

# The Influence of Tsunami Disaster Response Simulation Method Through Social Skill on Students' Preparedness at MTs Nurul Islam South Lampung Regency

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**Abstract :** The purpose of this study was to determine the influence of disaster response simulation method through social skill on students' preparedness at MTs Nurul Islam, South Lampung Regency. The method used in this research was the verification method with quantitative approach. The study used interview, observation techniques and strengthened by documentation to collect the data. This research was conducted at MTs Nurul Islam, South Lampung Regency, for the academic year 2021/2022. The results reported that; 1) The use of the simulation method has an influence with the Strongly Ready category on the preparedness of MTs Nurul Islam students in dealing with the threat of a tsunami disaster, as many as 26 people with a percentage of 49.2%. 2) There is a positive and significant influence between method simulation responsive disaster on social skills on students' communication skills at MTs Nurul Islam, indicated by a significance value of  $0,000 < 0.05$ . 3) There is a positive and significant influence between the tsunami response simulation method on the social skills of students' group skills at MTs Nurul Islam, indicated by a significance value of  $0.001 < 0.05$ . 4) There is a positive and significant influence between the disaster response simulation method on student preparedness at MTs Nurul Islam indicated by a significance value of  $0.041 < 0.05$ . 5) There is a positive and significant influence between social skills and communication skills on student preparedness at MTs Nurul Islam, indicated by a significance value of  $0.000 < 0.05$ . 6) There is a positive and significant influence between social skills group skills on student preparedness at MTs Nurul Islam indicated by a significance value of  $0.036 < 0.05$ . 7) There is a positive and significant influence between the disaster response simulation method, social skills (communication skills) and social skills (group skills) on students' preparedness at MTs Nurul Islam indicated by a significance value of  $0.000 < 0.05$ .

**Keywords:** Simulation Method, Social Skill, Preparedness

## I. INTRODUCTION

Natural disasters are disasters caused by events or a series of events caused by nature, including earthquakes, tsunamis, volcanic eruptions, floods, droughts, hurricanes, and landslides. Meanwhile, non-natural disasters are disasters caused by non-natural events or series of events, which include technological failures, failed modernization, epidemics, and disease outbreaks.

One of the examples of a natural disaster that has occurred in Indonesia is the eruption of Mount Krakatau. This volcanic eruption is one of the deadliest in history, it has led to the megatsunami and heat cloud waves, it killed more than 30,000 people, and making the area around the eruption has covered in volcanic ash and destroyed the coasts of Banten and Lampung. Mount Anak Krakatau is one of these volcanoes, a volcano that appeared in 1927 after the eruption of Mount Krakatau in 1883[1].

Mount Krakatau is located in the Sunda Strait, precisely in Lampung Regency. South Lampung Regency is one of the regencies in Lampung Province. The regency capital is located in Kalianda. This district has an area of 2,007.01 km<sup>2</sup> and a population of 950,844 people (BPS Lampung Selatan, 2020). Based on data from the Ministry of Home Affairs in Permendagri no.137 of 2017 it is stated that the area is 700.32 km<sup>2</sup> and has a population of 1,269,262 people [2].

The tsunami event caused by the eruption of Mount Anak Krakatau in the Sunda Strait hit the coastal areas of Banten and Lampung. At least 426 people were killed and 7,202 injured and 23 people missing as a result of this incident. The tsunami was caused by high tides and underwater landslides due to the volcanic eruption, not caused by a tectonic earthquake [1]. Meanwhile, on Sunday, December 23 at 14:40 WIB, according to the BMKG the center of the vibration was at Mount Anak Krakatau, 115.46 East Longitude - 6.10 South Latitude, a depth of 1 km. The vibration is equivalent to the strength of M. 3.4. Almost three years have passed, the tsunami that hit Indonesia, precisely on Saturday, December 22, 2018. Until now, Mount Anak Krakatau's eruptive activity is still happening and is at level III or Alert [3].

