

## Trends of Articles on Technology-Assisted Turkish Education

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### Abstract

The aim of this research is to determine the tendencies of the articles published on the use of technology in Turkish education from different aspects such as subject fields, methods, data collection tools used in research, data analysis methods, sampling features. The scope of the research consists of articles indexed by Google Scholar in the field of technology-assisted Turkish education between 2000 and 2018. In the study, all articles were reviewed by using “Turkish Education Publication Classification Form (TEYSF)” and descriptive analysis was applied for these studies. According to the research findings in which 100 articles were reviewed, it was determined that there were deficiencies in the method parts of the studies. It has been determined that the researchers prefer using 21 to 30 references per article. Also, the journal of Turkish Studies has been found to publish the most articles in the field of technology-assisted Turkish education. However, it has also been determined that the research questions are not explicitly stated in the articles. It was determined that studies with 1 or 2 authors were performed at a rate of 81% in article studies, however, 79% of the articles were published between 2013 and 2018, and that, when the fields of Turkish education of articles were analyzed, most studies were made in the field of teaching Turkish as a foreign language. While making data analysis of the research, it was concluded that the frequency/percentage/Figure, SPSS, t-test were mostly preferred for the quantitative part, and descriptive analysis for the qualitative part. As a result, articles written in the field of technology assisted Turkish education are discussed in many dimensions and suggestions for researchers are given based on the study.

**Keywords:** Turkish Education, Teaching Turkish to Foreigners, Technology-Assisted Turkish Education, Research Trends

**DOI:** 10.29329/epasr.2020.334.20

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## Introduction

Thanks to the revolutions made both in the field of education and in other fields following the inclusion of Turkish in the Turkish Constitution as the official language in 1924, the encouragement for using a clear, simple correspondence language in state institutions, paying attention to the studies on Turkish, and the writing revolution in Turkey in 1928, mother tongue practices started to be paid attention to. It is necessary to commemorate Ziya Gökalp at this point, especially due to his efforts to bring the writing language closer to the spoken language and his envision for a system based on the dialect of Istanbul (Gökalp, 1990).

According to Aksan (1999: 15), “we see the world through the window of our mother tongue and shape the universe with the concepts of our mother tongue.” Gboyega & Idiat (2013: 267) suggest that mother tongue, as the term suggests, is closest to a person's heart. It is necessary to draw attention to the teaching of the mother tongue, as the gain that mother tongue brings in securing a commitment to a nation is huge, and even the mother tongue perceives the society in which it lives, and directs it. Language barriers do not exist only in communications established with foreign languages. Many people cannot use their mother tongue effectively enough (Schulz, Degenhardt & Czerner-Nicolas, 2020). The ability of a person to establish healthy relationships in the society he/she lives in, and to perform all kinds of learning successfully during his/her education, depends on his/her ability to use his/her mother tongue effectively. People who use the language adequately establish healthier relationships and become more successful in life because they can express themselves better. “Teaching mother tongue to the growing generations very well is really important; this is because language is the basic element of culture and it is the most powerful tool that brings people closer together” (Kavcar, 1994: 150). Knowing and using the language is very essential to be successful both at school and in life.

It is seen that language is not a knowledge and skill field learned and completed at a certain age or period within the framework of definitions made and opinions stated. Mother tongue education continues at every education institution at all levels from primary education to university. The knowledge and skills to be acquired by students do not differ greatly according to their education levels, they are intertwined with each other (Sever, 2004: 5-8). “Mother tongue education is the basis of education and training in every branch. Information on every subject is given in mother tongue, as well as understanding, expressing, and evaluation of right-wrong thoughts and behaviors are also earned within mother tongue education” (Göğüş, 1994: 33). A student who has not acquired his/her mother tongue skills cannot be expected to be successful in the field of education. As a matter of fact, according to Bloom (1995: 59): “There is no doubt that some of the general cognitive input behaviors include language skills and especially the power of reading comprehension from the education perspective.” In addition, using the mother tongue as a teaching tool also increases the cognitive

performance of students (Trujillo, 2020). This cognitive performance comes into play to help when complex terminologies and concepts are encountered even while learning another language (Suliman, 2014).

It is an accepted fact that the person realizes him/herself in the learning, understanding and interpretation process that continues from his/her birth to death. At this stage, it is noteworthy that mother tongue education has a great effect on the child's cognitive development. An education system that does not know what to teach and why and that does not use the necessary methods and tools in this regard should not be expected to be successful (Sinan: 2006: 3). This is because language is to build a bridge to other native speakers (Tulasiewicz & Adams, 1998). For this reason, the education system must have the qualifications that can build bridge between people.

Our globalizing world is in constant change and transformation. This change and transformation is undeniably linked to technological developments. The fact that technology has such a place in our lives also affects education. It is not possible to expect success from the education system that tries to educate the individuals that we call Z-generation, who were born in 2000 and after and who are dependent on technology, with traditional methods. For this reason, education is one of the main areas that are affected by the change and development movements the most easily.

