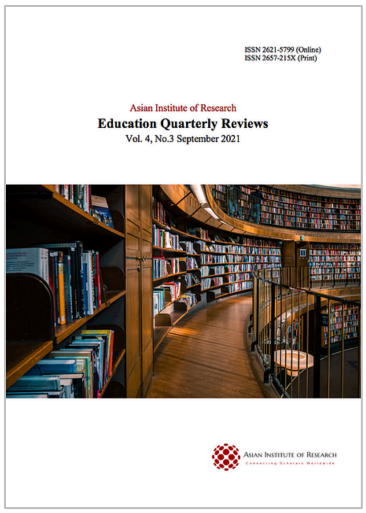

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Opinions of Primary School Teachers about Mathematics Teaching During the Covid-19 Pandemic Period*

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Abstract
This study was conducted to reveal the aspect of distance education studies on teaching of mathematics with the evaluation by class teachers during the Covid-19 Pandemic period. 24 primary school teachers from Onikisubat district of Kahramanmaras province have participated in the research. The semi-structured interview form developed in line with the expert opinions was applied to the primary school teachers separately. This study was required in order to evaluate the events experienced in the distance education process due to the coronavirus pandemic and the effects of the pandemic on the field of education in the direction of the opinions of the class teachers. Qualitative research was carried out to interpret any situation from a different perspective in the study, and a case study has been conducted to reach the depth of the situation. As a data collection tool, a semi-structured interview form was prepared with the approval of expert opinions. After the data were brought together, content analysis was carried out by giving similar descriptions and describing them in a way that the reader could comprehend. The sample of the study consisted of teachers who personally experienced the process in the nearby environment, which consists of easily accessible situation sampling in order to accelerate the study. It is thought that it will be important to work properly execution of the processes that may occur in such times by determining the causes and consequences of the situations experienced in the field of education due to reasons such as the suspension of face-to-face education and the cessation of schools after the pandemic in the world. As a result of the research, suggestions will be made for the studies that can be done about teaching mathematics in distance education.

Keywords: Distance Education, Pandemic, Covid-19, Mathematics Teaching

* This research was produced by the first author, under the first supervision of the second author and the second supervision of the third author from a master's thesis (10417837) completed at Inonu University, Institute of Educational Sciences.

1. Introduction

1.1 Problem Statement

Basic life skills in the general objectives of the Turkish Education System; especially cognitive and affective skills are acquired in educational settings. All of the cognitive skills, such as problem solving and adapting solutions to different situations, all the acquisitions that require a connection in the mind belong to the discipline of mathematics. For this reason, we need to ensure that individuals have analytical thinking in the face of the problems they encounter in their entire lives, by paying attention to mathematics teaching during their education period from pre-school to higher education (Baykul, 2020).

Problem solving skills are the basis of today's education programs. The ability to have problem-solving skills is directly proportional to the child's cognitive processes such as sorting, classification, measurement, comparison, and visualization (Yildirim, 2019). It is important that all these gains, which are the basis of mathematics teaching, are given effectively in childhood, when the individual is the most curious and inquisitive, in terms of finding solutions to the problems that he will encounter later in his life. Our lives are shaped by the impact of rapid technological developments in every part of life. In the field of education, the impact of technological developments is quite high. The understanding that has developed in the field of education has made it necessary to benefit from different technological inventions in different disciplines. Receiving technological support during mathematics teaching increased student motivation and made the teaching process more effective (Pesen, 2020). Teaching with technological tools allows students to face more problems without wasting much time, to visualize the problems they encounter, to establish cause-effect relationships and to enjoy the lesson more.

Mathematics, which is considered as a science related to numbers and values, is also a tool that allows us to find solutions to the problems we encounter in daily life, and allows us to understand technology and the environment we live in. With the emergence of humanity, mathematics has found a place where it will constantly live and develop. Since the day it emerged, the development of mathematics can be compared to construction work in that the floors on which an apartment is dug up are solid (Biber, 2019). We can explain the ordinary events happening around us with mathematical science and logical content (Bilgener & Ozel, 2019). The logic of ordinary situations we encounter in daily life, such as the symmetrical appearance of butterflies and the movement of the wind, which is the movement of the air from the place where the air is high, to the direction where it is less, is explained by mathematics. It is unthinkable for us to progress socially and keep up with these advances without understanding mathematics and establishing the connection with the mathematics course in social events in our minds. There is a relationship with mathematics in all disciplines in social life. Associating mathematical expressions with other disciplines gives the ability to recognize and understand the situation. The relationship established with mathematics in all areas of life necessitates the effective presentation of mathematics teaching under all conditions. In this direction, we should act on the basis of the view that "every child can learn mathematics" adopted by our ministry in mathematics teaching. Mathematics skills gained in primary school enable to produce solutions for the complex situations encountered in the later processes of life (Yesilpinar Uyar, 2019).

Although there are many definitions of distance education, researchers; they have come together on a common denominator at the point that the teaching takes place with technological tools without the learner and the teaching element being in the same environment (Bagricak Yilmaz & Karatas, 2020). The concept of distance education first entered the education environment as 'learning by letter' and continued its existence in education with the technological tools developed over time. Its purpose is to ensure that education is received by many people at the same time. Distance education, which is seen as the contribution of technological developments to the field of education, still continues with the developing technology that showed itself in the 1960s in our country (Dincer, 2006).

The importance of presenting different learning environments to the learner has been emphasized many times in the studies conducted to date. In particular, the use of computer and internet technology in the field of education has increased recently. Digital platforms are used in educational environments through computers in terms of rich

content, visualization, gamification, and real experiences (Kiyik Kicir & Demir, 2021). The emergence and spread of the Internet have increased the quality of distance education. Today, every individual with an internet infrastructure can easily access distance education in the field they want (Al & Madran, 2004).

