



THE IMPACT OF SCHOOL WATCHING METHOD ON EARTHQUAKE DISASTER PREPAREDNESS ON PRIMARY SCHOOL STUDENTS AT SDN MOJOREJO 2 SRAGEN

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Case Study

ABSTRACT

Introduction: The world's largest archipelago, Indonesia is located on the equator between the plains of Asia and Australia and between the Pacific and Indian oceans. This geographical position can increase the danger of natural disasters such as tectonic earthquakes, volcanic eruptions, tsunamis, and so on. There are many consequences of earthquakes, one of which is that many buildings are destroyed or collapsed. School children can get involved in disaster preparedness at their schools because it is an effective, dynamic, and sustainable strategy that teaches kids to recognize the signs of disasters that happen around them from an early age. Disasters can occur anywhere, at any time, even in the middle of the school day. The aims of this study was determining the effect of the School Watching Method on earthquake disaster preparedness on Primary School Students, particularly at SDN Mojorejo 2 Sragen.

Methods: The method employed was Quasy Experimental. The research design was a group pretest-posttest without control group design. There were 49 respondents and the sampling used was total sampling. The research instrument used was a modified questionnaire from a questionnaire and a check sheet or preparedness observation from LIPI (S3) and UNESCO/ISDR. **Results:** The results of the dependent t test showed a p value of 0.0000, this meaning that there was a significant difference in average disaster preparedness after being given disaster education using the school watching method. **Conclusions:** The findings showed that there is an effect of the school watching method on earthquake disaster preparedness at SDN Mojorejo 2 Sragen.

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INTRODUCTION

There were three earthquakes in Central Java in 2018, with one each in Banjarnegara, Jepara, and Cilacap Regencies. Two earthquakes occurred in the Jepara and Cilacap regency in 2019 and one in the Jepara regency in 2020 (Badan Penanggulangan Bencana Daerah Provinsi Jawa Tengah, 2018). Extended seismic activity can indicate a sign of isolated locked patches within plate boundaries. When these isolated locked patches are finally released, they will produce large-magnitude earthquakes. Since the Indian Ocean, which is where the Eurasian and Indo-Australian plates converge, is located on the southern side of Central Java Province, earthquake and tsunami disasters that result from the release of energy can damage the coast and land of Central Java Province. (Governor Regulation No. 8 of 2020 for the Province of Central Java concerning the Tsunami Disaster Contingency Plan). In times of disaster, students can find out how to deal with disasters.

School children, particularly primary school students can get involved in disaster preparedness at their schools due to it is an effective, dynamic, and sustainable strategy that teaches kids to recognize the signs of disasters that happen around them from an early age. This can also build a culture of safety and resilience, especially for children through the provision of disaster prevention and management efforts in schools. This is accomplished by utilizing the school environment as a community. Primary school students spend an average of about 7 hours in their daily activities at school. So that the school can be categorized as a place that is prone to disasters. Even during school hours, disasters can happen anywhere and at any moment (Meilianingsih & Sugiyanto, 2022).

According to previous studies, primary school students at SDN Mojorejo 2 Sragen have never received health education or socialization about school watching in disaster preparedness, particularly earthquake disasters. Because this



methode is very interesting for students. SDN Mojorejo 2 Sragen Has never had a history of disaster. Based on this background, the researcher intends to research "The Effect of the School Watching Method on Earthquake Disaster Preparedness in Students of SDN Mojorejo 2 Sragen".

