Peer review process completion rates and subsequent student perceptions within completely online versus blended modes of study. *System, 62*(1), 93-101. https://doi.org/10.1016/j.system.2016.06.010

Güngör, B. (2018). The effect of the integration of talking toys on preschoolers' vocabulary learning in English. *Erken Çocukluk Çalışmaları Dergisi*, *2*(2), 180-193. https://doi.org/10.24130/eccd-jecs.196720182255

Hamilton, M. 2013. *Autonomy and Foreign Language Learning in a Virtual Learning Environment. London*: Bloomsbury.

Hauck, M., & Guichon, N. (2011). Editorial: Teacher education research in CALL and CMC: More in demand than ever. *ReCALL*, *23*(3), 187-199. https://doi.org/10.1017/S0958344011000139

Herlina, A. (2014). The Utilization of Technology to Improve English Speaking Skills. *Journal for the Study of English Linguistics*, *2*(2), 19-24. http://dx.doi.org/10.5296/jsel.v2i2.6665

Lin, M. H. (2015). Learner-centered blogging: A preliminary investigation of EFL student writers' experience. *Journal of Educational Technology & Society, 18*(4), 446-458.

Liu, H., Lin, C. H., & Zhang, D. (2017). Pedagogical beliefs and attitudes toward information and communication technology: a survey of teachers of English as a foreign language in China. *Computer Assisted Language Learning*, *30*(8), 745-765. https://doi.org/10.1080/09588221.2017.1347572

Hamad, M. M. (2017). Using WhatsApp to Enhance Students' Learning of English Language "Experience to Share". *Higher Education Studies, 7*(4), 74-87. http://doi.org/10.5539/hes.v7n4p74

Hooker, M. (2009). How can I encourage multi-stakeholder narrative and reflection on the use of ICT in teacher professional development programmes in Rwanda? *Educational Journal of Living Theories, 2*(3), 324-364.

Houcine, S. (2011,). The effects of ICT on learning/teaching in a foreign language.*International Conference "ICT for Language Learning"*. https://www.academia.edu/download/34070270/The_effects_of_ICT_on_learning.pdf

Hubbard, P., & Levy, M. (2006). *Teacher education in CALL.* Amsterdam: John Benjamins Publishing.

Hubbard, P. (2017). *Technologies for teaching and learning L2 listening.* In Carol A. Chapelle, Shannon Sauro (Eds.) The handbook of technology and second language teaching and learning (pp 93-106). http://doi.org/10.1002/9781118914069

İlter, B. G. (2015). How does technology affect language learning process at an early age?. *Procedia-Social and Behavioral Sciences, 199*, 311-316. https://doi.org/10.1016/j.sbspro.2015.07.552

Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2015). *NMC horizon report: 2015 higher education edition.* Austin, TX: The New Media Consortium

Kalanzadeh, G. A., Soleimani, H., & Bakhtiarvand, M. (2014). Exploring the influence of using technology on Iranian EFL students' motivation. *Procedia-Social and Behavioral Sciences, 98,* 814-823. https://doi.org/10.1016/j.sbspro.2014.03.486

Kalasi, R. (2014). The impact of social networking on new age teaching and learning: An overview. *Journal of Education & Social Policy*, *1*(1), 23-28.

Kapsargina, S., & Olentsova, J. (2019). Reasonability of using LMS Moodle tests as a form of control in teaching a foreign language for students of secondary vocational education. *Advances in Economics, Business and Management Research, 131*, 811-815.

Kennedy, C., & Miceli, T. (2013). In piazza online: Exploring the use of wikis with beginner foreign language learners. *Computer Assisted Language Learning*, *26*(5), 389-411. https://doi.org/10.1080/09588221.2013.770035

Kozikoğlu, A. G. İ. (2013). Yabancı dil öğretiminde bilgisayar kullanımına ilişkin öğretim elemanlarının görüşleri. *Yüzüncü Yıl Üniversitesi Eğitim Fakültesi Dergisi*, *10*(1), 373-394.

Kuru Gönen, S. İ. (2019). A qualitative study on a situated experience of technology integration: reflections from pre-service teachers and students. *Computer Assisted Language Learning*, *32*(3), 163-189. https://doi.org/10.1080/09588221.2018.1552974

Lawless, K.A., & Pellegrino, J.W. (2007). Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. *Review of Educational Research*, *77*(4), 575-614. https://doi.org/10.3102/0034654307309921

Lee, K. (2000). English teachers' barriers to the use of computer-assisted language learning. *The Internet TESL Journal*, *6*(12).