Due to the Coronavirus pandemic that affected the world in 2019-2020, face-to-face education was suspended in schools and different solutions were developed in order not to cause disruption in education. (Can, 2020) In this process, distance education has become widespread in the world and it is aimed to continue education without interruption. The Ministry of National Education keeps up with the developing technologies in education with many applications such as Fatih Project, Education Information Network, smart board, tablet-computer distribution and digital accelerated the transition to education. The necessity of all these platforms emerged during the Covid-19 Pandemic period, which our country was also greatly affected by, and education continued uninterruptedly with the skills of our teachers in this field. (Bayburtlu, 2020) It is thought that distance education, which is used at a high level due to the pandemic spreading around the world, will form the basis of education rather than being seen as an alternative for education in the future. (Sonmez et al., 2020). Distance education has become a necessity out of necessity today. At this point, teachers who have the duty of transferring education have a great role. In order to ensure that our teachers are efficient and effective in this process, there is a greater need for distance education information (Ergin, 2010).

The problems and solutions that the teachers have experienced in teaching mathematics in the distance education period are emphasized according to the opinions of the class teachers in this research. The research aims to reveal the problems faced by class teachers in mathematics teaching in the distance education period and to determine solutions to these problems. For this purpose, answers to the following questions were sought.

1. What are the problems faced by primary school teachers in teaching mathematics in the distance education process during the COVID-19 Pandemic Period?
2. What are the positive/negative effects of the distance education process on mathematics teaching during the COVID-19 Pandemic Period, according to the opinions of primary school teachers?
3. To the opinions of primary school teachers, to what extent does the continuity of participation in live lessons during the distance education process during the COVID-19 Pandemic Period affect the academic success of the students?
4. What are the teaching methods and techniques used by primary school teachers in teaching mathematics in the distance education process during the COVID-19 Pandemic Period? What is the effect of these techniques on the skill to be acquired?
5. What are the digital platforms that primary school teachers use in teaching mathematics in the distance education process during the COVID-19 Pandemic Period? Compare these platforms. (Education Information Network, ZOOM, SKYPE, MEET, WHATSAPP)
6. To the opinions of the primary school teachers, how was the school-family cooperation regarding the mathematics lesson in the distance education process during the COVID-19 Pandemic Period?
7. From primary school teachers' point of view, what are their opinions and suggestions regarding measurement-evaluation for mathematics courses in the distance education process during the COVID-19 Pandemic Period?
8. What do you think are the observable effects of mathematics lesson achievements at upper levels in the distance education process during the COVID-19 Pandemic Period, to the opinions of primary school teachers?
9. What are your suggestions for solutions to the problems encountered in mathematics teaching during the distance education process during the COVID-19 Pandemic Period, up to the opinions of the primary school teachers?

1.2. Purpose and Importance of the research

This study was needed in order to evaluate the events experienced in the distance education process due to the coronavirus pandemic and the effects of the pandemic on the field of education by direction of the opinions of the class teachers. It is thought that it will be important to work properly for the processes that may occur in such times by determining the causes and consequences of the situations experienced in the field of education due to reasons such as the suspension of face-to-face education and the closing the schools temporarily after the pandemic in the world. This study aims to determine the opinions of class teachers about teaching mathematics during the COVID-19 pandemic period.

2. Method

One of the scientific research methods, the qualitative research method, was benefitted from and the data were interpreted with the case study design of the qualitative research in the research. As a data collection tool, semi-structured interview form prepared with expert opinion was preferred. The obtained data were analyzed by the content analysis method. The sample of the study, on the other hand, constitutes an easily accessible case sample. Qualitative research is a research method that explains any situation with different disciplines in order to understand and explain it from different perspectives. Qualitative data collection techniques, such as observation, interview, document review are used in an environment which aim to reveal the situation as a whole. Researchers working with qualitative research often need environmental, perceptual and process information. In qualitative research, it is essential to present the situation in general terms rather than explaining the results by number or majority (Yildirim & Simsek, 2016).

Qualitative research, which is generally preferred in social sciences, is preferred in terms of in-depth analysis of data. Explaining the results by delineating provides a detailed understanding of the researched subject. It is necessary to constantly look at the rapid changes in the world from different ways (Seggie & Akbulut Yildirmis, 2021). Qualitative research involves evaluating events and phenomena from a different perspective. The existence of different perspectives, the researcher's thoughts on the subject, the diversity of methods is effective in determining the basic features of qualitative research. In the light of all this information, the characteristics of qualitative research; the appropriateness of method-theories, participant diversity, researcher-research ideas, and approach-method diversity.

No generalizations are made at the end of qualitative research, events and facts are evaluated on the conditions in their own environment. Because events are always observed literally in their own environment. In qualitative research, the environment in which the research is conducted and the suitability of the environment to the subject are very important. In qualitative research, the researcher is responsible for collecting, examining, transforming, analyzing and reporting data. After examining the parts that make up the qualitative research situation one by one, the result is given as a whole. The people who are the data source of the subject to be investigated in these studies consist of individuals who witnessed the event at the heart of the situation. In qualitative research, the researcher is freer to determine the method and technique to reach the result. Although qualitative research data are ended up numerically in order to form a basis for content analysis, it is essential in qualitative research to describe the situation with its own reality in qualitative research (Gurbuz & Sahin , 2018).

2.1. Research model/pattern

Case study design, one of the qualitative research method designs, was used in this research. The main purpose of the case study is to search the depth of the situation. In a case study, it can be an individual, group, institution or environment. The situation is investigated within the framework of process, environment, events. As a result, with a holistic approach, how it affects and is affected by the situation is revealed. It is very important for the study to determine the questions to be asked in case study examples, to determine the data related to the questions, the data to be collected and the results to be analyzed in what ways (Yildirim & Simsek, 2016).