MTs Nurul Islam is one of the schools affected by the disaster, to be precise the tsunami disaster of the eruption of Mount Anak Krakatau on December 22 2018, located on Jl. Coastal Kingdom No. 65, Sukaraja Village, Rajabasa District, South Lampung Regency. The school was severely damaged by the tsunami that hit the coasts of Banten and South Lampung. Responding to the results of initial observations, interviews with the Principal of MTs Nurul Islam, namely Mrs. Sariyati, S.Pd asserted that the school building and dormitory building for students and students of MTs Nurul Islam were destroyed by the impact of the tsunami waves caused by the eruption of Mount Anak Krakatau. It is due to the distance from the beach to the school is only 200 meters. Schools must be remodeled, while dormitories must be rebuilt from the beginning. However, there were no casualties because the children were on school holidays. It is possible that the disaster will repeat itself at the school because it is located in a disaster-prone area. Therefore, MTs Nurul Islam needs to be applied regarding the disaster response simulation method in schools.

In social studies learning that uses the simulation method, students are fostered their abilities related to interacting and communicating skills in groups. Basically, this simulation method will provide students with an understanding to find out the quick and appropriate actions that must be taken when an earthquake and tsunami actually occur, as well as evacuation actions after the earthquake shocks stop and this simulation method also aims to improve student preparedness.

Based on the results of a preliminary study at MTs Nurul Islam, South Lampung Regency, researchers tried to conduct research on "The influence of Tsunami Response Simulation Methods Based on Social Skill on Student Preparedness at MTs Nurul Islam, South Lampung Regency".

The aim of this study was to: 1) To find out the influence of the disaster response simulation method on communication skills, 2) To find out the influence of the disaster response simulation method on team or group building skills, 3) To discover the influence of the disaster response simulation method on interaction skills, 4) To discover the influence of the disaster response simulation method on problem solving skills, 5) To find out the influence of the disaster response simulation method on student preparedness, 6) To find out the influence of communication skills on student preparedness, 7) To discover the influence of building skills teams/groups on student preparedness, 8) To discover the influence of interaction skills on student preparedness, 9) To find out the influence of problem solving skills on student preparedness, 10) To find out the influence of method of simulation, interaction skills, communication skills, team/group building skills and problem solving skills on student preparedness

## II. RESEARCH METHOD

The research method used in this study is a quantitative research method. Quantitative research can be defined as a research method based on the philosophy of positivism, used to examine certain populations or samples, sampling techniques are generally carried out randomly, data collection uses research instruments, data analysis is quantitative/statistical with the aim of testing hypotheses that have been established. Determined [4].

The type of research used by the researcher is the correlational method. This method states the relationship between variables that does not show the dependence of one variable on another variable as is the case in a causal relationship. In this method the relationship between variables is shown in the form of a linear relationship, namely a reciprocal relationship between 2 or more variables [5].

Indicators of the attributes of the simulation method consist of orientation, training for participants, simulation process and strengthening. Indicators of the attribute of social skills consist of communication skills, group abilities, interaction skills, and problem solving abilities, while indicators of preparedness attributes consist of knowledge and attitudes towards disasters, early warning systems, emergency response plans, resource mobility capabilities. The indicator is then formulated into 50 statements.

In filling out the questionnaire, students must fill in the available columns in the order of 4, 3, 2 and 1 using a semantic differential scale according to Sugiono [4]. The order of the questionnaires is as follows:

- a. Score 4 means strongly agree = Strongly agree
- b. Score 3 means agree = Agree
- c. Score 2 means disagree = Disagree
- d. Score 1 means strongly disagree = Strongly Disagree

The data collection tool uses social skill instruments that have been developed and carried out at the stage of validity testing and normality testing. The data obtained were processed using SPSS version 26 software. The population in this study were all students of MTs Nurul Islam.

TABLE 1 STUDENT DATA FOR MTS NURUL ISLAM, SOUTH LAMPUNG REGENCY  
ACADEMIC YEAR 2021/2022

Grade	Study Group	Total
VII	2	63
VIII	2	71
IX	1	34

Total Students	168
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The data is the population in this study are students of class VII, VIII and IX, totaling 168 students. The sampling technique used in this study is the non-probability sampling technique used, namely the purposive sampling. Purposive Sampling is a sampling technique with certain considerations. The selection of a group of subjects in purposive sampling is based on certain characteristics that are considered to have a close relationship with previously known population characteristics. Meanwhile, in this study, to calculate the size of the unorganized sample from the population, it is calculated based on the Slovin formula as follows.

$$n = \frac{N}{1 + Ne^2}$$

Description

n = Number of Samples

N = Total Population

e = critical value (research limit)

desired and the percentage of allowance for inaccuracy due to sampling error that can still be tolerated at the level of significance (0.05) (Kasinu, 2007) [6].

