SUJE
ISSN: 2146-7455

Received : 25.10.2023
Accepted : 24.12.2023
Available Online : 30.12.2023

SAKARYA UNIVERSITY

The Reflections of Earthquakes on Education: Insights From School Managers

Duran MAVİ[a] Gamze TUTİ[b]

a: 0000-0001-7244-6448 Turkish Ministry of National Education, Turkiye duranmavi@hotmail.com

b: 0000-0001-8831-6613 Turkish Ministry of National Education, Turkiye gmzeclskn@hotmail.com

Abstract

Earthquakes are natural disasters that can affect the performance of schools, educators, and student success. In light of the recent earthquakes that occurred in Türkiye on February 6, 2023, efforts by both authorities and researchers are underway to assess the effects of the earthquake on the education, staff, and students. In this regard, the perspectives of school managers who remained in their positions following the earthquakes and diligently fulfilled crucial responsibilities hold significant value. A limited number of studies have narrowly examined past educational crises caused by earthquakes. However, the effects of these earthquakes, labeled by government officials as the disaster of the millennium, on education services in the zone have not been fully clarified. Consequently, the current study concentrates on the educational conditions, practices, and expectations within the earthquake-devastated zone. The study was conducted in Elbistan district of Kahramanmaraş, known to be one of the two epicenters of the earthquake. The methodology of phenomenological design was employed during the investigations. The views of 10 school managers (four principals and six vice principals) were obtained for the purpose of the study. The results unveiled insufficiencies in the educational environment within the earthquake zone, with limited and challenging educational practices prevalent. However, respondents highly appreciated the efforts made. Findings uncovered that the educational services in the earthquake zone were incapacitated due to physical problems and managerial inefficiencies. Participants had significant expectations regarding enhancing physical conditions, receiving psychological support services, and improving staff procedures (such as payments, transfers, and professional development). Based on the results, some recommendations were made for the researchers and authorities.

Keywords

School manager, earthquake, education, phenomenology.

Ethics Committee Approval: Ethics committee permission for this study was obtained from Trabzon University Social and Humanitarian Sciences Scientific Research and Publication Ethics Board decisions with the decision dated 08.09.2023 and numbered 2023-9/1.4.

Suggested Citation: Mavi, D., & Tuti, G. (2023). The Reflections of Earthquakes on Education: Insights From School Managers. *Sakarya University Journal of Education, 13*(4 - Special Issue - Disaster Education and Education in Disaster Regions), 701-720. doi: https://doi.org/10.19126/suje.1380907

INTRODUCTION

The pursuit of education is a lifelong process. Persevering through obstacles, fostering creativity, acknowledging societal obligations, and embodying a problem-solving mindset are the sought-after traits instilled by education. The attainment of educational success in a society is closely tied to the elimination of barriers that hinder the implementation of the aforementioned characteristics. Many issues that frequently dominate the public agenda, including inadequate investment in education (Kurul, 2012), academic achievement (Bozkurt et al., 2021; Gümüş et al., 2021) and refugee students (Topaloğlu & Özdemir, 2023), act as obstacles to the smooth functioning of the educational system. However, there are certain barriers that can have a more profound impact on education, educational institutions, educators, and learners. Among these, earthquakes stand out as particularly destructive.

Earthquakes seriously impact the education systems of the countries where they occur (Öztürk, 2013). Damage to schools, destruction of infrastructure (such as internet connectivity, transportation networks, and electronic systems), fatalities, and subsequent tremors all impede the delivery of educational services. Studies conducted in different geographies also confirm the detrimental impact of earthquakes on schools and education (Rodgers et al., 2021; Shaheen, 2008). On the date of February 6th (2023), earthquakes originating in Kahramanmaraş greatly impacted the educational landscape of Turkey, including both students and educators. The four provinces (Kahramanmaraş, Hatay, Adıyaman, and Malatya) and two districts (Islahiye and Nurdağı [Gaziantep]) have been significantly affected by the disasters, resulting in the complete or severe physical damage of a considerable number of educational institutions in these places (Education Reform Initiative [ERI], 2023a; Presidency of Strategy and Budget [PSB], 2023). Educational institutions that incurred minimal damage were assigned to various governmental entities, including municipal authorities, the Disaster and Emergency Management Presidency, and district governorships. The earthquakes on February 6 not only resulted in physical destruction in the specified locations, but also claimed the lives of numerous students and educators, as well as left others trapped, wounded, or with amputations as a direct consequence of the tremors. A vast number of children and educators were obligated to depart from their hometowns and settle in unfamiliar cities, where they faced a multitude of psychological and societal challenges. Despite all this, there has been a gradual reestablishment of educational institutions, and the educational landscape in the earthquake-affected area has been restored to its customary state.

The implementation of restorative measures for schools, reallocation of facilities to alternate organizations, and reintegration of container schools and temporary classrooms fall under the principal initiatives to uphold the continuity of education in the earthquake-affected region. Festivals and projects implemented by The Scientific and Technological Research Council of Türkiye (STRCoT) (STRCoT, 2023) and support from international institutions and organizations (MoNE, 2023a; United Nations Children's Fund [UNICEF], 2023) are other practices used to solve existing problems. In the same manner, educators put forth their utmost efforts in serving their schools and guiding their students (ERI, 2023b). From the first moment of the earthquake, the school principals, vice principals, and teachers worked tirelessly to ensure that schools remained open and ready for education.

As seen in other countries (Mutch, 2021), following the earthquake, schools were quickly transformed into hubs for social support, nutrition, and shelter for students, thanks to the dedicated efforts of educators, particularly the school management team. Even in the face of collapsed or severely damaged buildings, school principals and vice principals served as visiting educators in different

schools, while simultaneously managing their own campuses. They played a crucial role in getting tents, containers, and old schools ready for educational purposes. Through this process, the school management team obtained significant insight into the educational conditions, practices, and expectations in the earthquake zone. In other words, the school principals and vice principals had distinct and remarkable experiences as they worked towards enhancing educational standards in the aforementioned locations. These experiences are precious in presenting the current panorama, evaluating practices, and defining expectations. Indeed, periods of crisis are as valuable as they are challenging (Abaslı, 2017; Kıral, 2018; Sertel et al., 2021). Conducting a thorough assessment of requirements, enriching the crisis management framework, fortifying communication channels, and formulating effective resolutions can be achieved by drawing insights from past crises. (Aksu & Deveci, 2009; Bakioğlu & Savaş, 2001).

