


Tendencies in Turkey-based academic studies on distance education during the covid-19 pandemic

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Abstract

This study examines the tendencies in Turkey-based scientific articles related to distance education during the Covid-19 pandemic. In this qualitative study, content analysis and categorical analysis were used. The population of the study is comprised of Turkey-based academic studies on distance education while the sample consists of 125 scientific research articles published until April 2021 and included in the Google Scholar database. Tendencies in studies on distance education were examined in terms of article information, research methods, samples, data collection tools, data analysis methods, and subjects or topics. The "publication classification form" developed by the researcher was used for data collection. As a result of the study, it is seen that qualitative research methods and case studies are frequently used while sample groups consisting of undergraduate students and interview forms are mainly preferred. It was also determined that the studies focus on research subjects that examine the opinions on distance education according to various demographic variables. In consecutive studies on this subject, diversification has been recommended in terms of subjects and methods, designs, participants from whom data is collected, and data collection tools.

1. Introduction

Having started to take effect all over the world in early 2020, the Covid-19 outbreak is one of the prominent crises throughout human history. This crisis was declared a pandemic by WHO (World Health Organization) on 11 March 2020. The Covid-19 pandemic has caused significant changes and transformations in many areas and notably in health, all over the world (Dwivedi et al., 2020). Education is another field facing changes and transformations (Upoalkpajor & Upoalkpajor, 2020). According to the data reported by the United Nations Educational, Scientific and Cultural Organization (UNESCO), schools in 188 countries have been closed to face-to-face education. This amounts to approximately 92% of the worldwide student population. As in all countries of the world, the education system in Turkey has also been affected by the pandemic (Noble, 2020; Wired and Altun, 2020). UNESCO has announced that it will support countries to take measures on distance education in order to reduce the negative effects of closed schools and to ensure the continuity of education for everyone. In this context, countries have launched existing distance education opportunities supported by different technological infrastructures in the most effective way (Mulenga & Marban, 2020). To minimize the impact of the pandemic in Turkey, emergency scenarios were switched on to enjoy the use of digital technology to the fullest extent. These

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scenarios were followed by compulsory distance education as a consequence (Bozkurt, 2020). For, in cases where appropriate place, time, and conditions are not possible, the most practical way of providing equal opportunity in education is distance education (Şen, Atasoy & Aydın, 2010; Veletsianos, 2010).

Distance education, also called distance learning, is a set of planned activities in which learning contents are presented to users through special communication methods without time and space limitations and with the use of electronic or non-electronic technologies (Rovai & Downey, 2010; Lee, 2020). Distance education is an interdisciplinary field that learns, teaches, and eliminates the limitations of learning content by using technology with a pragmatist approach (Bozkurt, 2017). Therefore, common technologies are used in learning-teaching processes and determine the stages of distance education (Anderson & Dron, 2011; Moore & Kearsley, 2011). In other words, technology is an important determinant of the classifications for distance education. Based on the chronology and generation of distance education, newspaper, letter, radio, television, video, computer, and internet technologies have played a decisive role, respectively (Anderson & Simpson, 2012; Casey, 2008). However, great developments have been observed in the sharing of information as well as in technology. Educational institutions have achieved new missions to serve large communities other than their own students (Deng, Benckendorff & Gannaway, 2019). One of the practical ways to accomplish these missions is online learning (Garrison, 2009). Online learning is a learning environment in which learners and teachers can communicate and interact synchronously or asynchronously (Moore, Dickson-Deane & Galyen, 2011). In this context, Turkey is one of the countries where formal education and online learning is concurrently provided. The "Education Information Network (EBA)" platform was established for primary and secondary education levels within the scope of the "Movement of Enhancing Opportunities and Improving Technology (FATİH)" project. This platform offers reliable and accurate e-content suitable for class levels while at the higher education level, employing the "Digital Transformation Project in Higher Education", faculty members and students come together interactively through online learning and continue their lessons and projects online as well as face to face. Also, almost all universities in Turkey are conducting a part of the educational process in an online environment via Distance Education and Application Centers (Kaçan & Gelen, 2020).