$$n = \frac{168}{1 + (168 \times 10\%^2)} = 62,6 = 63 \text{ (rounded)}$$

Thus, the sample size in this study was 63 students. Collecting data in this study used the method of documentation and questionnaires. Testing this hypothesis used simple linear regression and multiple regression through SPSS 26 software

**III. RESULT AND DISCUSSION**

**A. Research Result**

Dealing with the questionnaire data in the field related to the Disaster response simulation method, communication skills, group skills and student preparedness can be grouped into several categories as follows, the percentage score in table 1.2 is as follows:

**TABLE 2 ACHIEVEMENT OF DISASTER RESPONSE SIMULATION METHOD**

Percentage	Number of Students	Category
80 – 100	0	Excellent
66 – 79	58	Good
56 – 65	3	Pretty Good
40 – 55	2	Fair
< 40	0	Poor

Source: Primary Data, 2022

Based on the table 2, there are 58 students with good categories ranging from 66-79. 3 students with very good category ranged from 56-65. 2 students with very poor category both in the range of 40-55.

**TABLE 3 ACHIEVEMENT OF SOCIAL SKILLS COMMUNICATION SKILLS**

Percentage	Number of Students	Category
80 – 100	12	Excellent
66 – 79	49	Good
56 – 65	2	Pretty Good
40 – 55	0	Fair
< 40	0	Poor

Source: Primary Data, 2022

Based on the table 3, there are 12 students with very good categories, there are 49 students with good categories ranging from 66-79. 2 students with very good category ranged from 56-65.

**TABLE 4 ACHIEVEMENT OF SOCIAL SKILLS TEAM/GROUP BUILDING SKILLS**

Percentage	Number of Students	Category
80 – 100	0	Excellent
66 – 79	56	Good
56 – 65	1	Pretty Good
40 – 55	6	Fair
< 40	0	Poor

Source: Primary Data, 2022

Based on the table above, there are 56 students with good categories, there is 1 student with fairly good categories ranging from 56-65. 6 students in the unfavorable category ranged from 40-55.

**TABLE 5 ACHIEVEMENT OF STUDENT PREPAREDNESS**

Percentage	Number of Students	Category
80 – 100	26	Strongly Ready
65 – 79	31	Ready
55 – 64	5	Almost Ready
40 – 54	0	Less Ready
< 40	0	Not Ready

Source: Primary Data, 2022

Based on the table above, there are 26 students who are very ready, there are 31 students with a ready category in the range of 65-79, there are 5 students with an almost ready category ranging from 55-64.

## B. Discussion

### 1) The influence of Tsunami Disaster Response Simulation Method on Social Skill Communication Skills

Responding to field data, there is a positive and significant influence between the disaster response simulation method on the social skills of students' communication skills at MTs Nurul Islam, indicated by a significance value of  $0.000 < 0.05$ . Based on the results of these calculations, it can be concluded that there is a positive and significant effect of the tsunami response simulation method on social skills and communication skills.

The attributes of social skills in this study include communication skills and group skills. Partially, this study is in line with the findings undertaken by Munawarotul Fauziyah in 2013 about the influence of social skills on the care of the students of the Q Al-Munawir Krapyak complex, Yogyakarta Faculty of Tarbiyah and Teacher Training, UIN Sunan Kalijaga Yogyakarta. The result of this research is that there is a positive and significant influence on the influence of social skills on the concern of students.

These findings are positive, this is in line with the theory proposed by Peterson L, who argues that social skills are the ability to communicate, establish relationships with other people, listen to opinions or complaints from others, give or receive feedback, give or receive criticism, act socially according to applicable norms and rules [7].

This is also in line with the results of research in the field by applying the simulation method based on social skills (communication skills), such as students being more active in speaking in front of the class. In addition, the results of interviews with respondents, social skills are also applied outside the classroom. For example, students are required to participate in extracurricular activities Rohis. From these extracurriculars, students are guided to speak fluently in public or commonly called preaching.

### 2) The influence of the Tsunami Disaster Response Simulation Method on Social Skills Group Skills

Dealing with field data, there is a positive and significant effect between the tsunami response simulation method on the social skills of students' group skills at MTs Nurul Islam, indicated by a significance value of  $0.001 < 0.05$ . Based on the results of these calculations, it can be concluded that there is a positive and significant effect of the disaster response simulation method on the social skills of group skills.

