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# Creating a Disaster Preparedness Inclusion School through Training of Ability to Face Disaster Threats Based on Multisensory

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**Abstract**—The potential for earthquakes, floods, tornadoes in the city of Yogyakarta needs to be addressed with a training and simulation as an effort to mitigate disasters in schools, especially for primary school age children who are vulnerable to disasters and among them are the most vulnerable groups, namely children with needs specifically. Children with special needs has the same rights as other children to know about how to protect and save themselves when a disaster strikes. Some of them have mobility barriers to protect themselves and even save themselves. Then it is necessary to have information on the procedures / plans for rescue for children with special needs in the face of disaster. The training and simulation in this activity aims to: (1) equip students and teachers with knowledge about the potential for earthquake disasters, floods, tornadoes related to the condition of the area at the school location; (2) equip students and teachers with knowledge about knowledge and attitudes facing disasters; (3) providing knowledge of students and teachers about the importance of protecting the environment to prevent disasters; (4) providing alternative efforts for earthquake disaster mitigation, flooding, multisensory based tornadoes; and (5) train teachers to be able to provide disaster mitigation assistance to students, especially children with special needs. This training was conducted by lecturing, question and answer, and demonstration methods. The lecture and question and answer method was conducted to provide students with an understanding of knowledge and attitudes facing earthquakes, floods and tornadoes, and socialization to explain the importance of environmental sustainability in order to prevent natural disasters, as well as socialization of geographic information related to potential disasters in the city of Yogyakarta, and multisensory based concept of earthquake disaster mitigation, floods and tornadoes. Demonstration methods for carrying out multisensory based earthquake disaster mitigation, flood, and tornado simulations. The targets in this are SD Karanganyar and SDN Minggiran. The two elementary schools are inclusive elementary schools in the city of Yogyakarta. Based on observations at SDN Karanganyar and SDN Minggiran, there were ABK students who did not understand how to protect and save themselves when a disaster strikes. Therefore, disaster mitigation training is needed to improve the ability to face multisensory-based disaster threats. The training was conducted from February 2018 to October 2018. Through training in capacity building in the face of multisensory-based disaster threats, it is expected to increase the ability of children

with special needs to face the threat of disasters. This training leads to the realization of disaster preparedness inclusive schools.

**Keywords:** disaster preparedness, multisensory, inclusion school

## I. INTRODUCTION

3  
The city of Yogyakarta borders the city of Bantul which is prone to earthquakes. Based on the map of the 2006 earthquake damage, the city of Yogyakarta is included in the moderate damage area zone. Therefore, vigilance is very important considering the number of casualties and material losses that are not small in every disaster, such as the earthquake that occurred in the city of Yogyakarta on May 27, 2006. Based on information from BNPB (2017) [1], the number of victims died reaching 218 people and 318 people injured, and 145,796 people were displaced. The earthquake resulted in 4,129 houses being severely damaged, 10,219 houses slightly damaged, 294 educational facilities damaged, and 30 health facilities damaged. In addition to the earthquake, in the city of Yogyakarta there was also a flood disaster on December 20, 2013 which resulted in 24 people suffering (BNPB, 2017) [2]. Then, in the city of Yogyakarta there were also frequent tornadoes, such as on February 18, 2007 which resulted in 8 deaths, 54 people were injured and 700 people were displaced, on November 7 2008 a tornado disaster caused 8 people to be injured and on October 5, 2010 resulted in 1 person being injured. A tornado disaster in the city of Yogyakarta also occurred on February 23, 2015 which resulted in 1 death, as well as March 30, 2016 which resulted in 2 people died and 4 people injured.

3  
Of the many casualties due to the disaster, children are one of the vulnerable groups to disasters (PP No 21, 2008) [3], this was triggered due to the limited understanding of disaster risks around them, which resulted in the absence of preparedness in the facing disasters, and in among them there are the most vulnerable groups, namely children with special needs. Some of them have mobility barriers to protect and even save themselves independently. Children with special needs has the same rights as other children to know about how to protect and save themselves when a disaster strikes. Then it is necessary to have information on how the procedure / plan of rescue for children

with special needs against disasters. Therefore, school institutions are the right place to educate disaster management training for children.

Training to improve capacity <sup>2</sup> deal with disasters can be done early in elementary schools so that children can find out how to save themselves in the event of a disaster. This training can be started from elementary school age because according to Piaget, this time is a concrete operational phase (Suhardjo, 2011; Harijanto, 2011) <sup>4,5</sup>. Moreover, disasters often afflict school-age children either at school or outside school hours. It shows the importance of knowledge about disasters and training to increase the ability to deal with disaster threats needs to be provided early to provide provisions on understanding and steps that must be taken when a disaster threat is present in the vicinity to reduce disaster risk. The training was the beginning of an effort <sup>5</sup> to realize the disaster preparedness inclusion school.