The present study aims to analyze the educational conditions and practices in the earthquake zone, as perceived by the school principals and vice principals in Türkiye after the February 6 Earthquakes. For this purpose, school principals and vice principals working in Elbistan district of Kahramanmaraş, one of the earthquake centers, were included in the scope of the research. These individuals were witnesses to the earthquake's effects on education, including the challenges experienced by schools, teachers, students, and the expectations of stakeholders. Examining this process, which has a profound effect on millions of students and hundreds of thousands of educators (ERI, 2023a; ERI, 2023b; UNICEF, 2023), is expected to contribute to the production of knowledge to understand and improve the current situation (Özek & Sincer, 2023). With regards to this matter, the research claims to support the implementation of educational policies, schools, school managers, and teachers. Additionally, the research holds significant implications for addressing educational challenges that may arise in the aftermath of a potential earthquake in Istanbul or the Aegean region. Finally, there is also a need to anticipate potential challenges that schools in disaster-prone countries may face and offer viable solutions for them. Based on the study's findings, a set of recommendations will be presented to school principals, educational authorities, policymakers, and researchers.

Conceptual Framework

Earthquake and Türkiye

Disasters are unforeseeable and unpredictable events that result in societal, psychological, and monetary upheaval for both individuals and the community. They cause massive loss of resources and disrupt many public services. Furthermore, they can result in prolonged interruptions of critical facilities, such as transportation, healthcare, and education, for an extended period of time. Earthquakes are one of the natural disasters whose effects can last for a long time.

Although earthquakes last a few minutes, they are devastating disasters that can cause severe material and moral damage. The geological movements of the plates around it cause Türkiye to experience many earthquakes of various magnitudes every year. This makes Türkiye an earthquake country (Öcal & Topkaya, 2011; Şengör et al., 2008). The historical evidence of numerous seismic events in Anatolia further solidifies this notion. Notably, the August 17, 1999 earthquake served as a pivotal moment in raising the nation's consciousness on this matter. On February 6, 2023, it is possible to say that this awareness peaked with the earthquakes and the damage they caused.

Education in Earthquake Zone

The intensity of earthquakes, their closeness to the surface, and different mistakes (e.g., vertical construction, permitting urbanization near fault lines) hinder the productivity of public institutions in the aftermath of an earthquake (Özek & Sincer, 2023; Yamamoto & Altun, 2023). These impediments manifest in sociocultural and infrastructure services that are utilized by individuals. Among the public services detrimentally impacted by earthquakes are educational activities (Adıgüzel, 2007; Alcocer et al., 2020; Öztürk, 2013).

On the day of February 6, 2023, a catastrophic earthquake struck Kahramanmaraş, resulting in the demise of numerous students, parents, and educators. Furthermore, a multitude of schools were either reduced to rubble or deemed uninhabitable (PSB, 2023). School buildings, most of which had physical damage but were still usable, were allocated for organizations such as DEMP and municipalities. In these centers, earthquake victims were sheltered, aid was stored, and state institutions provided services (ERI, 2023a). During all these difficulties, schools were also prepared for students. In fact, this preparation was sometimes carried out in tents or container schools (Turkish Radio and Television Corporation [TRT], 2023). This process has been greatly aided by the valuable contributions of school principals and vice principals.

Research Context and Problem

School managers, including principals and vice principals, have worked tirelessly to enhance school and teaching conditions in the earthquake-affected area. Nevertheless, it remains a challenge to ascertain the attainment of optimal quality in educational and pedagogical services within the region. At this point, school principals and vice principals, who have played a crucial role in elevating schools to their current state, hold a special significance and are expected to make significant contributions in the future. The available literature examining the effects of earthquakes on education mainly comprises of reports collected from different institutions and organizations (ERI, 2023a; ERI, 2023b; PSB, 2023; UNICEF, 2023). In this regard, it is thought that evaluating the educational activities, practices, conditions, and expectations in the earthquake zone through the perspectives of school principals and vice principals would yield important outcomes. Therefore, in light of the perspectives of school principals and vice principals, the present inquiry delves into the educational circumstances, practices, and expectations in the earthquake-affected area. The study aims to provide a better understanding of the state of schools and education in the earthquake zone. In this way, it is desired to strengthen the knowledge base of the February 6 Earthquakes, which will have long-lasting effects and are estimated to cause billions of dollars in damage to educational institutions. Based on the results obtained, recommendations will be made regarding educational policies and practices. Within the scope of the research, the answers to the following questions were sought:

1) How do you evaluate the educational conditions in the earthquake zone?

In this context, what are your thoughts on;

a) Physical and instructional facilities and

b) Managerial practices in educational environments?

2) What are your views on educational practices in the earthquake zone?

In this context, what are your thoughts on;

a) The appropriateness and diversity of educational practices and

b) Their effectiveness?

3) How would you organize education services in the earthquake zone?

In this context,

a) Can you share your views on the services that need to be changed or improved?

b) What are your suggestions for improving the current conditions?

METHOD

In this inquiry, a qualitative research modality was employed, with a particular focus on utilizing *phenomenology* as a design methodology. This facilitated the revelation of participants' subjective experiences, perspectives, and assessments pertaining to the topic at hand (Özdemir, 2010, p. 328). Indeed, undertaking an analysis of phenomena provides a holistic understanding of individuals' perspectives on exceptional circumstances. (such as earthquakes[1]) (p. 334).

Study Group

The individuals selected for the present study were chosen through the utilization of the criterion sampling technique. *Criterion sampling* is a sampling approach that permits the examination of participants' views, who have predetermined gauges (Patton, 2015, p. 425). Considering the context at hand, it was determined that the selection of study participants would encompass school principals and vice principals serving in Elbistan district of Kahramanmaraş, who have maintained their professional roles following the earthquake. Based on the criterion above, the views of 10 participants were sought. Demographic information about the participants is presented in Table 1:

Table 1

Demographic Information of the Participants

No.	Code Name	Title	Gender	Age	Marital Status	Education	*Seniority in Management	Current School	Status of School	Shelter Earthquakes
1	SP-M01	School Principal	Male	39	Married	Bachelor's	10	3	Moderate Damaged	Container
2	VP-M01	Vice Principal	Male	33	Single	Bachelor's	2	1	Minor Damaged	Own Home

[1] Authors' note.