A good language/mother tongue education is needed in order to realize the innovations in the field of education and to educate generations that think, question, find solutions, get to the root of the problem, use language skills effectively, and learn other languages easily. The fact that an increase in students' interests, attitudes and achievements in the class was observed with the introduction of technological tools (smart board, projection devices, powerpoint presentations, 3D films etc.) in education was also supported by studies performed. For this reason, inclusion of the technology in the mother tongue education will also make it more useful and compliant with the education requirement of the age, thus making mother tongue and foreign language education suitable for Z generation.

The trend of using technology in language teaching that started especially after the 2000s has also manifested itself in many studies. *In the book named "English Language Learning and Technology"*, the necessity of living in an English-speaking place to learn English is rejected and it is mentioned that this is now eliminated thanks to technology and people in different countries can chat via computers (Chapelle, 2003). Also in the study titled *"The Path of Speech Technologies in Computer Assisted Language Learning"*, especially speech technology was emphasized in language teaching (Holland & Fisher, 2008).

In the book titled *"Teaching English Language Learners Through Technology"*, many technological activity suggestions and practices for English learners are introduced (Erben, Ban &

Castaneda, 2009). Also in the study named “*Technology-Assisted Solutions for Today’s English Language Learners*”, many technological applications for learning English were mentioned. Colon (2015) set out from various concepts related to the human brain in his section and then gave some suggestions about technological applications on the basis of each class. In the article titled “*Technology Assisted Language Learning Is a Silver Bullet for Enhancing Language Competence and Performance: A Case Study*”, the benefits of technology-assisted language teaching, which are described as “TALL”, were mentioned. Then, two groups that received traditional education and received technology-assisted education were compared and the result was in favor of the group that received technology-assisted education (Ahmad, 2016). When all of the studies are considered, it is seen that the place of technology in language teaching is increasing gradually and that the learning that takes place in this way is more efficient.

There used to be a Turkey that closed itself to the outside world until the 1980s. However, with changing living conditions and technological developments, it is observed that Turkey and the Turkish language has go beyond their own borders. With the developing world, Turkish, which has gone beyond its borders, has reached such a position that it competes with the world states and world languages. Tens of thousands of foreigners speak Turkish today, as a result of teaching Turkish as a foreign language by both official institutions and non-governmental organizations. Today, Özdemir has explicitly stated that the use of visual materials prepared with state-of-art technology in teaching Turkish to foreigners has an important place in the life of young people, and also that the visual and multimedia media allow teachers and students to examine the non-verbal and cultural aspects of the language as well as its verbal aspects (2013: 2053). All these facts reveal that the use of high-tech course materials in teaching Turkish both as a foreign language and as mother tongue has an important place in the life of young people.

In order to ensure a continuous success in the education of the new generation, the above mentioned stages must be observed and evaluated by academics and teachers. In the light of scientific studies, new methods should be tried, scientific studies in this field should be reviewed by means of the methods such as trend determination or meta-analysis and the researchers should be guided for further studies. The process of questioning the quality of educational research is very important for future studies. Misconceptions can be found in the findings of educational research pointed out by some authors. Therefore, studies on the quality of research are important and necessary (Dunkin, 1996: 88).

No studies on trend determination have been found in the field of the use of technology in Turkish education in Turkey. But in general, studies on the determination of trends in Turkish education have been carried out:

In the field of Turkish education as mother tongue; Girmen, Kaya, Bayrak (2010) reviewed 178 doctoral and master's theses between 2006-2010 in order to identify problems in Turkish education based on postgraduate theses. Şahin (2010), on the other hand, conducted a study to determine the tendencies of postgraduate theses on initial literacy education and described the current situation in this field. Coşkun, Özçakmak and Balcı (2011) conducted a meta-analysis study in their research, which included general information about theses on Turkish Education between 1981-2010.

There are many trend determination studies on Turkish education. Out of them, Varişoğlu, Şahin, Göktaş (2013) determined the trends in their research on Turkish education by analyzing 558 articles published between 2000 and 2011 by means of content analysis method. Yağmur Şahin, Kana and Varişoğlu (2013) conducted a trend determination study for postgraduate theses written on Turkish education. Within the scope of this study, theses in Turkish education departments are discussed in many dimensions by reviewing 62 doctoral and 490 master's theses indexed between 2000-2011. Kan and Uzun (2014) reviewed the findings, discussion and conclusion sections of the master's theses in Turkish education field in terms of lexical structure features. Within the scope of the study, 339 master's theses published between 2006-2011 were reviewed. In addition, Aktaş and Uzuner Yurt (2015) conducted a content analysis study on article abstracts in the field of Turkish education, and reviewed the abstracts of 724 articles published between 2004-2013. In their study entitled 'An Assessment of Literature Regarding the Education and Teaching of Turkish: Trends/Orientations at International Scientific Meetings', Bozkurt and Uzun (2015) drew up a report on the basic trends in papers presented at international scientific meetings regularly held in Turkey in the field of the education and teaching of Turkish. Through this research, it has been determined that there are very few studies in the database that bring/suggest innovation to the field as a result of the findings obtained from 837 papers directly related to the field of education and teaching of Turkish by making content analysis on the database obtained from congress books, abstract booklets and congress programs within the frame of categories determined. Özçakmak (2017) reviewed the master's and doctoral theses published in 2011-2015 in order to identify new trends in postgraduate studies on Turkish education and determined the field the theses were for.