The case study examines why and how questions in detail. In case studies, there are theories and explanations that can help in understanding similar situations and events without aiming to reach a general conclusion(Seggie & Akbulut Yildirmis, 2021). It also sheds light on similar studies in terms of examining events and situations in real environments in detail and establishing a cause-effect relationship about what happened in the process. In the case study, data are collected with the help of written documents, interviews, observations, archive records, physical documents related to the situation (exam paper, picture, etc.).

2.2. Data collection and Analysis

Data collected with a semi-structured interview form developed by the researchers. During the collection of data, phone calls and calls made via Google Meet or Zoom recorded. While creating the form, support was received from three field experts Data were collected from teachers selected on a voluntary basis using a semi-structured interview form in the study. First of all, the interviews were recorded after the volunteers were approved by the teachers with the consent form. After the interviews, they were converted into text form and recorded in the computer environment. 24 of the interviews with the teachers were made face to face. Teacher interviews lasted between 06 minutes 26 seconds and 18 minutes 41 seconds.

The data collected in line with the opinions of the teachers were analyzed with the content analysis technique. According to Yildirim and Simsek (2005), content analysis is the systematic scanning of printed or visual materials and analyzing them thematically in terms of certain topics. The data obtained through content analysis were classified among certain themes and the relationships between the data were revealed. With content analysis, themes and sub-themes related to the sub-problems of the research were created. The themes created by the researchers were presented to the opinions of field experts and presented in their final form. The analysis of the data collected for the study was provided by content analysis.

In content analysis, which enables similar data to be brought together and interpreted in a way that the reader can understand, the data is expressed descriptively after in-depth analysis. There are four stages to reach the results in content analysis; including coding, creating a theme, organizing the data according to codes-themes, and defining-interpreting the findings (Yildirim & Simsek, 2016).

Inductive or deductive methods can be used in content analysis. If the inductive method is used, it is possible to reach a new and different conclusion about the situation. If the deductive method is used, it has the purpose of testing an existing situation. Content analysis allows the researcher to analyze a large amount of text, saving time and money (Seggie & Akbulut Yildirmis, 2021). The documents found related to the researched subject are not damaged in any way, and accessing the same documents from any place when requested is a situation that facilitates content analysis. While doing content analysis, the researcher is advantageous as he is not controlled by others while doing his own analysis.

In content analysis, the researcher tends to explain the data he has reached. After the data is filtered in detail, it is interpreted within the framework of a certain subject and transferred to the reader (Gurbuz & Sahin, 2018).

2.3. Participants

The universe of the research consists of official primary school teachers in Kahramanmaras. 24 primary school teachers from Onikisubat district of Kahramanmaras province have participated in the research. Easily accessible case sampling method was used in the research.

The easily accessible case sampling used in qualitative research has the feature of accelerating the study and making it practical. In this method, the researcher usually deals with the situation that he can reach most easily. Although easily accessible case sampling is widely used in qualitative research, it is a less preferred method due to the lower validity, reliability and usability of its results compared to other methods (Yildirim & Simsek, 2016).

Accessing a closer state always requires little cost. Convenience sampling is an advantageous situation for researchers because the situation is easily accessible, requires low cost, and generally includes the familiar situation. With these features, easily accessible case sampling facilitates research.

The demographic variables that emerged according to the data obtained before the interviews with the teachers are given in Table 1 as follows:

Table 1: Demographic Characteristics of the Participants

Feature	Teacher Characteristics	f
Gender		
Female	T2, T3. T5, T7, T8, T9, T13, T15, T16, T17, T18, T20	12
Male	T1, T4, T6, T10, T11, T12, T14, T19, T21, T22, T23, T24	12
Age		
Between 30-40	T4, T5, T9, T13, T17, T24	6
Between 40-50	T2, T6, T7, T10, T11, T12, T14, T16, T18, T20, T21, T22	12
50 and above	T1, T3, T8, T15, T19, T23	6
Length of service		
1-10 years	T5	1
10-20 years	T4, T7, T9, T12, T13, T17, T24	7
20-30 years	T1, T2, T6, T10, T11, T14, T15, T16, T18, T19, T20, T21, T22	13
30 and above	T3, T8, T23	3
Technological Devices Used in Distance Education		
Computer	T8, T18, T20	3
Smartphone		
All	T1, T2, T3, T4, T5, T6, T7, T9, T10, T11, T12, T13, T14, T15, T16, T17, T19, T21, T22, T23, T24	21
Way to Connect the Internet in Distance Education		
Mobile network	T3, T12, T14, T19	4
Wi-fi	T4, T5, T7, T8, T9, T11, T16, T17, T20, T21, T24	11
All	T1, T2, T6, T10, T13, T15, T18, T22, T23	9

As seen in Table 1, 12 female and 12 male teachers participated in the study. 6 of the teachers are in the age range of 30-40, 12 of them are in the age range of 40-50, and the other 6 are over the age of 50 and 50. 1 of the teachers has 1-10 years of seniority, 7 of them have 10-20 years of seniority, 13 of them have 20-30 years of seniority, and 3 of them have seniority of 30 and 30 years. In distance education, 3 of the teachers benefited from the computer as a technological device, and 21 of them both computer and smart phone. 4 of the teachers used mobile networks to connect to the internet in distance education, 11 of them used wi-fi, and 9 of them used both mobile network and wi-fi.

