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Evaluation of Post-Earthquake Mathematics Education Processes By Mathematics Teachers In The Region: Kahramanmaraş Case

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Abstract

This study aims to examine the post-earthquake mathematics education processes in Kahramanmaraş from the mathematics teachers' perspective working in the same region. For this purpose, a purposive sampling method was used and six mathematics teachers who volunteered to participate in this study were interviewed among the mathematics teachers who performed educational activities in public schools in the Kahramanmaraş region both before and after the earthquake. A semi-structured interview form was used during the interviews. In the interview form, in addition to the questions about demographic characteristics, the question "How were the education and training processes carried out after the earthquake?" was asked and the teachers shared their experiences and observations. Phenomenological design, one of the qualitative research methods, was adopted as the research design because it was appropriate for the purpose of this study. Content analysis was employed for data analysis. The analyses were conducted with the MAXQDA Analytical Pro 2022 program. The findings were grouped under six salient themes: starting classes, motivation for the educational process, the process of 8th-grade students, teaching materials and supplies, measurement and evaluation activities, and students' school attendance. Among these themes, there were three sub-themes under the starting classes theme: start dates of classes, feelings when attending classes and activities during classes. Under the theme of motivation for the educational process, there were two sub-themes: difficulty getting motivated and becoming motivated easily. Under the theme of the process of 8th-grade students, there were two sub-themes: came to a complete standstill and continued from where it left off. There were no sub-themes in the other three themes. Teachers mostly made discourses on the themes of opening schools and being motivated for the education process.

Keywords

Earthquake, mathematics education, post-earthquake education.

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INTRODUCTION

The February 6, 2023, earthquakes centered in Kahramanmaraş, one of the biggest natural disasters that our country has experienced in recent years, caused many losses of life and property as well as social, economic, and cultural damages in the region. Many houses, schools, hospitals, and workplaces were destroyed, and daily life stood at a standstill in some regions. Although these earthquakes were centered in Kahramanmaraş, they affected many provinces, including Adıyaman, Hatay, Malatya, Gaziantep, Adana, Diyarbakır, Osmaniye, Kilis and Şanlıurfa (Arslan, 2023). It will take time to heal the wounds of this disaster. However, considering that socialization and education are two effective ways to recover, it will be more clearly understood how important the role schools have in this process. Because schools are not only institutions where academic knowledge is learned and taught, but also places where individuals are prepared for life and socialized. Similarly, Mutch (2014) stated that schools have crucial roles in preparation for, response to and recovery from natural disasters. Considering that teachers and students are the fixtures of a school, it can be clearly seen how crucial it is to understand them and their opinions in the process after the earthquake. Moreover, teachers have significant roles before, during and after the disaster process. Because children shape their reactions after the emergency threat is over by modeling the adults around them and in this context, schools play an active role in the post-disaster process (Lazarus, Jimerson, & Brock, 2002). According to Le Brocque et al. (2017), teachers are potentially in a position to follow traumatic events, provide vital support to children, and also identify children with psychosocial difficulties. However, in these disaster processes, the number of teachers, just like their students, whose houses were destroyed and who lost their relatives during the earthquake can be quite high. As Wolmer et al. (2003) point out, since teachers live in the same regions as their students during natural disasters, they may also be struggling to cope with post-disaster traumatic symptoms and personal losses.

Richardson et al. (2015) state that although there are many studies on the impact of natural disasters on the international injury burden, and the role of rescuers and responders, there are a limited number of studies in the literature that examine the impact of natural disasters on education. One of these studies was conducted by Deuchert and Felfe (2015). In the relevant study, authors examined the impact of typhoons, which rarely occur in their country, on children's education and stated that they found negative and permanent effects on children's education. In addition to the short-term negative effects of typhoons on education, the authors also emphasized that in the long run, the differences between the educational levels of the students increased as the children got older, with situations, such as decreasing test scores, widespread grade repetition and decreasing general education. In addition, ERO (2013) reported one of the very few studies on how post-earthquake education processes are carried out. According to the related study, in the aftermath of the Canterbury earthquakes in New Zealand, the importance of bringing students back to school to normalize the situation was emphasized. In this context, before reopening schools, teachers were expected to establish strategies for communicating with their students, offering learning activities that students could do at home or establishing 'learning centers' (ERO, 2013). On the other hand, it was determined that the other studies related to disaster and education talked about the problems experienced in schools after natural disasters (Arslan, 2023), measurement and evaluation activities (Agnew & Hickson, 2012) and the use of distance education in the process (Yamamoto Telli & Altun, 2023). In detail with the research conducted by Arslan (2023), the problems faced by school principals in schools after the 6 February Kahramanmaraş earthquake, their solutions to these problems and their suggestions were examined and it was observed that after the earthquake, absenteeism problems