Research conducted by Chafidhatul Ulum in 2018 on the social skills of students in thematic learning at MI Muhammadiyah Selo Kulon Progo Faculty of Tarbiyah and Teacher Training UIN Sunan Kalijaga Yogyakarta. The result of this research is that the implementation of thematic learning at MI Muhammadiyah is carried out through three stages, namely stages, while the social skills of students include skills in cooperating with others, self-control skills and skills in sharing thoughts and experiences with others.

As asserted by Maryani that social skills are skills to interact, communicate and participate in groups. Social skills need to be based on personal intelligence in the form of self-control, self-confidence, discipline and responsibility [8].

Whereas, Laura Cadler in Maryani team or group building skills include accommodating people's opinions, working together, helping each other, paying attention to each other. social skills are competencies that are expected to be possessed by students, in group skills students are expected to be able to create cooperation between peers.

This is also in line with the results of research in the classroom, team/group building skills are needed in the application of the simulation method. Where students work together and help each other during a disaster simulation. In addition, social skills are also applied outside the classroom. Based on the results of interviews with respondents, students who take part in Scout extracurricular activities have the formation of social skills, team/group building skills, students often participate in scouting activities such as Jamborees, these activities train students to work together and help each other. Based on the description above, the influence of the tsunami response simulation method is very closely related to group skills.

### 3) The influence of the Tsunami Disaster Response Simulation Method on Student Preparedness

Responding to field data, there is a positive and significant effect between the disaster response simulation method on student preparedness at MTs Nurul Islam, indicated by a significance value of  $0.041 < 0.05$ . Based on the results of these calculations, it can be concluded that there is a positive and significant effect of the disaster response simulation method on student preparedness.

Research conducted by Tri Widodo in 2021 on the influence of the disaster simulation method on the preparedness of students at SMP Negeri 4 Cigeulis Pandeglang Regency in facing the threat of an earthquake, Faculty of Teacher Training and Education, Syiah Kuala University. The results of this study indicate that there is an effect of the simulation method on the preparedness of students at SMP Negeri 4 Cigeulis Pandeglang Regency in facing the threat of an earthquake.

These findings are positive, this is in line with the theory proposed by Gregg which states that,

“Preparedness is an activity undertaken by individuals or groups before a disaster occurs to develop operational capacity and facilitate an effective response when a disaster occurs” [9].

According to the National Disaster Management Agency (BNPB), preparedness in schools is important, considering that many schools or madrasas are located in areas prone to earthquakes and tsunamis. Based on its geographical and geological location, MTs Nurul Islam, South Lampung Regency is included in a disaster-prone area. For this reason, preparedness must be increased as a disaster risk reduction activity before a disaster occurs [10].

Preparedness in dealing with disasters is very necessary for students to minimize the occurrence of fatalities. Building student preparedness in schools that are disaster-prone areas does not mean teaching students to reject or withstand the threat of disasters, but students must increase their potential and preparedness in facing the threat of future disasters. In addition, students must have good ability to anticipate the coming disaster

### 4) The influence of Social Skills on Communication Skills on Student Preparedness

Regarding to field data, there is a positive and significant influence between social skills and communication skills on student preparedness at MTs Nurul Islam, it is indicated by a significance value of  $0.000 < 0.05$ . Dealing with the results of these calculations, it can be concluded that there is a positive and significant effect of social skills on communication skills on student preparedness.

The attributes of social skills in this study include communication skills and group skills. This can be seen from the research conducted by Hambali in 2017 on improving students' social skills in social studies learning through the integrated model of the Faculty of Teacher Training and Education, University of Lampung. The results of this study indicate that the implementation of learning with an integrated approach can improve students' social skills, especially in the aspects of social communication skills and team/group building social skills.

Students' preparedness in dealing with disasters is applied with communication skills. According to Laura Cadler in Maryani communication skills include listening and speaking in turns, convincing people to be able to express opinions, listening until the person finishes the conversation [8].

In the disaster response simulation method that has been practiced by students, students also relate these communication skills, for example by explaining to their peers who do not understand the meaning of disaster, the characteristics before a disaster occurs, and what to do when a disaster occurs.

### 5) The influence of Social Skills on Group Skills on Student Preparedness

Based on field data, there is a positive and significant influence between social skills and communication skills on student preparedness at MTs Nurul Islam, indicated by a significance value of  $0.000 < 0.05$ . Based on the results of these calculations, it can be concluded that there is a positive and significant effect of social skills on communication skills on student preparedness.

