

# Analysis of studies in the field of educational technologies related to Covid-19 during the pandemic period in Turkey

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## ABSTRACT

This study aims to make a descriptive analysis of the studies in the field of educational technologies discipline related to the Covid-19 disease during the pandemic period. The study was conducted with document analysis, one of the qualitative research methods. The articles examined in the study were obtained by scanning the databases of ULAKBİM, Google Scholar, Ebscohost Turkish Education Index, ASOS Index and Sobiad Index using the keywords Educational technologies and Covid-19. In this context, 82 articles made in the field of educational technologies related to Covid-19, which were determined by the purposeful sampling method, were identified and examined. These articles were published in the journal in which the studies were published using descriptive analysis, the number of authors, research method, and the data collection tools used in the research were examined under the titles such as the sample of the research, the method of determining the samples in the research, and the techniques used in the analysis of the data. As a result of the study, it was stated that it would be appropriate to conduct different studies with different stakeholders in the field of educational technologies regarding the Covid-19 pandemic process.

**Keywords:** Educational technologies research, Covid-19, descriptive analysis, document analysis.

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## INTRODUCTION

The Covid-19 virus emerged in December 2019 in the city of Hubei, in the Chinese province of Wuhan. This virus has spread to many countries around the world in a short period of time. Due to its rapid and alarming spread, this situation has been declared a pandemic as of 11 March 2020 and warnings have been issued to governments to maximize their precautions by limiting interpersonal interaction (World Health Organization[WHO], 2020).

The pandemic threat faced by countries has also affected many sectors, especially the health sector (Telli-Yamamoto and Altun, 2020; Macit, 2020; Ustun and Ozciftci, 2020). One of these sectors is the education sector. After the first coronavirus case in Turkey was seen in March, formal education was delayed in

universities and schools of all levels affiliated with the Ministry of National Education, and teaching activities were decided to be managed with various methods of distance education. At this point, weekly lesson programs were structured by the Ministry of National Education (2020a), and distance education was started on the Internet with the Education Informatics Network (EBA) and television with TRT channels as of March 23, 2020. In Higher Education Institutions, distance education activities were managed with the use of simultaneous (synchronous) classroom tools and especially learning management systems (Turnbull et al., 2021).

Covid- 19 pandemic has forced to close the country, to close its limits and quarantine people. In this context, a new education system worldwide is shaped (Gilani,

2020). Over time, public and private educational institutions were allowed to be opened at certain grade levels, but face-to-face education was not fully implemented at all levels in universities and schools affiliated with the Ministry of National Education. The use of distance education practices in almost every level of education in Turkey has brought along the concentration of researchers in this field. Many research have been carried out in Turkey, especially on education during the pandemic period. Some of these studies;

In the study conducted by Cakın and Kulekci-Akyavuz (2020), the problems faced by teachers in distance education carried out during the pandemic process and the methods of motivating students were investigated. Kocoğlu et al. (2020) investigated the perspective of education in Turkey during the Covid-19 pandemic in their study. In their study, Gencoğlu and Ciftci (2020) examined the experiences and studies carried out in the field of education in Turkey during the Covid-19 pandemic. Can (2020) evaluated the effects of the Covid-19 pandemic on open and distance education practices in Turkey. In summary distance education systems carried out in the higher education institutions during the pandemic period were examined in terms of all stakeholders of education and evaluations were made about the findings obtained.

Presenting studies in a field as a whole will eliminate problems such as workload and access to research. At this point, the purpose of this study is to analyze these studies/researches, during the pandemic period in Turkey, to reveal their trends. Thus, it is aimed to identify gaps in the literature and guide new research and researchers. Therefore, the main aim of this study is to obtain information about the subject and methodological orientations of the studies carried out in this process. For this, answers to the following questions were searched:

Articles related to Covid-19 in the journals scanned for the relevant indexes were examined in terms of the following criteria;

1. Journals
2. The year the articles were published
3. Number of authors
4. Research method
5. Sample/study groups
6. Topic of research
7. Data collection tools
8. Statistical data analysis methods
9. Sample method
10. Reseach trends

## METHOD

### Research method

In this study, which is qualitative research, document

analysis was carried out. Document review includes the analysis of documents related to the subject to be researched. Document analysis, which saves time for the researcher, is an important source of information that should be used effectively in qualitative research (Yıldırım and Simsek, 2011).

