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INVESTIGATION OF MATHEMATICS TEACHERS' HOMEWORK APPROACHES BEFORE AND DURING THE PANDEMIC

Research article

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Investigation of Mathematics Teachers' Homework Approaches Before and During the Pandemic

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Abstract

The aim of this research is to examine the mathematics teachers' approaches to homework before and during the pandemic. The method of the study is a case study, one of the qualitative research methods. The participants of the study consist of 18 mathematics teachers who work in Sivas state schools affiliated with the Ministry of National Education or give private lessons in Sivas in the 2021-2022 academic year and volunteer to participate in the study. The data were collected with the data collection tool developed by the researchers, first in written form, and then through semi-structured interviews with volunteers. Content analysis was used in the analysis of the data. According to the findings, teachers' homework objectives are reinforcement, repetition, self-control, and individual learning. They also described homework as work done in out-of-school learning environments. Reasons for assigning homework; they expressed it as determining whether the students understood or not, encouraging them to study, dealing with problems alone for individual learning, working regularly, and associating the acquired knowledge with other subjects. They stated that before the pandemic, they prepared the content of the homework assignments for the exam, suitable for the achievements, tests, and worksheets, from easy to difficult, simple and in accordance with the achievement, while they prepared easier tests and worksheets from the content of EBA during the pandemic period. On the other hand, while expressing the methods of giving homework as test books, supplementary resources, worksheets, and textbooks before the pandemic, they stated that they gave homework from EBA, Whatsapp, and digital (Z) books in addition to what they did before the pandemic, and they did online exams and digital activities. It is also among the findings that homework follow-up is more difficult during the pandemic process and there are difficulties in reaching students and parents in providing feedback.

Keywords: Mathematics Homework, Teacher Opinions, Pandemic, Homework in Distance Education.

1. Introduction

The planned and programmed part of education is implemented in schools. It is thought that the time spent by the student at school is insufficient in order to reach the goals determined in education. For this reason, education should be supported by moving it to out-of-school environments. Teachers try to achieve this with their homework. Homework is one of the teaching techniques used by teachers. Homework provides students with many benefits such as repeating information, making it permanent, taking responsibility, being in cooperation, socializing, having self-confidence, making decisions, using time effectively, and adapting



their knowledge to new situations. Teachers give homework to their students for many reasons. According to Gürlevik (2006), homework is one of the methods used to transfer information from short-term memory to long-term memory. Barnes (2001) stated that homework is a teaching strategy used by teachers all over the world. Indeed, homework has always been a subject of attention by many educators and researchers. Many subjects such as whether the homework should be given, how often it should be given, how long the homework should take for the student, the content of the homework, the help that the student can receive while doing homework, the control of the homework, and how the homework should be used by the teacher have been the focus of research (Akyüz, 2013; De Jong, Westerhof & Creemers, 2000; Deringöl, 2022; Doctoroff & Arnold, 2017; Fernández-Alonso, Suárez-Álvarez, & Muñiz, 2015; House, 2002; Kalenkoski & Pabilonia, 2017; Taşlıcalı, 2020; Trautwein, Köller, Schmitz & Baumert, 2002; Zhu & Leung, 2012). Homework can be given for many purposes that positively affect student performance, such as reinforcement, repetition, the discovery of new information, recognizing the connection between previous information and new information, and improving self-confidence, self-control, and own learning and research skills. When the literature is examined, many studies have been carried out on homework in different disciplines. In science education (Gedik, Altıntaş, & Kaya, 2018; Tuncer & Altunay, 2009), Turkish education (Gedik & Orhan, 2013; Yılmaz, 2013), Biology education (Yeşilyurt, 2006), primary school education (Baynazoğlu, 2019; Kalsen, Kaplan & Şimşek, 2020) Chemistry education (Sarıgöz, 2011; Yücel, 2004) and Mathematics Education (Acar, Ersoy, Eser & Vural, 2013; Altıntaş, 2017; Arıkan, 2017; Deringöl, 2022; Gürlevik, 2006; Kapıkıran & Kıran, 1999; Kaplan, 2018; Kırmızıgül, 2018; Özcan & Gögebakan-Yıldız, 2017; Uçar, 2018; Tertemiz, 1991) are among these studies. As a matter of fact, although it has become the focus of attention in different disciplines, one of the lessons that teachers frequently use in homework to support learning at school is mathematics. Kaur (2010) stated that teachers give their students assignments for teaching purposes in order to reinforce what is taught in the classroom and to prepare them for upcoming exams. Researching the relationship between homework and mathematics achievement, Arıkan (2017) concluded that students who are given homework more often are less successful, and students who spend more time on homework are more successful. In the study of Deniz (2019), it was determined that students' metacognitive skills, preschool education, and homework were effective in mathematics courses and academic success. Studies on homework show that the importance of homework in teaching is so great that it cannot be ignored, especially in mathematics.

With the rapid spread of the COVID-19 pandemic to the world, our country switched from face-to-face education to distance education on March 23, 2020. As a reflection of the pandemic process, mathematics education in the pandemic process has been the focus of attention. Korkmaz (2021), in his study with university students, stated that Google Classroom is an effective application in distance education, but it is ideal for education courses and is insufficient in field courses. Şen (2021) stated that, during the pandemic process, the mathematics course broadcasts made through television provided positive contributions such as ensuring continuity in education, learning at one's own pace, repetitions, daily life connection, use of technology, and visual richness, but the limitation of measurement and evaluation with the use of different teaching methods, and techniques, stated that they had some deficiencies in terms of communication and feedback. In the study conducted by Özdemir and Çelik (2021), it was found that teachers experience difficulties arising from technology and external factors specific to students, teachers, and mathematics in the distance education process, to follow and use technology to overcome these difficulties, to eliminate the lack of documents/materials, to ensure active participation of the student. They stated that they took precautions such as using the lesson time effectively and ways of communication. In addition,

they stated that the measures taken by the teachers working in the rural areas and the teachers working in the city center differed. They evaluated this situation as a reflection of the inequality of opportunity in education in the distance education process.

The results obtained from the studies related to the pandemic show that this transition process affects our teachers' lesson materials, teaching strategies, planning, measurement and evaluation methods and many educational activities. Despite the importance of homework in the learning-teaching process, there has been no study on homework during the pandemic process. For this reason, since homework plays an important role in out-of-school learning, it is the aim of this study to examine and compare mathematics teachers' approaches to homework before and during the pandemic. It is anticipated that the findings obtained from the study may have important contributions to the literature. The problem sentence of this study is “What are the effects of the pandemic process on homework according to mathematics teachers?” is in the form. The sub-problems of this problem are as follows.

1. What are the opinions of mathematics teachers about homework?
2. According to the opinions of mathematics teachers before and during the pandemic
 - a) Have there been any changes in the content of your assignments?
 - b) Have there been any changes in homework assignment methods?
 - c) Have there been any changes in the methods they use in homework follow-up?
 - d) Have there been any changes in the methods of providing feedback to students and parents?
 - e) Have there been any changes in the frequency of homework assignments?
 - f) Have there been any changes in homework assignment purposes?

The duties and responsibilities of teachers, students, parents, and school administration have been differentiated in the education and training process of our age. It is to teach the learning that is required from the teacher in the education and training process, which assigns a role as a guiding guide to the teacher who puts the student in the center. For this, teachers need to train students who can use and develop the skills of research, interpretation, reasoning, analysis, problem-solving, and being social. Teachers need to use appropriate methods and techniques in order to raise students with the skills expressed. One of the methods and techniques used is homework. When the literature was examined by Oğuz (2010), it was stated that homework prompted students to research, gave them the habit of using time in a planned manner, developed a sense of responsibility, provided permanent learning, and increased students' success. Trautwein and Köller (2003) stated that homework directly affects students and parents. In addition, international students such as the Program for International Student Assessment (PISA), Progress in International Reading Literacy Study (PIRLS), and Trends in International Mathematics and Science Study (TIMSS) comparative studies have also explained that the achievement of Korean and Japanese students is higher than students in western countries with homework. Therefore, they stated that the effects of homework at the international level and its contribution to improving students' skills began to be examined in various studies. As a result of the research conducted in the literature, a limited number of studies were found about homework in mathematics lessons in our country. The effect of traditional and structured homework in mathematics lessons in primary school sophomores on students' academic success and attitudes towards homework (Elgit, 2019), the effect of homework duration and frequency in fourth grades on student achievement (Taşlıcalı, 2020), the relationship between mathematics homework variables and mathematics achievement (Aklar , 2019), examining the use of web technologies in homework from the aspects of teachers and students (Altuntaş, 2017), opinions of teachers, students and parents in secondary

school mathematics homework (Kaplan, 2018), examining the opinions of parents in mathematics homework in terms of some variables (Kırmızıgül, 2018), teacher and student views on homework (Gürlevik, 2006), the effect of homework and project on mathematics achievement in primary school sophomores (Özcan, 2003), and teachers, students and parents' perceptions of giving mathematics homework (Uçar, 2018). No study has been found in which the opinions of mathematics teachers about homework in mathematics lessons during the pandemic process or their comparative views about homework before and during the pandemic period. For this reason, this study is important in terms of providing guiding results for mathematics teachers and educators in Turkey in terms of homework during the epidemic process. It can also be beneficial in terms of establishing an effective and applicable homework policy in our country under all circumstances. In this research, it is thought that it will be a guiding example for our teachers about the content, follow-up, feedback, frequency of giving, method, and purpose of homework in the changing educational environment with the COVID-19 process in mathematics lessons and for other studies to be done during the epidemic processes.

2. Method

This research aims to examine the homework approaches of mathematics teachers before and during the pandemic. In the research, a case study, one of the qualitative research models, was conducted. Case studies were preferred in this study as they allow for an in-depth analysis of one or more cases. According to Yıldırım and Şimşek (2013), a case study is a research method that is based on how and why questions and allows the researcher to examine in depth a phenomenon or event that he cannot control. In other words, a case study is a longitudinal approach that explains the current situation or examines and analyzes the communication between the factors affecting change and development and shows the development in the process (Best & Kahn, 2017). According to Bogdan and Biklen (1998), they stated that the unit to be examined in the case study could be an individual or a community, as well as the situation of this person or community in a special process. In this study, written data were collected from the teachers who could reach them. Interviews were also conducted with teachers who volunteered.