Though distance education had been previously launched in Turkey through innovative projects, it was not until 16 March 2020 that the distance education process was thoroughly adopted following the suspension of face-to-face education in all schools. Everyone with or without distance education experience suddenly landed in distance education activities. This led to the virtualization of the classes along with questions raised about potential gains or losses of students (Arkorful & Abaidoo, 2015; Panigrahi, Srivastava & Sharma, 2018). In such discussions, distance education, equal opportunity, individual learning, flexibility in measurement tools, communication, and interaction are considered as gains (Dumford & Miller, 2018; Hurt, 2008) while social learning, resistance to change, practical deficiencies, and negative attitudes are seen as losses (Debes, 2021; Kegeyan, 2016).

The discussions during such a rapid transition period are acceptable, but whether the transformation into distance education will be successful or not is closely related to academic research in this field. Studies on distance education are important in terms of the quality and applicability of education (Murphy & Rodríguez-Manzanares, 2012). When the literature is examined, it is seen that there are many studies examining distance education research in different disciplines in Turkey. (Aydın Erdem et al. 2019; Cabı & Ersoy, 2017; Gökmen et al. 2017; Kaçan & Gelen, 2020; Korucu & Kabak, 2020). On the other hand, it is striking that there are no content analysis studies during the Covid-19 pandemic examining the research processes specific to the distance education subject in Turkey. In this context, it is reported that such content analysis studies play an important role in the dissemination of information, guiding future research, and shaping new policies, new practices and public perception specific to the subject (Çalık & Sözbilir, 2014; Suri & Clarke, 2009). Accordingly, classify scientific studies on distance education during the Covid-19 pandemic and to identify gaps, accumulations, and tendencies in studies will contribute to

the dissemination of information about distance education and revealing the needs and deficiencies in the field it will also guide researchers who are doing and will do research on distance education. Apart from this, it is thought to be important in terms of providing the opportunity to do a comparison of these studies with the studies published abroad on distance education during the Covid-19 pandemic process. Thus, this study aims to examine Turkey-based academic studies on distance education during the Covid-19 pandemic. Besides, the sub-goal was to find an answer for the following question: What are general tendencies in studies on distance education depending on (i) article information, (ii) research methods, (iii) samples, (iv) data collection tools, (v) data analysis methods, and (vi) subject.

2. Methodology

2.1. Research Model

This study is based on the systematic analysis of Turkey-based scientific articles related to distance education and published during the Covid-19 pandemic until April 2021 in terms of various variables. The main objective of the analysis in academic studies is to reveal general tendencies, gaps, or accumulations in the relevant field. For this reason, content analysis was used in this study, which is based on a qualitative research approach in terms of the process and subject. The term content analysis has been used as a research method rather than a data analysis technique. Content analysis is a scientific method that brings together similar data within the framework of certain concepts and themes and examines them objectively and systematically (Krippendorff, 2018; Yıldırım & Şimşek, 2013).

2.2. Population and Sample

The population of the study consists of Turkey-based scientific articles related to distance education and published during the Covid-19 pandemic while the sample consists of 125 research papers published until April 2021 and included in the Google Scholar database. The criterion sampling method, which is one of the random purposeful sampling methods, was used to reach scientific articles that comply with the time interval and criteria determined within the scope of the study. The basic approach in the criterion sampling method is the study of people, events, objects, or situations that meet a predetermined set of criteria (Büyüköztürk et al., 2017). In this context, the criteria determined in the study were as follows; (i) To have articles in the field of distance education in the Google Scholar database, (ii) April 2021 as the deadline for publication of articles, and (iii) to contain at least one of the keywords of "Covid-19" or "pandemic". 150 academic studies were found to meet the specified criteria. As a result of the examination, 12 research and 13 scientific articles consisting of papers or reviews and found to be unrelated to the research and research subject were excluded from the scope of the research, and the remaining 125 scientific research articles were subjected to an examination.