In the field of Turkish education as a foreign language, Büyükikiz (2014) made an review on postgraduate theses generated in this field. Within the scope of the study, he determined 22 doctoral theses and 125 master's theses published between 1981-2012 and made various suggestions. In another study conducted in the field of teaching Turkish to foreigners, Biçer (2017) searched the articles published between 2010-2016 on teaching Turkish to foreigners through the databases of ULAKBİM and GOOGLE SCHOLAR and reviewed 191 articles in total; and as the result of the study, he determined that the studies on teaching Turkish to foreigners were performed mostly

according to the qualitative pattern and that his sampling, data collection tool and data analysis technique were shaped accordingly.

Starting from the fact that every new research designed is shaped in the light of previous researches, it is much more important to follow the current ones especially in research conducted in the field of education. When the literature was searched, no such comprehensive research using technology for Turkish education was found. For this reason, this study intends to identify the journals in which the articles on the use of technology in Turkish education are published the most, the indexes in which the journals are searched, the number of references in the articles, the number of research questions, the number of authors, the distribution of the articles by years, the distribution of the articles by the types of research, the distribution of the articles by the fields of Turkish education and educational sciences, the methods, the data collection tools used in the articles, the sampling features and the data analysis methods, and to contribute to the literature by making suggestions. Analyzing the academic studies carried out in this field is important in order to identify the technological tools used in Turkish education and to find out the needs in this field. For these reasons, the problem of the research is constituted by the question: “What are the trends of the articles on the subject, which are produced in the field of Turkish education and indexed within Google Scholar?”. The sub-problems of the research are listed as follows:

- What are the distributions of the journals in which the articles are published the most?
- What is the distribution of the indexes in which journals where articles are published are searched?
- What is the distribution of the numbers of references in articles?
- What are the distributions of the numbers of research questions in the articles?
- What is the distribution of the numbers of authors in the articles?
- What are the distributions of articles by years?
- What are the distributions of articles by research types?
- What are the distributions of articles by their fields in Turkish education?
- What are the distributions of articles by the fields of educational sciences?
- What are the distributions of articles by their methods?
- What is the distribution of articles by data collection tools?
- What is the distribution of articles by sampling characteristics?
- What are the distributions of articles by data analysis methods?

## **Method**

A descriptive approach was used in this study due to the stages followed in the process of categorizing the articles that constitute the scope of the research by certain subjects, passing them through the coding process, digitizing, analyzing and reporting the data. Descriptive studies describe a given situation precisely and carefully. (Büyüköztürk et al., 2012: 22). This study is also suitable for qualitative research method as it provides a general evaluation and interpretation on the articles reviewed. Document review method was used to evaluate the articles within Google Scholar between 2000-2018, which were produced in the Turkish education departments in Turkey. The reviewed articles were analyzed by descriptive analysis technique. The collected data were first described systematically and clearly. Later, these descriptions were explained, interpreted, and the cause-effect relationships in the data were examined (Yıldırım & Şimşek, 2018).

### **Scope of the Research**

The scope of this study is constituted of the articles, which have been produced in the Turkish education departments in Turkey and published between the years 2000 to 2018 in Google Scholar. The articles in Google Scholar were analyzed and the data were digitized using the descriptive analysis technique. 100 articles in Google Scholar, which were produced between 2000 and 2018 in Turkish Education departments, were selected through the purposeful sampling technique and reviewed. Purposeful sampling is used in the research, if a selection will be made according to the people, events, objects or situations with certain qualifications (Büyüköztürk et al., 2012: 91). Since only articles produced in Turkish education departments were reviewed within the scope of this study, purposeful sampling technique was used. Purposeful sampling is used in the research if a selection will be made according to the people, events, objects or situations with certain qualifications (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2009, 91).