2.1 Participants

The participants of the study consisted of 18 mathematics teachers who volunteered to participate in the study, working in Sivas public schools affiliated with the Ministry of National Education or giving private lessons in the province of Sivas in the 2021-2022 academic year. An easily accessible sampling method was used to determine the participants. Each participant was given codes such as T1, T2, First of all, data were collected from the teachers who could be reached in writing. In order to examine the data collected in writing in more depth, interviews were conducted with three teachers (T3, T8, T16) who volunteered based on the answers given. While selecting the interviewed teachers; their volunteering and their responses in the written data (answers that could not be clearly understood) were taken into account. The demographic information of the 18 teachers who participated in the study is given in Table 1.

Table 1. *Demographic Information of Teachers Participating in the Study*

Participant	Gender	Length of Service in the Profession (year)	Graduated Faculty	Level (Middle School/High School)	Grade Level(s) Currently Taught	Average Number of Students in Classes
T1	Female	1-5	Faculty of Education	Middle School	5-6	-
T2	Female	1-5	Faculty of Education	Middle School	8	less than 20
T3	Female	6-10	Faculty of Education	Middle School	5-6-7	less than 20 ve 21-29
T4	Male	Over 20	Faculty of Arts and Sciences	High school	9	30-39
T5	Male	16-20 Years	Faculty of Arts and Sciences	Middle School	6-7-8	-
T6	Female	Over 20	Faculty of Arts and Sciences	Middle School	5-6-8	30-39
T7	Male	6-10 Years	Faculty of Education	Middle School	5-6	less than 20
T8	Female	16-20	Faculty of Education	Middle School	5-8	less than 20
T9	Male	16-20	Faculty of Education	High school	12	30-39
T10	Female	6-10	Faculty of Education	High school	9-10-12	30-39
T11	Female	Over 20	Faculty of Arts and Sciences	High school	12	30-39
T12	Male	Over 20	Faculty of Arts and Sciences	High school	9-10-11-12	30-39
T13	Female	1-5	Faculty of Education	High school	9-10-11-12	less than 20
T14	Male	16-20	Faculty of Education	Middle School	5-7	30-39
T15	Female	6-10	Faculty of Education	Middle School	5-6	21-29
T16	Female	6-10	Faculty of Education	Middle School	5-6-7	21-29
T17	Female	1-5	Faculty of Education	Middle School	5-6-7-8	20 altı
T18	Female	6-10	Faculty of Education	Middle School	7-8	30-39

As can be seen from Table 1, four teachers participating in the study are graduates of the faculty of science and literature. Fourteen teachers are graduates of the faculty of education. There are four teachers with 1-5 years of service, six teachers between 6-10 years, four teachers between 16-20 years, and four teachers with more than 20 years of service.

2.2. Data collection tool

Data were collected using a semi-structured interview form consisting of 22 questions. In order to answer the sub-problems of the study, the interview questions prepared by the researchers were presented to the opinion of two experts in mathematics education, and the content validity was reviewed and finalized in line with the suggestions. The interview form consists of two parts. In the first part, there are questions containing demographic information, and in the

second part, there are questions prepared according to the seven sub-problems determined. In Table 2, the themes are determined according to each sub-problem, and the interview questions related to the themes are given.

Table 2. Problems, Themes, and Interview Questions for Each Theme

Theme	Sub-Problems	Interview Questions
Opinion on Homework	What are the opinions of mathematics teachers about homework?	1) What do you think about homework? 2) Explain what is homework? Do you think homework should be given? Why?
Content	What are the differences between the content of homework given by mathematics teachers before and during the pandemic?	3) How would you prepare the content of the homework given before the pandemic? 4) How would you prepare the content of the homework given during the pandemic process? 5) During the pandemic and before the pandemic Is there a difference in the content of the homework given? If so, what difference is there?
Method	What are the differences between the methods of giving homework by mathematics teachers before and during the pandemic?	6) How was your homework method before the pandemic? 7) How was your homework method during the pandemic? 8) Has your method of homework changed before and during the pandemic? If it has changed, what kind of change is there?
Homework Follow-up	What are the differences between the methods used by mathematics teachers to follow up on homework before and during the pandemic?	9) How would you follow up on homework before the pandemic? 10) How would you follow up on homework during the pandemic process? 11) Has the follow-up of homework changed before and during the pandemic? If it has changed, what kind of change is there? 12) What are the conveniences and difficulties in the follow-up process of homework before and during the pandemic?
Feedback	What are the differences between the methods of providing feedback to students and parents in homework assignments before and during the pandemic?	13) How did you provide feedback to students and parents on homework before the pandemic? 14) How did you provide feedback to students and parents in their homework during the pandemic process? 15) Has your method of providing feedback to students and parents changed before and during the pandemic? If it has changed, what kind of change is there? 16) What are the conveniences and difficulties in the process of providing feedback to students and parents on homework during the pandemic process?
Frequency of Homework	What are the differences between the frequency of giving homework by mathematics teachers before and during the pandemic?	17) How often did you give homework before the pandemic? 18) How often did you give homework during the pandemic? 19) Has the frequency of homework changed before and during the pandemic? If it has changed, what kind of change is there?
Purpose of Homework	What are the differences in the	20) What is your purpose for giving homework before the pandemic?

	purposes of homework assignments of mathematics teachers before and during the pandemic?	<p>21) What is your purpose for giving homework during the pandemic process?</p> <p>22) Has your purpose for homework changed before and during the pandemic? If it has changed, what kind of change is there?</p>
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As can be seen from Table 2, two questions about their views on homework in the interview form, three questions about the content of the homework given, three questions about the method of assigning homework, four questions about the follow-up of homework, four questions about feedback, Homework There are three questions about the frequency of giving homework and three questions about the purpose of giving homework. It is in the form of three questions about the purpose of giving homework.

2.3. Data Collection and Analysis

The interview questions in the data collection tool were sent via WhatsApp due to the pandemic, and the teachers took the printout of the interview questions and answered them on paper, took photos of the papers with the answers, and sent them to the researcher via WhatsApp. After the written data were collected, semi-structured interviews were conducted with volunteer teachers (T3, T8, T16). Interviews were held via the Zoom program due to the pandemic process. The process was recorded in order to prevent data loss during the interviews. It was stated to the participants that the interviews would be recorded, but it was stated that the recordings kept at the end of the interviews could be listened to by the participants, and the opinions in the recordings could be optionally removed partially or completely if necessary. Thus, it was tried to prevent the negative effects of recording the interviews on the participants. The interviews lasted approximately 35-40 minutes. First of all, the written data and the audio recordings of the interviews with the teachers were transferred to the computer environment. Content analysis was used in the analysis of the data. According to Yıldırım and Şimşek (2013), the data were analyzed in four stages. These stages are; coding the data, organizing the codes and themes, defining and interpreting the findings, and determining the themes of the coded data. First, themes were determined according to each sub-problem. The written data were tabulated separately for 22 interview questions prepared according to the sub-problems. Codes and, if any, sub-codes were determined from these tables. For each interview question, tables with themes, codes and, if any, sub-codes were created according to the answers of the participants. Findings were interpreted according to the tables obtained. The obtained data were digitized and frequency and percentage tables were created. Similar items in the expressions were grouped and thematized in accordance with the group.

In order to ensure the reliability of the research, expert opinion was taken to confirm whether the themes obtained represent the codes. The field expert was asked to match the determined codes with the themes. By comparing the matching made by the field expert with the matches made by the researcher, Miles and Huberman's (1994) percentage of agreement formula was used for the reliability of the research. Accordingly, the agreement was calculated as 90%. Thus, it was seen that the desired level of reliability was achieved. In qualitative research, validity is the degree to which the researcher solves the problem in an unbiased manner as possible. In qualitative research, validity is examined in two ways as internal and external validity (Baltacı, 2019). Internal validity: It is the adequacy of the process followed while reaching the research results in revealing the studied reality. "Are the research findings internally consistent and meaningful? Are there specific principles, rules, or strategies used to confirm the findings? Were the findings found to be realistic and confirmed by the individuals

participating in the research?" questions such as these are aimed at increasing internal validity (Morse, 2016; Patton, 1990). External validity can also be called the universality or generalizability of research results. Based on the assumption that social events change according to the environment, it can be said that no research result can be directly generalized to another situation. However, in the generalization mentioned here, while phenomena are similar to each other at similar times, similar events are universal to the extent that they can produce similar results at different times (Baltacı, 2018; Creswell, 2002; Guba & Lincoln, 1994; Merriam, 1998; Teddlie & Yu, 2007). In order to ensure external reliability, it is necessary to report the research in a transparent way and to clearly indicate the participants and other data sources (Connelly, 2016). In order to ensure internal reliability; In the analysis of the collected data, it is necessary to get analysis support from other researchers and experts or to increase the consistency of scoring with different coders. In addition, data analysis based on a conceptual framework that was created and defined in detail before the data of the research was collected will contribute to internal reliability (Baltacı, 2017; Baxter & Jack, 2008; Creswell, 2002; Guba & Lincoln, 1994; Kitzinger, 1995; Kvale, 1994; Merriam & Grenier, 2019; Neuman and Robson, 2014). Various measures were taken by the researcher in order to minimize or eliminate the factors affecting the validity and reliability of the study (Aydın, 2014; Yıldırım & Şimşek, 2013). To ensure the internal validity of the study; the semi-structured interview form prepared by the researcher to be used in the study was presented to expert opinions and direct quotations were made. In order to ensure external validity; The research model, study group, data collection tools, data collection, data analysis, and how the findings were organized are described in detail. The obtained results are appropriately discussed in the conclusion part.

