

## THE ROLE OF TEACHERS IN PREPAREDNESS STUDENTS LEVEL FACING TSUNAMI DISASTERS

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**ABSTRACT:** Schools in tsunami-prone areas have a very high-level disaster vulnerability. Disaster mitigation must be given adequately by the school to students in improving their preparedness, for instance in the infrastructure aspect, such as building disaster friendly schools which are completed by provision signs for disaster evacuation routes, as well as providing early warning system. Furthermore, the skill of human resources in facing disaster situation needs to be involved. In the school environment, the majority of the population was dominated by the students. It will be at high risk if the students are not aware of the tsunami disaster. Teacher factors significantly influence the increase in tsunami preparedness of students. This study explored the role of the teacher in the students' preparedness in dealing with the tsunami disaster. The research used the quantitative descriptive method. Primary and secondary data were collected using a survey. The population of the study was the teachers and the elementary, secondary, upper secondary school students in the Pangandaran District. Students' preparedness were examined by Carter, LIPI, and UNESCO parameter. Results of the research showed that the students' preparedness score is 8,16 (highly significant) for elementary school, 5,86 (less significant) and 5,52 (less significant) consecutively for secondary and upper secondary school. The high score role of an elementary school teacher of the preparedness of the students caused by the personal closeness between teachers and students so that the student comprehend the learning materials effectively. Nevertheless, the lack of teacher attention personally to students and the lack of teacher understanding about disaster awareness, especially tsunami, were considered as the main factors that cause low students' scores. Providing the training to the teacher about disaster preparedness, which held by the local government (Education Department), is one of the alternatives that we can do to equip the students in improving their preparedness to the tsunami.

*Keywords: The Role of Teachers, Preparedness, Tsunami Disaster*

### 1. INTRODUCTION

Pangandaran Sub-district has many school buildings that stand in areas prone to tsunami disasters, this certainly increases the risk of disaster vulnerability for school residents, in this case especially students. Pangandaran itself is an area that faces the meeting of the plates, which results in a fairly high level of seismicity. The high level of seismicity in Indonesia is due to the location of Indonesia which is a meeting of three major world plates, namely the Indo-Australian plate and the Eurasian plate [1]. Besides being rich in natural resources, it also has a direct effect on the intensity of the earthquake which can cause a tsunami. Tsunamis themselves are sudden rising sea waves caused by sudden disturbance of sea water stability, either due to earthquake or other factors [2]. As was the case before, South Coast of Java was hit by an earthquake measuring 6.8 on the Richter scale, which was followed by the tsunami on July 17, 2006 at 15:19 WIB, with a wave height of 1-3.5 meters, and resulted in 500 more or less fatalities [3]. Based on this

experience, schools in Pangandaran sub-district that have a high risk of earthquake and tsunami disasters must improve, prepare themselves to face the risk of disasters that can come at any time. The schools are spread in various levels, from elementary schools (SD), junior high schools (SMP), and high schools (SMA), which are located close to the shoreline. Disaster vulnerability will be high when disasters occur during school hours, and many school residents, especially students are concentrated in schools. The loss of lives can be very large, if school residents do not have the provision for preparedness to face a capable disaster. The role of the teacher is very important in educating students how to deal with the tsunami disaster which can occur at any time during school hours. In this study an attempt will be made to analyze the role of the teacher in increasing students' preparedness in dealing with the tsunami disaster.

### 2. METHOD

The research method is needed to be able to

analyze the research process so that the data generated is in accordance with the research objectives. The method is the main way to prove a hypothesis through the specified technique or tool [4]. The outline method is a technique used by researchers to be able to analyze and obtain the desired data [5]. In this study using descriptive research methods. Descriptive research methods are used to examine groups of people, objects, conditions, thoughts, and events that occur at this time, with the aim of describing the situation in a systematic, up-to-date, and precision between the events being studied [6]. Then the research method is also a way to explore the phenomenon that is happening that is accompanied by in-depth interpretation and analysis [7]. Data collection in the field using survey methods to analyze the role of teachers in improving student preparedness. Survey method is a technique used to obtain variable data. Unit, then individual simultaneously [7]. Furthermore, the survey method is also a process of inquiry to obtain a truth from a set of situations, and find factual truth about social, economic, political groups, whose data is obtained from a group or a certain region [6]. The survey data collection method takes data from the field by selecting a sample from a predetermined population, by filling in the questionnaire as a primary data collection tool, which aims to make direct observations in the field, to infer the events that have occurred [8]. Then the determination of teacher and student sampling is taken proportionally based on the number of population per school to be studied.