Lee, L. (2004). Learners' perspectives on networked collaborative interaction with native speakers of Spanish in the US. *Language Learning and Technology*, *8*(1), 83-100.

Lee, C., Jor, G., & Lai, E. (2005). *Web-based Teaching and English Language Teaching: A Hong Kong Experience.* Hong Kong: The Chinese University Press.

Lin, H. (2015). Computer-mediated communication (CMC) in L2 oral proficiency development: A metaanalysis. *ReCALL*, *27*(3), 261–287.

Little, D., & Thorne, S. L. (2017). From learner autonomy to rewilding: A discussion. *Learner Autonomy and Web*, *2*, 12-35.

Liu, M., Moore, Z., Graham, L., & Lee, S. (2002). A look at the research on computer-based technology use in second language learning: A review of the literature from 1990-2000. *Journal of research on technology in educatio*n, *34*(3), 250-273. https://doi.org/10.1080/15391523.2002.10782348

Mahmud, M., & Nur, S. (2018). Exploring Students' Learning Strategies and Gender Differences in English Language Teaching. *International Journal of Language Education*, *2*(1), 51-64. https://doi.org/0.26858/ijole.v2i1.4346

Margerum-Leys, J., & Marx, R. W. (2002). Teacher knowledge of educational technology: A case study of student/mentor teacher pairs. *Journal of Educational Computing Research, 26*(4), 427-462. https://doi.org/10.2190/JXBR-2G0G-1E4T-7T4M

McLoughlin, C., & Lee, M. J. (2010). Personalised and self regulated learning in the Web 2.0 era: International exemplars of innovative pedagogy using social software. A*ustralasian Journal of Educational Technology, 26*(1), 418-431. https://doi.org/10.14742/ajet.1100

McMillan, J. H., & Schumacher, S. (2010). *Research in Education: Evidence-Based Inquiry*, MyEducationLab Series. Pearson.

Mishra, P., & Koehler, M.J. (2006). Technological pedagogical content knowledge: A new framework for teacher knowledge. *Teachers College Record*, *108*(6), 1017-1054.

Mollaei, F., & Riasati, M. J. (2013). Teachers' perceptions of using technology in teaching EFL. *International Journal of Applied Linguistics and English Literature*, *2*(1), 13-22. https://doi.org/10.7575/ijalel.v.2n.1p.13

Nami, F., Marandi, S.S., & Sotoudehnama, E. (2016). CALL teacher professional growth through lesson study practice: An investigation into EFL teachers' perceptions. *Computer Assisted Language Learning, 29*, 658–682. https://doi.org/10.1080/09588221.2015.1016439

Natalia, K., & Julia, O. (2018). New use of MOODLE tools for distance English language learning (experience of Krasnoyarsk State Agrarian University). International Multidisciplinary Scientific GeoConference: *SGEM, 18*(5.4), 225-232. https://doi.org/10.5593/sgem2018/5.4/S22.029

Nguyen, V. M. (2021). Positive Effects of Video-based Projects on the Communicative English Grammar Lessons. *International Journal of Language and Literary Studies, 3*(3), 54-68. https://doi.org/10.36892/ijlls.v2i3.666

Özel, A. (2013). The Use of the Internet and Web 2.0 Tools Among EFL Instructors. Akdeniz University, The Instıtute of Educational Sciences Foreign Language Teaching Department. Master Thesis, Antalya.

Paily, M. U. (2013). Creating constructivist learning environment: Role of "Web 2.0" technology. *In International Forum of Teaching and Studies 9*(1), 39-50.

Panagiotidis, P. (2018). Technology as a Motivational Factor in Foreign Language Learning. *European Journal of Education*, *1*(3), 43-52.

Parvin, R. H., & Salam, S. F. (2015). The Effectiveness of Using Technology in English Language Classrooms in Government Primary Schools in Bangladesh. *FIRE: Forum for International Research in Education, 2*(1), 47-59.

Peregoy, S., & Boyle, O. (2012). Reading, writing and learning in ESL: A resource book for teachers. New York: Allyn & Bacon

Pierson, M. E. (2001). Technology integration practice as a function of pedagogical expertise. *Journal of Research on Computing in Education, 33*(4), 413-430. https://doi.org/10.1080/08886504.2001.10782325

Poonpon, K. (2017). Enhancing English skills through project-based learning. *The English Teacher*, *XL*, 1-10.