### **Collection of Data**

“Turkish Education Publication Classification Form” (TEYSF) was used as data collection tool in the study. TEYSF, which is used to collect data, was divided into subheadings by considering the stages of a research in the research process. Each subheading was created within each other by being divided into items that would enable the data to be coded. Thus, each article reviewed could be evaluated according to the same criteria. TEYSF was created after the researchers rearranged the form used in the study by Sözbilir and Kutun (2008) for the purpose of the study. In order to organize the data collection tool in accordance with the purpose of the research, several draft forms were created and as the result of the pilot applications, the final version of the form was obtained. In order to increase the validity of the form used, the opinions of the experts in the fields of educational sciences and linguistics were sought. In addition, consistency between evaluators was checked to increase the credibility of TEYSF. By making use of the relationship between the sample coding forms of each

evaluator, necessary changes were made on the parts of the form that could not be understood or remained weak and the form was improved. In addition, the created form was used in the article titled “Trends in Research on Turkish Education” prepared by Varışoğlu, Şahin and Göktaş (2013). TEYSF consists of nine basic sections: 1. The tag of the article, 2. The type of the article, 3. The field of the article, 4. The subject of the article, 5. The method of the article, 6. Data collection tools of the article, 7. The sampling of the article, 8. Data analysis method of the article and 9. Additional section in which the researcher can express his/her views about the article.

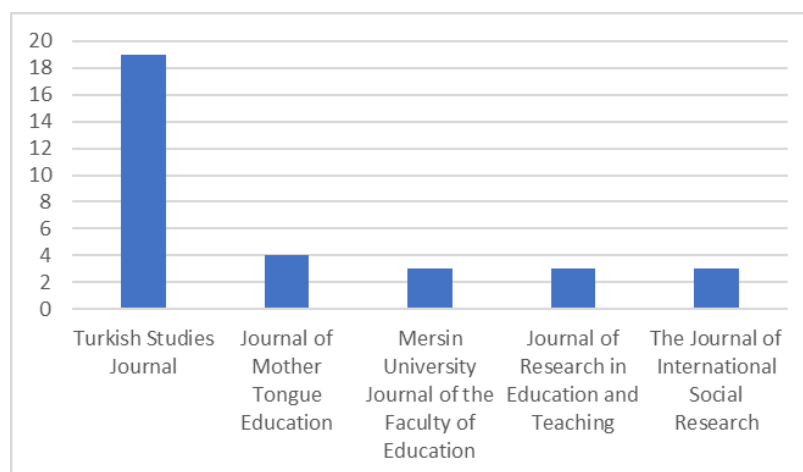
### Data Analysis

Descriptive analysis method, one of the qualitative data analysis methods, was used in the study. In this regard, the data obtained were summarized and interpreted according to previously determined themes (Yıldırım & Şimşek, 2018). The researchers coded and digitized the fields they identified on the classification form for each article by reading and reviewing the articles obtained and by performing document analysis. With this analysis method, the relationships between the data were determined. The data obtained at the end of the study were analyzed. For analysis of data, frequency and percentage tables, the two of descriptive analysis types, were used.

### Findings and Interpretation

This section contains the features of the articles reviewed on “technology-assisted Turkish education”. A total of 100 articles were reviewed.

The distribution of the journals in which the articles on technology-assisted Turkish education are published the most is shown in Figure 1.



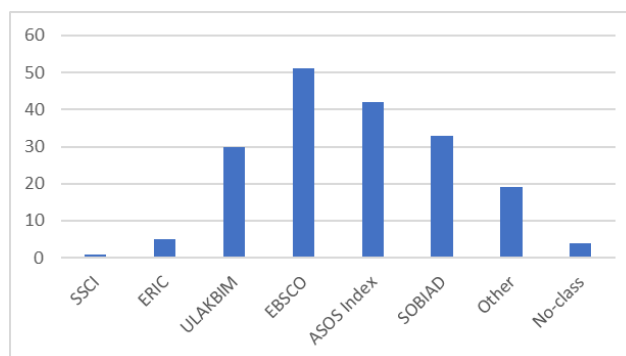
**Figure 1.** Journals Publishing the Articles

When Figure 1 is reviewed, it is seen that the articles on technology-assisted Turkish education are published mostly in Turkish Studies Journal. This journal has published 19% of all



articles reviewed. Journal of Mother Tongue Education, Mersin University Journal of the Faculty of Education, Journal of Research in Education and Teaching and the Journal of International Social Research constitute the part of 4%, 3%, 3% and 3%, respectively.

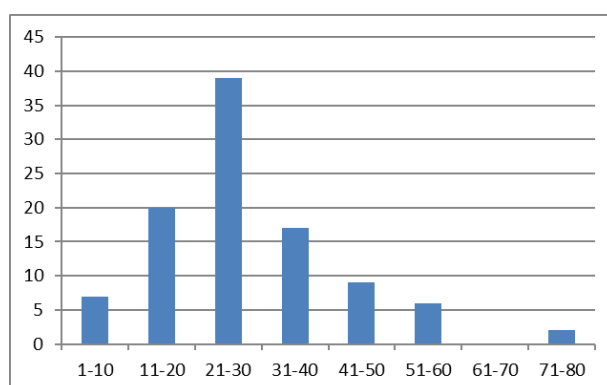
Journal classes in which the articles on the technology-assisted Turkish education are published are shown in Figure 2.