### 3. RESULTS AND DISCUSSION

Disaster event is an event or series of events that have an impact on people's lives, occur because of nature, or not because of nature, it can also be a human factor, which results in a lot of harm to humans [9]. Disaster is a major factor whose impact disrupts the joints of the community, then causes losses that cannot be overcome by the capabilities that exist within the community itself [10]. A disaster can be called a disaster when a threat arrives which is greeted with powerlessness in dealing with it [11]. Then furthermore the disaster is an event that has a negative influence on the normal life of the community, arrives suddenly and has a broad overall impact, sometimes it can cause fatalities [12]. The role of the teacher in students' disaster preparedness is highly expected, because in this case the teacher as an agent of transferring knowledge of disasters to students. Then of course when the process runs as it should, it is expected to minimize the impact on disasters. The teacher role parameters use five parameters,

namely material, initiative to hold discussions, involvement in making disaster signs, Initiating disaster evacuation training, and participating in directing students [13]. All parameters are then described in instruments using a scale of five [14], and asked directly to students and teachers themselves. The matter is of course to be able to measure the level of teacher participation in the readiness of students.

#### 3.1 The Role of Elementary School Teachers in the Preparedness Level of Elementary School Students

The preparedness process is an integral part of the disaster mitigation body. The definition of disaster mitigation itself is an action taken to reduce the impact of hazards before they occur [15]. Disaster mitigation activities must be accompanied by appropriate strategies, which are based on detailed disaster risk studies, supported by all levels of government, private parties, volunteers, and other parties [16]. Then what is meant by preparedness is activities that are intended to minimize the impact of disasters, at the time before they occur, when they occur, or even after a disaster, hasten assistance quickly, precisely, and effectively [10].

Furthermore, preparedness is an action that involves the government, interested parties, or individuals in order to be able to carry out effective prevention, rehabilitation, and recovery, which are included in the series are disaster management planning, maintaining resources, and training the members who will be involved [12]. With this description, it can be implied the importance of analyzing the role of teachers in the level of student preparedness. The results of research for the role of teachers in the level of preparedness of elementary school students can be seen in the following table:

Table 1. The Role of Elementary School Teachers (SD) in Students' Preparedness Levels in Facing Tsunami Disasters

No	School	Number of Samples	Total score
1	Elementary School	43	362
2	Madrasah Ibtidaiyah (MI)	6	38
	total	49	400
	Average/Category		8.16/Very Role

Source: 2013 research , adjusted.

The average score obtained by the teacher at the elementary school level is 8.16 which has a meaningful role. The magnitude of the

participation of elementary school teachers on the level of preparedness to face disasters students can not be separated from the personal closeness between teachers and students. It is this personal closeness that causes the process of transferring knowledge of disaster preparedness from teacher to student to run well.

### 3.2 The Role of Secondary School Teachers in the Preparedness Level of Junior High School Students

The participation of junior high school teachers in the level of preparedness for students facing disasters will greatly affect the level of preparedness of the students they care for. Students are part of the community who are following the process of self-improvement at certain levels of education [17]. As illustrated in table 2, we can see the role of junior high school teachers in their students' readiness as follows:

Table 2. The Role of Secondary School Teachers (SMP) in the Level of Student Preparedness in Facing a Tsunami Disaster

No	School	Number of Samples	Total score
1	Middle School (SMP)	17	106
2	Madrasah Tsanawiyah (MTs)	8	36
	total	25	142
	Average/Category	5.68/Less Acting	

Source: 2013 research , adjusted

Based on table 2, it can be seen if the average score obtained by junior high school teachers is 5.68, which falls into the category of Less Role. The small score is inseparable from the lack of teacher attention to students about the disaster preparedness. Then because of the stages of the development of students who are growing up as a teenager, so there is a tendency difficult to manage and direct.

### 3.3 The Role of High School Teachers in the Preparedness Level of High School Students (SMA)

The role of high school teachers in the preparedness of students in facing disasters greatly affects the level of preparedness of students in high school. Furthermore, the understanding of students is also someone who is directly involved in the learning process with the aim of achieving certain achievements (18). As reflected in table 3, describing the results of measurements made on students regarding the participation of teachers in

the level of preparedness of high school students. It can clearly be reflected in the table as follows:

Table 3. The Role of High School Teachers in High School Preparedness Levels in Facing Tsunami Disasters

No	School	Number of Samples	Total score
1	High School (SMA)	12	68
2	Vocational High School (SMK)	12	64
3	Madrasah Aliyah (MA)	1	6
	total	25	138
	Average/Category	5.52/Less Acting	

Source: 2013 research , adjusted

Based on the table it can be seen if the score obtained in the participation of high school teachers on the level of preparedness of high school students is 5.52, which falls into the category of Less Role. The acquisition score is the lowest score when compared with elementary school and middle school teachers. The result of this lack of role cannot be separated from the still lack of concern from high school teachers to the preparedness of the participants in their schools.

Then the mastery of the teacher's preparedness material was also questioned, because there were also many teachers whose educational backgrounds were not in accordance with the subjects taught. Another factor is that high school is a teenage age that does require a lot of special attention, so the treatment of students from teachers must be highly adapted.