3	SP-M02	School Principal	Male	49	Married	Bachelor's	23	1	Minor Damaged	A Relative's Home
4	VP-M02	Vice Principal	Male	32	Married	Bachelor's	7	7	Minor Damaged	A Relative's Home
5	SP-M03	School Principal	Male	33	Married	Bachelor's	8	8	Undamaged	Tent
6	SP-M04	School Principal	Male	38	Married	Bachelor's	13	4	Minor Damaged	School
7	VP-M03	Vice Principal	Male	39	Married	Master	5	5	Undamaged	Own Home
8	VP-M04	Vice Principal	Male	38	Married	Bachelor's	4	4	Undamaged	A Relative's Home
9	VP-M05	Vice Principal	Male	35	Married	Bachelor's	4	4	Undamaged	A Relative's Home
10	VP-M06	Vice Principal	Male	37	Married	Bachelor's	8	3	Undamaged	School

Notes: *, Year; SPM, School Principal; M, Male; VP, Vice Principal.

Data Collection Tool and Process

The data were collected through a semi-structured interview form developed by the researchers. The interview form consists of two parts. The first section includes questions regarding the demographic information of the participants. The second section includes the research questions and sub-questions. Upon completion of the necessary arrangements by the researchers, the interview form was reviewed by three experts who had prior experience conducting qualitative studies. Two of these experts are located in Turkey, while the other is based abroad. Upon careful consideration of the experts' opinions and recommendations, the interview form was officially approved. Prior to the implementation, two school principals and vice principals were interviewed as part of the pilot stage. At the end of these interviews, it was seen that the interview form was clear, understandable, and could serve the purpose of the research. After conducting the pilot study, it was concluded that the interview form could be effectively utilized for the research and interviews were subsequently executed. Morse (2015) acknowledges that obtaining comparable data in a qualitative study indicates data saturation. The interviews were concluded upon reaching data saturation (which occurred after the 10th participant was interviewed in this study). Subsequently, data analysis was conducted.

Ethical Principles, Trustworthiness and Rigor

The research was carried out based on the permissions received from Trabzon University Social and Humanities Research and Publication Ethics Committee (Date: 08/09/2023, No.: 2300049763 and Kahramanmaraş Provincial Directorate of National Education (Date: 15/06/2023, No.: 78343088). The

research was conducted with the participants' full consent. Prior to the interviews, the participants were briefed on the research topic, questions, and objectives. During these preliminary interviews, school principals and vice principals were asked to save/write their views on an online form. It was also stated to the participants in these meetings that they could terminate the process whenever they wanted. In this way, it was aimed to run a reliable and valid data collection process. The alignment of the participants' perspectives with the researchers' interpretations plays a crucial role in ensuring the validity of qualitative research. To guarantee the same results in this study, all participants were interviewed via telephone 10 days after the data collection was finished. During these last interviews, In the final round of interviews, the researchers reviewed the research data by seeking clarification on any statements that were unclear. Following the evaluations, all participants confirmed a strong correlation between the researchers' conclusions and their personal perspectives. Some minor inconsistencies and unclear points were eliminated by collaborating with the participants in this process. Additionally, qualitative research software was utilized to further validate the trustworthiness of our research data.

During the analyses, participants were anonymized by coding their names (such as *SP*=school principal, *VP*=vice principal, *M*=male, *01*=participant number). In this way, the identities of the participants were kept confidential. In the study, the experts involved in formulating the research questions were also consulted for matters regarding code compatibility and the creation or merging of themes. In addition, the data were analyzed with MAXQDA 2020. Finally, the summary of the interviews was presented to the participants two weeks after data collection to confirm their views. All these factors collectively contribute to the validity and reliability of the study (Yıldırım & Şimşek, 2016).

Analyses

The analysis procedure developed by Miles and Huberman (1994/2019) was followed while analyzing the data in the current study. According to this procedure, the data were first (*i*)simplified, then (*ii*)visualized, and finally (*iii*)inferred and verified. The data in the online form were edited to simplify the research data. The researchers or participants' perspectives are represented by the symbols "<<< ... >>>" in the simplified data. Recordings were systematically coded and thematized using MAXQDA 2020 qualitative research software. Thematization was achieved through the concept coding technique, which facilitated document analysis and the examination of phenomena as a whole. This combines the phenomenology design and concept coding utilized in the present study (Saldana, 2015, p. 120). The results were visualized using tables and code matrix. The process of drawing conclusions and verifying them was incorporated throughout the conclusion and discussion part.

FINDINGS

After examining the perspectives of the participants, a total of 132 codes were identified. These codes were then used to develop three main themes and nine sub-themes, which were ranked in order of frequency. The distribution of these codes belonging to themes and sub-themes is presented in Table 2.

Table 2

Code Matrix

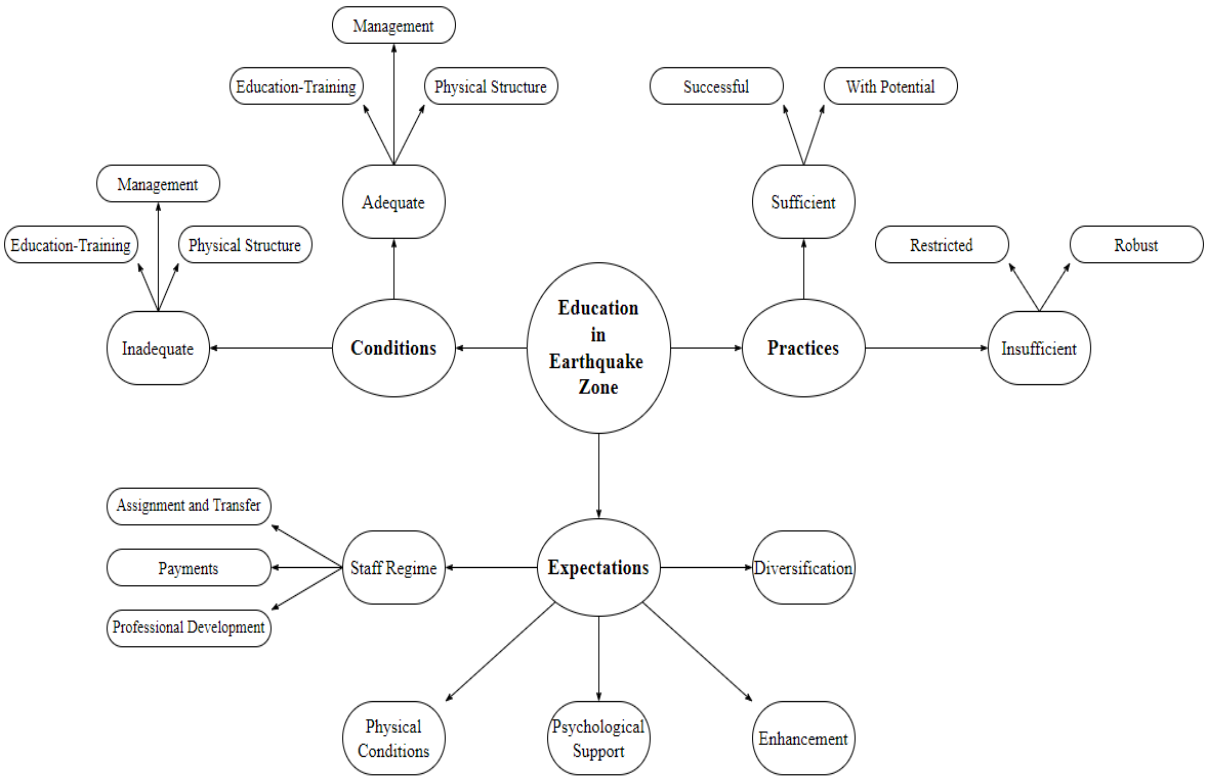
Education in Earthquake Zone				
Conditions		Practices		Expectations
Sub-Themes				
Adequate	Inadequate	Sufficient	Insufficient	Diversification
Education-Training	Education-Training	Successful	Restricted	Enhancement
Management	Management	With Potential	Robust	Psychological Support
Physical Structure	Physical Structure			Physical Conditions
				Staff Regime
				Assignment and Transfer
				Payments
				Professional Development

