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## Earthquake Disaster Education Improves Preparedness for Students at Elementary School of Jigudan Srandakan Bantul Indonesia

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### A B S T R A C T

Bantul district is an earthquake-prone area because it is close to the south coast area, it is traversed by plates that cause disasters. One of the disaster mitigation efforts is to prevent the number of victims when an earthquake occurs. It is necessary to increase understanding and change people's behavior. One of the right target is elementary school students because education at an early age will affect behavior. Earthquake disaster education is a disaster mitigation effort. The indicator is the measurement of the level of earthquake preparedness using a questionnaire. Education is carried out for students in grades 3, 4, and 5 of the Elementary School of Jigudan Srandakan Bantul. The school is located in the red zone. The results of these measurements are mostly in the ready category with a score of 65 – 79 as many as 42 students. It is important to continue the education to improve earthquake disaster mitigation.

## INTRODUCTION

Indonesia is a country located on four tectonic plates and there is a volcanic belt starting from the islands of Sumatra, Java to Sulawesi. These conditions have the potential to cause natural disasters such as earthquakes, volcano eruptions, tsunamis, floods, and landslides. In addition, Indonesia is a country that has a high level of seismicity. Disasters caused by natural events can cause many victims. One of the causes of a large number of victims is the lack of public knowledge about disasters. Most of the victims were women and children (BNPB, 2012; Daud et al., 2014).

Earthquake is one of the disasters caused by natural events, the earthquake that occurred on May 27, 2006, in Bantul resulted in 5,760 deaths, more than 40,000 injuries, and more than 1,000,000 damage to infrastructure. The threat of earthquakes in the Bantul district is very high because it is a disaster-prone area. Therefore the government society and individuals should increase disaster risk reduction efforts (Bappenas, 2006; Rofidah, 2017).

Disaster mitigation efforts in improving preparedness are by conducting disaster education, with the aim to grow and increase knowledge and understanding. The right target of which is the school community. The school community is the right agent to spread knowledge about disaster preparedness. Schools in the Bantul district are still far from being on alert because there are still many schools that have not received

regular disaster education. Schools that are included in disaster-prone areas or red zones are the right targets for earthquake preparedness education (BNPB, 2016).

Srandakan sub-district is one of the sub-districts close to the south coast area and is included in the red zone. One of the schools that is aware of being a disaster preparedness school is the Elementary School of Jigudan Srandakan Bantul. The distance from the school to the beach is 10 KM, so if the epicenter is in the south coast area, the earthquake is often felt very strong. In 2006 when the earthquake occurred the school was badly damaged and was renovated in 2014. After that, the school was promoted as a disaster alert school yet the Health Education has not been routinely carried out.



Figure 1. Elementary School of Jigudan Srandakan Bantul

## METHOD

The method uses a questionnaire measuring preparedness parameters referring to (LIPI-UNESCO/ISDR, 2006) using 4 parameters of school preparedness for students, namely knowledge and attitudes, plans for emergencies, early warning systems, and resource mobilization. These results will be interpreted in the preparedness level index. Namely, the Disaster Preparedness Level Index, which is a score less than 40 is not a ready category. A score of 40-54 is a less-ready category. A score of 55-64 is an almost ready category. A score of 65-79 is a ready category, and a score of 80-100 is a very ready category. Participants are students in grades 3, 4, and 5 of elementary school aged around 9 to 11 years. Filling out the questionnaire is done after students receive 30 minutes of earthquake disaster education twice a week.

## RESULT AND DISCUSSION

Participants in the measurement of earthquake disaster preparedness consisted of grades 3, 4, and 5 at the Elementary School of Jigudan Srandakan Bantul.

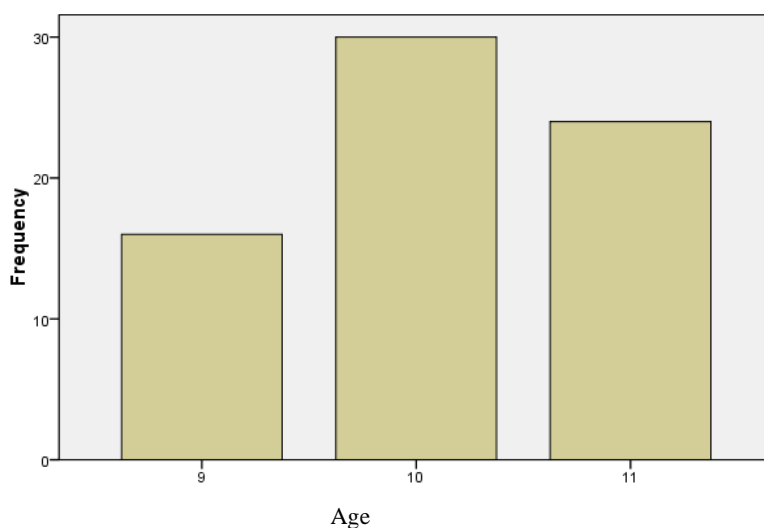


Figure 2. Age Distribution Range

Based on the frequency distribution of the age of 9 years as many as 16 students (22.9%), age 10 years as many as 30 students (42.9%), age 11 years as many as 24 students (34.3%). The school phase is a developmental age where a child is in the stage of growth and development, this condition is sensitive to stimuli so that it is easy to be guided, directed, and instilled good habits. This basis is an important matter where school children are the right target for disaster preparedness education. Because at that age students can be directed to be fast and responsive when an earthquake occurs.