increased in schools, students' motivation decreased, and fears and anxieties increased. In addition, among the findings of the study, it was emphasized that teachers were seriously affected by the earthquake. Agnew and Hickson's (2012) research aimed to reveal how different online assessment conditions affect final grade distributions in their research based on the online administration of final exams of economy course at the University of Canterbury, which were cancelled as a result of the earthquakes that occurred in Canterbury in 2010 and 2011. According to the results obtained in this context, the assessment results obtained when online assessments are only available for a short period show a higher correlation with the assessment results obtained from invigilated assessments. It means that online assessment conditions are significant for the accuracy of the assessment and teachers should prepare appropriate conditions accordingly. In this context, when we consider the mathematics course in particular, it is a process in which the evaluation conditions should be prepared more carefully due to the nature of the course. Because there is a perception among students that mathematics is difficult (Brown et al., 2008). In addition, since being able to do mathematics has an important place in the exams for transition to the next level of education in our country, any disruption in students' mathematics education may have negative effects on their future. Thus, in addition to the assessment of learning in mathematics, it becomes of particular importance to examine how a course that students perceive to be "difficult" is conducted after a natural disaster such as an earthquake. This necessitates that the research focuses on examining how mathematics teachers conduct mathematics lessons after the earthquake.

However, studies focusing on the post-disaster education process, especially those centered around the experiences of teachers, are crucial and necessary for understanding the effects of the post-disaster education process and developing measures to mitigate these effects. Since it is stated that it may be much more difficult for children to verbalize their feelings than adults (Başarır, 2023), it was thought that interviewing with teachers about post-earthquake education would provide richer information than interviewing with students since to develop the quality of mathematics education after a natural disaster; it is extremely important to see the post-disaster education process and to take measures accordingly. To realize this, it can be said that every study examining the post-disaster education process in terms of the experiences, and opinions of the teachers in the region who experienced both the earthquake and the post-earthquake process, is extremely valuable since those teachers give us first-hand information that is so valuable. With this viewpoint, the research problem of this study was determined as "How are the educational processes in the Kahramanmaraş region after the earthquake evaluated by the mathematics teachers working in the region?"

METHOD

Research Design

Within the scope of this research, phenomenological design, one of the qualitative research methods, was adopted. According to Creswell (2013), in the phenomenological design, phenomena that are recognized but do not have an in-depth and detailed understanding are examined. The phenomena or events subject to the research develop in the natural environment (Patton, 2014). Moreover, Smith and Shinebourne (2012) stated that what is important in the phenomenological design is the feelings, thoughts and discourses of individuals. This study aimed to examine the mathematics education processes in the Kahramanmaraş region after the earthquake based on the feelings, thoughts and

discourses of mathematics teachers working in the region; phenomenological design, one of the qualitative research designs, was employed as the research method.

Study group

This study aims to examine the mathematics education process in the post-earthquake region through the eyes of mathematics teachers; a purposive sampling method was used to determine the study group. According to Patton (2014), in purposive sampling, participants who were appropriate for the purpose of the research and who were thought to have sufficient and rich information for this purpose were selected. Thus, six mathematics teachers who volunteered to participate in this study were included in the study group from among the mathematics teachers who performed their education activities both before and after the earthquake in public schools in the Kahramanmaraş region. The mathematics teachers in the study group were coded as T1, T2, T3, T4, T5 and T6. In this context, detailed information about the participants is presented in Table 1.