2.3. Data Collecting Tools

The "publication classification form" developed by the researcher was used as a data collection tool. The publication classification form was prepared by determining the titles thought to be used in the form in line with similar studies (Çiltaş, Güler, & Sözbilir, 2012; Göktaş et al., 2012). These titles contain article information, the type of article, the subject of the article, the research method, and the level of samples, the number of samples, data collection tools, and the data analysis method. *Sampling or Study Group*

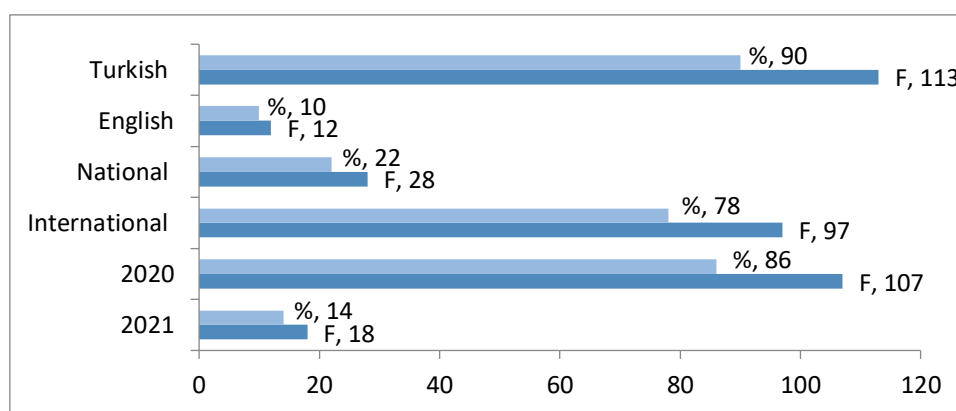
2.4. Data Analysis

The categorical analysis technique was used in the analysis of the collected data. Four steps were followed in the categorical analysis technique. In the first step, the studies were recorded in a folder on the computer according to the research title. Each of the studies was given a number from one to 150. In the second step, an Excel sheet was created to enter the data to be obtained for each title in the data collection tool. The serial numbers of the studies subjected to analysis were written in the rows in the Excel sheet, and the headings for the research problems were written in the columns. In the third step, the

articles were examined in detail according to the titles for each research problem and the tables were filled. In the fourth step, the data were arranged in a meaningful way and reported after the frequency and percentage calculations were made. The resulting findings were presented to the reader with percentages and frequencies using graphics. Furthermore, the procedures to ensure the validity and reliability of the study were: (i) to explain the data collection and analysis processes in detail, (ii) to create the encoding key named publication classification form, and (iii) to get help from an independent encoder. As a result of calculating the consistency between coders (Miles & Huberman, 1994), (Reliability = Consensus / (Consensus + Disagreement) x 100), the coefficient of the agreement was found to be 0.91, and this value was found to be at an acceptable level. In regards to codings analyses in which no consensus could be reached, the consensus was achieved after the encoders came together.

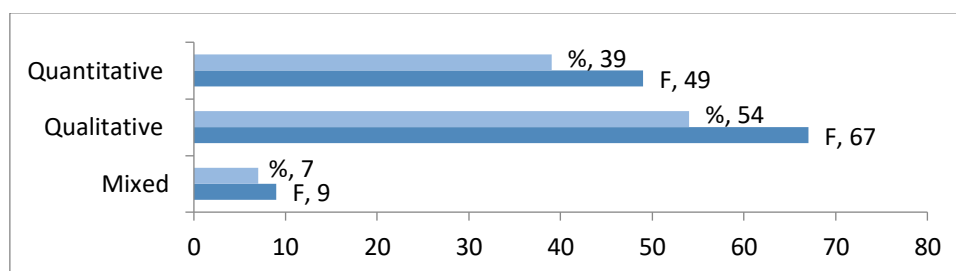
3. Findings

The findings of the study were analysed on the basis of research questions and are given below. The findings regarding the article information of academic studies on distance education during the Covid-19 pandemic are given in Graphic 1.



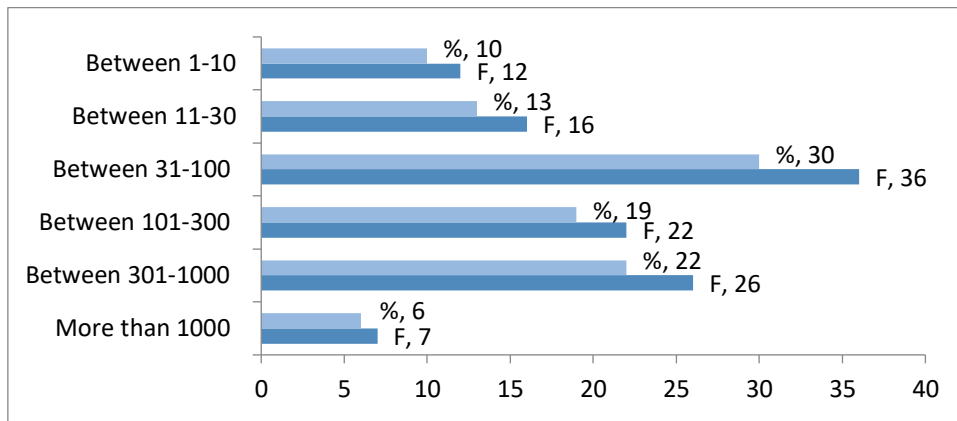
Graphic 1. Findings related to article information