4. Findings

4.1. Findings Regarding the First Sub-Problem

The first sub-problem is "What are the opinions of mathematics teachers about homework? ". To answer this sub-problem, "What do you think about homework? What is homework? Please explain" and "Do you think homework should be given? Why?" questions were posed. The answers given by the mathematics teachers participating in the study are summarized in Table 4 and Table 5.

Table 4. Findings related to "What do you think about homework? Explain what is homework?"

Theme	Code	Participant	f	%
Opinions on Homework	Reinforcement	T1, T2, T4, T5, T8, T9, T11, T12, T14, T15, T16, T17	12	66,6
	Repetition of The Lesson	T2, T3, T7, T8, T10, T18	6	33,3
	Permanence	T17, T13	2	11,1
	Remembering And Learning	T15	1	5,6
	Homework Done Outside Of School Time	T3, T6	2	11,1
	Individual Work	T4, T16	2	11,1
	Activities/Work At Home	T17, T15	2	11,1
	Research Questions	T17	1	5,6
	Learning Experience	T16	1	5,6

As seen in Table 4, 12 of the teachers participating in the study emphasized the reinforcement feature of homework, six of their repetition, two of them both reinforcement and repetition, one of them not forgetting and learning, and two of their permanence. Two of them

expressed their homework as homework done outside of school time, two of them as activities/studies done at home, two of them as individual study, and one of them as research questions.

Table 5. Findings related to “Do you think homework should be given? Why?”

Theme	Code	Sub Codes	Participant	f	%
Opinions on Homework	Must be given	Control, detection	T1	1	5,6
		Encouragement, responsibility	T2, T16	2	11,1
		Dealing with problems alone	T3	1	5,6
		Reinforcement	T5, T6, T9, T14, T15, T17, T18	7	38,9
		Regular work	T7	1	5,6
		Again	T10, T11, T4, T12, T13, T18	6	33,3
		Adapting acquired knowledge to other subjects	T8	1	5,6
		Permanence	T13	1	5,6
		Partnership	T16	1	5,6
		work habit	T16	1	5,6
		Realization of learning	T16	1	5,6
Identification/completion of learning deficiencies	T17, T5	2	11,1		

As seen in Table 5, all of the teachers who participated in the study stated that homework should be given. The reasons for giving homework are to determine whether they understand the subject, to identify the points they do not understand, to encourage the study, to acquire study habits, to identify missing learning, to cooperate, to deal with problems alone for individual learning, to reinforce the subjects, to study regularly and to adapt the acquired knowledge to other subjects. have expressed. The number of teachers who stated that it is given for reinforcement and repetition is higher. Excerpts from the teachers' opinions are given below.

“.....homework makes sense in terms of reinforcing students when appropriate. However, the excess is harmful” (T1)

“homework is the work given with the aim of reinforcing and repeating the topics covered in the lessons. When homework is not given, I think that homework should be given because the student does not think that he/she should study” (T2)

“...homework should be more precise than the math course because the math course is now impossible to complete within the school boundaries. The student should solve and see questions from various sources. In my opinion, homework is the individual work that the student should do in order to consolidate and improve what the teacher tells” (T4).

“...it can be defined as an out-of-school effort to repeat the information learned at school, to perpetuate and consolidate the information. In this way, new information is added to the mind of the student outside of school....It must be given. It is necessary for the student to revive the knowledge he learned at school in his mind and adapt this knowledge to new questions and new topics” (T8)

“... is another part of their learning experience, where they reinforce the knowledge they learned in school. I think giving homework supports learning and is necessary. It is given to solve the learning problem of the remaining student in the course and to increase the individual learning of the middle and good students...it is important because it causes students to gain the habit of working, sometimes to cooperating with their families, to realize the learning situation, and to take responsibility for the student.

Of course, the duration, amount, content, and control of the homework are important factors in the homework” (T16)

As can be seen from the expressions, T1 emphasized that the homework given too much is harmful. T2 stated that when homework is not given, students do not think that they need to study because they do not take responsibility for learning. T4 emphasized that the achievements could not be achieved within the boundaries of the school, and the necessity of supporting it with out-of-school learning environments. However, as can be seen, T4 expressed homework as an individual activity. This was interpreted as homework activities based on group work were not given. However, T8 stated that assignments should be given to new questions so that they can transfer the knowledge they learned to new topics. Of course, it can be said that this is related to the content of the assignments given. Except for T8, the approaches of all teachers are in the form of repetition and reinforcement of the subjects covered in the lessons by homework. Teachers generally stated that homework should be given due to its repetition and reinforcement features.

4.2. Findings Regarding the Second Sub-Problem

The second sub-problem, “What are the differences between the content of the homework given before the pandemic and the pandemic process of the mathematics teachers?” The answer to the question has been sought. In order to answer this sub-problem, answers were sought for themes such as content, method, follow-up method, feedback, frequency, and purpose.

4.2.1. Findings from 'content of homework'

Findings from 'content of homework' are given in Table 6 and Table 7. In Table 6, findings related to “the content of homework” before and during the pandemic are given.

Table 6. Findings related to “How would you prepare the content of the homework given before the pandemic?” and “How would you prepare the content of homework given during the pandemic?”

Theme	Before the Pandemic					In the Pandemic Process			
	Code	Sub Codes	Participant	f	%	Code	Participant	f	%
Content of Homework	For Exam	-	T1	1	5,6	For Exam	T1	1	5,6
	Learning outcomes	Worksheet	T2	1	5,6	From EBA Content	T2, T3, T8, T13, T14, T15, T17, T18	8	44,4
			Test	T11	1		5,6	Simple	T5
	Easy to Difficult	Photocopy	T3;T18	2	11,1	suitable for learning outcomes	T6, T11, T17	3	16,7
	Simple and Suitable for learning outcomes	-	T5,T9	2	11,1	Easy and suitable for learning outcomes	T9	1	5,6
	Intensive and Comprehensive	-	T12	1	5,6	intermediate level	T12	1	5,6
	auxiliary resource	-	T4,T6,T7,T14, T16	5	27,8	From Helpful Resources	T4, T16,T17	3	16,7
	Test and Worksheet	-	T6, T7, T14,T18	4	22,2	Test and Worksheet	T7	1	5,6

Textbook	-	T8, T10, T14, T15, T17, T18	6	33,3	Textbook	T17, T18	2	11,1
Sample question preparation		T13	1	5,6	Online WhatsApp, Google Form	T3, T10,T13, T14, T15,T16	6	33,3
Research question and poster preparation		T17	1	5,6	Preparing activity videos	T16	1	5,6
Material preparation		T16	1	5,6				

**The answers of T6, T7, T14, T15, T16, T17 and T18 regarding the content of homework in the pre-pandemic period and a few codes are included. The answers of T3, T13, T14, T15, T16, T17, T18 regarding the content of homework during the pandemic process and a few codes are included.

As can be seen from Table 6, six of the teachers who participated in the study stated that while preparing the content of the homework given before the pandemic, they prepared tests and worksheets suitable for the exam, from easy to difficult, simple, and in accordance with the outcome. One teacher stated that she prepared more intensively and comprehensively in face-to-face education. While preparing the content of the homework given during the pandemic process, they stated that they prepared the content of the homework in accordance with the achievements, easy, simple, and plain, from the EBA content, auxiliary sources, in the form of tests and worksheets, suitable for distance education. Excerpts from teachers' opinions before the pandemic process are given below.

Before the pandemic process: "I give homework in the form of printed papers and photocopies containing easy to difficult questions about the subject" (T3)

Pandemic process: "I was doing the tests in Eba content and sending tests via WhatsApp" (T3)

While T3 clearly stated the homework contents from easy to difficult before the pandemic, he stated that he gave EBA contents during the pandemic period. There are no detailed explanations such as simple or difficult. He stated that he gave homework in the form of photocopies and tests, and he expressed the method of assigning homework for both processes. In the interview, the reason for giving homework content from easy to difficult: *"It's a custom order, I'm giving it in this floating way. In the process that goes as knowledge, comprehension, and synthesis, the child must first comprehend and then go hard, so I prepare it like this."* T3 also stated that he prepared homework contents for each acquisition in this way, that difficult questions in the fifth, sixth and seventh grades were more procedural, and that in the eighth grades he also included difficult questions for the high school entrance exam.

Before the pandemic process: "I was giving the exercises in the textbook and the questions that I compiled from different sources" (T8)

Pandemic process: "During the pandemic process, I gave the exercises at the end of the topic during the live lesson. Besides, I sent homework from WhatsApp groups and EBA"(T8)

Before the pandemic process: "...the test books in the hands of the students, the resources I have had good content for question assignments. Apart from that, I was given material assignments on concrete subjects. In these contents, the internet was shaped by articles and training videos" (T16)

Pandemic process: "It showed differences according to class levels. Of course, there were certain differences compared to face-to-face education. I could not give most of the assignments I gave by handing over concrete resources one-to-one before in distance education. Homework was shaped through test books, activity videos, and Google Forms" (T16)

T8 stated that before the pandemic, he gave questions compiled from written sources as homework, and during the pandemic process, he gave homework questions in the form of exercises, for this he used WhatsApp groups and gave homework from EBA. In the interview, he stated that he paid attention to the exercise style of the homework content, and the questions at the intermediate level, covering the whole class. In both processes; He made statements such as "If I give homework at the end of the lesson, I prepare questions consisting of content related to the achievement of that day" and "My method of assigning homework has changed during the pandemic process, so the content has changed". He explained the reason for the change in the content as not every student has the same conditions for accessing information. Therefore, he stated that he was not given homework in a way that would force the students, and he gave homework at a lower level compared to the pre-pandemic period. Rather than the content of the homework, T16 wrote on the interview form: "Where would you give homework from? and "How would you assign homework?" It was noted that he answered the questions. In the interview, T16 stated that he gave the homework from the test books, but he did not choose the test books at random. At the beginning of the term, the contents of the books were examined and he stated that books consisting of easy, medium and difficult questions were used and he determined the source according to the student with the lowest level. T16 explained, "I give assignments in the form of exercises at the beginning of the subject, which will consist of more difficult questions as the subject progresses". The use of material, T16 explained, "In distance education, for example, the sum of the interior angles of a triangle is 180° , the fifth grade students cut out of paper and made a side-by-side placement activity, took a video shot with their parents and provided their own learning, the information was more permanent and I saw the benefit." T16 also emphasized that volunteering is essential in video shootings. It can be said that the homework contents of T16 vary from simple too difficult in the form of practice, activity, design, and presentation according to each student and grade level. He also emphasized that the content of homework varies according to grade level (5th, 6th, 7th, 8th grade) and grade level achievement (poor, moderate, good, very good).