Ethical Committee Decision

Ethical permission was obtained from the Inonu University Social and Humanities Scientific Research Ethical Committee (Session Date:13-01-2021 Number of Sessions:2 Number of Decisions:3) for this research. Journal writing rules, publication principles, research and publication ethics and journal ethics rules were obeyed in this article. The authors are responsible for any violations that may arise regarding the article.

3. Results

The findings obtained from the analysis of the data are shown in the form of tables and the themes, sub-themes and categories created are supported and interpreted with examples in this section. During the Covid-19 pandemic period, the opinions of class teachers on teaching mathematics were given as findings.

3.1. Findings on teachers' views towards mathematics teaching in distance education

Views formed by teachers and students towards the lesson in mathematics teaching affect the mathematics teaching process. Teachers' approaches to mathematics teaching in distance education, findings regarding teacher views on mathematics teaching during the Covid-19 pandemic period are presented in the Table 2.

Table 2: Views of Primary School Teachers on the Positive/Negative Effects of Distance Education on Mathematics Teaching During the COVID-19 Pandemic Period

Themes	Sub-themes	f
the positive effects	Making use of images	3
	Digital activities	3
	Providing self-confidence	2
	Possibility of repeating	1
the negative effects	Lack of participation	2
	Not getting feedback	6
	Monotonous	1
	Keeping the narrative abstract	11

As seen in Table 2, the opinions of primary school teachers on mathematics teaching in distance education during the Covid-19 pandemic period were grouped under two themes: "I saw its positive effects" and "I saw its negative effects." Under the theme I saw its positive effects; using visuals (f=3), digital activities (f=3), providing self-confidence (f=2), possibility of repetition (f=1) sub-themes were formed. Under the theme I saw its negative effects; sub-themes such as lack of participation (f=2), lack of feedback (f=6), monotone (f=1), and abstraction of the expression (f=11).

When Table 2 is examined, the views of primary school teachers towards teaching mathematics in distance education are mostly negative during the Covid-19 pandemic period. It was revealed that teachers who stated that they saw the positive effects of the process used different teaching methods in education. It was observed that the teachers who stated that they saw the negative effects of the process experienced student-induced negativity.

When Table 2 is examined, the views of classroom teachers on mathematics teaching in distance education during the Covid-19 pandemic period are mostly negative. For example, T11; “Of course, it negatively affected the process, not like in the classroom, but not in the face-to-face manner. We couldn't do much on the computer because the math textbook was a bit of an abstract-based course.” T1; “*There is no problem in the lectures, but the problem is that we cannot control whether the lesson is understood or not. We teach the lesson, but the class hours are 30 minutes. If not, we cannot control the student due to the fact that it is shortened and there is not enough time for each student. In other words, the course is being taught, different websites are used, that is, it can be taught uniformly*.” statements show the negative opinions of teachers.

It was revealed that teachers who stated that they saw the positive effects of the process used different teaching methods in education. It was observed that the teachers who stated that they saw the negative effects of the process experienced student-induced negativity. In the interview with T23, “Of course, we cannot say that it is as

productive as the classroom environment because there is no appropriate interaction. In addition, when I examine what they have done in the homework process, that is, in the homework we give to get feedback, I cannot comprehend whether the students themselves do it with the help of their family and naturally how much they understand the subject. But if it had happened in a classroom setting, I would have understood that." stated.

3.2. Findings of teachers' views towards concretization in mathematics teaching in distance education

Mathematics teaching in primary school is conveyed to students by making use of concrete objects and examples. The views of primary school teachers during the Covid-19 pandemic period towards concretization in mathematics teaching in distance education are given in Table 3.

Table 3: Views of Primary School Teachers on Concretization in Teaching Mathematics in Distance Education during the COVID-19 Pandemic Period

Themes	**Sub-themes**	**f**
Concretized	By reflecting on the digital screen	11
	Using household materials	8
Not concretized		5

Looking at Table 3, the views of the primary school teachers towards concretization in the distance education process in the mathematics lesson formed 2 themes as "I could concretize" and "I could not concretize." I was able to embody the theme; by reflecting on the digital screen (f=11) and using the materials at home (f=8). The number of primary school teachers who stated that they could not embody is 5.

When looked at Table 3, it has been revealed that the majority of primary school teachers in the Covid-19 pandemic period do not have difficulties in concretizing within the possibilities in mathematics teaching in distance education.

T3; *"Yes, I am a teacher who works by concretizing mathematics as much as possible. T14; "I made use of the videos, as I said before, to embody."* Their expressions show the way teachers embody.

3.3. Findings of methods and techniques used by teachers in teaching mathematics in distance education

In order to increase the efficiency of the lesson and ensure the permanence of learning during lesson activities, teachers need to benefit from many different methods and techniques. The methods and techniques used by primary school teachers in distance education mathematics teaching during the Covid-19 pandemic period are given in Table 4.

Table 4: Views of Primary School Teachers on the Methods and Techniques Used in Teaching Mathematics in Distance Education during the COVID-19 Pandemic Period

Themes	**Sub-themes**	**f**
Traditional methods	Plain expression technique	13
	Question and answer technique	8
	Demonstration	3

According to Table 4, the methods and techniques used by primary school teachers in distance education mathematics teaching during the Covid-19 pandemic period formed 1 theme as 'Traditional Methods.' Traditional methods theme; It is divided into 3 sub-themes, namely the lecture technique (f=13), the question-answer technique (f=8) and the demonstration (f=3). When Table 4 is examined, primary school teachers generally preferred traditional teaching methods in distance education mathematics teaching during the Covid-19 pandemic period.