**Figure 2.** Indexes where the Journals, in which the Articles Are Published, Are Searched

According to the review of Figure 2, it is seen that the journals are searched mostly at EBSCO index at a rate of 51%. Afterwards, it was determined that they were searched in ASOS Index, SOBIAD, ULAKBIM, ERIC and SSCI at a rate of 42%, 33%, 30%, 5% and 1%, respectively. During the search of the indexes of the journals, journals searched by multiple indexes are included in the index categories above separately. Journals that are not searched by any of these categories are classified in the ‘other’ category, constituting the rate of 19%. The no-class category, which constitutes 4%, contains those that are not searched by any index.

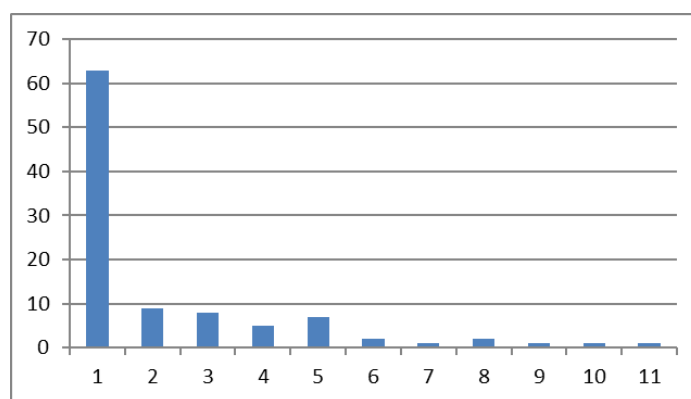
The number of references in the articles on technology-assisted Turkish education, is shown in Figure 3.



**Figure 3.** Number of References in Articles

According to the review of Graph 3, it was seen that 21 to 30 references were used in the articles at most. This corresponds to the part of 39%. The articles using 11 to 20 references, the articles using 31 to 40 references, the articles using 41 to 50 references, the articles using 1 to 10 references, the articles using 51 to 60 references and the articles using 71 to 80 references constitute the parts of 20%, 17%, 9%, 7%, 6% and 2%, respectively. As can be understood, articles using 11 to 40 references have a large share by forming a percentage of 76% in total.

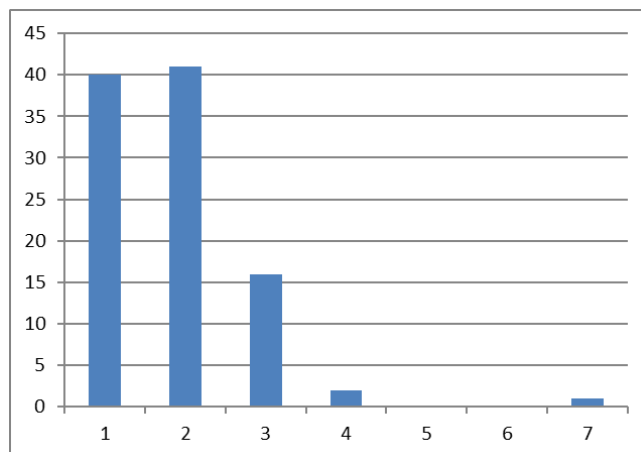
The number of research questions in technology-assisted Turkish education articles is shown in Figure 4.



**Figure 4.** Number of Research Questions in Articles

According to the review of Figure 4, it is seen that the articles with 1 research question take place the most at a rate of 63%. Then it is seen that this is followed by the articles with 2 research questions, the articles with 3 research questions, the articles with 5 research questions, the articles with 4 research questions, the articles with 6 and 8 research questions and the articles with 7, 9, 10 and 11 research questions at a rate of 9%, 8%, 7%, 5%, 2%, 1%, respectively. In other words, most of the researchers include only one research question in their articles. Although some articles do not contain the research question explicitly, what the article intends to research was determined based on the essence of the article and this was processed into the data as a research question.

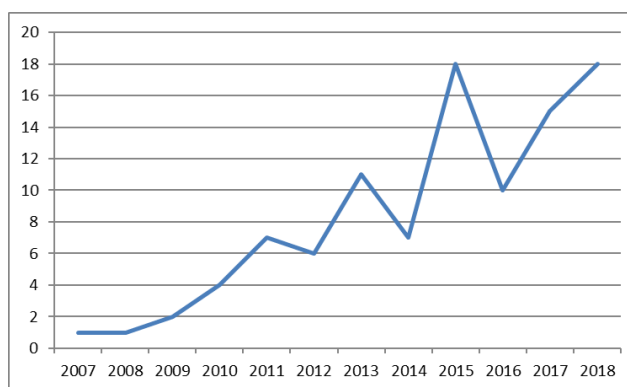
The number of authors in the articles on technology-assisted Turkish education is shown in Figure 5.