Table 7. Findings related to "Is there a difference between the content of homework given during the pandemic and before the pandemic? If so, what difference is there? "

Theme	Code	f	%	Sub Codes	Participant	f	%
Content of Homework	Yes	11	61,1	Multiple choice questions	T1	1	5,6
				Not taking responsibility	T4	1	5,6
				simple questions	T5, T9	2	11,1
				less questions	T6	1	5,6
				EBA - WhatsApp	T7,T17	2	11,1
				Online assignments with the use of technology	T8	1	5,6
				Due to communication with students	T12	1	8,3
				Writing the lecture notes	T15	1	5,6
				In geometry subjects	T16	1	5,6
	No	7	38,9	-	T2,T3,T10,T11, T13, T14, T18	7	38,9

As seen in Table 7, 11 of the teachers who participated in the study stated that there was a difference between the content of homework given during and before the pandemic, while seven of them stated that there was no difference. Teachers who stated that there was a difference stated that they included multiple choice and simple questions as reasons, kept the number of questions low, gave online assignments, used EBA content, and shared on WhatsApp groups. They emphasized that the students did not fulfill their responsibilities and

had communication problems. One teacher, on the other hand, gave homework in the form of writing the notes in the lesson, while another teacher stated that the content of geometry subjects changed. Excerpts from the teachers' opinions are given below.

“There was a difference. Because, before the pandemic, we usually had documents. The pandemic process created a virtual homework process and evaluation with the use of a little more technology” (T8)

“I can say that there were differences mostly for the 5th and 6th grades. At these levels, where there are mostly concrete subjects, since the lessons are taught with distance education, there is not much use of materials in the lesson and they cannot gain concrete experience, so I asked them to shoot videos explaining what they are doing especially on geometry subjects. I thanked them for these assignments by sharing them in the group” (T16)

T8 stated that the content of homework changed in both processes, while written documents were used, while virtual documents were used. In the interview, T8 also stated that since the method of giving homework has changed, its content has changed, and homework content has been prepared more easily and is suitable for all grade levels. In the interview, T16 stated that the content of geometry subjects in the 5th and 6th grades changed more. T16 stated that he wanted the students to shoot videos since there was not much use of materials in distance education. In the interview, T16 said, *“I didn't have much time to prepare materials in face-to-face education in the fifth and sixth grades. In order to make the information more permanent in distance education, I had material activities done and I saw that it was effective”* T3 also stated in the interview that the content of the homework was the same in both processes; *“I talked about the same thing. It has not changed much in terms of level or scope.”*

4.2.1. Findings from “homework assignment method”

In the sub-problem, *“What are the differences between the methods of giving homework by mathematics teachers before and during the pandemic?”* The answer to the question has been sought. To answer this sub-problem, *“How was your homework method before the pandemic?”*, *“How was your homework method during the pandemic?”* and *“Has your homework method changed before and during the pandemic? If it has changed, what kind of change is there?”* questions were posed. The answers given by the mathematics teachers participating in the study are summarized in Table 8 and Table 9.

Table 8. Findings related to “How was your homework assignment method before the pandemic?”, “How was your homework assignment method during the pandemic?”

Theme	Before the pandemic				In the Pandemic Process			
	Code	Participant	f	%	Code	Participant	f	%
Homework Assignment Method	Photocopy	T7,T9,T10	3	16,7	Digital events and Z books	T7	1	5,6
	Test	T1,T2,T3,T6, T11, T12, T14,T17	8	44,4	Test	T1, T17	2	11,1
	Helpful resources	T4, T6	2	11,1	Helpful resources	T4	1	5,6
	in the form of repetition	T14	1	5,6	in the form of repetition	T12,T14	2	11,1
	Textbook	T5, T7, T9, T15, T16, T17	6	33,3	Textbook	T16, T17	2	11,1
	Doing research	T12	1	5,6	video shooting	T16	1	5,6

at the end of the subject	T8	1	5,6	at the end of the subject	T8	1	5,6
Saying homework in lectures	T18	1	5,6	EBA, Whatsapp, online exams	T2, T3, T6, T9, T10, T11, T13, T14, T15, T16, T17, T18	12	66,6
Worksheet	T1, T2;T15,T17	4	22,2	Worksheet	T1, T5	2	11,1
Notebook	T10, T15	2	11,1				
Internet	T13	1	5,6				

As can be seen from Table 8, while the teachers participating in the study expressed their methods of giving homework before the pandemic in the form of notebooks, tests, auxiliary resources, worksheets, and textbooks, one teacher answered when he gave homework. In the pandemic process, while expressing the methods of giving homework in the form of tests, supplementary resources, worksheets, textbooks, EBA and WhatsApp, online exams, digital activities, Z books, and subject repetition, a teacher answered when he gave homework.

Before the pandemic process: “Before the pandemic, I was giving test assignments that I duplicated” (T3)

Pandemic process: “I gave a test on the EBA platform. In general, I was explaining the assignments by writing messages” (T3)

In the interview, T3 stated that he reproduced himself as a test in face-to-face education, gave homework to the evaluation questions from the book, and stated that he used the documents in the EBA during the pandemic process. T3 stated that he used videos and teacher tests while giving homework from the documents in EBA, and that he uploaded files to EBA several times.

Before the pandemic process: “I was giving homework at the end of each subject. These assignments were checked at school. Accordingly, the course and activity participation scores were supported” (T8)

Pandemic process: “I continued to give homework at the end of the topic during the pandemic process. In this process, the control of the assignments could not be ensured in a healthy way and I could not get enough feedback” (T8)

T8 stated that it was time to give homework by stating that T8 gave homework at the end of the subject before and during the pandemic process. Before the pandemic, T8 stated the contribution he made to the student’s participation scores in lessons and activities, and stated the purpose of giving homework, and the homework follow-up by stating that he checked it at school. He emphasized that homework checks could not be done regularly during the pandemic process.

Before the pandemic process: “...I was giving homework on the activities and tests in the book rather than using the necessary materials in the lesson, as I could easily understand whether I understood when I looked into the eyes of my students when I told them face to face at school” (T16)

Pandemic process: “... I mostly gave homework on the computer. I was preparing and solving timed tests for 8th graders with Google Forms or sharing the tests in groups via WhatsApp. It's the same in 7th grade. I was also sharing the videos and tests in EBA after the topic. I wanted to give lectures by supporting 5 and 6 with tests, having the activities in the school books practiced, and making videos on appropriate topics. I was sharing videos and tests from EBA again” (T16)

While T16 stated that he gave homework on the activities and tests in the book before the pandemic, he showed that he could make eye contact with his students and use appropriate materials in the lesson. He stated that he shared tests on digital platforms and used EBA content during the pandemic process. He emphasized that he had the activities in the textbooks done

differently in the 5th and 6th grades and that he wanted the students to explain their practices with video footage.

Table 9. Findings related to "Did your homework method change before and during the pandemic? and "If it has changed, what is the change? "

Theme	Code	Participant	f	%
Homework Giving Methods	No	T1, T3, T4, T5, T11, T13	6	33,3
	Yes	T2, T6, T7, T8, T9, T10, T12, T14, T15, T16, T17, T18	12	66,7

As seen in Table 9, when the teachers participating in the study compared the homework assignment method before and during the pandemic, six of them stated that they did not change and 12 of them stated that they did. Changing points; method of application, number of questions, platforms used (EBA, WhatsApp, digital content). Excerpts from the teachers' opinions are given below.

"I was giving homework at the end of each subject. These assignments were checked at school. Accordingly, support was provided for the course and activity participation scores" (T8)

"Before the pandemic, I used to make photocopies of daily or weekly assignments and give them to students. During the pandemic period, I was sending tests via WhatsApp or EBA. Change is the intervention of technology. I wanted them to send me the activity homework by shooting a video in the fifth grade" (T16)

T8 emphasized the contribution of homework to the student's participation scores in lessons and activities. While T16 stated that the change was due to the intervention of technology, he stated that he had to hand over the homework he had given before the pandemic over the phone or EBA during the pandemic process. He also emphasized that the videos of the activities done in the fifth grade were shared. In the interview, T16 stated that he gave homework through EBA and Google Forms in distance education, but every student did not do it seriously, that it was beneficial for the working student, and that the questions in these assignments were definitely answered via Zoom afterward. T16 and T8 "Do you continue to do homework online after the pandemic process?" When the question is asked; "Google Form, I do not give it over the phone. It is more efficient for students to solve questions on paper. However, the use of EBA was common in our school and district before the pandemic. That's why my EBA usage hasn't changed much before the pandemic, during the pandemic, and after the pandemic." In the interview with T8; "The way I assign homework has changed during the pandemic. While giving more one-to-one homework before the pandemic, the activity, the style of practice was mostly with technology and WhatsApp during the pandemic process." With the pandemic process, it can be said that even teachers who have never used technology in their classes before started to use digital environments such as EBA, WhatsApp, and Google Forms in compulsory distance education, but factors such as the economic situation of the families, the environment they live in, and the educational status of these platforms are effective in achieving the purpose of the assignments given from these platforms.

4.2.2. Findings from "Homework Follow-up practices"

In the sub-problem, “What are the differences between the methods used by mathematics teachers to follow up homework during the pandemic process and before the pandemic?” The answer to the question has been sought. To answer this sub-problem, “How would you follow up on homework before the pandemic?”, “How would you follow up on homework during the pandemic?”, “Has the follow-up of homework changed before and during the pandemic? If it has changed, what kind of change is there? and “What are the conveniences and difficulties in the follow-up process of homework before and during the pandemic?” questions were posed. The answers given by the mathematics teachers participating in the study are summarized in Table 10, Table 11, and Table 12.