Table 1

Detailed Information about the Participants

Participant	T1	T2	T3	T4	T5	T6
Gender	F	F	F	M	M	M
Total years of service in the profession	10	10	5	3	10	17
Years of service at the current school	4	7	1	3	5	11
Where the school is located (center/district)	city center	city center	city center	district	district	city center
Approximate number of students in the school	300-350	450-500	1500-1550	200-220	900-950	1700-1750
Destruction of the school in the earthquake	not destroyed	destroyed	not destroyed	not destroyed	not destroyed	destroyed

As seen in Table 1, three of the teachers in the study group were female, and three were male. It was observed that the teachers' years of service in the profession ranged from three years to 17 years, and their years of service in their current schools ranged from one year to 11 years. In addition, four teachers were working in public schools in the city center of Kahramanmaraş, and the other two were working in public schools in the districts of Kahramanmaraş. According to the statements of the teachers in the study group, the number of students in the schools they worked in varies from 200 to 1750. In other words, in addition to teachers working in small schools, teachers working in larger schools were also included in the study group. Moreover, it was observed that the schools of two of the four teachers working in the provincial center were destroyed while the schools of the teachers working in the district were not destroyed.

Data collection tool and data collection process

A semi-structured interview form was used as a data collection tool. The questions in the interview form were first presented to two mathematics teachers who were not in the study group and two academic experts in the field to determine whether they were eligible for the purpose of this study. The final version of the interview form was created by revising it in line with the feedback from the experts. In this context, in the interview form used as a data collection tool within the scope of this study, in addition to the questions about demographic characteristics, the question "How were the education and training processes carried out after the earthquake?" was asked and teachers were expected to share their experiences and observations. The reason for formulating the question in the data collection tool in this general way is that the themes to be addressed in the findings were not predetermined, and the themes would be structured based on the responses received from teachers. However, since a semi-structured interview form was used as the data collection tool, probing questions were asked as needed (not necessarily to every teacher) to correctly understand or elaborate on the responses provided by the teachers. However, these probing questions were not included here, as they were not planned before the interviews, and the flow of the interviews did not follow the same pattern for each teacher. The interviews were conducted online with each teacher separately and the duration varied from 20 minutes to 35 minutes. These interviews were recorded with the consent of the teachers.

Data analysis

Content analysis was employed in the data analysis process since it is necessary to bring together similar data within the framework of certain concepts and themes in content analysis, (Creswell, 2016). However, Patton (2002) emphasized that inductive analysis should be used in the process of creating themes by bringing together the words that repeat in the data set. In this study, inductive analysis was adopted because the themes were formed in line with the data obtained without predetermining the themes. In addition, direct quotations obtained from the interviews are often used to reflect the views of individuals in a striking way (İlgar & İlgar 2014). To code the research data accurately and completely, the transcribed documents were read several times at different times and transferred to the MAXQDA Analytical Pro 2022 program for the analysis process. According to Creswell (2013), coding is the process of identifying data with similar characteristics and grouping them into small, meaningful pieces. In this context, in the process of coding the data obtained within the scope of this study, firstly, meaningful small pieces with similar characteristics were brought together and codes were created in this way. Then, themes and sub-themes were formed by bringing together those that appeal to similar characteristics from the codes obtained. After the coding process was completed, expert opinion was obtained from an independent researcher as to whether the coding was appropriate or not.

Validity and reliability

Guba and Lincoln (1982) stated that trustworthiness is more important than validity and reliability in qualitative research and that there are four criteria for this: credibility, dependability, confirmability and transferability. In this context, member checking, prolonged involvement and peer debriefing are employed for credibility (Holloway & Wheeler, 1996). To increase the credibility of this study, member checking was frequently used during the semi-structured interviews and peer debriefing was used after the data coding process was completed by an independent researcher. One of the ways to ensure

the reliability criterion is to conduct data source triangulation by interviewing different people on the same subject to access various data sources (Denzin, 1978). In this study, data triangulation was achieved by interviewing six mathematics teachers who experienced the same phenomenon. Confirmability is related to the presentation of every detail of the study, from the data collection process to the findings, and every detail of this study is shared with the reader. Finally, for the transferability criterion, it is stated that how the sample selection is made, and the characteristics of the participants should be clearly explained (Sharts-Hopko, 2002). In this study, a purposive sampling was conducted in accordance with the purpose of this study and the details about the participants were shared in the relevant section.