As is seen in Graphic 1, the publication language of 113 articles (90%) is Turkish and 12 articles (10%) are in English. 28 articles (22%) are in national journals and 97 (78%) are in international journals. 107 articles (86%) were published in 2020 and 18 articles (14%) were published in 2021. The findings regarding the research methods used in the studies on distance education during the Covid-19 pandemic are shown in Graphic 2.



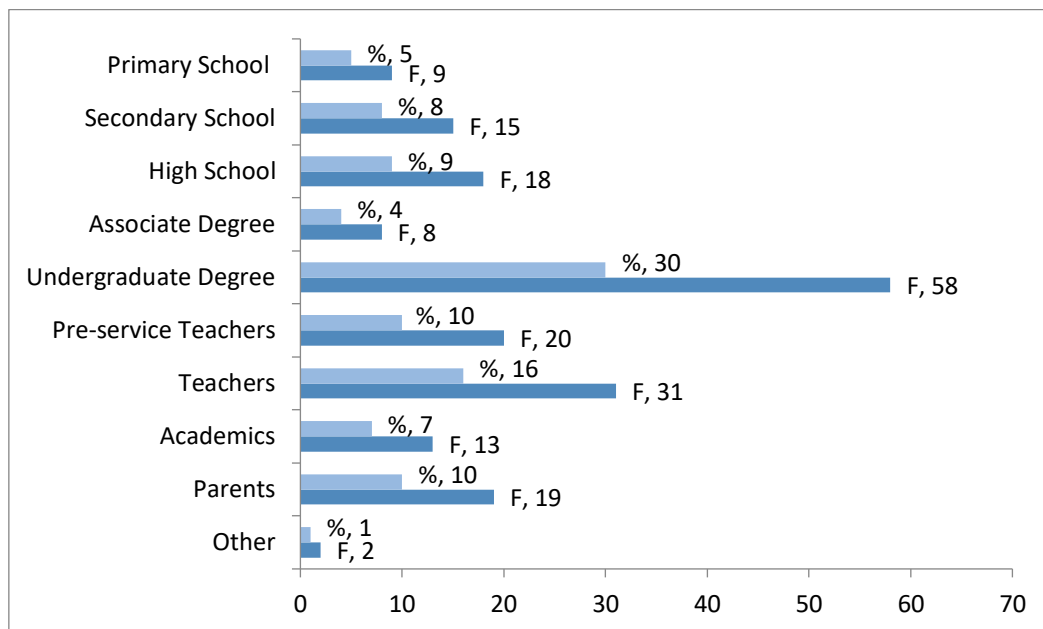
Graphic 2. The findings regarding the research methods used in the articles

As seen in Graphic 2, 49 (39%) are quantitative, 67 (54%) qualitative and 9 (7%) mixed research methods. The findings regarding the total number of samples used in distance education studies conducted during the Covid-19 pandemic are shown in Graphic 3.