Quansah, R., & Essiam, C. (2021). The use of learning management system (LMS) moodle in the midst of covid-19 pandemic: Students' perspective. *Journal of Educational Technology and Online Learning*, *4*(3), 418-431. https://doi.org/10.31681/jetol.934730

Rodinadze, S., & Zarbazoia, K. (2012). The advantages of information technology in teaching English language. *Frontiers of Language and Teaching*, *3*(5), 271-275.

Schmitt, N. (2000). Vocabulary in language teaching. Cambridge: Cambridge University Press.

Sert, O., & Li, L. (2017). A qualitative study on CALL knowledge and materials design: Insights from pre-service EFL teachers. *International Journal of Computer-Assisted Language Learning and Teaching*, *7*(3), 73-87. https://doi.org/10.4018/IJCALLT.2017070105

Shadiev, R., Hwang, W. Y., & Huang, Y. M. (2017). Review of research on mobile language learning in authentic environments. *Computer Assisted Language Learning*, *30*(3-4), 284-303.

Shadiev, R., Hwang, W. Y., & Liu, T. Y. (2018). A study of the use of wearable devices for healthy and enjoyable English as a foreign language learning in authentic contexts. *Journal of Educational Technology & Society*, *21*(4), 217-231.

Shadiev, R., & Yang, M. (2020). Review of studies on technology-enhanced language learning and teaching. *Sustainability, 12*(2), 524. https://doi.org/10.3390/su12020524

Shalatska, H.M., Zotova-Sadylo, O.Y., Muzyka, I.O. (2020, December 20). Moodle course in teaching English language for specific purposes for masters in mechanical engineering [Conference presentation]. *7th Workshop on Cloud Technologies in Education (CTE 2019),* Kryvyi Rih, Ukraine.

Sharma, P. (2009). *Controversies in using technology in language teaching.* BBC Teaching English.

Shih, C. L., & Chuang, H. H. (2013). The development and validation of an instrument for assessing college students' perceptions of faculty knowledge in technology-supported class environments. *Computers & Education*, *63*, 109-118. https://doi.org/10.1016/j.compedu.2012.11.021

Sitthirak, Ch. (2013). Social media for language teaching and learning. *Thammasat University Journal*, *31*(1), 611-619.

Shyamlee, S. D., & Phil, M. (2012, March). Use of technology in English language teaching and learning: An analysis [Conference presentation]. *International Conference on Language, Medias and Culture.* IACSIT Press, Singapore.

Sozbilir, M., Kutu, H., & Yasar, M. D. (2012). *Science education research in Turkey: A content analysis of selected features of papers published*. In J. Dillon& D. Jorde (Eds). The World of Science Education: Handbook of Research in Europe (pp.341-374). Rotterdam: Sense Publishers.

Stickler, U., & Hampel, R. (2015). Qualitative research in CALL. *CALCO Journal*, *32*(3), 380-395.

Sun, Z., Lin, C. H., You, J., Shen, H. J., Qi, S., & Luo, L. (2017). Improving the English-speaking skills of young learners through mobile social networking. *Computer Assisted Language Learning*, *30*(3–4), 304–324. https://doi.org/10.1080/09588221.2017.1308384

Szendeffy, J. (2005). *A practical guide to using computers in language teaching*. Ann Arbor, MI: University of Michigan Press/ESL.

Towndrow, P. A. (2007). T*ask Design, Implementation and Assessment: Integrating Information and Communication Technology in English Language Teaching and Learning.* Hong Kong: McGraw-Hill Education.

Toy, B. Y., & Tosunoğlu, N. G. (2007). Sosyal bilimler alanındaki araştırmalarda bilimsel araştırma süreci, istatistiksel teknikler ve yapılan hatalar. *Gazi Üniversitesi Ticaret ve Turizm Eğitim Fakültesi Dergisi*, (1), 1-20.

Uşun, S. (2013). Bilgisayar Destekli Öğretimin Temelleri. Ankara: Nobel yayıncılık.

Ürün, M. F. (2015). Integration of technology into language teaching: A comparative review study. *Journal of Language Teaching and Research*, *7*(1), 76-87. http://dx.doi.org/10.17507/jltr.0701.09

Veglis, A. (2013). Education of journalists on ICTs: Issues and opportunities. *Journal of Applied Journalism & Media Studies*, *2*(2), 265-279. https://doi.org/10.1386/ajms.2.2.265_1

Williams, J., & Chinn, S. J. (2009). Using Web 2.0 to support the active learning experience. *Journal of Information Systems Education, 20*(2), 165-174.