Note: Those written in *italics* are sub-themes belonging to sub-themes.

As seen in Table 2, the codes relating to the *expectations* theme have the highest frequency, while those under the *practices* theme have the lowest. *Physical conditions* is the sub-theme with the most depth, while the sub-themes of *education-training*, *management,* and *with potential* have relatively few codes. It is possible to visualize the view of themes and sub-themes in Figure 1.

Figure 1

Themes and Subthemes



Findings Related to Educational Conditions

When the participants' views were analyzed for the first question of the study, "How do you evaluate the educational conditions in the earthquake zone?" two themes were reached: *Adequate* and *inadequate. The conditions* theme consists of two sub-themes. Of these, *adequate* has three sub-themes: *Education-training, management*, and *physical structure*. *The education-training* sub-theme consists of the codes that include school principals' positive opinions about students and courses. These positive views are also valid for the *management* sub-theme. However, a small group of participants, whose opinions fell under the *physical structure* sub-theme, are employed in areas that were not heavily impacted by the earthquake. They noted that the education system in these regions was not greatly affected. It is possible to say that the codes under the *adequate* sub-theme do not contain solid, definite views. Participants (e.g., VP-M01, SP-M04, VP-M02) present their views here with adjectives such as "good", "positive", "normal" or "sufficient".

The second sub-theme of the *conditions* theme is *inadequate*. In this theme, participants emphasize the inadequacies of educational conditions. The *inadequate* theme, like the *adequate* theme, consists of the sub-themes of *education-training*, *management,* and *physical structure*. In the *education-training* sub-theme, it is understood that the participants doubt the quality of the services provided by the schools. For example, VP-M03 expresses his view on this issue with the following striking

statements: "Yes, schools provide services, but I doubt what we can provide. I think the following semester's services will be better. However, right now, we are doing the minimum ".

VP-M05 and VP-M06 have similar views on the quality of educational conditions. Moreover, both participants think the forced dual education practice calls into question the quality of education provided. *Management* is the sub-theme where participants criticize authorities and education policies. VP-M03 criticizes the authorities for failing to coordinate education services, while VP-M02 complains about constantly changing managerial practices. SP-M04 questions the leadership abilities of top managers at this point. He summarizes the current panorama with the sentence, "School managers are doing paperwork and are unable to perform their main job of educational leadership, visionary and idealist identity <<<leadership>>.". SP-M03, who had similar thoughts, reported that some of the managers had difficulties in analyzing the conditions of the earthquake zone during the crisis. According to this participant, this situation prevents cooperation among education professionals. Additionally, SP-M01 complains that managerial practices sometimes become rigid during the crisis process. VP-M03, who has overlapping views, expresses his views on this issue as follows:

My personal view is that we are not managing schools effectively. Some of the schools' damage records <<<official records>> turned from “heavy” <<<damage>>> to “moderate” <<<damage>>>, some were turned into <<<social>> markets, some were robbed... We could not manage the process. Especially at the beginning, there was a search for a solution. There were days when everyone looked at each other and tried to run away from the school buildings <<<because they might collapse>>>. We did not know what to do, and this was also because we were afraid for our lives. Maybe we did not fail in management, but we failed; we had to make up work.

Within the *physical structure* sub-theme, VP-M05 highlighted the challenges of using schools with diverse structures. He noted this as a stressor within the institution. Similarly, SP-M01 and SP-M02 report that infrastructural problems negatively affect educational conditions. According to these participants, physical problems have a detrimental effect on the psychology well-being of both students and teachers, and they view these limitations as a significant barrier to providing effective educational services. In this regard, VP-M05 confirms these views by saying, "A school was opened in one container town. Schools could have been opened in other container cities as well.". This sheds light on the lack of school buildings and, thus, on the structural problems of educational conditions. In the *inadequate* sub-theme, participants harshly criticize the educational conditions in the earthquake zone. In fact, participants frequently used expressions such as *problem*, *doubt*, *necessity*, *complex,* and *ineffective* when expressing their views.

Findings on Educational Practices

The second research question, "What are your opinions on educational practices in the earthquake zone?", yielded data that were divided into two sub-themes, labeled *sufficient* and *insufficient*, within the broader *practices* category. The participants' views under the *sufficient* sub-theme align with the results gathered from those who perceived the educational practices in the earthquake zone as positive and appropriate. In the *successful* sub-theme, the managers see the educational practices as *good* and *satisfactory*. For instance, SP-M04 stayed at the school for a while after the earthquake and closely witnessed the preparation of educational practices. He described the educational practices as "A style of education close to the normal one continues. Students are treated a little more flexibly" and deemed it as successful. In addition, VP-M04 also had parallel views and stated that "Suitable

conditions were provided by the measures taken in the short period." These findings demonstrate how managerial practices affect educational practices positively, distinguishing it from SP-M03 and VP-M06. The *with potential* sub-theme under *sufficient* presents a positive outlook on educational practices, while also including critiques. For instance, SP-M02 and VP-M05 highlight shortcomings, but also acknowledge that the situation is improving. VP-M06 explains the source of this improvement with the educational culture of the city where the research was conducted:

As I mentioned above, our education has suffered; however, Elbistan is one of the cities that will recover the fastest in education among the provinces and districts in the earthquake zone. My reason for saying this is this: Our city has an established educational culture, and I do not see that culture as a phenomenon that will collapse in an earthquake.