S6; "*We used more talking visuals, asking questions and getting answers, so we can do distance education, but we can't do these others anyway*." T17; "*The methods and techniques we used were generally teacher-centered, so we had to use more narrative methods.*" T2; "*Words fly away, writing remains, I print it, and at the last stage I print it. I reinforce it with exercises and activities, questions and answers are definitely exercises. I reinforce them all one by one and in that way, even though we are already in the classroom, so we use them mostly." With their expressions, we see that the methods and techniques used by teachers in distance education are mostly traditional expression techniques."* With their expressions, we see that the methods and techniques used by teachers in distance education are mostly traditional expression techniques.

3.4. Findings on digital platforms used by teachers in teaching mathematics in distance education

With the beginning of compulsory distance education, the use of technological developments in education life has become widespread. The digital platforms that primary school teachers use in distance education mathematics teaching during the Covid-19 pandemic period are shown in Table 5.

Table 5: Views of Primary School Teachers on the Digital Platforms Used in Distance Education Mathematics Teaching During the COVID-19 Pandemic Period

Themes	**Sub-themes**	**f**
Live Course Software	Education Information Network,	3
	ZOOM	21
	Others	
Benefitted site	Education Information Network	3
	TV course contents	4
	Morpa Kampus	9
	Okulistik	4
	Others	

As presented Table 5, the digital platforms used by primary school teachers in distance education mathematics teaching during the Covid-19 pandemic period were examined in two themes as 'Live Courseware' and 'Used Site.' Education Information Network and ZOOM platforms formed under the theme of live course software have f=3 and f=21 values, respectively. The sites that teachers use in distance education are Education Information Network course contents (f=3), Morpa Campus (f=4), Okulistik (f=9), other (f=4).

During the Covid-19 pandemic period, it is seen that primary school teachers benefit from the Education Informatics Network developed by the Ministry of National Education and the special software program ZOOM while teaching mathematics in distance education. It has been observed that different sources other than the textbook are also used in the courses established in mutual interaction from Education Information Network and ZOOM. T15; "*I use Education Information Network zoom Morpa Campus if you count them digitally from time to time."* T8; "*I processed from Education Information Network and Zoom in general, of course." It has been observed that different sources other than the textbook are also used in the courses established in mutual interaction from Education Information Network and ZOOM*." T10; "*Now, as I said, I just used z-books. Apart from that, the textbooks are already the first thing we use. Because the textbooks are PDF, there is a Fatih pen program that supports it. I use it. In the Fatih pen program, shape graphics can be painted. So simple graphics. I use the tools for children's comprehension there in Fatih pen, I use PDF in the other one, which has its own special*

interfaces over the z-book, we use it from there, I process it from Education Information Network, I process it from Zoom anyway." Teachers benefited from various resources in distance education.

3.5. Findings of teachers' views on readiness for higher education in distance education mathematics teaching

The periods before the education period provide the students to form the basis of the new information they will learn. During the Covid-19 pandemic period, the statements of primary school teachers regarding the readiness of students at the upper level in teaching mathematics in distance education are shown in Table 6.

Table 6: Views of Primary School Teachers on Students' Readiness for Upper Level in Teaching Mathematics During the COVID-19 Pandemic Period

Themes	**f**
It will start ready.	10
There will be deficiencies.	9
They are not ready.	5

When looked at Table 6, the opinions of primary school teachers about readiness for the upper level in distance education mathematics teaching during the Covid-19 pandemic period formed three themes: it will start as ready (f=10), there will be deficiencies (f=9) and they are not ready (f=5).

According to Table 6, the majority of the primary school teachers stated that the students' readiness for the next level would be insufficient and they were not ready for the next level. T12; *"We are experiencing the same problems in face-to-face education, unfortunately, our students come across us in a way that their readiness level is not fully settled, especially in the mathematics course with numerical lessons because there is a certain stereotype in our students, I cannot do this. I would like to state that we are going through a more difficult process compared to other courses."* T23; *"In that process, our children will inevitably have difficulties in reaching the level we want or the level that the curriculum requires, and there will be some problems in the upper levels, because they will come from behind involuntarily."*

3.6. Findings on the general problems faced by teachers in teaching mathematics in distance education

The pandemic process, which started a new era in education, had positive and negative results. The problems faced by primary school teachers in teaching mathematics in distance education during the Covid-19 pandemic period are given in Table 7.

Table 7: Views of Primary School Teachers on General Problems Encountered in Teaching Mathematics During the COVID-19 Pandemic Period

Themes	**f**
Inability to teach by doing-experiencing and touching	11
Students are reluctant and uninterested	2
Failure to follow-up given activities - lack of feedback	6
Inability to interact face to face	4

According to Table 7, every teacher has experienced negativities in distance education during the Covid-19 pandemic period. These disadvantages are; Inability to teach by doing-experiencing and touching (f=11), students being unwilling and uninterested (f=2), inability to follow the given activities, lack of feedback (f=6) and inability to establish face-to-face interaction (f=4) constituted the themes.

When Table 7 is examined in general, there is no primary school teacher who does not have problems in teaching mathematics in distance education. Primary school teachers stated that the spontaneous interaction process in face-

to-face education is missing or absent in distance education. They also said that they could not see the products of the process due to the low interaction.

T19; "*As in the example I just gave, we make people understand the subject by dipping bread into the glass of the doner kebab shop. This was a very impressive example for me. It is an example that specifically expresses me in mathematics. Because mathematics requires mutual interaction."* T4; *"So we are doing distance education with covid-19, you know, we are experiencing some more difficulties in teaching mathematics, how do we live, we cannot make eye contact with children, I cannot make children feel those questions*." T9; *"Children cannot do anything under our control by doing and touching."*

3.7. Findings of teachers' views on measurement-evaluation in mathematics teaching in distance education

Evaluation of the teachings in the field of education in the process and at the end of the process is essential for the efficiency and permanence of education. The views of primary school teachers on measurement and evaluation in distance education mathematics teaching during the Covid-19 pandemic period are given in Table 8.