Woodrow, L. (2017). Motivation in language learning. In *Essential competencies for English-medium university teaching*. Springer, Cham.

Yaverbaum, G.J., Kulkarni, M. & Wood, C. (1997). Multimedia Projection: An Exploratory Study of Student Perceptions Regarding Interest, Organization, and Clarity. *Journal of Educational Multimedia and Hypermedia, 6*(2), 139-153.

Zeng, G., & Takatsuka, S. (2009). Text-based peer–peer collaborative dialogue in a computer-mediated learning environment in the EFL context. *System, 37*(3), 434-446. https://doi.org/10.1016/j.system.2009.01.003

Zengin, Ö., & Aksu, M. (2017). A Review Study on the Integration of Technology into Foreign Language Education in Turkey. *Journal of Faculty of Educational Sciences*, *50*(2), 79-104. https://doi.org/10.1501/Egifak_0000001398

Zhao, Y., & Tella, S. (2002). Technology and teacher education. *Language Learning & Technology*, *6*(3), 25.

Zhao, H. (2008). Using the Internet to improve EFL through reading and writing for communicative purposes. *Polyglossia, 14,* 17-24.

Zhou, W. (2020). Mobile Assisted Chinese Learning as a Foreign Language: An Overview of Publications between 2007 and 2019. *Frontiers of Education in China*, *15*(1), 164-181. https://doi.org/10.1007/s11516-020-0007-7

Genişletilmiş Özet

Giriş

Günümüz eğitim kademeleri göz önünde bulundurulduğunda ilköğretim, ortaöğretim, yükseköğretim ve hatta yaygın öğretimdeki dil eğitim kurumlarında öğretim teknolojilerinin, uzaktan eğitim teknolojilerinin ve yardımcı yazılımların sıklıkla kullanıldığı görülmektedir. Bu durum diğer alanlarda olduğu gibi İngilizce öğretiminde de mevcut teknolojik birikimin uygulamaya aktarılmasına ihtiyacı doğurmuştur. Bu sebeple eğitimin her alanında zorunlu olarak artan teknoloji kullanımı da mevcut araştırmalarda şimdiye kadar ortaya konan teknoloji entegrasyonu eğilimlerinin belirlenmesini daha önemli hâle getirmiştir. Bu bağlamda çalışmanın başlıca amacı İngilizcenin yabancı dil olarak öğretiminde teknoloji entegrasyonuna yönelik araştırmaların yöntemsel anatomilerinin teknopedagojik bakış açısıyla ortaya koyulmasıdır. Bu amaç doğrultusunda ele alınan araştırmaların tanımlayıcı özellikleri, yöntemsel özellikleri, incelenen değişkenler, kullanılan teknolojik ortamlar/araçlar/materyaller ile eğitimci ve öğrencilerin üstlendikleri roller incelenmiştir. Çalışmanın pandemi dönemi ve daha sonraki öğretim süreçlerinde İngilizcenin yabancı dil olarak öğretiminde teknoloji kullanımına yönelik bir kılavuz niteliği taşıyacağı ve ilgili araştırmacılar ve eğitimcilere yön göstereceği düşünülmektedir. Bu kapsamda aşağıdaki araştırma sorularına cevap aranmıştır:

1. Araştırmaların yıllara göre dağılımı nasıldır?
2. Araştırmalarda hangi yöntem ve araştırma desenleri kullanılmıştır?
3. Araştırmalarda çalışılan örneklem düzeyi ve büyüklükleri nelerdir?
4. Araştırmalarda incelenen değişkenler nelerdir ve yıllara göre dağılımı nasıldır?
5. Araştırmalarda kullanılan teknolojik ortamlar/araçlar/materyaller nelerdir ve yıllara göre dağılımı nasıldır?
6. Araştırmalarda kullanılan teknolojik ortamlar/araçlar/materyaller ile incelenen değişkenler arasındaki ilişki nasıldır?
7. Araştırmalarda kullanılan teknolojik ortamlar/araçlar/materyaller ve eğitimci-öğrenci rolleri arasındaki ilişki nasıldır?