The *restricted* sub-theme under *insufficient* consists of codes where educational practices are limited. The general outlook of the relevant sub-theme can be defined as "favorable but with room for improvement." Here, SP-M01 states that there was an effort to integrate educational practices into the garden. However, the curriculum does not entirely support this initiative. In addition, SP-M04 notes that guidance and counseling services are not efficient, while SP-M03 argues that students are unable to fully fulfill their duties. VP-M03 holds a similar viewpoint. In this vein, VP-M04 stated, "There is not much of an option right now. It should continue like this.". illustrating the view that educational practices are squeezed into a narrow scope. The theme of *robust* encompasses the challenges encountered in educational practices and discussions. Additionally, SP-M01 and VP-M06 state that recompense training has become obligatory due to the difficulties experienced. The problematic situation and effectiveness of educational practices are clarified by SP-M01, stating that “Recovery may be challenging but not impossible. Therefore, mandatory recompense training is necessary for all levels.”. VP-M03 describes the dilemma faced by schools, teachers, and school managers in regards to educational practices by stating that:

We opened the schools with some difficulties. We keep them open. In this context, I have criticisms about the quality. We are still uneasy. What happened, and what will happen? We do not know what would happen if an earthquake occurred in the classroom. The authorities are also struggling. There are always different opinions and thoughts... Everyone is puzzled. (…) I do not expect academic achievement to increase. The issue of academic achievement was closed on the morning of the earthquake, but did we manage to bring a smile to the students? I think yes! On the school way, they <<<students>>> close their eyes <<<<to avoid seeing scenes of destruction, etc.>>>. Under these conditions, effectiveness is not an option.

VP-M05 shares similar perspectives on this matter. He explains that the challenges encountered during training exercises are primarily a result of managerial errors as evidenced in the following statements: "Despite the end of the third week in schools, the continuous transfer of students in and out of schools has negatively affected education services. At the same time, problems in the education services provided after the earthquake also negatively affect children.". Lastly, VP-M02 pointed out the importance of motivation as a major underlying cause of the challenges encountered, and highlighted the vital role of addressing the needs of students and educators.

Findings on Expectations

The analysis of the data related to the third research question, "How would you organize education services in the earthquake zone?" resulted in the identification of five sub-themes falling under the *expectations* theme: *diversification*, *enhancement*, *psychological support*, *physical conditions*, and *staff regime*. *Diversification* contains the participants' expectations regarding educational activities and curricula. For instance, SP-M02 suggests that schools have carried out a diverse range of activities after the earthquake, but there is still a need for increased efforts. Additionally, teacher performance and curriculum updates are seen as crucial factors by SP-M04, while SP-M03 highlights the significance of social activities. In the same parallel, SP-M01 argued that "For elementary education, I would have been meticulous that the lessons were held in open spaces and that the instructional activities were taught through play-based activities. However, unfortunately, the curriculum prevented me a lot.". Additionally, VP-M06 states that recompense training will significantly contribute to minimizing learning losses.

Participants of the *enhancement* theme appear to value the efforts being made. However, all school managers maintain the belief that the current conditions and practices must be upheld and improved. In the same vein, VP-M01 and VP-M04 concur that preserving and advancing the available education and training facilities and services is the appropriate course of action in the earthquake- affected area.

In the *psychological support* theme, school managers acknowledged the importance of guidance and counseling for themselves, their staff, and students. VP-M02 suggests that motivation plays a crucial role in this process. Similarly, SP-M02 states that providing psychological support is essential for helping students develop a positive outlook on their future. SP-M01, a principal at a secondary school, has a strong commitment to the academic growth and achievements of his teachers and students in preparation for central exams. Here are his thoughts on this subject:

Considering the environmental factors, making education appropriate can be supported by psychological support and various activities. (…) Students need to protect themselves from negative factors without feeling anxious. As valuable educational actors, teachers need to be mentally and physically rehabilitated. If this is ensured, effectiveness occurs. (…) Considering the losses suffered by educators in the earthquake zone, teachers should be supported economically, their wages should be increased, and they should be provided with periodic guidance and psychological support services. Housing support should also be provided to teachers and their families, and teachers' anxiety levels should be reduced. Thus, teachers can be more committed to their work, and education can be improved.

According to VP-M06, psychological assistance and counseling should encompass students, educators, and school managers. Similarly, SP-M03 highlights the importance of psychological support in recovering from a significant trauma, like an earthquake.

The *physical conditions* theme consists of participants' views on improving the conditions of schools. This theme focuses on improving schools' physical conditions and the promotion of opportunities for teachers and students. According to VP-M02, the improvement of the physical environment cannot be delayed any longer, and VP-M03 recommends targeting specific aspects such as the school facilities, outdoor space, internet connection, and power infrastructure.

Staff regime is the theme with the highest participant expectations, which pertains to the employment of teachers and school managers, as well as economic benefits and requirements for professional

growth. Under this sub-theme are the sub-themes *assignment and transfer*, *payments*, and *professional development*. The majority of participants in the *assignment and transfer* theme indicated a preference to be assigned away from the earthquake zone, with a few exceptions (such as SP-M02). The addition of the views on volunteer teachers and school managers working in the earthquake zone indicates that the participants hold expectations regarding the right to transfer. School managers also expect the higher authorities will take necessary steps to place teachers and support staff in schools where their services are required. For example, VP-M05 explains this in the following sentences: "Teachers became over-normed after the earthquake. When assigning these teachers to schools in need, they should have been assigned according to the superiority of service points. There should be fairness in the number of kindergarten and primary school students.".

The *payments* sub-theme includes expectations for economic regulations to be established to acknowledge the efforts of educators. The primary references for this expectation are the loss of the former attractiveness of the earthquake zone, rising prices, and economic losses of earthquake victims. *The professional development* sub-theme includes specialization and support for teachers and school managers in their careers. VP-M01 explains this by pointing to other sub-themes under *expectations*:

The staff is exhausted. Both psychologically and physically... They are homeless, they are tired... This needs to be eliminated. "Teaching is sacred. Come to school, bro/sis!" does not make much sense in these conditions. We need to address their most basic needs. There may be career <<<<development>> opportunities, there may be economic regulations. They need to be empowered in these matters.

According to SP-M03, SP-M04, and VP-M06, this approach best benefits teachers and students. Participants believe that the professional development of staff is functional in eliminating the disruptions in schools and education and training services in the earthquake zone.