Ethical Principles

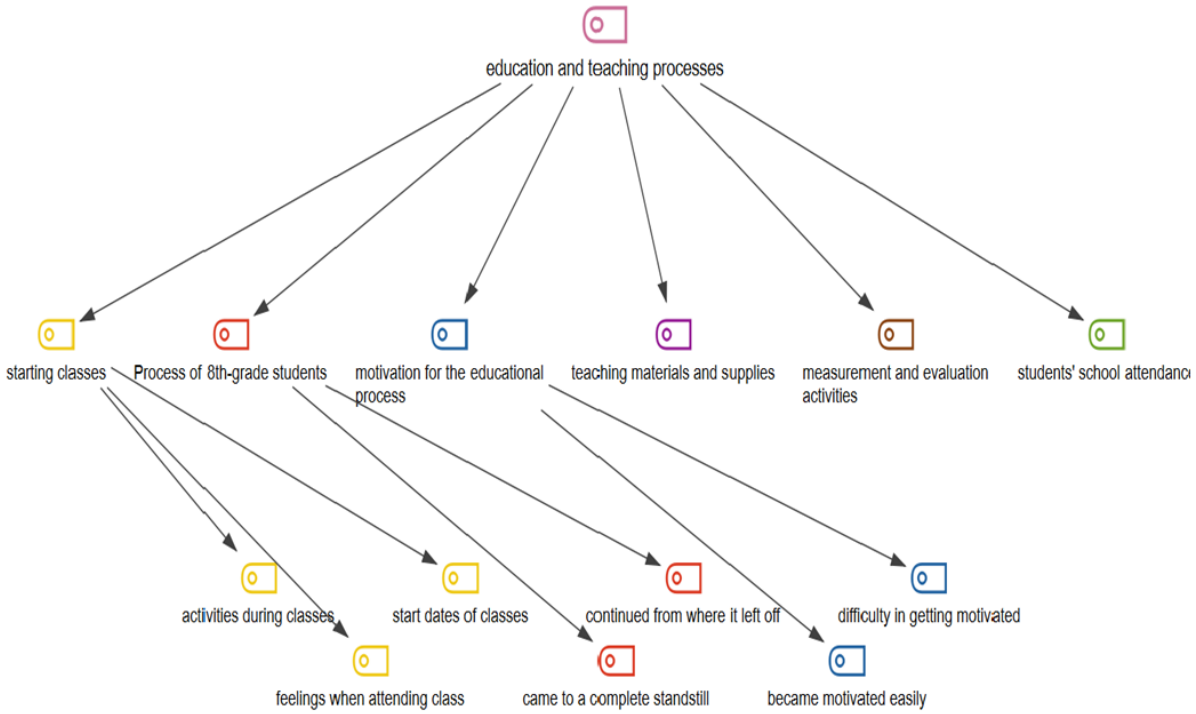
Ethics committee permission for this study was obtained from Rectorate of Aksaray University Human Research Ethics Committee decisions with the decision dated 20.06.2023 and numbered 2023/04-27.

RESULTS

The findings obtained within the scope of this research were grouped under six themes: starting classes, motivation for the educational process, process of 8th-grade students, teaching materials and supplies, measurement and evaluation activities and students' school attendance. The code-subcode model for these themes is presented in Figure 1.

Figure 1

Code-Subcode Model for the Themes



As can be seen in Figure 1, there were various sub-themes belonging to three themes: starting classes, motivation for the educational process, process of 8th-grade students, while there were no sub-themes for the other three themes. When the percentage and frequency values of the usage of the codes forming the themes were analyzed, it was observed that the most emphasized codes were in the themes of starting classes and motivation for the educational process. These were followed by the codes forming the themes of the process of 8th-grade students, teaching materials and supplies, measurement and evaluation activities and students' school attendance. The frequency and percentage values related to the use of the codes belonging to these themes are presented in Table 2.

Table 2

Frequency and Percentage Values of the Codes Belonging to the Themes

Theme	Number of codes used	%
Starting classes	30	36.59
Motivation for the educational process	22	26.83
Teaching materials and supplies	9	10.98
Measurement and evaluation activities	6	7.32
Students' school attendance	4	4.88
Process of 8th-grade students	11	13.41
Total	82	100.00

In this context, the findings related to each theme and sub-theme, if any, are presented below under separate subheadings.

Starting classes

The data obtained from the teachers who made discourses under this theme were grouped under three sub-themes: start dates of classes, feelings when attending classes, and activities during classes. The findings related to these sub-themes are presented separately below.

Start dates of classes

In this context, the comments of the participant teachers about the date when the decision was made to start education were analyzed. Some teachers mentioned that although there was not much loss of life and destruction in their regions, they waited too long for the schools to open, while others stated that it was unnecessary to open schools when vital needs were unmet. T1 expressed this opinion as follows:

"…I mean, there is a problem of shelter and hunger. Tap water is undrinkable. There is a water problem. For this reason, as a teacher, it was not something to think about; there was no need for the school to open;"

while T4 stated that:

"…There was not much destruction in our region, our school and houses are always intact. That's why the opening of the schools was very late, and when it was late, the students were very disconnected from education, and the subjects did not catch up in the remaining time."