Yöntem

Çalışmada nitel araştırma yöntemlerinden içerik analizi yöntemi kullanılmıştır. Çalışmanın kapsamını Türkiye'de İngilizcenin yabancı dil olarak öğretiminde teknoloji entegrasyonuna yönelik olarak yapılan 110 lisansüstü tez oluşturmaktadır. Çalışmanın kapsamına dahil edilen tezler, Türkiye'deki tüm tezlerin kataloglandığı bir sistem olan Yükseköğretim Kurulu Başkanlığı Tez Merkezi'nde yayınlanan ve erişim izni verilen lisansüstü tezler arasından ölçüt örnekleme yöntemiyle seçilmiştir. Ulaşılan tezlerin İngilizcenin yabancı dil olarak öğretiminde teknoloji entegrasyonuna yönelik olup olmadığını belirlemek için özet ve yöntem bölümleri genel olarak incelenmiştir. Yapılan incelemeler sonucunda 822 tez arasından çalışmanın kriterlerine uygun olan 94'ü yüksek lisans, 16'sı doktora seviyesinde olmak üzere toplam 110 tez çalışma kapsamına dahil edilmiştir. Veri analizi sürecinde araştırmalarda incelenen değişkenler sınıflandırılırken Bloom taksonomisi Modeli temel alınmıştır. Bu modelde Bloom (1956) öğrenme alanlarını bilişsel, duyuşsal ve psikomotor alanlar olmak üzere üç başlık altında sınıflandırılmıştır. Veri analizi sürecinde araştırmalarda kullanılan teknolojilerin sınıflandırılmasında ise her bir teknolojinin temel ve ortak özellikleri dikkate alınarak araştırmacılar tarafından bir sınıflandırma yapılmıştır. Araştırmalardaki eğitimci ve öğrenci rolleri teknopedagojik bakış açısıyla analiz edildiğinde, eğitimciler veya araştırmacılar tarafından öğrencilere teknolojik becerilere ilişkin, pedagojik aktivitelere ilişkin veya dil öğrenimine ilişkin çeşitli roller atandığı görülürken, eğitimci rollerinin daha temel ve genel olduğu görülmüştür. Bu kapsamda araştırmalarda öğrencilere atanan roller sınıflandırılırken Teknolojik Pedagojik Alan Bilgisi (TPAB) Modeli temel alınmıştır.

Bulgular

Çalışmadan elde edilen bulgulara göre lisansüstü tezlerde İngilizcenin yabancı dil olarak öğretiminde teknoloji entegrasyonunun 2004 yılından başlayarak günümüze kadar artan bir eğilimle sürdürüldüğü görülmektedir. İngilizcenin yabancı dil olarak öğretiminde teknoloji entegrasyonuna yönelik tezlerin yöntemleri incelendiğinde büyük bir kısmında nicel araştırma yöntemlerinin kullanıldığı ve çoğunlukla yarı deneysel araştırma desenine başvurulduğu tespit edilmiştir. Deneysel araştırmaların ağırlığı, karma araştırma yöntemi izlenen çalışmalarda da göze çarpmaktadır. Seçilen örneklem düzeyleri incelendiğinde çoğunlukla lisans düzeyindeki öğrenci gruplarıyla çalışıldığı görülmektedir. İngilizcenin yabancı dil olarak öğretiminde teknoloji entegrasyonuna ilişkin tezlerde ele alınan değişkenlerin bilişsel, duyuşsal ve teknik beceriler adı altında sınıflandırılabildiği görülmüştür. Çalışmalarda kullanılan teknolojilerin ise çoklu ortam materyalleri, Web 2.0 uygulamaları, eğitim yazılımları, teknolojik araçlar ve diğer teknolojik uygulamalardan oluştuğu tespit edilmiştir. Ayrıca farklı teknolojilerin eğitim süreçlerine entegrasyonunda eğitimci ve öğrencilerin üstlendikleri roller de ilişkisel olarak incelenmiştir. Elde edilen sonuçlara göre; bilişsel değişkenlerden büyük bir kısmının dil öğrenimine ilişkin olduğu bir kısmının ise temel bilişsel değişkenlerden oluştuğu tespit edilmiştir. Bu doğrultuda dil öğrenimine ilişkin bilişsel değişkenler kelime öğrenme becerisi ve