### 3.4 Comparison of Elementary, Middle School and High School Teacher Participants' Levels in Preparedness of Students in Facing Tsunami Disasters

The teacher is a professional educator, who is burdened with basic tasks starting from planning, implementing, and evaluating learning, at the level of early childhood education, primary and secondary formal education [19] [20] [21] [22] [23] [24] [25]. The level of teacher participation in students' level of preparedness in facing disasters can be seen from the average score obtained at the level. Then based on parameters, the acquisition of these scores can be categorized into several levels. Can be seen in Figure 1, a comparison of the role of elementary, junior high, and high school teachers in the level of preparedness to deal with students' disasters. The diagram is as follows:

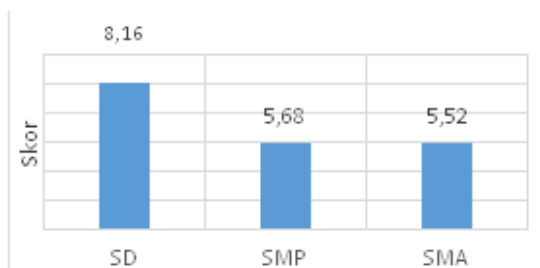


Fig. 1. The Role of Elementary, Middle and High School Teachers in Students' Level of Preparedness in Facing Tsunami Disaster in Pangandaran District  
 (Source: 2013 research, adjusted)

Viewed from diagram 1, the participation of elementary school teachers in the level of preparedness of elementary school students facing disasters gets a score of 8.16 with the category of Very Role. The score obtained by elementary school teachers is the highest score when compared to the role of junior high school teachers who get a score of 5.68 with the Less role category, and the smallest is a high school teacher with a score of 5.52 with the Less Role category. Furthermore, if the level is broken down into more detailed categories such as elementary school teachers consisting of elementary and MI, then junior high school teachers consisting of junior high school and MTs, and high school teachers consisting of high school, MA, and vocational school can be illustrated in figure 2 as follows:

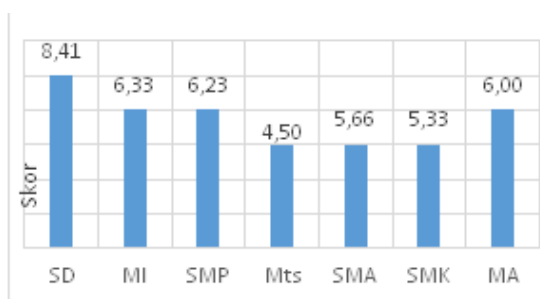


Fig. 2. The Role of Elementary, MI, Middle School, Mts, High School, Vocational, and MA Teachers in the Preparedness Level of Students Facing Tsunami Disasters in Pangandaran District  
 (Source: 2013 research, adjusted)

Based on diagram 2, it can be seen that the highest score is Primary School Teachers (SD), followed sequentially by Madrasah Ibtidaiyah (MI) Teachers, Junior High School Teachers (SMP), Madrasah Aliyah Teachers (MA), High School Teachers (SMA), Vocational High School (SMK) Teachers, and the smallest score is the Tsanawiyah Madrasah Teachers (MTs). Many factors cause the distribution of scores that can occur, including the educational background of the teacher himself. It was found that many of the educational

backgrounds of teachers are not in accordance with what is taught in schools, especially at the high school level, preparedness material is contained in the subject of Geography, but the geography teacher's own educational background is not appropriate, such as mathematics, biology, etc. effect on the mastery of the relevant teacher's material. Similarly, for junior high school teachers, rarely found linear background, there is a background in Commerce, then FISIPOL. Then in elementary school the teacher education background is very diverse, and very rarely the background is PGSD, for example Psychology, PPKN, English, Biology, PAI, PGA, D2 PPKHBN, D2 UT, IAID, and some even have high school graduates. In addition to the educational background, teaching methods also influence. Among them many teachers still use the lecture teaching method, the method's lack of interactivity makes it easy for students to get bored and not understand the material presented. These factors are among those found and affect the role of teachers in the level of preparedness of students in dealing with the tsunami disaster in Pangandaran.

#### 4. CONCLUSIONS

The conclusion of the role of the teacher in the level of preparedness of students in the face of the tsunami disaster in Pangandaran, drawing conclusions as seen from the acquisition of the average score from filling out the questionnaire conducted by students at their respective levels. It can be concluded if there is a difference in the average score between the roles of elementary, middle, and high school teachers, namely for the role of elementary school teachers getting the highest score and in the classification are categorized into the category of Very Role. Then for junior high school level the role of the teacher gets an average score that is categorized into the category less role. Furthermore, for the high school level the role of the teacher gets the lowest average score from the two previous levels and falls into the category of Less Role. The recommendation is to improve teacher recruitment so that the opening of formation is in line with a linear educational background, so that the mastery of the material is in accordance with the field of science to be taught. As well as teaching methods teachers must be more varied, so that students' interest in the material is more elevated, and mastery of the material will be achieved by students. The impact after all is realized is the participation of teachers in the level of disaster preparedness of students will move high, and certainly will minimize the impact of disasters that can occur at any time.

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