Table 10. Findings related to “How would you follow up on homework before and during the pandemic?”

Theme	Before the pandemic					In the Pandemic Process				
	Code	Sub Codes	Participant	f	%	Code	Sub Codes	Participant	f	%
Homework Follow-up practices	Follow-up chart	Assigned student	T3, T4, T7, T12, T9, T15	6	33,3	Done	Answering unanswered questions	T1	1	5,6
		Teacher	T2, T5, T6, T7, T8, T10, T11, T12, T13, T14, T16, T17, T18	13	72,2		EBA, Zoom, WhatsApp	T2,T3, T6,T7, T8,T9, T10,T11, T12,T13, T14,T15, T16,T17, T18	15	83,3
		Parent					T15	1	5,6	
	Answering unanswered questions	-	T1	1	5,6	Not done	Focus on class participation	T4	1	5,6
							little time	T5	1	5,6

As seen in Table 10, 17 of the teachers who participated in the study stated that they followed up their homework with a follow-up chart before the pandemic. Six teachers stated that they assigned students, 13 teachers stated that they controlled it, and two teachers (T7 and T12) stated that they also controlled together with the student they assigned. A teacher, on the other hand, stated that he did the checks by returning to the questions that could not be done in the next lesson. During the pandemic process, 16 teachers stated that they followed up on their homework. Answering the questions that could not be done, they stated that they made follow-ups by contacting the parents and via EBA and WhatsApp. Since T4 focused on students' participation in the lesson, T5 stated that they could not follow up because the time was short. Excerpts from teachers' opinions of both processes are given below.

Before the pandemic process: “There are students that I assign for homework tracking in the class. Also, I check it from time to time during the lesson” (T3)

Pandemic process: “Assignments are registered on the EBA platform. I can access other assignments via WhatsApp” (T3)

Before the pandemic process: "By checking at the end of the homework period"(T8)

Pandemic process: "We were able to control the homework given by EBA"(T8)

Before the pandemic process: “I was dedicating 5-10 minutes of the lesson to homework control. I was looking at whether they made the solutions on the book and checked the answer key one by one” (T16)

The pandemic process “...I wanted them to follow up on homework privately and send it to me. Some students were taking printouts of their assignments, unzipping them, and taking pictures of them. Some of them were deciphering it in a notebook and sending it to me privately” (T16)

Emphasizing that homework in EBA during the pandemic process and homework that expired before the pandemic, T8 in the interview said; “*During the pandemic process, homework was followed up with more technology and WhatsApp, and it was difficult to control. In the homework in EBA, we could not determine the deficiencies of the students and how much they learned. Before the pandemic, the assessment was one-on-one in the classroom. We used to provide photocopies and textbooks in the form of printed resources.*” T3 stated that while T3 was following up on the homework with himself and the students he assigned before the pandemic, during the pandemic process, he checked the homework with the follow-up charts of the EBA system for homework in EBA and via WhatsApp for other assignments. During the meeting; “The follow-up system in EBA was easy, but the follow-up in face-to-face training is easier. I check my homework whenever I'm free at school. Follow-up imposes a responsibility on students. I have to check the homework. There are those who do homework because the teacher will score plus or minus.” He emphasized the importance of homework follow-up. T16 stated that he followed homework individually both before and during the pandemic. In face-to-face education, it can be said that while the first minutes of the lesson are devoted to homework, it can be said that homework follow-up is done outside of class hours during the pandemic process. In the interview, for the homework follow-up; “*For example, in a class of twenty, I wonder why if five people haven't done their homework. When you don't check the homework, the teacher doesn't check anyway. The student can think that if I do it, it will happen even if I don't.*” When the homework is not followed up, the number of students who do not do it increases; He stated that when the controls were made and the parents were informed, the next homework was done, the homework prepared on Google Form was timed, the results reflected the truth for most students, they saw who did how much, and these questions were later solved via Zoom.

Table 11. Findings related to “*Has the tracking of homework changed before and during the pandemic? If it has changed, what kind of change is there?*”

Theme	Code	Participant	f	%
Homework Follow-up practices	Yes	T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18	17	94,4
	No	T1	1	5,6

As seen in Table 11, 17 of the teachers who participated in the study stated that there was a change in the follow-up of homework before and during the pandemic. One teacher replied that it did not change. The teacher who answered "not changed" only gives private lessons. Excerpts from the teachers' opinions are given below.

"Yes. While checking one by one before the pandemic, I was able to control more easily thanks to the EBA documents during the pandemic process" (T2)

"...of course it has changed.... the process of controlling and providing feedback has become very difficult. I accelerated the control and feedback process by giving digital assignments rather than classical methods other than EBA"(T7)

"Changed. While there was more intensive follow-up before the pandemic, more limited follow-up was made during the pandemic process" (T12)

"I was having trouble with the controls" (T13)

"Changed. I interacted more with the parent. I wanted the assignments made in the chat groups to be sent to me" (T15)

"I was giving homework and following up in both terms. The only difference was to give the homework over the phone and follow up" (T16)

While T2 stated that it was easier during the pandemic process as it was done through the EBA platform, T7 emphasized that the control and feedback processes of the homework given in the form of classical methods became difficult, so the follow-up process was accelerated by giving homework from EBA and other digital environments.

Table 12. Findings related to "What are the conveniences and difficulties in the follow-up process of homework before and during the pandemic?"

In the Pandemic Process					
Theme	Code	Sub Codes	Participant	f	%
Homework Follow-up practices	Easy	through EBA	T2, T7, T17	3	16,7
		Since it has not been studied in depth	T8	1	5,6
	Difficult	Only teacher control	T3	1	5,6
		Disruptions in education	T5	1	5,6
		Online, phone, etc.	T4, T6, T13, T16, T17, T18	6	33,3
		Time	T7, T10	2	11,1
		Communication with students	T11, T12, T15, T16, T18	5	27,8
	No difference	-	T1, T9, T14	3	16,7

As seen in Table 12, four of the teachers who participated in the study stated that it was easier to follow homework during the pandemic process, 13 teachers stated that it was more difficult, and three teachers stated that there was no difference. The statements of some teachers were included under several codes. They stated that it is easy to follow-up through EBA and no in-depth analysis. They stated that the difficult aspects are that the follow-up is only done by the teacher, it is online, the time is limited and there are problems in communicating with the students. Excerpts from the teachers' opinions are given below.

"Before the pandemic, homework control was taking a long time, but we were able to have clear information about the student's learning level. It was only a result-oriented evaluation during the pandemic process. We were able to observe how many correct answers in how many questions, rather than why the student could not solve which question" (T8)

"Of course, it was easier to check homework in face-to-face education. Homework in distance education did not reach everyone. That's why not everyone did the homework. We were checking it during class time, in face-to-face training. Homework could come later during the pandemic period. It was challenging to check the homework and look at the screen one by one on the phone" (T16)

T8, on the other hand, stated that homework controls during the pandemic process were easier since the student's homework could not be examined in depth. T16 stated that homework coming in untimely and being checked by phone are the difficult aspects of homework follow-up. In the interview with T16 to get more in-depth information, it was stated that they had difficulties in tracking homework during the pandemic process, that the lack of a concrete

document made it difficult for students, therefore, when they went to school one day a week, they copied some of the homework and received them from school, but it was more difficult to follow up on any homework in distance education. has done. After the pandemic process, he stated that he did not use the methods he used in distance education in homework tracking, but only informed the parents from the WhatsApp group.

4.2.3. Findings from “Homework Feedback”

In the sub-problem, “How do math teachers provide feedback to students and parents during the pandemic process and before the pandemic? What are the differences in providing feedback between these two processes?” The answer to the question has been sought. To answer this sub-problem, “How did you provide feedback to students and parents on homework before the pandemic?”, “How did you provide feedback to students and parents on homework during the pandemic process?”, How did feedback change to students and parents before and during the pandemic?, If it has changed, what kind of change is there?” and “What are the conveniences and difficulties in the process of providing feedback to students and parents in homework during the pandemic process?” questions were posed. The answers given by the mathematics teachers participating in the study are summarized in Table 13, Table 14 and Table 15.

Table 13. Findings related to “How did you provide feedback to students and parents on homework before the pandemic?” and “How did you provide feedback to students and parents on homework during the pandemic?”

Theme	Before the pandemic				In the Pandemic Process			
	Code	Sub Codes	Participant	f %	Code	Participant	f %	
Homework Feedback	Assignment checklists	One-on-one meeting with the student	T3	1 5,6	EBA	T3, T9, T16	3 16,7	
		Information to parents	T2,T17	2 11,1				
		T11	1 5,6	Phone-WhatsApp-Online	T2, T3, T6, T7, T8, T10, T12, T13, T14, T15, T16, T17, T18	1 3 72,2		
	Information to parents	Face to face	T1, T4, T6, T7, T8, T9, T10, T12, T15, T17, T18	1 1 61,1	follow charts	T11,T17	2 11,1	
		With phone	T13, T14, T16, T17	4 22,2	Could not follow up	T4, T5	2 11,1	
	Interview with the student		T1, T8, T9, T13, T15, T16	5 27,8	Contacting students and parents	T1	1 5,6	
	Identifying errors and omissions	Feedback to student	T5,T6, T7, T10, T17, T18	6 33,3				
		Feedback to parent	T9, T10	2 11,1				

As can be seen from Table 13, the teachers participating in the study stated that they provided feedback to the students and parents by identifying homework checklists, communicating with parents, meeting with the student one-on-one, and identifying mistakes and deficiencies before

the pandemic. During the pandemic process, they stated that they provided feedback to students and parents via homework tracking charts, EBA, WhatsApp, and telephone. T4 and T5 stated that feedback could not be given to students and parents, and T1 stated that he continued the method he used before the pandemic. Excerpts from teachers' views before and during the pandemic are given below.