MATERIALS AND METHODS

The method employed was Quasy Experimental. The research design was a group pretest-posttest without control group design. This study's data collecting technique based on interviews. The respondents is all fourth- and fifth-graders from SDN Mojorejo 2 Sragen. This study employed a sample of 49 participants, and total sampling was used to select the sample. Respondents were chosen based on certain criteria, including 4th and 5th-grade students at

SDN Mojorejo 2 Sragen, students at SDN Mojorejo 2 Sragen, and students in good health. The research instrument used was a modified questionnaire from the LIPI (S3) and UNESCO/ ISDR preparedness questionnaire and observation sheet. This instrument used before and after implementing school watching for 2 times with approximately 30 minutes. The questionnaire consisted of disaster knowledge, disaster action plans, disaster alerts, resource mobilization, and observation. The research was conducted at SDN Mojorejo 2 Sragen Regency from March to June 2023. The independent variable in this study is school watching. The dependent variable in this study is earthquake disaster preparedness. The t-test was utilized in this study to examine the difference in disaster preparedness in students at SDN Mojorejo 2 Sragen before and after they were provided with the school-watching method.

RESULTS

Overview of Preparedness of Primary Students in Facing Disasters Before and After Treatment SDN Mojorejo 2 Sragen

Table 1. Preparedness of Primary School Students in Facing Disasters Before and After Treatment at SDN Mojorejo 2 Sragen

Disaster preparedness	N	Minimum	Maximum	Mean	Std.Deviation
Before treatment	49	10	100	57.20	21.630
After treatment	49	47	100	88.98	9.966

The findings of univariate analysis on the last assessment of primary school students' preparation for dealing with disasters showed an average score of 88.98, placing them in the category of high preparedness. This indicated a 31.78 percent increase in students. More information can be seen in the graph below:

Figure 1. Students' Preparedness of SDN Mojorejo 2 Sragen

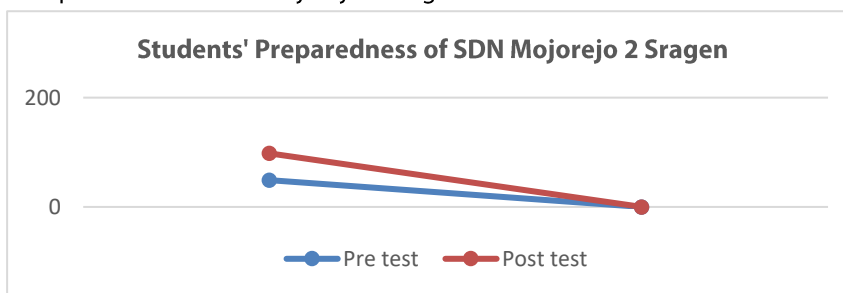


Figure 1 showed an improvement in factors such as students' knowledge about disasters, activity plans in dealing with disasters, disaster warning signs, mobilization of human resources to prevent disaster risk, and observation of the school environment.

The Effect of School Watching Method on Primary School Student's Preparedness in Facing Disasters to Students at SDN 2 Mojorejo Sragen

Table 2. Preparedness of Primary School Students in Facing Disasters Before and After Treatment at SDN Mojorejo 2 Sragen

Treatment	Paired Differences						t	df	value
	Mean	Std Deviation	Str.Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
	-10.46939	5.77387	.82484	-12.12784	-8.81094	-12.693	48	.000	

Based on the table above, it was shown that the average pre-post difference in the treatment group was 10.46939 with a standard deviation of 5.77387. The dependent t-test findings indicated a p-value of 0.000, meaning that there was a significant difference in the average disaster preparedness after being given disaster education using the school-watching method.

The Differences in Preparedness of Elementary Students in Facing Disasters Before and After Treatment

Table 3. Preparedness of Primary School Students in Facing Disasters Before and After Treatment at SDN Mojorejo 2 Sragen.

	N	Mean Rank	Sum of Ranks	P value
Treatment group	49	25	1225	0,000

Based on Table 2.2, provides information that using the Wilcoxon statistical test, the p-value of 0.000 is smaller than alpha 0.05, and it can be concluded that there is a difference in students' increased preparedness for disasters. In comparison to before getting the school-watching method education, students who have had the method will have more knowledge.