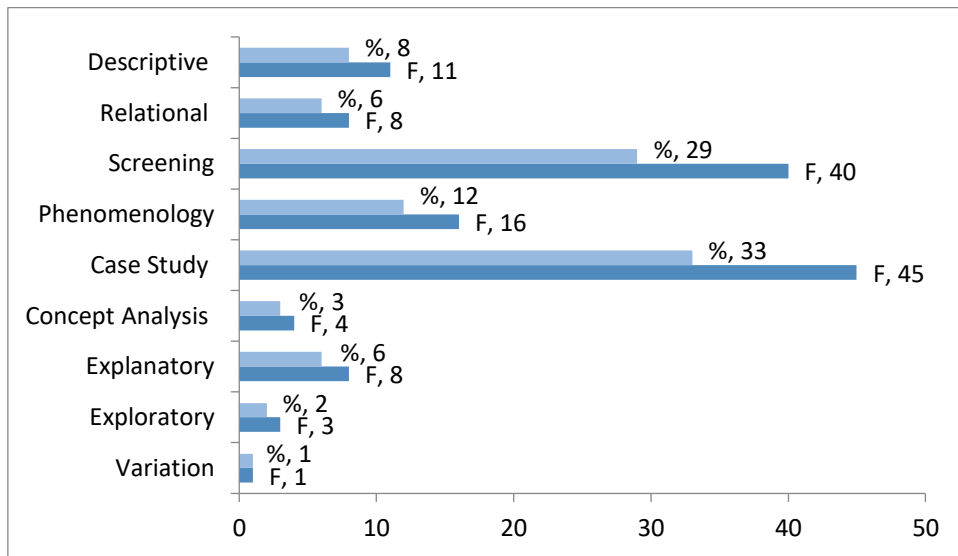
Graphic 3. The findings regarding the total number of samples used in the articles

As seen in Graphic 3, the researchers chose the maximum range of 31-100 (f: 36, 30%) as the total number of sample in the articles. This is followed by the ranges of 301-1000 (f: 26, 22%) and 101-300 (f: 22, 19%). The least preferred number of samples is the group consisting of a sample of more than 1000 (f: 7, 6%). The findings regarding the level of samples used in the studies on distance education during the Covid-19 pandemic are shown in Graphic 4.



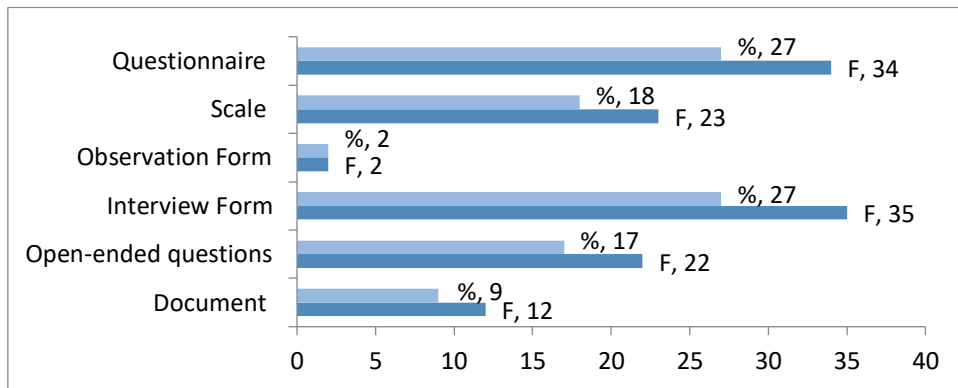
Graphic 4. Findings regarding the sample group used in the articles

As is seen in Graphic 4, during the Covid-19 pandemic process, the sample groups were mainly comprised of undergraduate students (f: 58, 30%) and teachers (f: 31, 16%) in articles on distance education, followed by pre-service teachers (f: 20, 10%), parents (f: 19, 10%), high school (f: 18, 9%) and secondary school students (f: 15, 8%). It is also observed that the researchers studied less on associate degree students (f: 8, 4%) and primary school students (f: 9, 5%). Finally, it is observed that some articles consisted of more than one sample level. The findings regarding the research pattern used in distance education studies during the Covid-19 pandemic are shown in Graphic 5.