### Data source of the research

In this research, the journals at the time of the pandemic and issues published in 2020, 2021 and 2022 years were examined; the words “*covid-19, pandemic, corona, online, distance education*” were chosen as keywords. Only research articles were examined in the study. In line with all these methods, a total of 82 research articles were examined and document analysis was carried out within the scope of the relevant field criteria.

### Sampling method

The sample of the research was determined according to the criterion sampling method, which is one of the purposeful sampling methods. Criterion sampling was the sampling method used to identify samples that met the criteria in the study (Miles and Huberman, 1994).

### Analysis of data

In this study, document analysis of articles was made by the content analysis method. The content analysis consists of coding the data obtained from the documented documents, making themes, coding and organization of themes, evaluating data according to these codes and themes, and interpreting the findings obtained by the interpretation. The data obtained in this study was primarily encoded by the researchers according to the previously determined criteria and the themes were found.

## FINDINGS

Within the scope of this study, descriptive information about the studies carried out in the field of education technology related to Covid-19 is given below in tables.

When determining the data in Table 1, it is seen that research in the field of education technology related to Covid-19 have been published in 28 different journals. It is seen that most of the studies are in the “*Journal of National Education (Milli Egitim Dergisi)*” (f = 21), the *Journal of Open Education Practices and Research* (f = 11) and the *Journal of Higher Education* (f = 7). Apart from this information, when the above table is examined in detail, it is noteworthy that there are *Nursing and*

**Table 1.** Frequencies of studies in the field of education technology related to Covid-19 by journals published.

Name of the journal in which the papers were published	Frequency (f)	Percent (%)
Journal of National Education (Milli Egitim Dergisi)	21	26.6
Journal of Open Education Practices and Research (Acıköğretim Uygulamaları ve Araştırmaları Dergisi)	11	14.4
Journal of Higher Education (Yükseköğretim Dergisi)	7	8.5
Education and Science Journal (Egitim ve Bilim Dergisi)	6	7.3
Journal of Ahi Evran University Institute of Social Sciences	4	4.8
Journal of Education and e-Learning Research	3	3.6
Health Care Academician Journal	3	3.6
Journal of Economic and Administrative Sciences	2	2.4
Journal of Turkish Educational Science	2	2.4
Journal of Nursology	2	2.4
Journal of Nursing Science	2	2.4
Hacettepe University - Journal of Education	2	2.4
International Journal of Humanities and Education	1	1.2
International Journal of Engineering Research and Development	1	1.2
Journal of Gastronomy, Hospitality and Travel	1	1.2
Journal of Necmettin Erbakan University Faculty of Health Sciences	1	1.2
Turkish Journal of Audiology and Hearing Research	1	1.2
Istanbul Gelisim University Journal of Health Sciences	1	1.2
Inonu University Journal of the Faculty of Education	1	1.2
Journal of Social Research and Behavioral Sciences	1	1.2
Journal of University Research	1	1.2
Journal of Society and Social Work	1	1.2
Turkish Studies	1	1.2
Journal of Izmir Katip Celebi Faculty of Health Sciences	1	1.2
Journal of Qualitative Research in Education	1	1.2
Journal of Academic Emergency Medicine Case Reports	1	1.2
Ordu University Journal of Nursing Studies	1	1.2
ADO Journal of Clinical Sciences	1	1.2
<b>Total</b>	<b>82</b>	<b>100</b>

*Medical Sciences Journals* on the related subject.

When the data in Table 2 is examined, it has been determined that the frequency of distribution of studies in the field of educational technologies related to Covid-19 by years is mostly for "2020" (one year after the Covid-19 pandemic).

When the data in Table 3 is examined, it has been determined that the frequency of distribution of studies in the field of educational technologies related to Covid-19 by the number of authors is mostly "two authors".