CONCLUSION AND DISCUSSION

The current research examined the state of education in the earthquake zone through the lens of school principals and vice principals. The purpose was to examine the perspectives of education staff who remained in the region following the February 6 earthquakes in Türkiye. Upon careful analysis of the responses gathered for the first question of the research, "How do you evaluate the educational conditions in the earthquake zone?" are carefully analyzed, it is seen that the majority of the participants find educational conditions inadequate. However, a limited number of participants held a different perspective. In studies focused on the intersection of "COVID-19 pandemic and education," it is not uncommon to encounter sharp criticism from participants, particularly in the areas of education-training and management, as there has been much debate about the quality of education services during the pandemic (Camilleri, 2021; Özdoğan & Berkant, 2020). Moreover, according to studies conducted during the relevant period, it has been observed that the crisis in educational institutions is further intensified by managerial practices (Sertel et al., 2021), leading to a lack of direction among employees (Netolicky, 2020). This provides important insights into education managers' leadership and crisis management competencies in the earthquake zone.

Alongside this, participants expressed many views that centered on physical structure limitations and possibilities. These perspectives emphasized the use of schools for purposes other than education,

such as aid distribution or shelter (e.g., aid delivery or shelter). The research aligns with previous literature on the functions of schools during moments of crisis, adding to the existing body of knowledge within the context of earthquakes (Baltacı & Uçan, 2022; Kıral, 2018). The results of the study indicate the potential for forecasting the physical difficulties and educational aftermath of a potential earthquake in Istanbul or the Aegean region. It is thought that an earthquake in these regions, where a considerable number of Türkiye's students reside, may lead to more drastic consequences than what was uncovered in the present study.

According to the data gathered from the second question of the study, "What are your views on educational practices in the earthquake zone?", a limited number of participants found the educational practices in the earthquake zone "positive". Furthermore, many participants identified the services provided by schools as insufficient. As a whole, these perspectives indicate that the actions performed in schools within the earthquake zone do not meet the desired standards. The findings indicate that individuals who experienced an exceptional crisis did not perceive the education to be sufficient. However, it is recognized that the contributions of authorities, education staff, and volunteers should be valued. This highlights the significant role of school managers in managing crises and carrying out instructional activities. As a result of this role, school managers have many responsibilities in responding to the demands of the authorities (e.g., collecting and disseminating information, organizing social aids, preparing schools for education), leading to education staff, directing and helping to volunteers. This finding highlighted the significance of school managers in navigating through "earthquake" scenarios. According to official reports dated before February 6, 2023, there has been an improvement in educational indicators in certain areas within the earthquake zone (Turkish Statistical Institute [TSI], 2022). The earthquake has impacted the education in the zone, and the extent to which it will be restored to its former level is uncertain.

In contrast to previous studies (Bakioğlu & Savaş, 2001; Özek & Sincer, 2023), the current research highlights the concerns of the participants. In contrast to earlier studies, the present research offers a more thorough examination of the impact of earthquakes on education and the means of mitigating this impact. Türkiye (Yamamoto & Altun, 2023) and different countries around the world (Alcocer et al., 2020; Mutch, 2021; Rodgers et al., 2021; Shaheen, 2008) have experienced devastating earthquakes that deeply affected schools, educators, and students. At this point, reviewing the physical and psychological resources utilized by educators and students to overcome obstacles during educational activities in earthquake-affected countries could prove beneficial. Despite this, the present study reveals that both the participants' interest and the educational measures implemented in the earthquake-stricken region are not in line with this perspective.

The findings on the last question of the study, "How would you organize education services in the earthquake zone?" show that the participants have different expectations to improve educational activities and practices. School managers offer various suggestions for enhancing the learning environment in the earthquake-affected area. Recompense training and revising the curriculum emerge as prominent actions to be taken at this stage. The alignment between the research and literature is evident when taking into account the demands for enrichment educational activities. Indeed, research shows that Türkiye's centralized education system makes it difficult for educators to make curriculum revisions (Bellibaş & Gümüş, 2021; Gümüş et al., 2021). The structure of the Turkish education system, directly shaped by MoNE, limits its innovation capacity. Additionally, this restriction extends beyond the curriculum and is evident in various policies, including school administration and crisis management. Issues pertaining to student and teacher transfers in the aftermath of the

earthquake are typical examples. One common theme in the detailed comments from all participants was the expectation of receiving psychological support. Taking into account the impact of this anticipation on educators (Ford et al., 2019), it can be concluded that the research aligns closely with past studies. Additionally, this could also apply to countries prone to earthquakes, including Chile, Indonesia, Japan, New Zealand, and Mexico. The study's findings provide clues to the authorities and researchers about possible future earthquakes in Türkiye. One area of concern is the preparedness of schools in Türkiye for earthquakes. Is the MoNE currently conducting research on the number of earthquake-proof schools? In light of this, it can be argued that recommendations for studying the physical structure have become increasingly important. Official sources and studies in recent years have revealed significant efforts in Türkiye to build new schools and improve the physical structure of existing schools. Moreover, a significant portion of the MoNE budget has been spent on these efforts for some time (Mavi, 2023; MoNE, 2023b, pp. 15-16). However, with the February 6 Earthquakes, it has become inevitable to increase the budget allocated for the construction, strengthening, and development of schools in the earthquake zone. In this context, it may be appropriate to include earthquake-affected cities under the Regions with Development Priority or Centers of Attraction Program, which are specific programs developed for disadvantaged cities. Both individuals looking to invest in education and educators seeking employment in the region can take advantage of financial solutions in this context. The results indicate that reevaluating the financial benefits of volunteer educators' who are active in the earthquake-affected areas work can have a positive impact on education and training services. Research has proven that economic benefits are a key focus for those in the education field (Hanushek & Rivkin, 2006; Kurul, 2012; Uygun, 2012). Participants believe that addressing the professional development needs of teachers and school managers can lead to positive impacts on academic achievement of students. In light of the impact of professional development on educators (Karacabey, 2021), incorporating the triangle of earthquake, crisis, and education provides a distinctive perspective on the educational situation in the earthquake zone.

While the present study has important implications, it must also be noted that there are limitations to its findings. One of these limitations is that it solely reflects the opinions of school managers, neglecting the input of teachers, students, and parents. A potential criticism is that the research may have benefited from a quantitative methodology. Increasing the number of participants in addressing the aftermath of the February 6 Earthquakes can lead to more accurate predictions. Additionally, the research fails to consider the impact of learning loss and schooling, a crucial aspect of education in the earthquake affected area. However, it is approximated that numerous students moved to new cities in the aftermath of the earthquake, leading to some being unable to continue their studies in the second semester of the 2022-2023 academic year. In light of this, it is recommended for researchers to investigate the decline in schooling and learning in the earthquake-stricken zone.