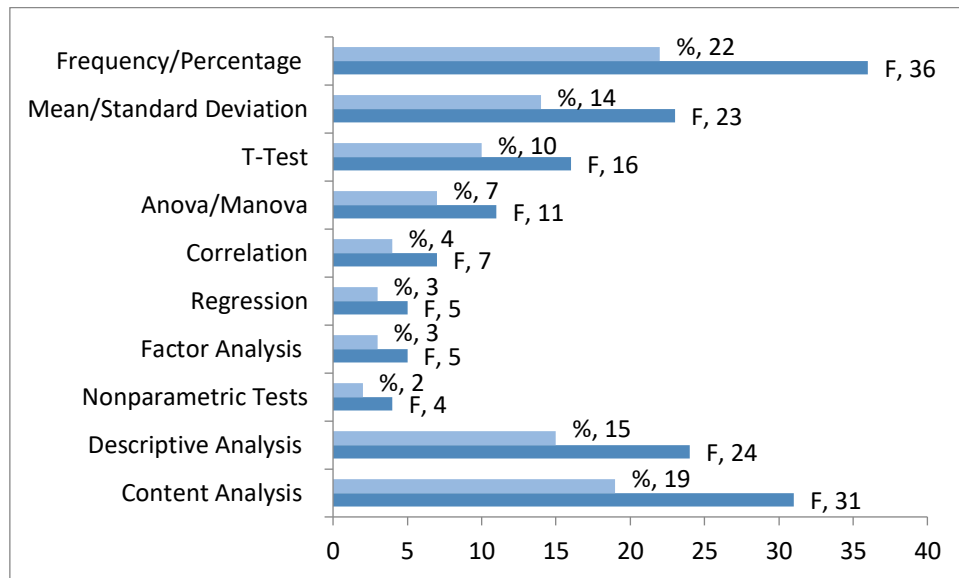
Graphic 5. Findings regarding the research patterns used in the articles

As seen in Graphic 5, researchers mostly used case study (f: 45, 33%) and screening pattern (f: 40, 29%) in research designs used in distance education studies, followed by descriptive (f: 11, 8%), explanatory (f: 8, 6%), relational (f: 8, 6%), concept analysis (f: 4, 3%), exploratory (f: 3, 2%), and variation (f: 1, 12%). It is also found that more than one data collection tool was used in some articles. Findings regarding data collection tools used in distance education studies during the Covid-19 pandemic are shown in Graphic 6.



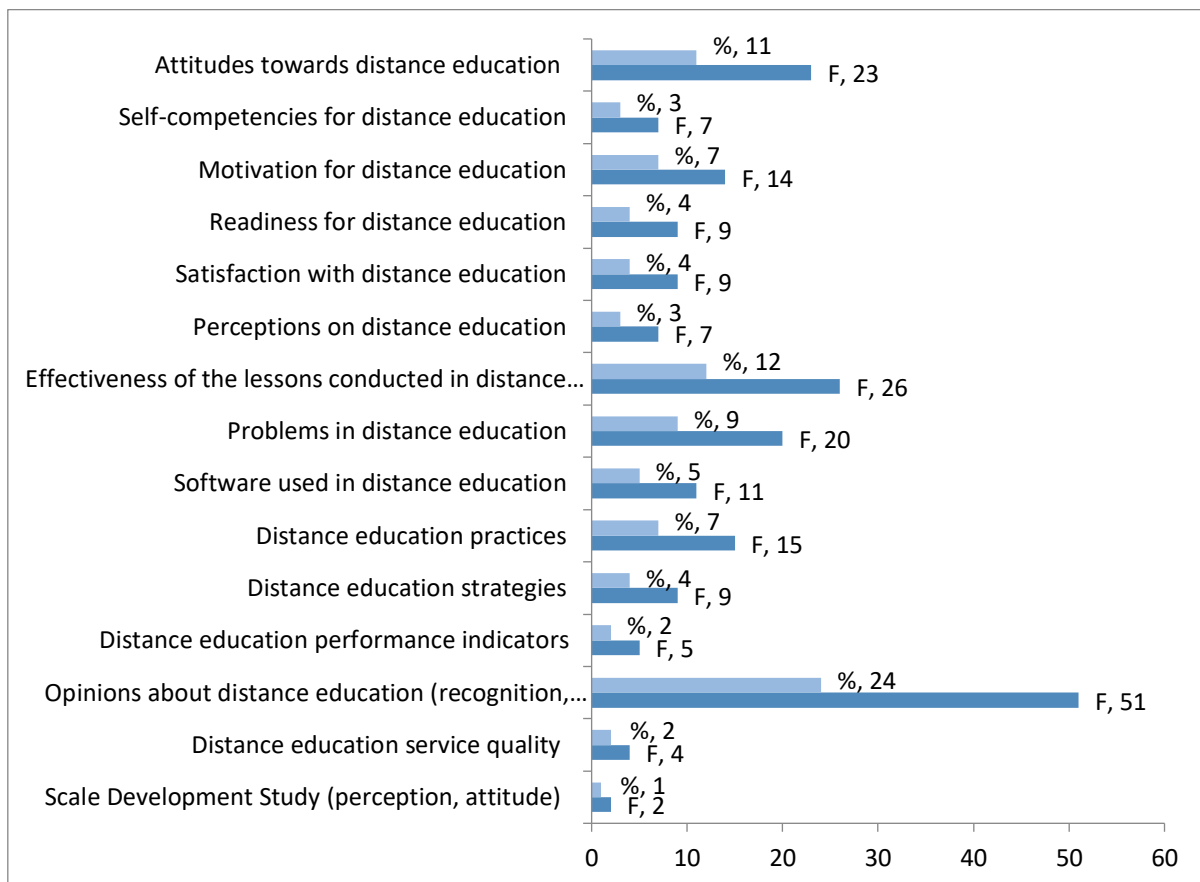
Graphic 6. Findings regarding the data collection tools used in the articles