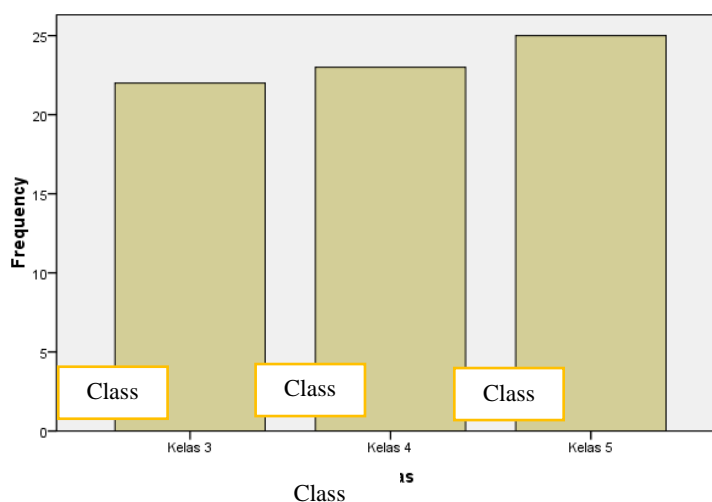


Figure 3. Class Distribution

Participants consist of 3 classes, namely class 3 as many as 22 students (31.4%), class 4 as many as 23 students (32.9%), and class 5 as many as 25 students (35.7%).

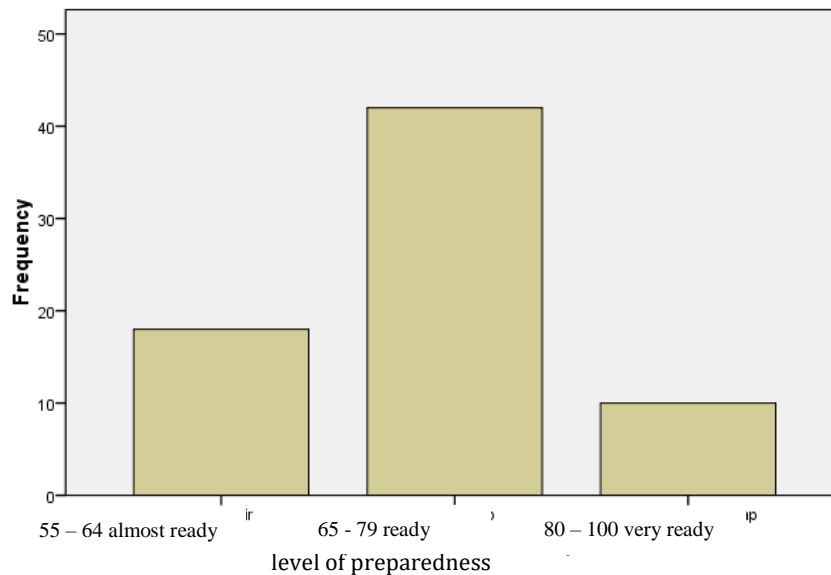


Figure 4. Level of preparedness

The results of measuring the level of preparedness using 4 parameters showed that a score of 55 - 64 was in the almost ready category as many as 18 students (25,7%), a score of 65 - 79 was in the ready category as many as 42 students (60%) and a score of 80 - 100 was in the very ready category. Very prepared as many as 10 students (14,3%). Preparedness is one of the disaster mitigations measures, to reduce the risk of damage to infrastructure and the number of victims. Based on research that disaster education is very effective in increasing preparedness, then to apply this research, further disaster education is carried out for students in grades 3, 4, and 5 at the elementary school level. Disaster education is carried out with the aim of changing or influencing individual behavior. Based on the results, the majority are in the ready category. This proves that disaster education is very effective in increasing preparedness. Students can plan to save themselves in the event of an earthquake. Then look for a safe place to take cover and find out the evacuation route that has been set (Setyaningrum & Setyorini, 2020; Setyaningrum & Muna, 2020).

The results from the answers to the questionnaire that many students already understand the meaning of natural disasters and the causes of natural disasters, especially earthquakes. Students can answer that if an earthquake occurs at school, what they can do is take cover under a sturdy table while holding on to the table legs, stay away from bookshelves or hanging items and objects, when leaving the building do not panic and do not jostle into an open field or spacious place.

## CONCLUSION

The results obtained that the level of preparedness of the participants included in the ready category as many as 42 students. Measurement of the level of preparedness can be a screening and show the effectiveness of earthquake disaster education.

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