DISCUSSION

Based on the results of the previous assessment of primary school students' preparedness in facing disasters, the students showed an average 57.20. This value is in the low preparedness category. This indicated weaknesses in the aspects of knowledge about disasters, activity plans in dealing with disasters, disaster warning signs, mobilization of human resources to prevent disaster risks, and observation of the school environment. Numerous students who were interviewed reported that they hadn't received any health education about disasters and that the lessons were not in-depth. It's only related to the environment. Socialization is done in the form of presentation in class. The class is used 4 and 5. The materials presented included disaster definitions, types of disasters (natural, non-natural and social disasters), disaster management (before the disaster, during the disaster, after the disaster), action before, during and after an earthquake. The disaster that was delivered was an earthquake (Partuti & Umyati, 2019). It is not possible to predict when an earthquake will occur, when it will occur, where and how large it will be. These incidents can occur during the day when we work at school or at night when we are in deep sleep, so we cannot save ourselves from an earthquake because it happens very quickly and can be hit by building collapse, hill slides or swept away by a tsunami storm at the time of that (Nur Rais, 2021)

In Indonesia, several natural disasters have occurred, including earthquakes. A earthquakes occur suddenly and cannot be predicted by humans. This needs to be done in an effort to reduce the risk of consequences caused by earthquake disasters. One of the causes of the large number of earthquake victims is due to a person's lack of knowledge and preparedness for earthquake disaster mitigation simulations are

very important to do early on to minimize the risk of becoming a victim through disaster education in schools. One of them is done in elementary school (Arisona, 2020) Natural disasters affect almost every corner of the world, one of them in Indonesia. The consequences of natural disasters have claimed many lives and damaged property. Children are vulnerable before, elementary school children (Rahiem & Widiastuti, 2020). The condition of the community influences the preparedness for earthquake disasters. Available of data such as social and economic data of the community needs to be known before a disaster occurs. Thus will support decision-making in estimating risks that may arise due to disasters, so that losses can be minimized and anticipation and preparedness for disasters can be increased (Permadi & Adiputra, 2019). At the time of the earthquake disaster, the large number of victims that appeared was due to the lack of public knowledge about disaster mitigation. So that the community needs earthquake disaster mitigation so that they are ready to face earthquake disasters. School is an effective vehicle for disseminating information, knowledge and skills. (Manulu & Elon, 2019).

According to the findings of the principal's interview, there had been no socialization from any party related to the disaster. Besides, only grades 3 and 4 got disaster-related materials when studying environmental education. There were textbooks with disaster materials, but there were no specific disaster reference books in the school library. In addition, there were no leaflets, comics, videos, or posters that the rest of the class can access to read or play as disaster information. Furthermore, the school lacked disaster-related facilities such as evacuation routes and warning signs, and neither students nor teachers nor staff have received any specialized training on disasters. The final assessment of primary school students' disaster preparedness using univariate analysis showed an average score of 88.98, placing

them in the high preparedness category. This indicated an increase in students of 31.78. This showed an improvement in the aspects of students' knowledge about disasters, activity plans in dealing with disasters, disaster warning signs, mobilization of human resources to prevent disaster risk, and observation of the school environment. The increase in knowledge in primary school students was due to students being provided an action disaster education treatment with the school-watching method. According to several reputable sources, disaster education was one of the factors that can enhance disaster preparedness. One method of disaster education is the school-watching method. This School Watching method was one method that can help students improve disaster preparedness through activities carried out at school with activities to collect data on an object (Meilianingsih & Sugiyanto, 2022)

One of the activities carried out is by designing educational media for primary school students in the form of games. Games are an effective and efficient way to educate children about self-protection preparedness in the face of disasters such as earthquakes that can occur at school. It is crucial to be prepared for disasters that could occur to reduce the number of injuries. This preparation must be done by students. One way to be prepared is to be aware of the things nearby that might be dangerous in the event of a disaster. Activities conducted in the school by inviting students to tour the area to see objects and places that are considered hazardous to elements, including students, teachers, administrative staff, and others. This is carried out by a group of educators using the School Watching method. This school-watching method can help students understand objects in the surrounding environment that can be dangerous when a disaster occurs. Additionally, it can teach students how to protect themselves in the event of disasters and develop their capacity for self-preparation (Suciana et al., 2021)

Research (Astini et al., 2018) Education with the School Watching method is a new learning method for children that makes them interested since it is the first time, they have heard of it. The school-watching method combines several ways of learning that include playing, drawing, and discussion. One of the goals of the School Watching method was to provide information to students about various kinds of knowledge related to disasters and self-protection that could be used in the event of a disaster.