Disaster risk reduction activities as mandated by Law No. 24 of 2007 concerning Disaster Management (Republic of Indonesia, 2007) <sup>6</sup>, must be integrated into the education sector. This is also supported in Law No. 23 of 2002 concerning Child Protection (Republic of Indonesia, 2002) <sup>7</sup> that education is one of the determining factors in disaster risk reduction activities. However, the number of schools or madrasas that are safe in disasters is still small. For example the availability of evacuation routes and information signs regarding disasters in the school environment. In addition, there are periodic activities to deal with disasters. (Zulkarnain, 2018) <sup>8</sup>

The implementation of disaster management is also contained in the Government Regulation of the Republic of Indonesia No 21 of 2008 (President of the Republic of Indonesia, 2008) <sup>9</sup> and supported by the UN Convention on the Rights of Children in 1989 (Eddyono, 2007) <sup>10</sup> that children have the absolute right to participate in decision making that will affect their lives before, during and after a disaster.

Various disasters that hit the city of Yogyakarta such as: earthquakes, floods, and tornadoes caused trauma for the people of Yogyakarta City, so that people began to be alert and responsive to disasters. This attitude of vigilance is shown by the community's concern to teach children how to deal with disasters. This is what underlies the implementation of disaster management training for children to realize disaster preparedness schools, because it is feared that in the event of a disaster, students with special needs are selfish so that they do not help other friends. In addition, a common problem that occurs is that disaster mitigation training with a focus on increasing capacity to deal with disasters in particular has not been integrated into the education curriculum in Indonesia (Notodiputro, 2013) <sup>11</sup>. This condition is contrary to the Hyogo Framework prepared by the United Nations that disaster preparedness education is a priority, namely Priority for Action 3. It is emphasized that disaster mitigation training has been integrated into the basic and secondary education curriculum in 113 other countries, including: Bangladesh, Iran, India, Mongolia, Philippines, Turkey, and Tonga (UNCRD, 2009) <sup>12</sup>

## II. METHOD

Some methods applied to the target group in this program include 1) observation activities; 2) interviews; 3) FGD; 4) counseling; 5) workshop; 6) training; 7) practice; 8) mentoring; 9) monitoring; and 10) evaluation.

## III. RESULT

In general the results of this training program are as follows:

a. The initial step of the activity, namely the proposal of multisensory-based disaster mitigation training for students with special needs in elementary school inclusion, was accepted by the Principal of Karanganyar Elementary School and SDN Minggiran. In this case, all school members were ready to accept the arrival of the team to carry out the community partnership program in the form of multisensory-based disaster mitigation training for children with special needs in inclusion elementary school at Karanganyar Elementary School and Minggiran Elementary School.

b. The training has been held for 6 days. The implementation of the partnership program in the community was carried out starting in February 2018. The disaster mitigation training material that had been carried out was: (1) types of disasters, disaster management, Disaster Risk Reduction (DRR) with lecture methods, and disaster simulations; (2) first aid (PP); (3) causes and control of fires, fire suppression, and introduction of fire extinguishers using light fire extinguishers (APAR) and traditional methods with lectures, as well as the practice of using APAR and traditional methods of demonstration; (4) history of the formation of the earth and the history of the occurrence of disasters; (5) evacuation and spatial lines; (6) cause and effect / impact of the disaster.

Especially for First Aid (PP) materials, procedures for using Light Fire Extinguishers (APAR), and disaster simulations, training materials were presented by resource persons from the DIY Disaster Preparedness Center (TAGANA). That is because the material requires special expertise in its presentation.

1) The training activities carried out at SDN Karanganyar were attended by an average of 93.75% of invited participants, while the average service activities at SDN Minggiran were attended by 100% of invited participants. This shows the enthusiasm of the community is quite large with the service program of the UPY team.

The implementation of multisensory-based disaster mitigation simulations in Karanganyar Elementary School and Minggiran Yogyakarta Elementary School ran smoothly, so that it was expected to increase the alertness of the local community to the possibility of disasters in their region.

2) Based on the results of the evaluation of the implementation of activities, a number of supporting and inhibiting factors can be identified in the implementation of this service.

Factors supporting the success of the program include:

1) The teacher and employees are willing to work together and are very helpful in implementing service activities.

## The 2<sup>nd</sup> International Conference on Informatics for Development 2018

2) The enthusiasm of the teacher and employees at the location of service in participating in the program carried out.

3) Availability of financial support from Kemenristekdikti 2018 budget year.

Factors inhibiting the implementation of the program include limited time to implement services, so some material is not delivered in detail.

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### AUTHORS PROFILE

MAHILDA DEA KOMALASARI, M.PD. Born in Klaten on September 30, 1990. Completed his undergraduate education program in PGSD Yogyakarta State University in 2012 and completed his master's degree in Basic Education Study Program at Yogyakarta State University in 2015. His main activities since 2015 until now are as permanent lecturers of the PGSD Study Program Yogyakarta PGRI University and teaches several courses, such as: Development of Teaching Materials, Curriculum Development, Learning Media Development. His interest in researching and learning about character can be seen from several scientific publications and his research on character, such as the research he did in 2015 with the title 'Development of Integrated Student Activity Sheet Character Value for Developing Primary School Students' Responsibility, Discipline, and Learning Achievement' and research in 2017 with the title 'UPY-Based Character Multimedia-Based Interactive Multimedia Development "My Character" to Improve UPY Students' Character. The book he wrote was titled 'Building My Character'.

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