Table 8: Views of Primary School Teachers on Assessment-Evaluation Activities in Teaching Mathematics in the COVID-19 Pandemic Period

Themes	**Sub-themes**	**f**
I did assessment activities.	By Exam-Trial	5
	By question and answer	11
I did not do assessment activities.		8

Looked at Table 8, the opinions of primary school teachers about measurement and evaluation in distance education mathematics teaching during the Covid-19 pandemic period are the themes of "I did assessment and evaluation activities" and "I did not do assessment and evaluation activities." I made assessment and evaluation theme; It has sub-themes through exam-trial (f=5) and question-answer (f=11). Eight of the primary school teachers stated that they did not make measurement and evaluation in mathematics teaching during the distance education process.

When Table 8 is examined, measurement-evaluation activities of primary school teachers in distance education mathematics teaching during the Covid-19 pandemic period consist of exam-trial and question-answer methods. T16; "*We make scoring, we do practice tests, we can evaluate in this way, or we can measure children with questions and competitions during the lesson."*

3.8. Findings of teachers' views on mathematics lesson times in distance education

The duration of education in distance education has also changed compared to face-to-face education. During the Covid-19 pandemic period, the views of primary school teachers regarding the course times given in distance education mathematics teaching are shown in Table 9.

Table 9: Primary School Teachers' Opinions on Mathematics Lesson Duration in the COVID-19 Pandemic Period

Themes	**f**
Lesson time are sufficient.	6
Lesson time are not sufficient.	18

According to Table 9, during the Covid-19 pandemic period, primary school teachers' views on the course durations in distance education mathematics teaching were divided as f=6 and not sufficient f=18.
According to Table 9, the majority of teachers have the opinion that the time allocated to mathematics teaching in distance education is insufficient.

3.9. Findings of teachers' views on Education Information Network tv course content in mathematics teaching in distance education

During the Covid-19 pandemic period, the views of primary school teachers on Education Information Network TV course contents in distance education mathematics teaching are given in Table 10.

Table 10: Views of Primary School Teachers on Education Information Network TV Course Contents in Teaching Mathematics in the COVID-19 Pandemic Period

Themes	**f**
I like.	13
I don't like.	4
Can be improved.	4
No idea.	3

In Table 10, the views of primary school teachers on Education Information Network TV course contents in distance education mathematics teaching during the Covid-19 pandemic period are shown in 4 themes as f=13, I don't like f=4, can be improved f=4, I have no idea f=3.

According to Table 10, primary school teachers said that they generally liked Education Information Network TV. There are also teachers who never examine or watch Education Information Network TV. T8; *"I find the Education Information Network TV course contents very positive and effective. I think that every student who participates has benefited from Education Information Network in a very meaningful way."* T14; "*Education Information Network TV course content can be supported with videos that can be enriched with more enrichable materials, let's say a little more plain logic, that is, the narration can be enriched by the other person listening to it."* T6; *"Well, they explain it nicely by going down to the student level." There are also teachers who never examine or watch Education Information Network TV*." T13; *"Frankly, I couldn't look at the Education Information Network TV course contents much. Since I use these platforms, I don't have much information."* T4; *"I don't use it a lot, it's a shortcoming. That's why I don't know the contents."*

3.10. Findings on students' approaches to mathematics teaching in distance education

The views of primary school teachers about students in the distance education process are given in Table 11.

Table 11: Views of Primary School Teachers of Mathematics Teaching in Distance Education of Students in Mathematics Teaching during the COVID-19 Pandemic Period

Themes	**f**
Lots of interest and desire.	20
Little interest or desire.	4

In Table 11, during the Covid-19 pandemic period, the **view**s of the primary school teachers in teaching mathematics in distance education are stated by the teachers as high interest and desire f=20, and low interest and interest f=4.

As to the table, according to the opinions of teachers in teaching mathematics in distance education, students are mostly interested and willing to the lesson. T21; *"Well, they do it very happily. My students are very enthusiastic and even say how many times I teach, let's do math or something. That's why we're in a further place right now."*

3.11. Findings on the effects of parents on mathematics teaching in distance education

The effects of parents on distance education mathematics teaching of primary school teachers during the Covid-19 pandemic period are shown in Table 12.

Table 12: Views of Primary School Teachers on the Effects of Parents on Teaching Mathematics in Distance Education during the COVID-19 Pandemic Period

Themes	Sub-themes	f
Positive	As an assistant	10
	Control and providing feedback	5
Negative	Misdirection	5
	Do it yourself	4

As given in the Table 12, the effects of parents on distance education mathematics teaching of primary school teachers during the Covid-19 pandemic period were examined in 2 themes as 'positive' and 'negative.' Positive theme; It is divided into 2 sub-themes as helping (f=10) and providing control-feedback (f=5). The negative theme formed the sub-themes of misdirecting (f=5) and making oneself (f=4).