In comparison to before getting the school-watching method education, students who have had the method will have more knowledge.

School watching is a method in disaster education by going around the area around the school, observing and understanding objects and places that are dangerous when a disaster occurs and facilities for safety and finding solutions to reduce the risk of disasters that may occur at the school. Students enjoyed this method because it was incredibly engaging, and it also allowed for the use of video resources. This is because using video media has been shown to significantly improve knowledge, skills, and behavior related to disaster preparedness (Setyaningrum & Sukma, 2020) The video contains some important information in the form of sound (audio), and images (visual) that can be captured by the senses of sight and hearing or can be seen with the eyes and can be heard through the ears. In addition to video media, the existence of a disaster simulation will also provide learning through games that aim to direct students to behave and behave like reality. As a result, students were able to learn about disaster-related material more deeply.

Preparedness is an appropriate and effective action or behavior of a person when a disaster occurs and after a disaster occurs that must be possessed by every individual, which causes a person to be able to protect himself or anticipate a disaster (Wulandari, 2018). Knowledge that must be mastered by individuals regarding earthquake disasters is an understanding of earthquake disasters and an understanding of disaster preparedness in environment, including an understanding of appropriate self-rescue measures when a disaster occurs as well as actions and equipment that need to be prepared before a disaster occurs in the that environment. Apart from knowledge, one's experiences can also influence preparedness for the disaster in this world (Hastuti, R Y; Khayati, F N; Fatimah, 2019). Preparedness is the initial capital owned by the community or as a capacity in reducing the impact of a disaster that occurs. If disaster preparedness is instilled in the community from an early age, for example elementary school children will have a strong resilience in dealing with disasters, such as earthquakes. The existence of knowledge and preparedness about disasters is very important in having a positive impact on the community when a disaster occurs (Hamid, 2020).

Disaster management efforts such as earthquake disasters can involve schools, this is because they can help students become more knowledgeable and prepared to deal with disasters such as earthquakes. Early education and training in disaster preparedness, such as in primary schools, are essential. According to a phenomenon that has occurred, around 66 million children worldwide are affected by disasters such

as earthquakes. If the level of knowledge of children is classified as good towards disasters, it can create the next generation that has resilience in facing disasters and has preparedness for disasters

Earthquake disasters are one type of disaster that often occurs in Indonesia, thus there is a need for Health Education and increased self-awareness from both the community ranging from children to adults. This is because earthquake disasters can result in various losses in the community, one of which is Primary Schools. This requires preparedness in the face of the earthquake disaster. The impact caused by an earthquake such as damage to public facilities and infrastructure takes a lot of casualties. Attempts to anticipate and mitigate the impact of disasters are one of them through disaster education, which aims to minimize the impact of losses caused by disasters (Setioputro et al., 2023)

Based on research by (Untari et al., 2018) was essential to provide disaster mitigation techniques at an early age, so that students have more knowledge about natural disasters and the mitigation of these natural disasters. Students need an introduction to disaster mitigation can be done by integrating disaster mitigation into learning in schools. Disaster mitigation is generally carried out to reduce the impact and losses due to the possibility of disasters, including human casualties or property losses. This will affect human life and daily activities in the community.

CONCLUSIONS

The study's findings indicated that an average score of 57.20 was identified in the initial measurement of primary school students' preparedness in facing disasters. With an average score of 88.98 included in the high preparation group, the findings of the univariate analysis on the final assessment of primary school students' preparedness in facing disasters indicate that there was an increase of 31.78 students. This shows Impact of School Watching Method on Earthquake Disaster Preparedness on Primary School Students at SDN Mojorejo 2 Sragen.

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