Before the pandemic process: "I look at the checklist before the lesson starts, I warn the student during the lesson" (T3)

Pandemic process: "I was checking from EBA and warning students. I was leaving a message to the parent from the WhatsApp group or privately" (T3)

Before the pandemic process: "We were able to meet with students and parents one-on-one" (T8)

Pandemic process: "By phone call and message" (T8)

Before the pandemic process: "...I was providing face-to-face feedback to students. On the other hand, I provided feedback to the parents sometimes by calling and sometimes by sharing the ones who did or did not do their homework in WhatsApp groups" (T16)

Pandemic process: "...I was sending a private message to the parent or calling. Of course, we were able to provide feedback to students and parents who had internet access and reached homework. We could see the students doing the homework given by the EBA. While I was teaching distance lessons to those who did not, I was telling that EBA is important during the lesson and they should follow up their homework" (T16)

T3 stated that he checked the homework checklists before the lesson started and that he checked the EBA during the pandemic and provided feedback to students and parents. In the interview, he stated that he could access all the information about the assignments from the reports section in EBA. T8 stated that he had one-on-one meetings with both students and parents before the pandemic, T8 said that *"There was a lot of communication by phone in both processes. There was not much change in communication with the parent. From the point of view of his students, our connection regarding homework was by phone. Since there was bussed education, parents who far away did not have the opportunity to come to school very often and we were talking on the phone. The way we provide homework feedback has changed for students during the pandemic. It was over the phone while face-to-face,"* While T16 stated that he provided face-to-face feedback to the student before the pandemic, he stated that he followed up his homework via telephone and EBA during the pandemic process. However, T16 emphasized that *"the one who has the internet and reaches the homework"* in distance education. It can be said that the learning process did not take place with all students during the pandemic process, so the assignments could not be delivered, and speeches were made to increase the use of EBA for the students who attended the classes. In the interview with T16 to obtain more in-depth information; *"Individual feedback was difficult in homework follow-up. The parents did not show the necessary sensitivity in distance education. The children were not even aware of the homework. By typing, I was sending solutions with audio recordings. Mediocre students did not even attend classes. We were doing lessons with middle and good students. The answers to the tests and other assignments must be done. Otherwise, it doesn't make much sense. Labor doesn't help either. Children should see their mistake"*.

Table 14. Findings related to "Did your feedback method to students and parents change before and during the pandemic?" and "If it has changed, what kind of change is there?"

Theme	Code	Alt Code	Participant	f	%
Feedback	Yes	Student- parent	T3, T4, T5, T6, T8, T9, T10, T11, T12, T13, T15, T16, T18	13	72,2
		parent	T7, T17	2	11,1
	No	parent	T1, T2, T14	3	16,7
		Student	T1, T14, T17	2	11,1

As can be seen from Table 14, 15 of the teachers who participated in the study stated that the methods of providing feedback to parents and students have changed during the pandemic process, while four teachers have not changed. Some of the teachers' statements are under several codes. T17, one of the teachers who stated that they have changed, emphasized that the method of providing feedback to the student has not changed, but the method of providing feedback to the parents has changed. Excerpts from the teachers' opinions are given below.

"Yes, technology was used more actively. We responded immediately, but the pre-pandemic quality was not provided at all" (T4)

"Parents are generally not very keen on coming to school. I continued to communicate by phone before and after the pandemic" (T2)

T4, who stated that he had changed, stated that feedback was provided immediately with the opportunities offered by technology, while T2, who worked in the village school, stated that in both processes, feedback was provided to parents by phone.

Table 15. Findings related to "What are the conveniences and difficulties in the process of providing feedback to students and parents in homework during the pandemic process? "

Theme	Code	Sub Codes	Participant	f	%
Feedback	hasn't changed	-	T1, T9, T13	3	16,7
	Convenience	Communicating with student and parent at the same time	T2	1	5,6
		Easy to reach with WhatsApp	T3	1	5,6
		Follow from EBA	T16	1	5,6
		Using the phone a lot	T4, T11, T14	3	16,7
	Difficulty	Parent-student numbers entered the directory	T3, T7, T8, T16	4	22,2
		WhatsApp groups used	T11	1	5,6
		hard to come back	T5, T15	2	11,1
		Connection issues	T6, T10, T12	3	16,7
		not taking responsibility	T7	1	5,6
	Inability to reach student – parent	T14	1	5,6	
	No answer				

As can be seen in Table 15, the teachers participating in the study facilitated the process of providing feedback to students and parents on their homework during the pandemic; communicating with students and parents at the same time, reaching via WhatsApp and phone, and following them on EBA. The difficulties are; stated the disruptions experienced in feedback, students not taking responsibility, not being able to reach students and parents, not being understood in communication, and connection problems. Some teachers' answers are under several codes. There is no answer to the question in the answers of the two teachers. Excerpts from the teachers' opinions are given below.

"It was easy to reach via WhatsApp. But late returns etc. we had difficulties" (T3)

“Before the pandemic, we were able to give immediate feedback on assignments to the student. Communication during the pandemic process has been difficult. Because we had to make phone calls with each student separately” (T8)

“While it was very easy to deal with face-to-face before the pandemic, it was very difficult to do this over the phone during the pandemic. When they asked a question, it was difficult for us to make a solution on paper and to explain the question on the paper. Sometimes I would narrate with audio recording. For convenience, I was learning the answers instantly in the system and shared the results with the students and parents. Also, I could see which student made a mistake in which question” (T16)

While T3 stated that it was easy for teachers to reach via WhatsApp, it was difficult to get feedback from students and T8 stated that separate phone calls made the process difficult. T16 stated that it was difficult to write the answers by showing the steps of the process one by one during the pandemic process, and when necessary, the questions were explained with a voice recording for better understanding. He expressed convenience as learning the results on the digital forms instantly, seeing the wrong questions and sharing them with the parents. In the interview with T16 to obtain more in-depth information, he stated that it is easy to follow up on EBA, but most of the students do not do the homework there, and the homework reports in EBA do not reflect much, since the steps of the process are not seen in the students who do.

“As a parent meeting could not be held at the school during the pandemic process, providing feedback to parents was limited to the WhatsApp group” (T17)

“Communication was more effective during face-to-face training” (T18)

Considering the responses of T17 and T18, it was stated that they did not explain the easy and difficult aspects of providing feedback to students and parents about homework in both processes, and T17 stated that the communication tool he used to provide feedback was the effective of communicating with face-to-face education. can be said.

4.2.4. Findings from “Frequency of Homework assignments”

In the sub-problem, “What are the differences between the frequency of giving homework by mathematics teachers during the pandemic process and before the pandemic?” The answer to the question has been sought. To answer this sub-problem, “How often did you give homework before the pandemic?”, “How often did you give homework during the pandemic?” and “Has the frequency of homework changed before and during the pandemic? If it has changed, what kind of change is there?” were asked. The answers given by the mathematics teachers participating in the study are summarized in Table 16 and Table 17.

Table 16. Findings related to "How often did you give homework before the pandemic? " and "How often did you give homework during the pandemic? "

Theme	Before the pandemic				In the Pandemic Process					
	Code	Participant	f	%	Code	Participant	f	%		
Frequency of Homework assignments	When I teach a new subject	T1, T16	2	11,1	end of each lesson	Ö1, Ö6, Ö13, Ö15	4	22,2		
	Every week	Two	T12, T17	2	11,1	Every week	One	Ö2, Ö5, Ö12, Ö11, Ö14, Ö18	6	33,3
		At least two	T2, T8, T15	3	16,7		two	T7,T8	2	11,1
		At least one	T10, T5	2	11,1		Three	Ö17	1	5,6
		One	T9, T11, T3, T14, T18	5	27,8		One or two	T10	1	5,6
	When I teach the subject completely	T7	1	5,6	once every two weeks	T9	1	5,6		
	after each lesson	T4, T6, T3, T13	4	22,2	at the end of the topic	T3,T16	2	11,1		
				I couldn't give	T4	1	5,6			

As seen in Table 16, the teachers who participated in the study stated the frequency of homework before the pandemic, at the end of the subject or achievement, after each lesson, once a week, twice a week, at least once a week, at least twice a week. The statements of T3 are under two codes. In the pandemic process, they stated the frequency of homework at the end of the subject, after each lesson, once a week, twice a week, three times a week, once every two weeks. T4, on the other hand, stated that he could not get the feedback he wanted when he gave it. Excerpts from teachers' views before and during the pandemic are given below.

Before the pandemic process: "After each lesson, I leave a few examples of the content of the lesson to the children. On a weekly basis, I give a subject test and evaluation test homework related to the finished subject" (T3)

Pandemic process: "As soon as the subject is completed, I send homework for the test"(T3)

Before the pandemic process: "Two or three times a week" (T8)

Pandemic process: "Twice a week"(T8)

Before the pandemic process: "After each topic, if there are parts that need to be solved before the whole topic is finished, I will definitely give them and after the unit there will be retests (activity or material) assignments"(T16)

Pandemic process: "After each subject, I gave the tests and activities that I wanted them to solve at home as in face-to-face training" (T16)

T3 stated that before the pandemic, at the end of each lesson, he gave a few questions about the content of the lesson and gave homework in the form of a test as the subject was completed in both processes. During the meeting; "When the class I started before the pandemic did not end, I was giving the remaining questions homework. I couldn't do that in EBA. That's why I always give questions after each lesson in face-to-face training". T16 stated that they continue the same system in distance education. While it was seen that gave homework every week in face-to-face and distance education, it was seen that T16 gave homework more often and gave information about the homework method. In the interview with T16 to get more in-depth information, he stated that the course of the course affects the frequency of homework. In the interview, T8 stated that he gave homework "two or three times a week" before the pandemic

and "twice a week" during the pandemic period; *"Before the pandemic, I don't give homework until the subject is finished as a whole. It changes according to the ending of the subject. I was giving at least 2 to 3 times a week. In the pandemic process, I was teaching after the week's classes were over. Because there were children who could not attend the lesson. They did not know the subject. But he can join the other day and make up for it. That's why I was giving it on the day my weekly lesson ended"*.