When we look at Table 12 in general, the majority of classroom teachers said that parents had positive effects in terms of providing control and feedback at home during the process and helping the teacher. T4; *"I think it had a positive impact as a first class because they gave immediate feedback right next to him and helped because there was a question he could not do, I think it was positive."* T14; *"The positive aspects are that our parents, who are really at peace with mathematics, support the activities we do for their students. They explained the negative effects of the parents in terms of doing the activities themselves without having the students make them do the activities and transferring the subjects to the students as they know them*." T15; *"There are also some parents who do not provide the environment for the child, the noise becomes his brother, the voice speaks next to him and chats. Then our success decreases because the child's interest and attention inevitably gets distracted, or the Count does not do his homework, he does not provide control, then the success goes backwards."* T5; *"I mean, there are positive aspects and negative aspects as well. The negative side is that they tell the child the answer right away without giving the child the opportunity to think and do it, and the child says the answer before he/she learns. You can't intervene either."*

4. Discussion, Conclusion and Recommendations

As a result of the findings of this study, in which the opinions of class teachers on mathematics teaching in distance education were taken during the Covid-19 pandemic period; teachers' views towards mathematics teaching in distance education, teachers' views towards concretization in distance education mathematics teaching, methods and techniques used by teachers in distance education mathematics teaching, teachers' views towards mathematics teaching in distance education and digital platforms used in teaching mathematics in education, opinions of teachers on readiness for higher education in mathematics teaching in distance education, general problems faced by teachers in teaching mathematics in distance education, opinions of teachers on measurement-evaluation in teaching mathematics in distance education, opinions of teachers on course times in mathematics teaching in distance education, teachers' views on distance education mathematics teaching opinions of Education Information Network TV course content in teaching mathematics in education, students' views on math in distance education approaches to mathematics teaching, parents' effects on mathematics teaching in distance education are given under the headings.

In the first title, teachers' views towards teaching mathematics in distance education were discussed with their positive and negative themes. The sub-themes of benefiting from visuals under the positive theme, digital

activities, providing self-confidence and providing the opportunity for repetition; under the negative theme, the sub-themes of lack of participation, lack of feedback, monotonous and abstraction of the expression were formed.

A rapid transition has been achieved from face-to-face education to distance education. In this study, the researchers examined the competencies of the instructors who will give distance education against the new system. As a result of providing instructor training to the instructors with distance education, it contributed positively to their thoughts on self-efficacy and benefit. First of all, the teacher's perspective on distance education will affect the adoption of a new order and efficiency (Ak et al. ,2021).

By taking into account the opinions of teachers, students and parents, researchers working on the efficiency of distance education during the Covid 19 pandemic period, students' inability to actively participate in the lesson, parents and teachers not having sufficient guide model features, not being able to follow up students remotely, system-related problems, technological inadequacy, internet infrastructure. They revealed the existence of many problems such as the problem of (Basaran et al., 2020).

Teachers' views towards concretization in mathematics teaching in distance education were stated as "I could" and "I couldn't." Primary school teachers who can embody used sharing on the digital screen and materials at home as a method of concretization.

The methods and techniques used by teachers in teaching mathematics in distance education were examined under one theme as traditional teaching method. Among the traditional methods, the question-answer technique, the lecture method and demonstration technique were adopted the most.

The digital platforms used by the teachers in teaching mathematics in distance education were examined in two themes as the site used and the live course software used. While the teachers were conducting their course presentations through Education Information Network and ZOOM software, they benefited from the digital books of Okulistik, Morpa Kampus, Education Information Network TV course contents and other publications.

In this study, the Zoom program, Education Information Network distance education system and Education Information Network TV, which are actively used in the distance education process, are emphasized. While the teachers said that they were prepared for the process, they found Education Information Network sufficient in terms of education. They said that platforms in distance education are inadequate in terms of psychomotor skills, measurement and evaluation, and communication. The lack of interaction caused the problem of not being able to reflect the emotions. The inadequacy of distance education has been emphasized in the courses that require applied education. It is thought that teachers and students should receive training in order to be effective in Zoom, Education Information Network and Education Information Network TV applications. It has been suggested that efforts to improve internet infrastructure, technological material support, online platform usage training should be done (Balaman & Hanbay Tiryaki, 2021).

Teachers' views on readiness for higher education in mathematics teaching in distance education are mostly negative. In three separate themes stating that they are ready for the next level, they have deficiencies and they are not ready, the teachers focused on the themes that the students have deficiencies and are not ready.

Under the title of general problems faced by teachers in teaching mathematics in distance education, it has been observed that problems arise due to the lack of learning by doing-experience, by touching, student indifference, lack of feedback and lack of face-to-face interaction. According to the research, it was concluded that the time spent by the students on social media increased when the web-based learning was switched, and online education was most effective at the theoretical level and was not as efficient as face-to-face education (Keskin & Ozer Kaya, 2020).

Many problems have emerged in distance education. In this study, which is thought to affect the changes aimed at minimizing these problems, the subjects that teachers had the most difficulty in the process were communication

problems, problems with parents, and problems with learning. Teachers stated that they tried to create a feeling of being at school by doing activities to motivate students in this process, and they encouraged their students by saying nice words (Cakin & Kulekci Akyavuz, 2020).

Karatas examined the views of people and the level of these views after the Covid 19 pandemic. As a result of the research in his study, a growth was observed in the behaviors to comply with the pandemic rules, and a decrease was observed in people's desire to be in crowded environments. At the same time, the pandemic has increased people's sense of curiosity and affected their news watching behavior (Karatas, 2020).

Teachers' views on measurement-evaluation in mathematics teaching in distance education were examined with the themes of "I did" and "I did not." Primary school teachers who stated that they made measurement-evaluation in mathematics teaching in distance education benefited from exam-trial and question-answer techniques as measurement-evaluation methods.

Pre-service teachers evaluated the results of online training positively. While they found online training useful in terms of time and time saving, they also stated their disadvantages in terms of assessment, application, follow-up and equal opportunity compared to face-to-face training(Gorgulu Ari & Hayir Kanat, 2020).

The themes of 'adequate' and 'not adequate' emerged under the heading of teachers' views on course times in mathematics teaching in distance education. In distance education, most of the primary school teachers think that the time allocated to mathematics teaching is insufficient.