As is seen in Graphic 6, researchers mostly used interview forms (f: 35, 27%) and questionnaires (f: 37, 27%) in data collection tools used in distance education studies, followed by the scale (f: 23, 18%), open-ended questions (f: 22, 17%), document (f: 12, 9%) and observation form (f: 2, 2%). In addition, it was found that more than one data collection tool was used in some articles. Findings regarding data analysis methods used in distance education research during the Covid-19 pandemic are shown in Graphic 7.



Graphic 7. Findings regarding the data analysis methods used in the articles

As is seen in Graphic 7, mainly frequency/percentage (f: 33, 20%), descriptive analysis (f: 30, 18%), mean/standard deviation (f: 28, 17%) methods are used in data analysis methods used in distance education studies, followed by content analysis (f: 26, 16%), t-test (f: 16, 10%), correlation (f: 7, 4%), regression (f: 5, 3%), factor analysis (f: 5, 3%), and nonparametric tests (f: 4, 2%). The findings of the articles on distance education during the Covid-19 pandemic are shown in Graphic 8.



Graphic 8. Findings on the research topics of the articles

As seen in Graphic 8, the articles generally focus on "examination of opinions about distance education" (f: 51, 24%), "effectiveness of the lessons in distance education" (f:26,%12), and "attitudes towards distance education" (f: 23, 11%) while there are few studies on "scale development studies" (f: 2, 1%), "distance education service quality" (f: 4, 2%) and "distance education performance indicators (f: 5, 3%). However, it has been determined that the articles contain more than one research topic.

4. Discussion, Conclusion, and Recommendations

This study examined Turkey-based academic articles on distance education published during the pandemic. The results revealed that most of the studies (90%) were published in Turkish. The relevance of the articles, which is Turkey in this sense, may have been effective in such a result. Similar results were obtained in the study conducted by Çifçi and Ersoy (2019) on preschool education. In regards to the type of journal, it was found that the studies were mostly published in international journals (78%), which is a result of the Covid-19 pandemic being a global crisis. For, each published research result is closely related to all countries of the world. Most of the studies were published in 2020 (86%). This is thought to be related to the period of the study, which was limited to April 2021. Considering the calendar year, more studies can be published in 2021.

It was concluded that in studies related to distance education based in Turkey, qualitative research methods (54%) were mainly used and were followed by quantitative research methods (39%) and mixed research methods (7%). Content analysis studies in Turkey (Baz, 2017; Koşar, 2018; Saraç, 2017) differ from this study in terms of results. While quantitative research method results are expected to be more preferred due to reasons such as giving generalizable results and reaching a large sample (Gürbüz & Şahin, 2014), it was determined within the scope of the present study that the qualitative research method is preferred more. This is thought to be due to the lack of appropriate conditions for developing a quantitative data collection tool. However, the more use of qualitative and mixed research methods by researchers may be due to reasons such as the participant role of the researchers, holistic approach, flexibility in research designs, and inductive perspective. Therefore, researchers should be encouraged to use more quantitative and mixed research methods. In this context, Şimşek & et al. (2008) reported that students should be provided with more information on how to conduct and report mixed research. However, other conditions such as the required sample size, sample group or time may not have been provided. The results of the research regarding the level and number of sample support this situation. According to the results, the most preferred level of sample was undergraduate level (30%) and the most preferred number of sample was the range of 31-100 (30%). This overlaps with the results of studies conducted by Uygun & Sönmez (2019). However, a greater number of samples are needed to develop quantitative data collection tools (Erkuş, 2007). Restrictions and quarantine practices may have resulted in working with fewer sample groups since it is known that such occasions complicate field research.