**Figure 5.** Number of Authors in Articles

According to the review of Figure 5, it was determined that 41% of articles had 2 authors at most. Articles with 1 author constitute a rate of 40%. Articles with 3 authors, articles with 4 authors and articles with 7 authors constitute a part of 16%, 2% and 1%, respectively. As is seen from the Figure, the articles published are mostly written by 1 and 2 authors, which corresponds to a large rate of 81%.

Distribution of the articles on the technology-assisted Turkish education by years is shown in Figure 6.



**Figure 6.** Distribution of Articles by Years

According to the review of Figure 6, it is seen that the most articles have been written in 2015 and 2018 with a part of 18% each. This is followed by the year 2017 with 15%, the year 2013 with 11%, the year 2016 with 10%, the years 2011 and 2014 with 7%, the year 2012 with 6%, the year 2010 with 4%, the year 2009 with 2% and the year 2007 with 1%. Judging by these data, it is seen that 79% of the articles on technology-assisted Turkish education have been written in the last 6-year slice and the first 6-year slice constitutes only 21%. In addition, it can be said that the number of articles by year is progressing with a partially regular increment, though not fully regularly, and that

the studies in the field increase. Since no articles on the subject could be reached between 2000 and 2006, the table was created starting from 2007.

The distribution of the articles on technology-assisted Turkish education by type of research is shown in Table 1.

**Table 1.** Distribution of Articles by Type of Research

The distribution of the Articles on Technology-Assisted Turkish Education by Type of Research		
	f	%
Literature Compilation	19	19
Method Study	1	1
Theoretical Study	2	2
Experimental Study	13	13
Action Research	0	0
Descriptive Study	43	43
Evaluation Study	17	17
Professional Study	5	5
Total	100	100

According to the review of Table 1, it was determined that the 43% of the articles were produced by descriptive study. It has been concluded that there is literature compilation at a rate of 19%, evaluation at a rate of 17%, experimental study at a rate of 13%, professional study at a rate of 5%, theoretical study at a rate of 2% and method study at rate of 1%. There is no action research in the articles reviewed.

The distribution of the research on technology-assisted Turkish education research by their fields in Turkish education is shown in Table 2.

**Table 2.** Distribution of Articles by their Fields in Turkish Education

The distribution of the Articles on Technology-Assisted Turkish Education by their Fields in Turkish education		
	f	%
Reading Education	4	3.48
Writing Education	10	8.70
Listening Education	1	0.87
Speaking Education	0	0
Grammar/Studies on Language	6	5.22
Children's Literature Education	0	0
Teaching Turkish to Foreigners	38	33.04
Initial Literacy	2	1.74
Multilingualism	0	0
Mixed Language Skills	19	16.52
Other	35	30.43
Total	115	100

According to the review of Table 2, it is seen that a study in the field of teaching Turkish to foreigners takes place the most with a percentage of 33.04%. This is followed by mixed language skills with 16.52%, writing education with 8.70%, grammar/study on language with 5.22%, reading

education with 3.48%, initial literacy with 1.74%. There are no studies on speaking education, children's literature education and multilingualism. Other studies that do not fall into any of these categories constitute the percentage of 30.43%. Since a research sometimes can fit in more than one field, the total number of types is more than the number of articles reviewed.

The distribution of the research on technology-assisted Turkish education by the fields of educational sciences is shown in Table 3.

**Table 3.** Distribution of Articles by the Fields of Educational Sciences

The Distribution of the Research on Technology-Assisted Turkish Education by the Fields of Educational Sciences		
	f	%
Teacher Education	2	1.18
Education/Training Technology	100	59.17
Scale/Test Development	2	1.18
Education/Training Problems	5	2.96
Attitude/Interest/Case Determination	45	26.63
Program/Curriculum Studies	4	2.37
Textbook Review	11	6.51
Measurement Assessment	0	0
Total	169	100

According to the review of Table 3, training/education technology comes first at a rate of 59.17% with a frequency of 100 since all of the articles in the research are related to technology. This is followed by attitude/interest/case determination with 26.63%, textbook review with 6.51%, education/training problems with 2.96%, program/curriculum studies with 2.37%, teacher education and scale/test development with 1.18%. No articles were available in the measurement assessment field. Since an article can be available in more than one field, the frequency is 169, although 100 articles are reviewed.

The methods of the articles on technology-assisted Turkish education are shown in Table 4.