Feelings when attending class

When the data on how the participant teachers conducted mathematics lessons after the earthquake were analyzed, it was observed that the teachers stated that education was meaningless in the first period when the schools opened and that teaching mathematics or achieving success in mathematics did not mean anything. They emphasized that especially in regions with high loss of life and destruction, people had difficulties in meeting their shelter, hygiene, food, and security needs before education and that they could not think of teaching mathematics without overcoming these problems. For example, T6 expressed this thought as follows:

"…Honestly, when I think about my students who died, it became a little meaningless for me to teach mathematics, to force students to do it... Because, I mean, children lost their lives and we are still teaching mathematics... it seemed very meaningless at first."

T5, on the other hand, expressed his thoughts as follows:

"…My aim in that process was never to teach mathematics; I just wanted to take the children away from that earthquake and let them focus on different things."

Activities during classes

The teachers, who said that they started to overcome their own shocks gradually in the following periods, stated that they tried to make a quick recovery of the subject in the remaining time but that they could do this superficially. T3 mentioned that:

"…Before the earthquake, we used to do the mathematics lesson by focusing and solving a lot of questions on the board, but after the earthquake, we did it superficially; I never called the students to the board."

T2 similarly said:

"…I can tell you for myself, the first semester subjects are over. I did the lesson with the anxiety of completing the subjects of the second semester, with the anxiety of processing the subjects of the second semester quickly in a short time, without dwelling on it too much, saying that they should see a little bit of everything."

In addition, T2 said:

"…We went from four teachers to three teachers. Since I didn't know the level of those children, the subjects they could and could not handle, our lessons were not very productive anyway."

Another indication that the mathematics lessons before the earthquake and the mathematics lessons after the earthquake were very different may be the functioning of the Support and Training Courses (Destekleme ve Yetiştirme Kursları-DYK) conducted in schools. T4, who stated that there was not much destruction and loss of life in his region, stated that the process was very inefficient in his schools:

"…We had Support and Training Courses, we were doing them regularly before the earthquake. Although there was not much destruction and loss of life in our region, both our schools opened late and after it opened, we did not have courses; our lessons were unplanned and unscheduled."

Motivation for the educational process

It was observed that the data obtained within the scope of this code were grouped under two different sub-themes. In the first sub-theme, teachers stated that both themselves and the students had difficulty getting to motivate themselves for education process. In the second sub-theme, teachers stated that students adapted to the education process very quickly and were surprised by this.

Difficulty getting motivated

T5, who stated that they had difficulty being motivated in the process, said:

"…Before the earthquake, I was running to school, but after the earthquake, both we and the students were disconnected. In other words, we have nothing to do with the lesson."

T3, who stated that the students could not adapt to anything due to their negative psychology after the earthquake, emphasized that they had difficulty motivating many of the students with the following sentences:

"…Already after the earthquake, the panic-stricken child is completely withdrawn and does not talk about anything."

In addition to this, T2 stated that the students had a lot of difficulty being motivated because they saw the traces of the earthquake in every environment they looked at:

"…There are buildings around our school waiting to be demolished; that is, the view is terrible, and the buildings that are just a pile of iron are constantly working construction machinery. Building demolition works are constantly being carried out. Children cling to the windows when they see these things, and they all have anxiety. There are some who are afraid of entering the building and do not enter."

Became motivated easily

On the other hand, T1, who stated that the students adapted to the education and training process very quickly and that he was surprised by this, said:

"…My teacher said that we would run away when there was an earthquake, but other than that, the word earthquake never came out of their mouths; they had forgotten it. We were surprised when we saw them; we were the bad ones."

Similarly, T4 shared his experiences that the students quickly adapted to the education process with the following sentences:

"…I actually did not see much effect of the earthquake on our children. When I was going back to my duty because the school was opening, I went thinking about how I would teach a lesson and what kind of speech I should give. I didn't even need to do that."

