

Implementation of Disaster Risk Reduction Education in SD Muhammadiyah Condongcatur 2

Yumidiana Tya Nugraheni¹, Agus Firmansyah²

¹Islamic Education Department, STAI Masjid Syuhada Yogyakarta, ²Postgraduate Department, UIN Sunan Kalijaga, Jl. Pringgokusuman No 12 Yogyakarta, Indonesia. Tel. +62-274-58017

Corresponding author

yumidianatya@gmail.com

Abstract: This research is an effort to reduce disaster risk in educational institutions, especially Muhammadiyah Condongcatur 2 Elementary School. This study is a qualitative study with a case study type. Data acquisition was carried out through observation, documentation, and interviews. The data analysis consists of data condensation, data display, and conclusions. This study aims to: first, determine the implementation of PRB in SD Muhammadiyah Condongcatur 2. Second, determine the obstacles to PRB in SD Muhammadiyah Condongcatur 2. The results of the study are: The implementation of PRB in SD Muhammadiyah Condongcatur 2 is carried out in stages. The components of PRB that have been implemented include aspects of preparation and training and education for educators and staff. The two stages have produced several analyses, including disaster history, multi-sector disaster threat analysis, vulnerability analysis, capacity analysis, and standard procedures for flood disasters. The obstacles to implementing the three stages of PRB have not been optimally understood and additional training is needed to strengthen them.

Keywords: Implementation, Disaster Risk Reduction and Elementary Schools.

Introduction

Indonesia's climate is determined by its location and geographical features. The natural expanse of 6,400 km between the Pacific Ocean and the Indian Ocean. Indonesia has three basic climate types: monsoonal, equatorial, and local climate systems. This has resulted in differences in rainfall in Indonesia. These conditions have an impact on a number of threats, such as the threat of floods, tsunamis, landslides, earthquakes, and volcanic eruptions. Based on data from the National Disaster Management Agency (BNPB), in 1982-2014 there were 13,729 disasters, dominated by floods and followed by landslides, strong winds, droughts, earthquakes, and other disasters. However, the disaster that claimed the most victims was the earthquake, followed by the tsunami (resulting in 174,101 deaths), earthquakes (15,250 deaths), floods and landslides (7,555 deaths), and other disasters (28,603 lives).

These complex and challenging conditions are exacerbated by the impacts of climate change caused by environmental degradation. Climate change has a significant impact on humanitarian and development program interventions and will continue to challenge the development and implementation of the education sector. From the data listed in the 2013 Indonesian Disaster Risk Index (IRBI 2013) issued by BNPB, 80% of Indonesia's territory is at high risk of disasters, covering 205 million people exposed to disaster risks, with 107 million of them being school-age children. Considering the disaster risk and the extent of exposure, integrated, synchronous, and synergistic efforts are needed between ministries or institutions, communities, and the business world to prevent disaster risks, strengthen the capabilities of institutions and communities, reduce the impact of disasters, prepare communities, ensure early warning systems, and strengthen emergency response and recovery capabilities. According to

data from the Ministry of Education and Culture in the Disaster Resilient Education book, 2019, around 24.05% or 52,902 educational units are in earthquake-prone areas, 24.59% (54,080 educational units) are in flood-prone areas, 1.10% (2,417 educational units) are in tsunami-prone areas, 7.09% (15.59 educational units) are in landslide-prone areas, and 0.77% (1,685 educational units) are in volcanic eruption-prone areas. Based on these problems, this study aims to: first, determine the implementation of PRB in SD Muhammadiyah Condongcatur 2. Second, determine the obstacles to PRB in SD Muhammadiyah Condongcatur 2.