Table 17. Findings related to "Did the frequency of homework change before and during the pandemic? "If it has changed, what kind of change is there?"

Theme	Code	Participant	f	%
Frequency of Homework	Yes	T1, T2, T7, T8, T9, T12, T15, T17	8	44,4
	No	T3, T4, T5, T6, T10, T11, T13, T14, T16, T18	10	55,6

As seen in Table 17, when the teachers participating in the study compared the frequency of homework assignments before and during the pandemic, eight teachers stated that they changed, and 10 teachers stated that they did not. Excerpts from the teachers' opinions are given below.

"I can say that it has not changed" (T3)

"The homework we gave during the pandemic was not done efficiently. We tried to keep the homework at a reasonable level so that the productivity would not decrease even more" (T8)

"During the pandemic period, I tried to keep the homework density the same in face-to-face education, but sometimes it took too much time to prepare and throw homework on the computer. In addition, eye strain and back pain could affect the frequency of preparing some assignments" (T16)

In the interview, T3 stated that he gave homework as a test at the end of the subject in both processes, but unlike face-to-face education, he could give the questions that were not covered in the course as homework on a daily basis and write questions in the notebook. In other words, it can be said that T3 gave homework more frequently in face-to-face education's stated that in distance education, students do not do their homework efficiently, and that they try to keep the frequency of homework in such a way that the number of homework does not decrease, so as not to overwhelm them and not reduce their productivity. During the meeting; "The frequency of homework did not change much, but it was a little more before the pandemic," he explained. T16, on the other hand, stated that he tried to keep the homework density the same in both processes, but that it was difficult to prepare homework in the computer environment, so the frequency of homework in distance education could change. In the interview, he stated that he could not assign individual homework for each student from EBA, that he sent collective homework for the class, and that the students received some homework copied in photocopy form from the school.

4.2.5. Findings from "Purpose of Homework"

In the sub-problem, "Are there any differences in the purposes of homework assignment of mathematics teachers during the pandemic process and before the pandemic?" The answer to the question has been sought. To answer this sub-problem, "What is your purpose of giving homework before the pandemic?", "What is your purpose of giving homework during the

pandemic?” and “Has your purpose of homework changed before and during the pandemic? If it has changed, what kind of change is there?” questions were posed. The answers given by the mathematics teachers participating in the study are summarized in Table 18 and Table 19.

Table 18. Findings related to “What is your purpose of giving homework before the pandemic?” and “what is your purpose of giving homework during the pandemic process?”

Theme	Before the pandemic				In the Pandemic Process			
	Code	Participant	f	%	Code	Participant	f	%
Purpose of Homework	Reinforcement	T1, T3, T4, T5, T6, T7, T9, T10, T11, T12, T14, T15, T16, T17, T18	15	83,3	Reinforcement	T1, T3, T4, T5, T7, T8, T9, T10, T11, T12, T14, T16, T17, T18	14	77,7
	Repetition of the lesson	T2, T3, T8, T13, T14, T15, T18	7	38,9	The student does not break away from the lessons / stay away from the lessons	T1, T4	2	11,1
	Student self-development	T7, T8	2	11,1	Continuity to the lesson	T2	1	5,6
	Reinforcement and not forgetting	T12	1	5,6	Reinforcement and repetition	T3, T7, T12	3	25
	work habit, self-discipline	T16	1	5,6	work habit, self-discipline	T16	1	5,6
	Providing student motivation	T5	1	5,6	Don't miss out on lessons	T4	1	5,6
					Understanding the topics and lack of missing information	T6	1	5,6
					Student self-development	T8	1	5,6

As seen in Table 18, the teachers participating in the study aimed to give homework before the pandemic, reinforcing, not forgetting, keeping the student fit, detecting and completing incomplete and incorrect learning, self-development of the student, developing study habits, providing self-control, taking responsibility, attending the lesson. They expressed it as coming prepared and providing student-parent cooperation. Some teachers' answers are under more than one code. In the pandemic process, reinforcing the purposes of giving homework, ensuring continuity in the lesson, keeping the student alive, ensuring the completion of the deficiencies, self-development of the student, taking responsibility, student-parent cooperation, self-control, understanding and eliminating missing and wrong learning, motivating the student, they expressed it as coming to class prepared and providing individual learning. Some teachers' codes are under several codes. Excerpts from teachers' views before and during the pandemic are given below.

Before the pandemic process: “Consolidation and repetition of the subject” (T3)

Pandemic process: "Consolidation and repetition of the subject" (T3)

Before the pandemic process: "Repetition of the subject, adding new information to the information they learned, and seeing different question styles and understanding the subject better" (T8)

Pandemic process: “Same as before the pandemic” (S8)

Before the pandemic process: "To reinforce what they have learned, to realize their individual learning better, to get parent-student cooperation, to gain study habits, to provide self-discipline, to take responsibility, to notice mistakes with control at school, to ask what they do not understand and to get feedback" (T16)

Pandemic process: “Same” (T16)

T3 stated that he gave homework for the purpose of repetition and reinforcement in both processes. In the interview, he stated that he gave homework for the student to make an effort, adapt to the school culture, and have a sense of responsibility. He also explained, “Sometimes I used to give very easy homework so that children would not be distracted from school during the pandemic process”. In T8, the purpose of giving homework did not change; again, to add new information and to better understand the subject. It can be said that T8, who emphasized the addition of new information, stated that homework can also be used for individual learning and learning to learn. During the meeting; *“The purpose of giving homework was paralleled. We have given the learned information to reinforce, repeat, construct in the mind, and reach new learnings. During the pandemic process, the homework was in the form of reinforcement so that the student could learn the missing subjects on his own when he could not attend the live lesson.”* It can be said that while homework is given for the consolidation and repetition of the subject in face-to-face education, it can be said that it is given within the learning of the subject in the courses that cannot be attended in addition to these purposes in distance education. In T16, the purpose of giving homework has not changed; He stated that he gave homework for reinforcement, individual learning, parent-student cooperation, gaining working habits, taking responsibility, recognizing and correcting mistakes. It can be said that T16, unlike other teachers, gives homework for social relations, student behavior and personality development.

Table 19. Findings related to “Did your purpose of homework change before and during the pandemic?” “If it has changed, what kind of change is there?”

Theme	Code	Sub Codes	Participant	f	%
Purpose of Homework	No	-	T1, T3, T5, T7, T8, T9, T10, T11, T13, T14, T16, T18	12	66,7
	Yes	To ensure continuity in the course	T2	1	5,6
		Keeping the student in the process	T4	1	5,6
		In order to raise the subjects	T15	1	5,6
		motivate students	T17	1	5,6
		To teach basic acquisitions	T6	1	5,6
	To ensure course follow-up	T12	1	5,6	

As can be seen in Table 19, when the teachers participating in the study compared their homework objectives during the pandemic process and before the pandemic, it was seen that 12 of them did not change, and six of them gave the answer that they changed. The teachers who answered that it has changed stated that they gave homework during the pandemic process in order to ensure the continuity of the lesson, keep the student in the process, teach the basic achievements, motivate the student, train the subjects and follow the lesson. Excerpts from teachers' opinions are given below.

“My aim in homework is always repetition and better understanding and reinforcement of the subject. I can say it hasn't changed.” (T3)

“Before the pandemic, we used to give homework in order to reinforce the achievements and improve the cognitive levels of the students, since we could measure the status of each student, how much they worked and their success. Since some of the students were able to attend the classes at the beginning of the pandemic process, my general aim was to ensure that they gain the achievement and not forget it” (T7)

“Yes, it has changed, during the pandemic process, the issues were not fully grown, there was no time to solve questions. For this purpose, I was giving the solution of questions as homework. In addition, since the writing part was insufficient for the notebook in terms of time, I had them write in the form of homework. Before the pandemic, I was giving it only for repetition and reinforcement” (T15)

T3, who stated that he did not change, stated that the purpose of giving homework was always the same and that it was repetition, reinforcement and better understanding of the subject, while “What are your habits that you started and continued to use in distance education? When the question is asked to T16 and T3; T16 said that the use of smart boards has increased, while he used to write more, now he teaches lessons on smart boards, especially in geometry. While informing via WhatsApp for his own class (the class where he is the class teacher), it is now used for every class. He said it was the same afterwards. In the interview held at T3; “There were some beauties that the pandemic taught us, but the school where I work is more suitable for the traditional method. Internet usage is very low. The pandemic process made me very tired. That's why I immediately went back to my old ways.” Teachers who stated that they gave homework to ensure subject repetition, reinforcement and permanent learning stated that they gave homework for different purposes along with the transition to compulsory distance education during the pandemic process. They stated that they gave homework in order to ensure that students do not stay away from the education-teaching process, participate in the lesson, complete the subject-achievements, and motivate them. However, based on the answers of the teachers, it can be said that family, environmental and economic conditions such as financial inadequacies, environmental conditions, internet-tablet-computer deprivation cause disruptions in education. It can be said that homework has achieved its purpose and has been beneficial for students whose opportunities and conditions are suitable in the education process.

5. Conclusion and Discussion

Unlike studies on homework, this study examined and investigated mathematics teachers' approaches to homework from a comparative perspective, taking into account compulsory distance education during the pandemic process. Teachers participating in the study did their homework; individual work, home work/activity, learning experience and homework done outside of school time. Similarly, Taşlıcalı (2020) stated that homework is an activity done inside or outside the classroom, and Cooper (2001), Paulu and Perkinson (1995) stated that learning can also take place outside of school and classroom environments. In the study, it was stated that homework has the feature of reinforcement, repetition, and permanence in learning. These results; Rosário, Cunha, Nunes, Moreira, Núñez, and Xu (2018) and Gürlevik (2006) provide repetition of the learned subject, Gür (2002) and Kaur (2010) reinforce student knowledge, Paulu and Perkinson (1995) students repeat knowledge and It is in line with the findings of Kapıkıran and Kıran (1999) that homework should be given to enable the student to achieve self-study competence. All of the teachers who participated in the study stated that homework should be given. The reason is that the student; They expressed whether they understood the subject and where they did not understand, encouraging them to study, gaining



the habit of working, being able to cooperate, dealing with problems alone for individual learning, reinforcing the gains, working regularly and adapting the acquired knowledge to other subjects. Similarly, Özcan (2003) stated that homework is necessary in the learning-teaching process. Cooper, Robinson, and Patall (2006) stated that homework provides some degree of individualization and Oğuz (2010) permanent learning. Trautwein and Köller (2003) stated that homework should be given in order for the student to perform self-learning. Another result of the study is that over-given homework is harmful. This result is in line with Öcal's (2009) research, which states that homework that takes too much time causes students to feel negative emotions towards homework. The participants stated that homework should be given to the student because it contributes to the student to spend time with his/her parents and to see the success level of their child. Yuladur and Doğan (2009) also stated that homework allows students to communicate with their families, to follow the development of children and to participate in the process; Kralovec and Buell (2001) stated that homework often disrupts the order in family life.