**Table 4.** Methods of Articles

The distribution of the Articles on Technology-Assisted Turkish Education by their Methods						
				Total		
		f	%	f	%	
Quantitative	Experimental	Semi	4	30.77	44	50
		Full	8	61.54		
		Poor	1	7.69		
		Single	0	0		
	Non-Experimental	Searching	26	83.87		
		Descriptive	5	16.13		
		Correlational	0	0		
		Comparative	0	0		

Qualitative	Critical Study	0	0		
	Theorizing	0	0		
	Phenomenology	1	12.5		
	Case Study	7	87.5	8	9.09
	Culture Analysis	0	0		
	Conceptual Analysis	0	0		
	Historical Analysis	0	0		
Body of Literature	Literature	31	100	31	35.23
	Compilation				
	Meta-Analysis	0	0		
Mixed	Diversification	5	100		
	Explanatory	0	0	5	5.68
	Exploratory	0	0		
Total		88		88	100

According to the review of Table 4, it is seen that quantitative research is 50% of all research followed by the literature with 35.22%. Qualitative research is 9.10%, and mixed research is 5.58%. For quantitative research, searching was used the most, while case study was used for qualitative research, literature compilation was used for the literature, and diversification was used for mixes.

Data collection tools of the articles on technology-assisted Turkish education are shown in Table 5.

**Table 5.** Data Collection Tools of Articles

Distribution of the Articles on Technology-Assisted Turkish Education by Data Collection Tools		
	f	%
Document	40	36.36
Survey	22	20
Attitude/Perception/Personality/Interest or Ability Tests	11	10
Achievement Test	8	7.27
Interview	16	14.55
Observation	4	3.64
Alternative Tests	6	5.45
Other	3	2.73
Total	110	100

According to the review of Table 5, it is seen that the documents are used mostly as data collection tool at a rate of 36.36%. This is followed by surveys with 20%, interview with 14.55%, attitude/perception/personality/interest or ability test with 10%, achievement test with 7.27%, alternative tests with 5.45%, observation with 3.64% and other tools with 2.73%. Articles with no use of data collection tools are not included in this section.

### Sampling Characteristics of Articles

The sampling characteristics of the articles on technology-assisted Turkish education are shown in Tables 6, 7 and 8.

**Table 6.** Technology-Assisted Turkish Education by the Sampling Level

Distribution of the Articles on Technology-Assisted Turkish Education by the Sampling Level		
	f	%
Pre-school	0	0
Primary School (1-5)	6	8.22
Primary School (6-8)	7	9.59
Elementary School (9-12)	0	0
Undergraduate (Faculty of Education)	21	28.77
Undergraduate (Other)	1	1.37
Postgraduate (Master-Doctorate)	0	0
Teachers	11	15.07
Faculty Members	1	1.37
Foreign Students	8	10.96
Other	18	24.66
Total	73	100

According to the review of Table 6, it is seen that mostly undergraduate group of the Faculty of Education has been studied with 28.77%. This is followed by teachers with 15.07%, foreign students with 10.96%, primary education (6-8) with 9.59%, primary education (1-5) with 8.22%, and undergraduate (other) students and faculty members with 1.37%. No studies on elementary school and postgraduate students have been found. In addition, there is a sample group of 24.66% that does not fall into these categories.

**Table 7.** Technology-Assisted Turkish Education by Sampling Size

Distribution of the Articles on Technology-Assisted Turkish Education by Sampling Size		
	f	%
1 to 10	12	17.65
11 to 30	11	16.18
31 to 100	25	36.76
101 to 300	16	23.53
301 to 1000	3	4.41
Above 1000	1	1.47
Total	68	100

According to the review of Table 7, the researchers preferred mostly the sampling size of 31 to 100. Its share is 36.76%. Then 101 to 300 samples were preferred with 23.53%, 1 to 10 samples with 17.65%, 11 to 30 samples with 16.18%, 301 to 1000 samples with 4.41% and above 1000 samples with 1.47%.

**Table 8.** Technology-Assisted Turkish Education by Sampling Selection Methods

Distribution of the Articles on Technology-Assisted Turkish Education by Sampling Selection Methods		
	f	%
Random	9	13.24
Easily Accessible Sampling	5	7.35
Purposeful	39	57.35
Whole Universe	15	22.06
Total	68	100

According to the review of Table 8, the researchers used purposeful sampling with a rate of 57.35%. This is followed by the whole universe with 22.06%, random sampling with 13.24% and easily accessible sampling with 7.35%.

The distribution of the articles on technology-assisted Turkish education by the data analysis methods is shown in Table 9.