There are several studies related to disaster risk reduction and prevention as follows: first, the research of Yumidiana Tya and Agus Firmansyah, which explains that the implementation of SPAB at the Quwwatul Islam Al-Qur'an Education Park (TPA) was carried out for four days with SPAB facilitators. SPAB training produced a disaster risk map, alert team, earthquake emergency program, action plan, and evacuation route. The obstacles to the implementation of SPAB internalization 10 SPAB steps are not fully understood, and additional training is needed to strengthen it.(Nugraheni, 2023) Second, the research of Hayatul Khairul Rahmat, Kasmir, and Anwar Kurniadi explains that through disaster education integrated with Qur'anic values, it can instill an attitude of awareness, alertness, and response to disasters in junior high school students. In the implementation of this disaster education, it can be done through integration, insertion, and strengthening through extracurricular activities with an emphasis on prevention, emergency response, rehabilitation, reconstruction, mitigation, and preparedness. In its implementation, this integration and interconnection is not only in knowledge but also in terms of attitude and psychomotor.(Rahmat et al., 2020)

Third, the research of Zela Septikasari, Heri Retnowati, and Insih Wilujeng, which explains the integration of PRB material into the curriculum, integration of PRB material into local content, and integration of PRB material into self-development. Strategies that can be implemented for the integration of elementary school PRB education include integration through an online platform

created by the Ministry of Education and Culture, involving multiple parties in disaster management in schools, schools implementing independently, integration through scouting extracurricular activities, through the civil servant pre-service system, and through regional regulatory policies. The proposed framework for elementary school resilience, namely, (1) school disaster risk assessment and planning for PRB education integration; (2) teacher and staff training related to PRB education integration; (3) implementation of PRB integration according to school characteristics and paying attention to the sustainability of integration; (4) evaluation of the implementation of PRB education integration; and (5) PRB integration innovation.(Septikasari et al., 2022)

Fourth, Aldila Rahma's research explains that the Indonesian government, together with related agencies, continues to work together in implementing disaster curriculum into all levels of education, adjusted to the age and capacity of children in dealing with emergencies.(Rahma, 2018) Fifth, Putu Eka Suarmika and Erdi Guna Utama's research explains that disaster mitigation education based on local wisdom can be implemented in the 2013 Curriculum by (1) identifying local wisdom in disaster mitigation and (2) integrating it into learning. Since an early age, children are brought close to disasters and maintain and treat the environment well, so that it will form children who are resilient in dealing with disasters and love the environment for a sustainable life.(Suarmika & Utama, 2017)

Materials and Methods

This research is field research with a qualitative approach. The research location is at SD Muhammadiyah Condongcatur 2. The data collection method is carried out by interview, documentation, and observation. The research time is in December 2023. The research data sources consist of primary and secondary data. Primary data are documents on the implementation of PRB at SD Muhammadiyah Condongcatur 2 and books published by the National Secretariat (SekNas) PRB of the Ministry of Education and Culture. The

data analysis process consists of three parts, namely data condensation, data display, and data conclusions.(Miles et al., 2014)

Results and Discussion

Disaster prevention and risk reduction education

Disaster Risk Reduction is a long-term activity, as part of sustainable development, by using knowledge, innovation, and knowledge to build a culture of safety and resilience in all educational units, as stated in the Hyogo Framework for Action (HFA), and has also become a commitment of the Indonesian nation. PRB related to the field of education as stated in the HFA and has been proposed in the Sendai Framework for Disaster Risk Reduction 2015-2030, needs to be a priority program in the education sector, which is realized through PRB education in schools. PRB education is a joint learning process that is interactive in nature in the community and existing institutions. The scope of disaster risk reduction education is broader than formal education in schools and universities. This includes the recognition and use of traditional wisdom and local knowledge for protection against natural disasters. In addition, PRB education is a very important vehicle for realizing a culture of readiness and alertness in facing the threat of disaster, as well as a manifestation of Education for Sustainable Development (ESD).(Suharwoto et al., 2015, p. 8)