The themes that emerged as a result of teachers' views on Education Information Network TV course contents in distance education mathematics teaching are 'I like,' 'I don't like,' 'can be improved' and 'I have no idea.' The majority of the teachers stated that they examined the course contents of Education Information Network TV and that it was usable, but the students could not benefit from it due to the time.

When students' approaches to mathematics teaching in distance education are examined, it has been revealed that students' interest and desires for mathematics lessons in distance education are as high as in face-to-face education. It was stated by the teachers that the students especially wanted to do the mathematics lesson more than other lessons.

When the effect of parents in mathematics teaching in distance education was examined under the headings of "positive" and "negative" themes, primary school teachers talked about the positive effects of parents in this process. Teachers stated that parents form the gap between the problems that may arise due to the inability of the teacher and the student to come together and provide the best help to the teacher in this process.

With the Covid 19 pandemic process, a rapid transition to distance education has been achieved in educational institutions. Researchers discussed distance education systems with the participation of 33 universities in Turkey. The research is important in order to strengthen the effectiveness in distance education. As a result of the study, it has been revealed that universities carry out the distance education process mostly by using Moodle and ALMS management systems. While Big Blue Button was the most preferred program in live lessons, Zoom and Microsoft Teams programs were also used. It has been determined that universities mostly do not use the synchronous teaching method known as mutual coursework in different places at the same time. It is seen that attendance to courses is followed in more than half of the universities. The majority of the participants are of the opinion that distance education should become widespread. Nearly half of the majority stated that the subjects were not sufficiently understood with distance education. Participants think that instructors should receive training on distance education (Durak, et al., 2020).

Focusing on the social effects of the Covid 19 pandemic process, which affected the whole world in 2020, on children, Erol concluded that with the increase in health problems of children, other developmental areas were negatively affected. The fact that people have to stay at home due to the pandemic has shown that the mental health

of children is affected by causing many problems in the family. He made various suggestions to ensure that children are least affected by this process. He emphasized that psychological counseling centers that will provide free service should be opened and necessary training should be given in order to establish communication in accordance with the age levels of children (Erol, 2020). Due to the pandemic, schools suspended face-to-face education and made a rapid transition to distance education and online courses. This change has affected the efficiency level of education in students. Countries had to abide by the special rules and the general rules taken around the world. Legislation, infrastructure, human resources, content and application themes were taken into consideration at the basis of the decisions to be taken in distance education applications throughout Turkey. In the studies, it is thought that the online education system, which started with necessity, will be the basis of the education system in the future (Telli Yamamoto and Altun, 2020).

Examining the advantages and disadvantages of distance education studies carried out worldwide due to the Covid 19 pandemic, Er Turkuresin reveals the principles of economy, repetition, time and space flexibility as the advantages of distance education; It has been described as disadvantages of learning not being permanent, problems stemming from assessment and evaluation, internet shortage, system problems and lack of interaction. By collecting the opinions of the candidates who received teaching training at the university via e-mail, it was concluded that the students were moderately satisfied with the distance education (Er Turkuresin, 2020).

Kurtdas, who investigates the effects of the Covid 19 pandemic process on society in many ways, emphasizes that the pandemic has created a traumatic effect in all areas of the world. Covid 19 has caused many changes in the economic, social and cultural fields. He emphasized that it is not possible to predict exactly in which direction the changes will affect the countries in the long run, and that it is not necessary to resist the changes caused by the pandemic. Socially, the transition to digital life in the world has accelerated with the pandemic. A rapid transition has made to the digital world in a way that people can take care of all their needs almost without leaving the house, and societies have had to keep up with it(Kurtdas, 2020).

Opinions about education during the pandemic period form the basis for the studies to be carried out. In this respect, Guler inquired the complaints submitted to private schools during the pandemic period in his study. It created ideas for suggestions before possible risks turn into a crisis. When he examined which word registrations people made the most complaints on the internet portal, he found that complaints were created with the word groups such as education fee, meal and book fee, not being able to offer healthy lessons in distance education, and cancellation of registration (Guler, 2020).

The researchers, who examined the effects of Covid 19 on teachers and students separately with the opinions of students and teachers, searched by writing terms using a database. With Covid 19, students feel restricted in the economic and social areas. Students who state that restrictions trigger aggressive behavior on themselves generally have negative feelings during the Covid 19 pandemic process. They also often experience insomnia, loss of appetite, and moodiness. Students prefer face-to-face education at school if they positively evaluate the repetition aspect of videos in distance education. They also stated that they had problems in motivating the lessons and in social interaction. They expressed the positive aspects of distance education as watching the video recordings again and providing learning in accordance with the individual pace. When the opinions of the teachers are examined, it is revealed that distance education is not adopted. The inability to provide sufficient interaction and the inability to make the desired presentations on theory and practice make distance education negative for teachers (Cicek, et al., 2020).

During the Covid-19 pandemic period, the following suggestions can be made for primary school teachers to teach mathematics in distance education:

- Technology trainings can be prepared for teachers, students and parents of students who have problems in using technology due to the closure of schools in distance education as a requirement of the new education model with the Covid-19 pandemic.
- In-service training can be organized in order to increase the competence of teachers in the distance education approach adopted due to the Covid-19 pandemic.

- In order to maintain equality of opportunity in education in the distance education process, the internet infrastructure of all geographical areas and necessary technical services can be expanded.
- Assistance services can be provided for students who cannot attend distance education due to economic reasons.
- Seminars and events can be organized in order to prevent psychological problems that may occur due to quarantine in teachers, students and parents during the distance education process.
- Compensatory education programs can be made for the subjects that are considered insufficient in the distance education process.
- The effectiveness of the subject can be investigated by adopting different titles and different models on the subject covered in this study.

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