According to Table 4, it has been determined that "qualitative research method" (f=38; %=46.3) are used the most, followed by quantitative research methods (f=26; %=31.7) and mixed research methods are used the least (f=18; %=22) in studies conducted in the field of education related to Covid-19. When the research design was examined, it was seen that the frequency was above the "case study" (f=31) which is one of the qualitative research methods.

When Table 5 is examined, it has been determined that

**Table 2.** Frequency distribution of studies published in the field of education technology on Covid-19 by years.

By years	Frequency (f)	Percent (%)
2020	35	42.6
2021	28	34.1
2022	19	23.3
Total	82	100

the studies in the sample/study group vary. It has been determined that the most frequently studied sample group is "higher education students" (Undergraduate and Graduate Students).

When the values given in Table 6 are examined, it is seen that 15 studies are about "opinions and evaluations on distance education" and 12 studies are about "the problems involved in distance education".

According to the data in Table 7, it is seen that the "interview form" (f = 26) is used the most as a data

**Table 3.** Frequency distribution of studies published in the field of education technology on Covid-19 by the number of authors.

By number of authors	Frequency (f)	Percent (%)
Two Authors	32	39.0
One Author	29	35.3
Three Authors	10	12.1
Four Authors	6	7.3
Five Authors or more	5	6.3
Total	82	100

**Table 4.** Frequency distribution of studies published in the field of education technology on Covid-19 by research method.

Research method	Scanning model	Relational scan	Case study	Document analysis	Meta-analysis	Total
Quantitative	24	2	-			26
Qualitative	-	-	31	5	2	38
Mixed	9	-	9	-	-	18
Total	33	2	40	5	2	82

**Table 5.** Frequency distribution of studies published in the field of education technology on covid-19 by sample/study groups.

Sample/study groups	Frequency (f)	Percent (%)
Higher education students/undergraduate students	16	19.5
Higher education students/graduate students	14	17.7
Teacher candidates	9	10.9
Academics staff	7	8.5
Secondary school teachers	6	7.3
Primary school teachers	6	7.3
High school students	5	6.0
Primary school parents	5	6.0
School administrators	4	4.8
University staff	3	3.6
Trainees	3	3.6
Stakeholder views	2	2.4
Doctors	1	1.2
Mothers of 3-6 years old children	1	1.2
Total	82	100

collection tool in studies in the field of education related to Covid-19, followed by open-ended questions (f=22) and survey/scale.

According to Table 8, it has been determined that the most frequently used test method in the analysis of the data obtained in the related articles is “*content analysis*”. It was predicted that this frequency was because the studies were mostly qualitative research. Content analysis is followed by parametric tests (f=19).

As shown in Table 9, when the distributions of the related studies according to the sample methods were

examined, the frequency was found to be “*purposive sampling*” (f=41). Purposive sampling, also known as judgmental, selective, or subjective sampling, is a form of non-probability sampling in which researchers rely on their judgment when choosing members of the population to participate in their surveys.

As shown in Table 10, when the distributions of the related studies according to the research trends were examined, the frequency was found to be “*online education*” (f=13). Other research trends have varied. Emergency distance education, e-learning, hybrid learning, and online meeting are some of them.

**Table 6.** frequency distribution of studies published in the field of education technology on Covid-19 by topic of research.

Topics research (f)	Frequency	Percent (%)
Opinions and evaluations on distance education	15	18.2
Problems involved in distance education	12	14.6
Adaptation process in distance education	8	9.7
Attitude, perception and behavior	8	9.7
Success and satisfaction	7	8.5
Stakeholder view	7	8.5
Readiness	6	7.3
Educational technologies environment and tools used in distance education	6	7.3
Impact on educational activities	5	6.6
Vocational acquisition	3	3.6
Roles	2	2.4
Change of paradigm	2	2.4
Expectation	1	1.2
Total	82	100

**Table 7.** Frequency distribution of studies published in the field of education technology on Covid-19 by data collection tools.