The attributes of social skills in this study include communication skills and group skills. This can be seen from the research conducted by Hambali in 2017 on improving students' social skills in social studies learning through the integrated model of the Faculty of Teacher Training and Education, University of Lampung. The results of this study indicate that the implementation of learning with an integrated approach can improve students' social skills, especially in the aspects of social communication skills and team/group building social skills.

Students' preparedness in dealing with disasters is also applied with group skills. According to Laura Cadler in Maryani communication skills include listening and speaking in turns, convincing people to be able to express opinions, listening until the person finishes the conversation [8].

In the disaster response simulation method that has been practiced by students, where students also relate these communication skills, for example by explaining to their peers who do not understand the meaning of disaster, signs before a tsunami disaster occurs, the types of goods that must be available to anticipate the occurrence of a tsunami. tsunami and what to do in the event of a tsunami. This is evident in the preparedness of students where 26 students were declared Very Ready. Based on the description above, the influence of communication skills is very closely related to student preparedness.

6) The influence of Tsunami Disaster Response Simulation Method, Social Skill (Communication Skills) and Social Skill (Group Skills) on Student Preparedness

Based on field data, there is a positive and significant effect between the disaster response simulation method, social skills (communication skills) and social skills (group skills) on student preparedness at MTs Nurul Islam, indicated by a significance value of  $0.000 < 0.05$ . Based on the results of these calculations, it can be concluded that there is a positive and significant effect of the tsunami disaster response simulation method, communication skills and group skills on student preparedness.

Simulation method is one of the learning methods that can be used in social studies learning. This simulation method is based on social skills because students do not understand social skills.

According to Abu Ahmadi, Simulation means imitation or an act that is pretending. As a teaching method, simulation can be interpreted as an activity that describes the actual situation [11].

Research conducted by Lailatun Nikmah in 2016 on the implementation of the simulation method in learning earthquake preparedness at SMA Negeri 1 Karanganyam Klaten, Faculty of Social Sciences, State University of Semarang. The results of the study show that the simulation method is very effective in learning about earthquake preparedness. It shows that there is a positive relationship between the implementation of the simulation method and the level of students' understanding of earthquake preparedness.

In addition, the results of this study are in line with research conducted by Priyo Mukti Pribadi Winoto, Chilyatiz Zahroh (2020) who was informed that there was an effect of providing socialization on skills in disaster preparedness students. Meanwhile, the findings of research conducted by Rina Dyah Rahmawati (2016) showed that the use of simulation methods in learning methodology lectures had a significant influence on students' social skills in the form of social responsibility, cooperation, and tolerance.

This gives an indication that the use of the simulation method in learning is more appropriate to apply than the lecture method and that using the simulation method makes the class not bored while studying. One of the purposes of the simulation is to practice certain social skills that are practical for everyday life. The disaster simulation is so that students are more prepared in dealing with disasters. The whole series of learning can lead to the achievement of learning objectives, namely increasing students' social skills in dealing with disasters.

#### **IV. CONCLUSION**

Based on research on the influence of the Tsunami Disaster Response Simulation Method Based on Social Skill on Student Preparedness at MTs Nurul Islam, the following conclusions were obtained: 1) The use of the simulation method had an effect with the Very Ready category on the preparedness of MTs Nurul Islam students in dealing with the threat of a tsunami disaster, namely as many as 26 people with a percentage of 49.2%. 2) There was a positive and significant effect between the disaster response simulation method on the social skills of students' communication skills at MTs Nurul Islam, it was indicated by a significance value of  $0.000 < 0.05$ . 3) There was a positive and significant effect between the tsunami response simulation method on the social skills of students' group skills at MTs Nurul Islam, indicated by a significance value of  $0.001 < 0.05$ . 4) There was a positive and significant effect between the disaster response simulation method on student preparedness at MTs Nurul Islam as indicated by a significance value of  $0.041 < 0.05$ . 5) There is a positive and significant influence between social skills and communication skills on student preparedness at MTs Nurul Islam as indicated by a significance value of  $0.000 < 0.05$ . 6) There was a positive and significant influence between social skills and group skills on student preparedness at MTs Nurul Islam as indicated by a significance value of  $0.036 < 0.05$ . 7) There was a positive and significant effect between the disaster response simulation method, social skills (communication skills) and social skills (group skills) on student preparedness at MTs Nurul Islam and it was indicated by a significance value of  $0.000 < 0.05$ .

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