REFERENCES

Abaslı, K. (2017) Acil durumlarda eğitim programı kapsamında Türkiye'deki mülteci çocuklar için şartlı eğitim yardımı projesinin değerlendirilmesi [Evaluation of a conditional education assistance project for refugee children in Türkiye under the education in emergencies program]. *3. Uluslararası Öğrenciler Sosyal Bilimler Kongresi* [*3rd International Students Social Sciences Congress*] Türkiye, 117-136.

Adıgüzel, S. (2007). *İlköğretim okul müdürlerinin deprem ile ilgili kriz yönetimine ilişkin yeterlikleri* [*The competency of the primary school administrators on the crisis management related to earthquake*] (Thesis No.: 219277) [Master thesis], Yıldız Teknik University.

Aksu, A., & Deveci, S. (2009). İlköğretim okul müdürlerinin kriz yönetimi becerileri [Crisis management skills scale of primary school managers]. *E-Journal of New World Sciences Academy*, *4*(2), 448–464. Retrieved from: https://dergipark.org.tr/en/pub/nwsaedu/issue/19828/212453

Alcocer, S. M., Murià-Vila, D., Fernández-Sola, L. R., Ordaz, M., & Arce, J. C. (2020). Observed damage in public school buildings during the 2017 Mexico earthquakes. *Earthquake Spectra*, *36*(2_suppl), 110-129. https://doi.org/10.1177/8755293020926183

Bakioğlu, A., & Savaş, C. (2001). Okulda depremin neden olduğu krizin yönetimi [Managing earthquake-induced crisis at school]. *Öneri Dergisi* [*Öneri Journal*], *4*(15), 25-30. https://doi.org/10.14783/maruoneri.735484

Baltacı, Z., & Uçan, S. (2022). Inclusive, collaborative and personalized professional development process for the post–emergency remote teaching era: The importance of virtual professional learning networks. *Sakarya University Journal of Education*, *12*(1), 175-187. https://doi.org/10.19126/suje.1028020

Bellibaş, M. Ş., & Gümüş, S. (2023). The effect of learning-centred leadership and teacher trust on teacher professional learning: Evidence from a centralised education system. *Professional development in education*, *49*(5), 925-937. https://doi.org/10.1080/19415257.2021.1879234

Bozkurt, S., Çoban, Ö., Özdemir, M., & Özdemir, N. (2021). How leadership, school culture, collective efficacy, academic self-efficacy, and socioeconomic status affect student achievement? *Education and Science*, *46*(207), 465–482. http://dx.doi.org/10.15390/EB.2021.9338

Camilleri, M. A. (2021). Evaluating service quality and performance of higher education institutions: A systematic review and a post-COVID-19 outlook. *International Journal of Quality and Service Sciences*, *13*(2), 268-281. https://doi.org/10.1108/IJQSS-03-2020-0034

ERI. (2023a, March). *6 Şubat 2023 Tarihli Kahramanmaraş Merkezli Depremlerin Eğitime Etkileri* (*Bilgi Notu-1*) [*Effects of the February 6, 2023 Earthquakes Centered in Kahramanmaraş on Education* (*Information Note-1*)]. ERI.

ERI. (2023b, June). *Afet Bölgesinde Öğretmen Olmak: "Enkaz Hâlindeyiz, Birbirimize Tutunuyoruz."* [*Being a Teacher in a Disaster Zone: "We are Rubble, We Hold on to Each Other."*] ERI.

Ford, T. G., Olsen, J., Khojasteh, J., Ware, J., & Urick, A. (2019). The effects of leader support for teacher psychological needs on teacher burnout, commitment, and intent to leave. *Journal of Educational Administration*, *57*(6), 615-634. https://doi.org/10.1108/JEA-09-2018-0185

Gümüş, S., Şükrü Bellibaş, M., Şen, S., & Hallinger, P. (2021). Finding the missing link: Do principal qualifications make a difference in student achievement? *Educational Management Administration & Leadership*, *47*(6), 1–24. https://doi.org/10.1177/17411432211051909

Hanushek, E. A., & Rivkin, S. G. (2006). Teacher quality. In E. A. Hanushek and F. Welch (Eds.), *Handbook of the economics of education* (pp. 1051-1078). North-Holland.

Karacabey, M. F. (2021). School principal support in teacher professional development. *International Journal of Educational Leadership and Management*, *8*(1) 54-75. https://doi.org/10.17583/ijelm.2020.5158

Kıral, E. (2018). Çatışma ve kriz yönetimi [Conflict and crisis management]. İçinde N. Cemaloğlu ve M. Özdemir (Eds.), *Eğitim yönetimi* [*Educational administration*] (pp. 451-512). Pegem.

Kurul, N. (2012). *Eğitim finansmanı* [*Education financing*] (2nd ed.). Siyasal.

Mavi, D. (2023). XI. Kalkınma Planı'nda eğitim politikaları: Milli Eğitim Bakanlığı'nın görevleri nelerdir? [Education policies in the XIth Development Plan: What are the duties of the Ministry of National Education?] *Uluslararası İktisadi ve İdari İncelemeler Dergisi, 41*, 36-49. https://doi.org/10.18092/ulikidince.1227445

Miles, M. B., & Huberman, A. M. (1994/2019). *Nitel veri analizi: Genişletilmiş bir kaynak kitap* [*Qualitative data analysis: An expanded sourcebook*] (3rd ed.). (S. A. Altun, & A. Ersoy, Trans. Eds.). Pegem.

MoNE. (2023a, April). *Psikososyal destek projesi başladı* [*Psychosocial support project started*]. MoNE. Accessed from https://orgm.meb.gov.tr/www/psikososyal-destek-projesi-basladi/icerik/2332 on 05/09/2023.

MoNE. (2023b, April). *2024 yılı bütçe sunuş konuşması* [*2024 budget presentation speech*]. MoNE. Accessed from https://sgb.meb.gov.tr/meb_iys_dosyalar/2023_12/17102959_meb_2024yili butcesunuskonusmasi.pdf on 22/12/2023.

Morse, J. M. (2015). "Data are saturated...". *Qualitative Health Research, 25*(5), 587-588. https://doi.org/10.1177/1049732315576699

Mutch, C. (2021). The role of schools in helping communities copes with earthquake disasters: The case of the 2010–2011 New Zealand earthquakes. In J. Xu, Y. Lu, and E. C. Penning-Rowsell (Eds.) *Earthquake disasters: Prevention and reconstruction* (pp. 63-83). Routledge.