In addition, T6 stated that since many schools were demolished in the region where he worked, a tent city was established in the style of an education camp to carry out only education. He mentioned that there were social areas such as free food, a canteen, playgrounds in this tent city, which motivated the students. T6 said:

"…There were also students who received education in schools, but believe me, there was more demand for our campground. Many students from undamaged schools also came to this campsite. Because there is police protection. No one can enter; no foreigners can enter. It was a very campus-

like environment; they liked it. You know, everything is free in the canteen, they can queue up and buy whatever they want. There are lunch breaks; there is a playground. The children liked that environment. In other words, they distracted their attention in this way and increased their motivation."

In addition, T6 emphasized that teachers from different provinces and various non-governmental organizations come to the region and support education and stated that the motivation of both students and teachers increases when they see such support.

Process of 8th-grade students

Under this code, teachers' statements were again grouped under two different sub-themes. While some of the teachers stated that the preparations of the students preparing for the High School Entrance Exam (Liselere Giriş Sınavı-LGS) came to a complete standstill and they could not recover, some teachers stated that the exam preparation continued from where it left off after a short transition period.

Came to a complete standstill

Some teachers who stated that some of their students migrated to other provinces in the period after the earthquake stated that these students stopped preparing for the exam. Stating that all preparations of 8th grade students for the exam had stopped, T1 said:

"…I mean, this process is not like a pandemic. They have psychological conditions; there are impossibilities. They have three months of not being able to study. For example, let me put it this way even when you go to another place as a guest, we are people who think whether it will be a problem if I charge my telephone or not. As a result, these people went to stay with their relatives and friends. That's why there is no preparation for the exam."

Similarly, T2 emphasized that students preparing for the exam were left to their own devices and that there was no work in the region where he worked in terms of exam preparation.

Continued from where it left off

On the other hand, some of the participant teachers stated that the exam preparation process continued from where it left off sometime after the earthquake. T6 said:

"…I can say that we were active 24/7, especially on WhatsApp. As you already know, during the pandemic period, we were very active on WhatsApp and Zoom, and it continues. We constantly guided the children using WhatsApp. For example, I established question-solving groups for them."

It was determined that they tried to continue their preparations for the exam as much as possible. Similarly, T5, who stated that preparations for the exam continued after a certain period, said:

"…After we gathered with our LGS students, I mean, we had a better process, we did trials. We had already finished the subjects long before. The exam would be based on the first semester subjects. We brought them back into the process with essays."

T3, who also stated that they made efforts to prepare students for the exam, said:

"…Our DYK was continued. Our teachers also had extra courses for the school. They used to pick up the children after school. They were solving questions with them, and the last weeks were full of essays. The children were constantly being tested, and the optics were being collected. Since the

stationery stores were open here, the test results were coming from the optical reader. So we continued our preparation."

Teaching materials and supplies

Under this heading, the discourses of the participant teachers were analyzed in terms of access to materials and resources (e.g., course books, test books, notebooks, pens, pencils, board markers, and white writing boards) required for the education process. According to the data obtained, the participant teachers stated that the resources or materials required for education were accessible in the region after the earthquake. In this sense, it was observed that the teachers attributed the lack of severe problems in accessing teaching materials and resources to the fact that there was not much destruction in the region where they worked or that the aid provided to the earthquake zone was sufficient in this sense. T5 shared his experiences on this issue:

"…Some publishers sent us books. There were enough stationery materials in the aid."

While T4 said:

"…There was not much destruction in our region, our school was strong, we had no shortage of resources. You know, the students had books, and their houses had not been destroyed."

T4 stated that they did not have a shortage of resources and materials. On the other hand, T2 stated that the only source to overcome the deficiencies regarding the teaching materials needed by teachers and students in the region where he worked was the aid coming to the tent cities and said:

"…Aid organizations gave notebooks and so on for the students staying in tents, but I did not see any support from anywhere else."

Measurement and evaluation activities

The teachers who stated that their entire functioning was disrupted due to the earthquake stated that they did not carry out any assessment and evaluation activities after the lessons started and that the report card grades were given the same as the previous semester. T4 stated that no assessment and evaluation activities were carried out after the lessons:

"…We did not do any written work in the mathematics lesson, and we did not even give oral examination grades for students who did not have low averages."

T3, on the other hand, stated that they did not have the chance to measure whether the students understood or not even momentarily during the lessons and expressed this experience as follows:

"…I mean, do the children understand or not? I couldn't even understand this. It is tough to fully realize measurement and evaluation. There should be an exam anyway. In the lessons, we usually just briefly explained the subject and solved a few questions".

