

Original Article

Students' First-Aid Ability in Earthquake Disasters Significantly Improved Through an Online Role-Playing Method

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ARTICLE INFO	ABSTRACT
<p>Article History: Submit, 16 Dec 2021 Received, 19 Dec 2021 Accepted, 30 Dec 2021 Available online, 31 Dec 2021</p> <p>Keywords: Adolescent, Earthquake, Emergency, Roleplaying</p>	<p>Background: The earthquake brought about unprecedented societal changes, particularly among schoolchildren. Thus, in the educational setting, a lack of disaster readiness is caused by a lack of knowledge of hazards, which leads to a lack of preparedness in the event of a disaster. This study aims to see how the role-playing method in the network affects adolescent red cross students' abilities to provide first aid in an earthquake emergency.</p> <p>Methods: The research design used a pre-experimental design with a one-group pre-test post-test design approach to 20 PMR student respondents utilizing the Total Sampling technique, with the intervention of delivering earthquake first aid education, given twice for one week for a total of 60 minutes. An observation sheet was employed as the data-gathering equipment. The data was analyzed. T-Test with paired samples.</p> <p>Results: The results revealed that all respondents with a percentage (100.0 percent) had a 50 percent ability score in the pre-test and practically all of them with a percentage (90.0 percent) had a score of 75 percent-100 percent in the post-test. The mean pre-test = 8.70% and the mean post-test = 27.30% in obtaining value 0,000 = 0.05, indicating that there is an Effect of Method Role Playing In First Aid Network Capability Against Earthquake In PMR students in SMPN 1 Kalidawir Tulungagung.</p> <p>Conclusion: The network's role-playing strategy has an impact on motivation, and motivation is vital in the effectiveness of disaster awareness learning so that the community is more prepared and resilient in the event of a disaster.</p>
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Introduction

Indonesia is geographically situated at the meeting of the world's tectonic plates, especially the Pacific, Eurasian, and Indo-Australian plates, resulting in earthquakes and several active volcanoes. As a result of

this situation, Indonesia is vulnerable to a variety of disasters, including earthquakes, tsunamis, volcanic eruptions, and ground movements (Suryani & Febrianto, 2019). Natural disasters must be addressed by



devising response methods. Disaster risk management has undeniably risen to the top of the international agenda in recent years. Floods, droughts, earthquakes, and epidemics are all having an increasing impact on human life (Pabowo & Eldon, 2018).

The appearance of numerous health problems, particularly injuries or physical trauma, is one of the physical components that has been disrupted as a result of the earthquake disaster. In addition to having bodily consequences for catastrophe victims. Earthquakes can have a wide range of consequences, including disruption of economic activity, infrastructure damage, including health-care facilities, difficulties obtaining clean water, and inadequate sanitation, all of which can worsen the situation of disaster victims. Earthquakes can have a wide range of effects on victims, including disruption of economic activity, damage to infrastructure, including health care facilities and housing, difficulties accessing clean water, and poor sanitation, all of which can worsen the situation of disaster victims.

According to the National Disaster Management Agency (BNPB), there were 3,721 natural disasters in Indonesia from January 1, 2019, to December 23, 2019. This data reinforces the fact that Indonesia is a country prone to natural disasters (Khairul Rahmat & Alawiyah, 2020). According to the BNPB, there are still few evacuation routes, early warning systems, educational facilities for disaster management, and a weak role of schools in disaster mitigation education in the school environment, allowing for a high potential for catastrophe victims in schools. According to data on disaster incidents in the Yogyakarta area, 71 percent of school-age children were victims of disasters both during and outside of school hours (Indriasari, 2018). Adolescent disaster preparedness is in the less

prepared category (63.60 percent), however, some are already in the ready category (36.40 percent) (Mutianingsih & Mustikasari, 2019). According to the findings of a preliminary study conducted on December 24, 2020, at SMPN 1 Kalidawir with 16 students, 14 students stated that they did not know first aid in earthquakes due to a lack of information, that there had never been any socialization regarding disaster first aid, and that no "disaster preparedness school" program was implemented.

Children are vulnerable to disasters because they have a poor grasp of the threats that surround them, resulting in a lack of disaster preparedness. Junior high school students, particularly those involved in groups such as the Adolescent Red Cross, scouts, and others, should be familiar with seismic catastrophe first aid to reduce casualties after an earthquake. Because students who are involved in groups have a positive impact on the school environment, they are a vital component (Tamil, 2020). Efforts to raise catastrophe awareness among students should be considered so that they can be integrated into one portion of the curriculum, allowing for greater coverage. Apart from education, students additionally need a role-playing learning method to obtain a good understanding of the situation. According to Shadiqien (2020), the use of digital learning media enables more interactive learning, which may be done remotely and directly show visualizations. The focus of this research is to see how the online role-playing method affects students' abilities to provide first aid in an earthquake disaster.