Netolicky, D. M. (2020). School leadership during a pandemic: Navigating tensions. *Journal of Professional Capital and Community*, *5*(3/4), 391-395. https://doi.org/10.1108/JPCC-05-2020-0017

Öcal, A., & Topkaya, Y. (2011). Earthquake preparedness in schools in seismic hazard regions in the South-East of Turkey. *Disaster Prevention and Management: An International Journal*, *20*(3), 334-348. https://doi.org/10.1108/09653561111141754

Özdemir, M. (2010). Nitel veri analizi: Sosyal bilimlerde yöntembilim sorunsalı üzerine bir çalışma [Qualitative data analysis: A study on methodology problem in social sciences]. *Eşkisehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi* [*Eşkisehir* Osmangazi University Journal of Social Sciences], *11*(1), 323-343. Retrieved from: https://dergipark.org.tr/en/pub/ogusbd/issue/10997/131612

Özdoğan, A. Ç., & Berkant, H. G. (2020). Covid-19 pandemi dönemindeki uzaktan eğitime ilişkin paydaş görüşlerinin incelenmesi [The examination of stakeholders' opinions on distance education during the covid-19 epidemic]. *Milli Eğitim Dergisi* [*Journal of National Education*], *49*(1), 13-43. https://doi.org/10.37669/milliegitim.788118

Özek, B. Y., & Sincer, S. Deprem ve eğitim: 6 Şubat Türkiye depremi sonrası eğitim sisteminin direncini keşfetme [Earthquake and education: Exploring the resilience of the education system after the February 6 Earthquake of Türkiye]. *10th International Eurasian Educational Research Congress*, 2023, Türkiye, 410-413.

Öztürk, M. K. (2013). Sınıf öğretmeni adaylarının deprem deneyimleri üzerine bir araştırma [A research on earthquake experiences of primary school teacher candidates]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi* [*Hacettepe University Journal of Education Faculty*], *28*(28-1), 308-319. Retrieved from: https://dergipark.org.tr/en/download/article-file/87142

Patton, M. Q. (2015). *Qualitative research, & evaluation methods* (4th ed.). Sage.

PSB. (2023, March). *2023 Kahramanmaraş ve Hatay Depremleri Raporu* [*Kahramanmaraş and Hatay Earthquakes report*]. Presidency of The Republic of Türkiye PSB.

Rodgers, J., Hassan, W., Motter, C., & Thornley, J. (2021). Impacts of the 2018 M7.1 Anchorage earthquake on schools. *Earthquake Spectra*, *37*(3), 1849-1874. https://doi.org/10.1177/8755293020988022

Saldana, J. (2019). *Coding handbook for qualitative researchers* (3rd ed.). Sage.

Şengör, A. C., Özeren, M. S., Keskin, M., Sakınç, M., Özbakır, A. D., & Kayan, I. (2008). Eastern Turkish high plateau as a small Turkic-type orogen: Implications for post-collisional crust-forming processes in Turkic-type orogens. *Earth-Science Reviews*, *90*(1-2), 1-48. https://doi.org/10.1016/j.earscirev.2008.05.002

Sertel, G., Günbayı, İ., & Karadağ, E. (2021). Management practices and managerial qualifications in the period of crisis: Problems, opportunities and novelties by the pandemic: Phase I of a multiphase mixed methods research. *Journal of Mixed Methods Studies, 4*, 13-46. https://doi.org/10.14689/jomes.2021.4.2

Shaheen, M. A. (2008). Earthquake effects on educational institutions and libraries of Azad Kashmir: An appraisal. *Library Review*, *57*(6), 449-456. https://doi.org/10.1108/00242530810886724

STRCoT. (2023, March). *4007 Afet Bölgesi "Bilim Her Yerde" Özel Destek Çağrısı* [*4007 Disaster Area "Science Everywhere" Special Call for Support*]. STRCoT. Accessed from https://tubitak.gov.tr/sites/default/files/18842/4007_afet_bolgesi_bilim_heryerde_ozel_destek_cagrisi.pdf on 05/09/2023.

Topaloğlu, H., & Özdemir, M. (2023). Teachers' experiences on refugee education and their views on refugees' social inclusion: Case of Turkey. *Alberta Journal of Educational Research, 69*(4), 439-458. Retrieved from: https://journalhosting.ucalgary.ca/index.php/ajer/article/view/72810

TRT. (2023, March). *Deprem bölgesindeki öğrenciler için 1783 noktada çadır ve konteyner kuruldu* [*Tents and containers set up at 1783 locations for students in the earthquake zone*]. TRT. Accessed from https://www.trthaber.com/haber/egitim/deprem-bolgesindeki-ogrenciler-icin-1783-noktada-cadir-ve-konteyner-kuruldu-753901.html on 05/09/2023.

TSI. (2022). *Eğitim durumu* [*Education*]. TSI. Accessed from https://nip.tuik.gov.tr/?value=EgitimDurumu on 05/09/2023.

UNICEF. (2023). *UNICEF Türkiye humanitarian situation* (No. 3). UNICEF. Accessed from https://www.unicef.org/turkiye/media/15471/file/UNICEF%20Türkiye%20Humanitarian%20Sit

uation%20Report%20#3%20(Earthquake)%20-%2023%20February-01%20March%202023.pdf%20.pdf on 05/09/2023.

Uygun, S. (2012). Basında öğretmen sorunları [Teacher problems in the press]. *Milli Eğitim Dergisi* [*Journal of National Education*], *42*(194), 72-91. Retrieved from: https://dergipark.org.tr/en/pub/milliegitim/issue/36174/406737

Yamamoto, G. T., & Altun, D. (2023). Türkiye'de deprem sonrası çevrimiçi öğrenmenin vazgeçilmezliği [The indispensability of online learning after earthquake in Türkiye]. *Üniversite Araştırmaları Dergisi* [*Journal of University Research*], *6*(2), 125-136. https://doi.org/10.32329/uad.1268747

Yıldırım, A., & Şimşek, H. (2016). *Sosyal bilimlerde nitel araştırma yöntemleri* [*Qualitative research methods in social sciences*] (10th ed.). Seçkin.

Author Contributions

All authors contributed equally to the manuscript.

Conflict of Interest

No potential conflict of interest was declared by the author.

Supporting Individuals or Organizations

No grants were received from any public, private or non-profit organizations for this research.

Ethical Approval and Participant Consent

Ethics committee permission for this study was obtained from Trabzon University Social and Humanitarian Sciences Scientific Research and Publication Ethics Board decisions with the decision dated 08.09.2023 and numbered 2023-9/1.4.

Plagiarism Statement

Similarity rates of this article was scanned by the iThenticate software. No plagiarism detected.

Availability of Data and Materials

Not applicable.

Acknowledgements

No acknowledgements.