Students' school attendance

Participant teachers generally stated that almost 1/3 of the students in their schools did not attend school after the earthquake. While some of the teachers attributed this situation to the fact that students migrated to other settlements with their families after the earthquake, some teachers attributed it to the fact that school attendance was not required after the earthquake. T4 expressed his views on this issue as follows:

"…Our school was strong, and the houses of the students were strong. In fact, there was not much of an obstacle for them to come to school, but since attendance was not compulsory, they came to school and asked what to do. Obviously, there was no situation to bring students to school when there was no exam. Also, there are vineyards and garden work in our region, so the children went there when attendance was not compulsory."

On the other hand, T2 stated that students could not attend school because they had to leave their own homes:

"…Some of our students are staying in tent cities. They cannot come to tent cities and container cities because they are far away. They came to class a couple of times, and then they said, "Teacher, we are not going to come."

T6 stated that some of the students in his school migrated to other places with their families and continued their education in the places where they migrated. Thus, the enrollment of his school decreased considerably.

CONCLUSION AND DISCUSSION

According to the findings of this study, the experiences and observations of the teachers working in the Kahramanmaraş region about the educational process after the earthquake are grouped under six themes: starting classes, motivation for the educational process, process of 8th-grade students, teaching materials and supplies, measurement and evaluation activities and students' school attendance. Among these themes, teachers mostly made discourses about starting classes and motivation for the educational process.

Under the starting class theme, teachers concentrated on the sub-themes of start dates of classes, feelings when attending classes and activities during classes. While some teachers stated that there was no destruction in the regions where they were working. Therefore, their schools were in a position to start education earlier; some teachers stated that there was too much destruction in their regions and that it was pointless to start classes when they could not even meet their basic life needs. Similar views to those of the teachers who thought that the start of classes was meaningless were also expressed in the study of Yamamoto Telli and Altun (2023). In their study, it was emphasized that the need for education can be addressed after basic life needs are met. Similar to one of the findings of this study, an indicator that people cannot focus on other processes after natural disasters without meeting their basic life needs was also revealed in the study conducted by Richardson et al. (2015). A student who participated in their study stated that after the earthquake, he only tried to survive and could not focus on anything else. Moreover, in this study, teachers who stated that teaching mathematics started to seem meaningless to them when they entered the class stated that they only tried to keep the students away from the earthquake psychology during the lesson processes. For this purpose, Arslan (2023) also emphasized that extracurricular activities are emphasized in schools. Given that returning to school is perceived as a normalization process (Richardson et al., 2015), it can be said that the lesson process remains in the background in this sense.

When the findings related to the theme of motivation for the educational process were analyzed, it was observed that some teachers mentioned that students were easily motivated for the educational process, while some teachers stated that their students had difficulty motivating them for the process. It can be thought that this differentiation may be related to the magnitude of the losses experienced

by the students after the earthquake. MacGeorge et al. (2007) stated that emotional support can be especially useful for people who experience disasters but are not directly affected by them. In this context, it can be concluded that it would be easier for students who experienced the earthquake but were not affected by it through loss of life or property to focus on the educational process with emotional support. In addition, within the scope of this study, some teachers stated that the school environment distracted students from the earthquake psychology, socialized them and helped them to normalize. Consistent results were found in Richardson et al.'s (2015) study. While some of the students participating in the related study were able to recover their motivation immediately after the earthquake and establish a balance in their home, work and school lives, some of them stated that they could not establish this balance. In addition, reflecting consistent findings in the same study, students stated that the normal continuation of classes created stability in an unstable environment. This was a factor that facilitated their motivation. On the other hand, in this study, it was stated that the fear and anxiety experienced by the students in the process negatively affected their motivation by the teachers. Compatible with this finding, Yamamoto Telli and Altun (2023) argue that the fear of earthquakes and concern about the earthquake resistance of buildings may cause people to search for different spaces and to prefer single-storey buildings, and may also negatively affect school success. Thus, teachers and students who cannot enter their schools due to fear of earthquakes may have difficulty motivating themselves and their school achievement may decrease. Similarly, Arslan (2023) stated that the motivation of students who came to school after the earthquake decreased, and behavioral disorders, as well as fear and anxiety, increased in students.