yazma becerisi üzerinde yoğunlaşmıştır. Aynı zamanda çalışmalarda kelime öğrenme becerisinin incelendiği araştırmalarda eğitsel video, film ve belgesel gibi tüm dil kazanımlarının elde edilmesi üzerinde etkili olduğu ifade edilen farklı türlerdeki video materyaller ağırlıklı olmak üzere çoklu ortam materyallerinin kullanıldığı tespit edilmiştir. İngilizce'nin yabancı dil olarak öğretiminde teknoloji entegrasyonuna ilişkin çalışmalarda, kullanılan teknolojiler ile bu teknolojilerin kullanım süreçlerinde eğitimci ve öğrencilerin üstlendikleri roller incelenmiştir. Bu doğrultuda eğitimcilerin genellikle teknoloji kullanım süreçlerinde öğrencilere materyal/platform sağlama, öğrencileri yönlendirerek rehberlik sağlama ve çeşitli teknolojilerin dil öğretiminde kullanıma yönelik görüş/ tutum/ algı bildirme rolleri üstlendikleri tespit edilmiştir. Çalışmalarda öğrencilere verilen rollerin kullanılan teknoloji/ortam/araç özelinde incelendiğinde, alana / dil öğrenimine ilişkin roller, pedagojik aktivitelere ilişkin roller ve teknik becerilere ilişkin roller şeklinde gruplandığı tespit edilmiştir. Çoklu ortam materyalleri kullanılarak yürütülen çalışmalarda öğrencilerin sesli materyalleri yalnızca dinleyerek süreç sonunda çeşitli değerlendirmelere tabi tutuldukları dikkat çekmiştir.

Tartışma, Sonuç ve Öneriler

İngilizcenin yabancı dil olarak öğretimi süreçlerinde birbirinden farklı materyal veya ortamların destek amacıyla kullanılması, farklı öğrenme stiline sahip öğrencilere zengin ders içerikleri sunmanın yanı sıra öğrencilerin bireysel öğrenme süreçlerini yöneterek çeşitli seçimler yapmalarına da olanak sağlamaktadır. Çalışmadan elde edilen bulgular genel olarak değerlendirildiğinde İngilizcenin yabancı dil olarak öğretimi süreçlerinde geçmişten günümüze farklı araştırma yöntemleri eşliğinde farklı teknolojilerin çeşitli beceriler üzerindeki etkisinin incelendiği görülmüştür. Bu süreçte her bir teknolojinin potansiyeli ile hemen hemen doğrudan ilişkili beceriler üzerine odaklanılmaya çalışıldığı tespit edilmiştir. Ancak bu araştırma süreçlerinin büyük bir kısmında ilgili teknolojinin sunmuş olduğu potansiyelden oldukça temel seviyede faydalanıldığı ve bununla ilişkili olarak özellikle öğrencilere pasif olarak nitelendirilebilecek roller verildiği göze çarpmıştır. Ancak alanyazında teknolojik uygulamalar öğrenme ortamlarına, öğrencilerin aktif olarak bir problemi çözmelerine, anlamları kavramalarına ve öğrenmelerini yansıtmalarına olanak sağlayacak düzeyde dahil edildiğinde faydaları daha somut hale gelebileceği vurgulanmaktadır. Dolayısıyla gerek araştırmacıların gerekse eğitimcilerin İngilizcenin yabancı dil olarak öğretiminde bu durumu göz önünde bulundurmaları büyük önem taşımaktadır.

Çalışmadan elde edilen sonuçlar genel olarak değerlendirilerek araştırmacılara yönelik aşağıdaki önerilerde bulunulmuştur:

- Farklı teknolojik uygulamaların okul öncesi öğrencilere İngilizcenin yabancı dil olarak öğretimi süreçleri üzerindeki etkisini ortaya çıkarmaya yönelik araştırmalar tasarlanabilir.
- Teknoloji entegrasyonu ile desteklenen eğitim ortamlarında öğrencilerin aktif olarak rol aldıkları araştırma tasarımları ile teknolojilerin asıl potansiyellerini daha iyi bir şekilde ortaya çıkarabilecekleri uygulamalı araştırmalar tasarlanabilir.
- Bu araştırmada çalışmalarda ele alınan değişkenler Bloom Taksonomi Modeli'nde yer alan alanlara göre sınıflandırılmıştır. Yeni tasarlanacak araştırmalarda İngilizcenin yabancı dil olarak öğretimi sürecinde kullanılan teknolojilerin potansiyelleri öğrenme alanlarının basamakları temel alınarak daha detaylı bir şekilde incelenebilir.
- Sanal öğrenme ortamları ve video konferans araçları gibi günümüzde online eğitim süreçlerinde kullanımı giderek yaygınlaşan teknolojik uygulamaların İngilizcenin yabancı dil olarak öğretimi süreçlerinde destek sistemler olarak kullanımına yönelik araştırmalar tasarlanabilir.