**Table 9.** Data Analysis Methods of Articles

Distribution of the Articles on Technology-Assisted Turkish Education By The Data Analysis Methods							
		f	%	f	%	f	%
Descriptive	Frequency/Percentage/Figure	19	57.58				
	Ave./Standard Deviation	12	36.36	33	33.33		
	Diagram	1	3.03				
	Other	1	3.03				
Quantitative	t-test	14	21.21			99	72.79
	Anova /Ancova	8	12.12				
	Other	14	21.21				
	SPSS	19	28.79	66	66.67		
Predictive	Factor Analysis	1	1.52				
	Correlation	1	1.52				
	Man Whitney-U	5	7.58				
	Kruskal Wallis	4	6.06				
Qualitative	Other	1	2.70				
	Content Analysis	13	35.14			37	27.21
	Descriptive Analysis	23	62.16				
	Total					136	100

Looking at Table 9, it is seen that quantitative data analyses are more prominent with a rate of 72.79%. Qualitative data analysis has a rate of 27.21%. Among the quantitative data analysis, the frequency/percentage/Figure was mostly used descriptively and the SPSS program was mostly used predictively. In qualitative data analysis, descriptive analysis was preferred mostly.

### Conclusion and Discussion

In this study on technology-assisted Turkish education, the articles searched through Google Scholar were reviewed. And comparisons and evaluations were made with other studies according to the findings obtained.

The journal mostly published in this field is Turkish Studies. 19% of the articles reviewed were published in this journal. In addition, there is a very significant ratio difference with other journals. It is concluded that, among the indexes of the journals, the ratio of higher-level indexes such as SSCI and ERIC, in which EBSCO index takes the lead, is lower. It is clearly seen from the Figures that researchers prefer to use 21 to 30 references the most. However, it stands out as a major deficiency that the research questions are not always explicitly included in the articles. In studies where research questions are not explicitly included, a number has been reached by interpreting what is intended to be investigated in general. It was determined that mostly 1 research question was included in the articles reviewed, and the studies with one or two authors were conducted at a rate of



81%. Varışođlu, Şahin, and Göktaş (2013) found that studies with more than three authors were less preferred. The same result has also been reached in Dođan and Tok's (2018) trend research in the field of educational sciences. Therefore, it is possible to say that the three research results are parallel. This may be due to the fact that teamwork is more troublesome in some cases and the division of the score obtained in academic incentives. It is also clear that article studies have increased significantly in the last 6 years in general. Considering that technology has developed much faster than before, it can be said that the article studies have developed in this direction. It is possible to support this with the data that 79% of the articles have been written in the slice between 2013-2018. Descriptive studies have been carried out mostly in the articles. When it comes to the fields of Turkish education, it has been observed that the studies on teaching Turkish to foreigners have been performed the most. It can be said that the field of teaching Turkish to foreigners in technology-assisted Turkish education has a big share. Over the years, the use of technology in this field has been increasing and new studies are being produced. In their study conducted in 2013, Yađmur Şahin, Kana and Varışođlu stated that the studies of teaching Turkish to foreigners started to increase. For this reason, it can be said that studies gain/will gain momentum day by day. The data obtained from the study is such as to prove the status of momentum gain anticipated in the study conducted in 2013.

Boyacı and Demirkol (2018) found in their study, in which they reviewed 275 doctoral theses, that the mixed language skills take place the most. In this study, the field of teaching Turkish to foreigners is the majority, but the share of articles on language skills cannot be underestimated. The fact that the field of teaching Turkish to foreigners is an untouched field, that the studies have been expedited in recent years and that this study mostly consists of up-to-date articles plays a big role in the determined difference. Considering the fields of studies in educational sciences, it is striking that mostly the interest/attitude/case determination studies are conducted. In particular, fields such as measurement and evaluation, teacher education, scale/test development have been neglected. There are very few studies available on these subjects. In the method sections, it was seen that the searching method was preferred very frequently. It can be said that there are similar results in the studies of Varışođlu, Şahin and Göktaş (2013), Şahin (2010), Şimşek et al. (2008), Alper and Gülbahar (2009) and Arık and Türkmen (2009). It is seen that the document is at the forefront in the articles for data collection tools. For the sample types, it was observed that mostly the undergraduate students of the Faculty of Education were preferred. Even Varışođlu, Şahin and Göktaş (2013) criticized this issue by saying that different levels of research could be conducted in terms of the sample level, apart from prospective teachers and elementary school students. These samples were widely distributed between 31 to 100 people, and the researchers took purposefulness as basis mostly for sample selection. For the data analysis, researchers mostly preferred the frequency/percentage/Figure, SPSS, t-test for quantitative part and descriptive analysis for qualitative part. Based on these findings and results, the following suggestions can be made:

1. Research questions and sub-problems should be clearly included in the studies conducted.
2. Articles that require teamwork can be included more in order to conduct more extensive studies.
3. In parallel with the rapid development of technology, studies on technology-assisted Turkish education can be concentrated on.
4. In the field of technology-assisted Turkish education, methodological and theoretical studies and action research can take more part.
5. The method parts of the articles can be written more carefully and clearly.
6. As a sample, studies can be carried out apart from the students of the faculty of education.

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