The teachers participating in the study included the content of the homework given before the pandemic as exam-oriented, test and worksheets suitable for the achievements, from easy to difficult, simple and appropriate, sample questions related to the subject covered in the lesson, for doing research, remembering posters, preparing materials; In the pandemic process, they stated that they prepared easy, simple and plain, EBA content, auxiliary resources, test and worksheets, medium level, activity videos, online suitable for distance education. Baki and Çelik (2021), in which course contents suitable for online teaching are prepared, were also expressed by Şimşek and Yaşar (2022), where EBA contents were preferred.

When they compare both processes, the teachers who stated that there is a difference between the content of homework assignments give online homework in distance education, use EBA content, include multiple-choice, simple questions, keep the number of questions less and share on Whatsapp groups, and they use more intensive and comprehensive homework in face-to-face education. they have stated. It was emphasized that the students did not fulfill their responsibilities, had communication problems and due to the short duration of the lesson, the homework was given in the form of writing the notes in the lesson. Similarly, Bryan and Burnstein (2004) stated that the teacher should assign homework taking into account their own ideas. Another result of the study is that the content in the pandemic process is aimed at measuring the achievements, and the reason for the change of the content is that not every student has the same conditions for accessing information. Baki and Çelik (2021) expressed the difficulties experienced in distance education during the COVID-19 epidemic as the inability to provide equal opportunities in education, technical problems, financial impossibilities, and negativities arising from living in rural areas. These results also show parallelism with the findings of the study.

Homework assignment methods; pre-pandemic helpful resources, textbook, notebook, test, online, worksheets; In the pandemic process, it has been determined that it is in the form of tests, auxiliary sources, worksheets, textbook, online exams, digital activities, digital (Z) books and subject repetition via EBA and Whatsapp. Barlovits, Jablonski, Lazaro, Ludwig, and Recio (2021) stated that teachers in distance education feel the need to organize their education methods according to the current conditions. When the teachers who participated in the study compared the method of giving homework before and during the pandemic, six of them answered that they did not change, and 12 of them answered that they did. Changing points; method of application, number of questions, platforms used (EBA, Whatsapp, digital content). Obtained results; Baki and Çelik (2021) to use Whatsapp groups more actively in distance

education experienced due to COVID-19, to share course contents from EBA and telephone groups, and by Şimşek and Yaşar (2022) to provide access to all students to EBA content, to be reliable and legal It is in parallel with the findings that it is preferred with.

Findings regarding the follow-up of homework; the follow-up of teachers' homework before the pandemic; with the follow-up schedule, the assigned student, student-teacher follow-up, returning to the questions that could not be done in the next lesson; In the pandemic process, it has been shown that the questions that could not be answered were returned and the follow-up was made by communicating with the parents via EBA and Whatsapp. While 17 teachers who participated in the study stated that there was a change in the follow-up of homework before and during the pandemic, one teacher replied that it did not change. The teacher who answered "not changed" only gives private lessons. Barlovits, Jablonski, Lazaro, Ludwig, and Recio (2021) stated in their studies that communication with students has changed. The reason for not being able to follow up homework in distance education was stated as the short duration of the course and the focus on students' participation in the course. During the pandemic process, it has been found that it is easier to follow homework, it is more difficult, and there is no difference. Homework tracking is easier because it is done via EBA and there is no in-depth analysis, and it is more difficult because it is only done by the teacher, it is online, time is limited, and there are problems in communicating with students (internet shortage, tablet, phone, computer access problem, environmental problems). conditions, financial opportunities, parent profile). These findings show parallelism with the problems experienced in internet, tablet, computer and phone access in web-assisted homework application, as in Altuntaş's (2017) findings. Aydoğdu-İskenderoğlu and Konyalıhatipoğlu (2021) stated that the technological and financial inadequacies of the students during the pandemic process brought negativity in education. It is another result of the study that the degree of homework sent via Whatsapp cannot be determined and it is difficult to control. Cooper (1989a; 1989b) stated that the assignments received from the students should be evaluated carefully, including the necessary explanations. It was also stated that teachers and students experienced inexperience during the pandemic process. Şengil - Akar and Kurtoğlu - Erden (2021) The inexperience of the teacher-student-parent and the administration in using these platforms correctly and effectively in the lessons taught with EBA WEB, and the negativities caused by the inexperience in distance education in Şimşek and Yaşar's (2022) research overlap with the findings of the study. It was stated that homework follow-up imposes a responsibility on students. Rosário, Cunha, Nunes, Moreira, Núñez, and Xu (2018) stated that teachers' homework tracking practices and students' homework monitoring have an impact on students' behavior towards homework and their academic success. Another result of the study is that during the pandemic process, students attend classes less, are more irresponsible towards homework and homework tracking becomes more difficult, homework is given via EBA and Google Form, but whether each student takes it seriously or not, and it is beneficial for the student working in both processes. Batdal-Karaduman, Akşak-Ertaş, and Duran-Baytar (2021) also stated that the responsible student in face-to-face education behaves in the same way in the distance education process.

Findings regarding the methods of providing feedback to students and parents; before the pandemic, teachers prepared homework checklists, communicated with parents, had one-on-one meetings with students, by identifying mistakes and deficiencies; In the pandemic process, they use homework tracking charts and provide feedback via EBA, Whatsapp and phone. While 15 teachers who participated in the study stated that the methods of providing feedback to parents and students have changed during the pandemic process, three teachers stated that



they have not changed. Ease of providing feedback to students and parents in homework during the pandemic process; communicating with students and parents at the same time, reaching via Whatsapp and phone, and following from EBA. Altuntaş (2017) stated that the use of web technologies in homework contributes to student-teacher-parent communication and provides immediate feedback on homework. Two participants stated that feedback could not be given to the students and parents, and Okan (1989) stated that the homework that is given to the students is beneficial, while the homework that is not checked and given positive or negative feedback to the students does not provide any benefit. Difficulties were expressed as disruption in feedback, failure of students to take responsibility, inability to reach students and parents, incomprehension in communication, and connection problems. Altuntaş (2017) also emphasized in his study that Web-Assisted Homework applications bring with them negativities such as lack of technological tools (tablet, computer, etc.) and internet shortage.

Findings regarding the frequency of homework assignments before the pandemic, at the end of the subject or achievement, after each lesson, once a week, twice a week, at least once a week, at least twice a week, during the pandemic period, at the end of the subject, after each lesson, once a week once, twice a week, three times a week, once every two weeks or not at all. When they compared the frequency of giving homework for both processes, eight teachers stated that they changed, while 10 teachers stated that they did not. While the impossibilities of the students (phone, tablet, computer, internet) and ensuring that the students do not get away from the lessons are shown as the reason for the change; The reason for the change is that the gains and course hours are the same.

The purposes of homework are expressed as repetition, reinforcement, keeping the student fit, detecting and completing missing and wrong learning, taking responsibility, providing self-control, coming to the lesson prepared, ensuring student-parent cooperation, and self-development of the student before and during the pandemic. In addition to these, it was expressed as not forgetting the information before the pandemic, developing a study habit, providing continuity to the lesson during the pandemic process, motivating the student, and providing individual learning. There are studies that show parallelism to these results. Kırmızıgül (2018) and Kaplan (2018) stated that homework is necessary for repetition and reinforcement, Yuladur and Doğan (2009) stated that homework contributes to the student's communication with his family, following the development of children and participating in the process, Bursuck (1994) self-discipline and productive stated that it helps to develop working habits. Gür (2002) stated that homework has a great effect on students' reinforcing their knowledge, creating self-control and self-discipline. Paulu and Perkinson (1995) stated that with homework, the student can acquire the ability to repeat information and do research, Kapıkıran and Kıran (1999) stated that the student can achieve self-study competence by gaining a sense of responsibility, and Cooper (2001) stated that with homework, the student can develop a positive attitude towards school. When they compared the homework assignment objectives for both processes, 12 teachers gave the answer that they did not change, and six teachers answered that they did. The teachers who gave the answer that it has changed stated that they gave homework during the pandemic process in order to ensure the continuity of the lesson, keep the student in the process, teach the basic achievements, motivate the student, train the subjects and follow the lesson.

5.1. Recommendations

In future studies, documents related to homework can be collected after the pandemic and the reflections of the pandemic process can be investigated. This study can be done by expanding

the working group further. It is not limited to the mathematics course and research can be done on the basis of all courses. It is not handled from the perspective of the teacher, but the research can also be done with the variables of students and parents. It can be done on the basis of the professional service period of the teachers. It can be done by comparing it for the city center, district center and village settlements. and university levels can be examined separately. It can be done by comparing public and private schools. It can be done at every grade level. It can be done comparatively for numerical and verbal lessons.

5.2. Ethical Text

“In this article, the journal writing rules, publication principles, research and publication ethics, and journal ethical rules were followed. Responsibility for any violations that may arise regarding the article belong to the authors.” Within the scope of the research, ethics committee approval was obtained from the ethics committee of Sivas Cumhuriyet University with the decision dated 30.05.2022 and numbered 2022/35. There is no conflict of interest between the authors. The contribution rate of the first author to the article is 50%, and the contribution rate of the second author to the article is 50%.

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