Based on this understanding, the objectives of PRB education are as follows: Developing humanitarian values and attitudes; developing attitudes and concerns towards disaster risks; Developing an understanding of disaster risks, understanding of social vulnerability, understanding of physical vulnerability, as well as behavioral and motivational vulnerability; Increasing knowledge and skills for disaster risk prevention and reduction, responsible management of natural resources and the environment, and adaptation to disaster risks; Developing efforts for disaster risk reduction above, both individually and collectively; Increasing disaster preparedness knowledge and skills; increasing disaster emergency response

capabilities; Developing readiness to support community rebuilding when disasters occur and reduce the impacts caused by disasters; increasing the ability to adapt to major and sudden changes. The concept of safe schools, which was later developed into comprehensive safe schools, includes elements as sub-pillars that support disaster risk prevention and reduction education, as shown in this diagram:(Suharwoto et al., 2015, p. 8)



Figure 1. Disaster safe school concept

PRB education is designed to build a culture of safety and a resilient community in the face of disasters. In the comprehensive safe school framework, the PRB education pillar has eight strategies summarized in stages, as in the table below:(Suharwoto et al., 2015, p. 9)

Table 1. Stages of PRB education strategy

Preparation Stage	Training and Education Implementation Stage	Advocacy Stage
Education sector analysis	Teacher training and staff development	Integrated into the curriculum
Multi-threat risk assessment	Disaster education	Key messages based on consensus
Child-centered assessment and planning	Extracurricular and informal community-based education	

Implementation of disaster risk reduction and prevention education

Disaster risk reduction and prevention education was held for one day on December 15, 2015. The activity had two different targets, namely educators and students. The number of students who participated in the PRB activity was 78 children. The PRB activities for children included disaster risk reduction and prevention education and disaster fun games. Disaster risk reduction and prevention education was filled by national facilitators and district facilitator teams. The materials provided included an introduction to various disasters, disaster threats in schools, and various rescues in the event of earthquakes, floods, and hurricanes. Disaster fun games are part of the outbound that contains disaster mitigation content. The outbound integrates flood and earthquake mitigation.

The educator activities consist of two materials, namely the history of disasters and the introduction of disaster-safe educational units. The history of disasters explains the history of disasters and the threat of disasters in Indonesia. In addition, educators are asked to inventory the history of disasters that have occurred in schools. The introduction of SPAB that is carried out only focuses on several steps, namely the history of disasters in schools, ewevakuia plans, disaster risk assessments, and the creation of standard procedures for flood emergencies. The schedule of activities is as follows:

Table 2. Stages of PRB education strategy

Time	Students	Teachers	Location
06.40-07.00	Prayer and tadarrus		Mushalla
07.00-07.30	Dhuha prayer		Mushalla
07.30-08.00	The importance of disaster awareness		Mushalla
08.00-09.00	Disaster risk reduction and prevention education	History of disasters	Mushalla (Students) Library (Teachers)

09.00-09.45	Fun disaster game	Introduction to SPAB (Satuan Pendidikan Aman Bencana)	Mushalla (Students) Library (Teachers)
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Table 3. Threats at SD Muhammadiyah Condongcatur 2

No	Disaster	Yes	No
1	Flood	v	
2	Earthquake	v	
3	Volcanic Eruption	v	
4	Virus Pandemic	v	




Table 4. Causes and Impacts of Threats in SD Muhammadiyah Condongcatur 2

No	Disaster	Causes	Impacts
1	Flood	Non-standard drainage system and high rainfall	Learning activities are disrupted because classrooms are flooded
2	Earthquake	Active faults	Damage to roofs and tiles
3	Volcanic Eruption	Presence of active volcanoes	Learning is closed because it is covered in ash
4	Virus Pandemic	Including red areas	Online learning or WFH

The history of disasters in schools is the initial part of mapping disasters that have occurred in schools. The disasters that have occurred in schools include earthquakes, floods, and volcanic eruptions. This is according to the following table:




Table 5. History of disasters in SD Muhammadiyah Condongcatur 2

No	Time of incident	Disaster	Impacts
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1	May 27, 2006 (for 57 seconds)	Earthquake	Schools are closed, and some roof tiles have fallen.	4	Non-standard stairs	Stairs for class 5 and 6 and MM room	
2	October 26, 2010	Merapi eruption	Schools are closed, and schoolyards are covered in volcanic ash.	5	Old fan in the middle of the room	Library, teacher's room, class 5, and class 6	
3	2010-2012	Flood	Learning is disrupted because classrooms are flooded.	7	No evacuation route	All rooms	
4	February 13, 2014	Mount Kelud eruption	Schools are closed, and schoolyards are covered in volcanic ash.	8	Roof tiles without barriers	All upper edges of the school	
5	December 2019	Covid 19 Pandemic	Online Learning or WFH				

In addition to the history of the disaster, educators are asked to conduct a vulnerability analysis. The vulnerability analysis carried out by educators and staff is according to the following table:

Table 6. Vulnerability analysis in SD Muhammadiyah Condongcatur 2

No	Vulnerability	Location	Documentation
1	Doors that open inwards	Library room, class 4, UKS room, storage room, bathroom, admin room	
2	Sharp corners of tables and chairs	All tables and chairs in the school	
3	Cupboards near exits	Principal's room and library	

In addition to vulnerability analysis, educators are also asked to conduct a school capacity analysis in dealing with disasters. The school capacity analysis is as follows:

Table 7. Capacity analysis in SD Muhammadiyah Condongcatur 2

No	Capacity	Location
1	Assembly point	School yard
2	Door opens outward	Grade 1, 2, 3, 5, and 6.
3	Iron bell (as a sign of danger)	Principal's office
4	Disaster risk reduction training	library

The capacity and vulnerability analysis is strengthened by the preparation of standard operating procedures for flood emergencies. The standard operating procedure is prepared jointly by educators, education personnel, and facilitators. The standard operating procedure is as follows:

Table 8. Flood emergency standard operating procedure in SD Muhammadiyah Condongcatur 2

No	Who	Does what	Where	When	Description
1	Early warning (Mr.	Hiding the bell indicating high rainfall and	In the school environ	When the water started to enter the	

	Kidi n)	flooding	ment	school hall
2	Evac uatio n (hom eroo m teach er)	Calming down children in class	In the classroo m	When the water started to enter the school hall
3	Coor dinat or (prin cipal)	Moving items on the table	On the 2nd floor	When the water started to enter the classroom
4	Child comb er (Mr. Riza)	Giving direction and calming children	In all rooms	When the water started to enter the classroom
5	First aid (Reli gious teach er)	Conducting control of the classroom	On the second floor	When someone was injured

Barriers to Disaster Risk Reduction at SD Muhammadiyah Condongcatur 2

The implementation of PRB consists of three steps: preparation stage, implementation and training and education stage, and advocacy stage. The preparation stage consists of three steps as follows: education sector analysis, multi-threat risk assessment, child-centered assessment, and planning. The implementation, training, and education stage consists of three steps as follows: teacher training and staff development, disaster education, and extracurricular and community-based education. The advocacy stage consists of two steps as follows: integrated in the curriculum and key messages based on consensus.

The PRB stages have been implemented for the most part. The steps taken at SD Muhammadiyah Condongcatur Dua include: education sector analysis, multi-threat risk assessment, child-centered assessment and planning, implementation of teacher and staff training and education, and

disaster education. The steps that have not been implemented include extracurricular and community-based education, integrated into the curriculum, and key messages based on consensus.

Conclusions

The implementation of PRB at SD Muhammadiyah Condongcatur was carried out in stages. The PRB components that have been implemented include aspects of preparation and training and education for educators and staff. The two stages have produced several analyses, including disaster history, multi-sector disaster threat analysis, vulnerability analysis, capacity analysis, and standard procedures for flood disasters. Floods are a disaster that often occurs at the school. Disaster education for students and educators has been implemented. The follow-up program for this is the integration of disaster curriculum into the curriculum and the habituation of savethi briefing. This habituation is carried out once a month.

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