When the findings under the theme of the process of 8th-grade students were examined, as in the theme of motivation for the educational process, some teachers mentioned that the preparation process of the students in their schools for LGS was completely stopped, while some teachers stated that the preparation for the exam resumed after the earthquake for a while. Teachers who stated that they continued to prepare for the exam emphasized that digital communication platforms were effective in this. Similarly, in the literature, there are research results indicating that being able to communicate with teachers via e-mail after earthquakes contributes positively to the continuation of students' education (Richardson et al., 2015), as well as research results indicating that providing continuous dialogue and information sharing through Facebook and other digital platforms in disaster situations creates positive results (Bird, Ling, & Haynes, 2012; Dabner, 2012). On the other hand, one of the biggest reasons given by teachers who stated that exam preparations stopped due to impossibilities was that students did not have suitable environments where they could study. Similarly, Yamamoto Telli and Altun (2023) stated that families whose houses were damaged after the earthquake either took shelter with relatives or had to settle in tents and container cities because these environments were unsuitable for studying.

When the findings under the theme of teaching materials and supplies were examined, it was determined that there was no problem in accessing a teaching material or resource (e.g., course books, test books, notebooks, pens, pencils, board markers, and white writing boards) in general. Similarly, Arslan (2003) stated that the lack of teaching materials after the Kahramanmaraş earthquake was overcome. In this context, Richardson et al. (2015) also mentioned that access to teaching materials and resources is a positive situation. In that study, students emphasized that the availability of resources was critical even if the library was closed after the earthquake.

When the findings under the theme of measurement and evaluation activities were examined, teachers mentioned that no measurement and evaluation activities were conducted within the scope of mathematics classes after the earthquake. In the literature, the number of studies examining the effects of natural disasters on measurement and evaluation activities that should be carried out in the education process is quite limited. In the study conducted by Agnew and Hickson (2012) on post-earthquake assessment and evaluation activities, universities continued their assessment and evaluation activities online after the earthquake, and students who did not have internet access at home used the computer laboratories on campus in this process. Although similar processes were experienced in higher education institutions that switched to distance education after the earthquakes in our country, no assessment and evaluation activities could be carried out in primary and secondary schools affiliated with the Ministry of National Education because the courses were not conducted in a planned manner and school attendance was not required. Thus, students who attended the class could not receive effective feedback on whether they learned or not.

The Ministry of National Education stated that in the spring semester of the 2022-2023 academic year, due to the earthquake, attendance will not be compulsory in schools, and no one will be considered absent (Arslan, 2023). When the findings related to the theme of students' school attendance are analyzed, it can be said that this decision is one of the biggest reasons why students do not attend school because in the findings of the study, it was stated by the teachers that some students could not attend school due to impossibilities. It was concluded that most of them preferably did not attend school because there was no obligation to attend and take exams. Similarly, Arslan (2023) stated that student absenteeism increased significantly in schools after the earthquake. In addition, it is stated in the literature that some students were not able to go to school due to reasons, such as damage to themselves or their families due to the earthquake (Yamamoto Telli & Altun, 2023).

Recommendations

The suggestions presented within the scope of this study can be summarized in two points. The first one is the suggestions that can be presented to recover the education process more quickly after natural disasters. The other one is the suggestions for academic studies that can be conducted on the education and training process after natural disasters. The first suggestion that can be presented to recover the education process more quickly after natural disasters is that the opening dates of schools can vary according to the damage to the regions. For example, face-to-face education can be started earlier in areas with less damage, and in areas with more damage, face-to-face education can be started after basic life needs are met. Until the transition to face-to-face education, distance education can be provided with a solid infrastructure. In this context, teachers can prepare pre-disaster training videos, materials and resources; local authorities can take measures to increase the number and equipment of earthquake-resistant libraries, schools, and study areas. Education camps can be established in areas far away from the buildings that were destroyed or about to be destroyed after the earthquake in settlements that were severely damaged in the earthquake, and education can continue in these camps. Given that schools are centers of socialization and recovery, school attendance may be compulsory under certain conditions and in certain regions, and measurement and evaluation activities may be carried out in this context. Teachers could be informed before the media about how education will continue and given the opportunity to prepare for the education process. Most importantly, school staff, students and parents can be informed and trained about the education process after the earthquake.

Academic studies that can be conducted on the educational process after natural disasters can include topics on students' experiences and expectations. In addition, studies examining both the short-term and long-term effects of natural disasters on the education process can make insightful contributions to the education system.

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