Method

A pre-experiment with a one-group pre-test post-test design was applied as the research design. The population and sample in this study were all 20 students from SMPN 1 Kalidawir's Youth Red Cross. Data was obtained by measuring the ability to withstand earthquake disasters. The intervention was delivered in two 60-minute appointments over the course of a week, with each meeting lasting 60 minutes. On the first day, the intervention consisted of supplying material, and on the second day, it consisted of participating in self-help during the earthquake. A questionnaire with parameters based on LIPI UNESCO-ISDR 2006 was used to measure the respondent's ability level. The pre-test and post-test abilities were measured via video calls to each respondent to observe their actions in case of an earthquake. The research data was analyzed, and the Paired sample T-test was used for statistical analysis. The ability is then determined using the value with the categories of ability level 75 percent -100 percent (excellent), 75 percent -50 percent (sufficient), and less than 50 percent (less)

Results

Table 1 Ability of Earthquake First Aid before intervention (pre-test) with the role-playing method in the network. July 2021

Ability criteria	score	Frequency (n)	Percentage (%)
75%-100%		-	-
75%-50%		-	-
50%		20	100.0
Total		20	100.0

Table 1 shows that before the intervention, the level of students' abilities about earthquake first aid at SMPN 1

Kalidawir Tulungagung was totally (100.0 %), respondents received a score (50 %), and the average score was (8.70 %)

Table 2 Ability of Earthquake First Aid after the intervention of the role-playing method in the network (posttest). July 2021

Ability criteria	score	Frequency (n)	Percentage (%)
75%-100%		18	90.0
75%-50%		2	10.0
50%		-	-
Total		20	100.0

Table 2 below shows that after being given the role-playing method intervention in the network of first aid skills for the earthquake disaster, almost all respondents (90.0%) got a score of 75%-100%, and a small part (10.0%) was 2 respondents got a score of 75%-50% and had an average score (27.30%).

Table 3 Effect of Online Role laying Method on Earthquake First Aid Ability in Adolescent Red Cross (PMR) Students at SMPN 1 Kalidawir Tulungagung. July 2021

Criteria of value ability score	Pre-test		Post-test	
	N	(%)	N	(%)
75%-100%	0	0	18	90.0
75%-50%	0	0	2	10.0
50%	20	100.0	0	0
Total	20	100.0	20	100.0
Mean	8.70		27.30	
Paired Sample T-Test	<i>p-value</i> 0.000<0.05			

According to Table 3, the mean score of students' first aid ability in the event of an earthquake disaster was 8.70 in the pre-test and 27.30 in the post-test. There is an increase in the ability score before and after the intervention, as shown here. The abilities of students to provide earthquake

first aid had a p-value of $0.000 = 0.05$ in the Paired sample T-Test. As a result of the p-value, H1 is accepted. It may be concluded that the online role-playing method has an effect on students at SMPN 1 Kalidawir Tulungagung's ability to provide first aid in an earthquake disaster.

Discussion

All respondents observed changes in their level of ability after being addressed with the role-playing method for one week with two sessions. As compared to conventional approaches, which might make participants dependent on the trainer, learning based on problems or direct practice makes learning participants motivated in participating in activities. According to [Pabowo & Eldon \(2018\)](#) theory of functional consequences, providing an intervention can turn a negative functional consequence into a good functional consequence. It's also in line with [Tamil \(2020\)](#), which suggests that role-playing learning can affect the level of knowledge.

Differences in respondents' characteristics have had an impact on the level of assistance provided. Because it could express and illustrate the role it carries, respondent number 10 got a 30-point boost in its score. Meanwhile, respondent number 15 only saw a 22-point boost in his score, indicating that while they can express their abilities, they still need to be directed when expressing them. According to [Ferianto & Hidayati \(2019\)](#), behavior change can be affected by adjustment, which involves accepting a new attitude that is following previous values, and that behavior change occurs when we work continuously for 21 days.

Because motivation can promote an individual's willingness to collect information related to the issues being

explored, the motivational component plays a significant role in the person's abilities. The opinion of [Direja & Wulan \(2018\)](#) is that motivation creates a mental condition that stimulates taking an activity (action or activities) and provides strength that leads to the achievement of needs, brings satisfaction, or minimizes imbalances.

The online role-playing method has advantages in terms of application, which can be followed from their locations or homes. This allowed learners to take a more active role at home by adjusting the availability of materials, tools, and places around them ([Novita et al., 2019](#)). That way, respondents have a realistic scenario of whether they experienced an earthquake. [Wafi et al., \(2016\)](#) claims that the online role-playing method is a type of bilateral stimulation, which involves the sequential use of visual, auditory, or tactile external stimuli to help people process what they see and remember, as well as what they hear to help people process memories played. While using the role-playing strategy on the network, several respondents claimed that they realized and understood what they were doing. Complaints of insecurity and a lack of awareness that our feelings are diminishing. Increased preparation is an aspect of the disaster risk management process in the disaster management process, which is depicted as a cyclical model, emphasizing the ability to carry out emergency response actions swiftly and accurately. Individuals who participate in activities will be better prepared to handle seismic disasters thanks to the online role-playing strategy, which aids in the development of better abilities and characters.

Furthermore, all respondents claimed they enjoyed engaging in activities because they learned new things. This is in line with the findings of ([Cahyani et al.,](#)

2017) who claim that in addition to feeling pleased, pupils enjoy the role-playing strategy they used. Individuals receive knowledge in the learning process because they are interested in it. If a person is uninterested in the learning that is taking place, that person will become inactive and disconnected from the learning. This affects how people react to a continuous activity process. Individuals who dislike activities will not run, will not get new experiences, and will feel pressured to participate in activities. Individuals who are happy and participate in activities will gain knowledge and will do so voluntarily, with no pressure or violence from inside the individual.

Conclusion

Applying the online Role-Playing approach to students has a significant impact on their ability to provide first aid in earthquake disasters.

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