Data collection tools	Frequency (f)	Percent (%)
Interview form	26	31.7
Open-ended questions	22	26.8
Survey	13	15.8
Scale	11	13.4
Documents	6	7.5
Control list	2	2.4
Focus groups	2	2.4
Total	82	100

**Table 8.** Frequency distribution of studies published in the field of education technology on Covid-19 by statistical data analysis methods.

Data analysis methods	Frequency (f)	Percent (%)
Content analysis	25	30.8
Parametric tests	19	23.1
Descriptive analysis	16	19.5
Non-parametric tests	10	12.1
Correlation coefficient	6	7.3
Exploratory and confirmatory factor analysis	3	3.6
Descriptive Statistics	3	3.6
Total	82	100

**Table 9.** Frequency distribution of studies published in the field of education technology on Covid-19 by sample method.

Sample method	Frequency (f)	Percent (%)
Purposive sampling	41	64.2
Convenience sampling	11	17.1
Random sampling	7	10.9
Snowball sampling	5	7.8
Total	64	100

## DISCUSSION, CONCLUSION AND SUGGESTIONS

The Covid-19 pandemic has been the main issue in the focus of the whole world since the beginning of 2020. The fact that the subject is directly related to human health has also deeply affected human-related fields. One of these areas is undoubtedly education and issues related to education. The results obtained in this study, in which the Analysis of the Studies in the Field of Education Technologies Related to Covid-19 during the Pandemic Period in Turkey was made.

As a result of the examination, it was determined that the articles published were mostly published in the "Journal of National Education (Milli Eğitim Dergisi)". It can be said that the main reason for this situation is that this journal published a special issue in 2020 with the theme "Education in Turkey and the World During the Pandemic".

When the distribution of the articles by years is examined, it is seen that the highest number of publications is in "2020". The main reason for this can be thought of as a matter of curiosity about the effects of the pandemic on education immediately after the emergence of the pandemic and how the reflections of the distance education process, directly concern all levels of education.

The articles are mostly studies written by "two researchers". Studies with one author, two authors and three authors constitute the majority compared to other groups.

It was determined that the majority of the articles examined in this study were in the type of "qualitative research". When the research design was examined, it was seen that the density was above the "case study" which is one of the qualitative research methods. A mixed research design was determined as the least preferred research method. This situation has been accepted as a major deficiency in the relevant literature. The most commonly used quantitative research model in articles is the survey model. It can be said that the main reason why this research model is mostly preferred in research is to evaluate the current situation in its own conditions, as it is.

Another criterion was that in the articles published as a result of the research, it was determined that the sample group was mostly composed of "higher education students". This sample group is followed by teacher candidates.

When the articles included in this study were examined in terms of research topics, it was determined that the most frequently studied topic was "opinions and evaluations on distance education". With the pandemic process, a concept has started to become widespread in education: This concept is "emergency and distance education". Discussions were held on this new concept that emerged during the pandemic period and these discussions were reflected in the literature as articles. It is

predicted that this is the reason why studies focus mostly on opinions and evaluations of distance education. However, research topics vary.

When the data collection tools used in the published articles are examined; it was determined that the "interview form" and "open-ended questions" were used the most. This may be related to the fact that it is easier to access data and the cost, labor and time are more advantageous than in other studies (Bas, 2005).

As a result of the study, it was determined that "content analysis" was preferred most in the analysis of data in the articles examined. This is thought to be due to the use of content analysis in qualitative studies. The results of Goktas et al. (2012), Tavsancil et al. (2010) and Yilmaz et al. (2012) show similarities with the research findings of the study.

In this study, different from the other criteria, the research trends criterion was used. The aim here is to reveal trends in educational technology research during the pandemic period. According to this; when the distributions of the related studies according to the research trends were examined, the density was found to be "online education". Other research trends have varied. Emergency distance education, e-learning, hybrid learning, and online meeting are some of them.

Recommendations for future research at the end of the study:

- Mixed research models, in which qualitative and quantitative research are carried out together, should also be used in research.
- By ensuring the diversity of study groups, effects on education stakeholders should be examined more comprehensively.
- After the pandemic process, different studies can be carried out by focusing on different issues apart from opinions and evaluations.

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