The undergraduate level is frequently preferred in qualitative research in which perceptions or events are monitored in a realistic and holistic manner in the natural environment (Burbank, Odomb & Sandlin, 2015; Kutluca, Birgin & Gündüz, 2018). Therefore, it was concluded that working with undergraduate level sample groups based on the qualitative method is an expected situation in the pandemic process during which it is hard to meet the conditions required for using a quantitative method. However, factors such as convenience and affordability may have caused the undergraduate level (30%) more than the levels of primary school (5%), secondary school (8%), and high school (9%). Göktaş et al. (2012) reported that in educational research, researchers mostly prefer university students who are easy to reach, while Kahyaoğlu (2016) reports that pre-school, primary, and secondary school students are less preferred. Another remarkable finding in the study is that the number of studies conducted with the sample level of teachers (16%) is higher than the number of academics (7%) and pre-service teachers (10%). The literature review shows that teachers and their views on the process are expected to guide distance education studies (Alea et al., 2020; Hershkovit & Berger, 2019). In this context, it is expected

that the sample groups consisting of teachers were preferred more in the studies on distance education published during the pandemic.

The findings regarding the research design used in the studies revealed that case studies (33%) and survey models (29%) are generally used. This result of the research is in parallel with the studies conducted by Altunçekiç (2020), Kavaklı & Yakın (2019), and Varışoğlu, Şahin & Göktaş (2013). As is known, case studies examine cases in depth within their own boundaries and seek answers to questions of "how" and "why" (Baxter & Jack, 2008; Subaşı & Okumuş, 2017). In survey studies, a past or current situation is described as it is (Büyüköztürk et al., 2017; Creswell, 2017). In this context, the need for in-depth analysis of the distance education process during the pandemic may have led researchers to use such patterns. The results on data collection tools support this situation. It was determined that interview forms and questionnaires were mostly used as data collection tools. These data collection tools allow researchers to describe the distance education process as it exists and to examine it in its own environment. Findings regarding the data analysis methods used in the studies also support these results. According to the findings, percentage/frequency (36%) and content analysis (31%) techniques were used more in the studies. Content analysis is the method of analysing the collected qualitative data and reducing such data to quantitative terms (Baxter & Jack, 2008). When evaluated from this aspect, it can be implied that researchers examined in depth the distance education process under pandemic conditions.

Studies related to distance education based in Turkey mostly focus on opinions about distance education (24%), the effectiveness of courses in distance education (12%), attitudes towards distance education (11%), and the problems experienced in distance education (9%). Besides, such studies also examine the opinions of the participants about the distance education process in terms of various demographic variables. It can be inferred that the relevant studies focus on certain subjects. Also, it is considered as an expected situation to observe studies on the problems experienced in distance education and the effectiveness of the lessons to make better quality and applicable distance education activities during the pandemic.

In the light of these results, research is recommended on more articles, congress or symposium booklets in an attempt to reach more detailed results on distance education during the pandemic. One may notice that qualitative research methods are generally preferred. Thus, researchers are recommended to draw upon quantitative and mixed research methods and reach larger sample groups for generalizable results. More studies are recommended with sampling groups such as parents, instructors, and administrators, on which fewer studies are conducted. Studies can be enriched with other less frequently used research designs (such as phenomenology, explanatory, and exploratory) other than case studies and survey patterns in studies related to distance education. Data collection tools and data analysis methods and techniques used in the field of distance education can be diversified. Distance education is an interdisciplinary research area. Apart from concepts, errors, problems, solution suggestions, and attitudes, researchers can also focus on other subject areas (such as distance education strategies, distance education service quality, distance education performance indicators) to contribute to the field with different perspectives.

As a result, this research will contribute to the quality of researchers' work by offering them some suggestions in their studies on distance education in terms of method and research results. Also, revealing the general trend in the studies on distance education during the Covid-19 pandemic will guide researchers who will conduct research on this subject. In this context, this study is limited on the systematic analysis of Turkey-based scientific articles related to distance education and published during the Covid-19 pandemic until April 2021 in terms of various variables.

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