

# The cocept of disaster preparedness in disaster-prone areas at Harapan Bahagia Yogyakarta school

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## ABSTRACT

This archipelago country cannot be separated from disasters which cause many victims, especially children. This affects their future lives as a generation of the nation. Children's future regarding disaster preparedness can be improved by knowing the signs and causes of disasters, what to do before and during a disaster, and survival skills. The purpose of this article is to explain the reasons why disaster preparedness education is important for young children. The method used is a qualitative descriptive method directed at field research. The results obtained are that with disaster preparedness education it is hoped that children will be far from being perceived as having limitations in dealing with disasters because proper education will bring excellence and quality of mind and clarity in thinking. Apart from that, you can also understand the nature of existing truths, and will be accustomed to carrying out good habits and actions, always behaving well, always inviting students to think carefully and deeply, always encouraging creativity and thinking about nature and living things. All forms of education will have an effective effect if given from childhood or an early age.

## 1. INTRODUCTION

Indonesia is a country located in the ring of fire region. This is another term for the archipelago which is surrounded by confluence of tectonic plates spread out with rows of volcanoes and active earthquake faults (Agus, 2011). Indonesia's territory is geologically, geographically and astronomically vulnerable to disasters. The application of plate tectonic theory to the Indonesian archipelago explains that this archipelago is a place where plates of the earth's crust collide, including the Eurasian or Southeast Asian, Pacific and Dutch East Indies plates. Apart from that, the complexity of demographic, social and economic conditions in Indonesia which contribute to the high level of community vulnerability to the threat of disasters, as well as the lack of community capacity in dealing with disasters, causes the risk of disasters in Indonesia to be high (Nurjanah, 2011).

Early Childhood Education areas which are located in risk areas are very vulnerable to this phenomenon, therefore in disaster-prone areas, every educational institution introduces students to disasters or in institutions that are far from disaster risk in order to anticipate all possible disasters. The aim is for children who are vulnerable to the risk of disasters to become resilient children, meaning that children remain patient in facing these trials, their traumatic potential can be minimized, they are able to survive after a disaster, they are able to help others, they are able to minimize the

risk of disasters such as the arrival of disease outbreaks, reduce the possibility of disasters, reducing victims from disasters and alleviating the suffering of victims (Irene, 2010).

Children have a big challenge, namely being in a potential disaster area with risks that affect the development of their cognitive, behavioral and emotional abilities, children even experience physical danger which can result in a decrease or delay in the overall growth and development process. This affects their lives in the future as a generation of the nation. During childhood, the inculcation of values will be better maintained and last longer, compared to when humans have passed adulthood. This is because human cognitive development begins in childhood (UIN SUKA CISForm Team). This article reviews how disaster preparedness education is carried out in disaster-prone areas, so that children are prepared to face existing dangers.

## 2. METHODS

The method used by the author is a qualitative descriptive method directed at field research. The approach used in this research is a psychological approach. Because it relates to children's behavior and development in a phenomenon or educational environment. The author uses this data source by referring to what Sugiyono stated, sampling or determining data sources in qualitative research is using purposive sampling. This means that the data source was determined with certain considerations (Sugiyono, 2016). The author's data sources are the Head of the Harapan Bahagia KB, teachers in the Harapan Bahagia Play Group and parents of students or even related parties who have functions in the disaster sector. This data was collected through observation (observation), interviews (interviews) and documentation (documentation).

## 3. RESULTS AND DISCUSSION

### 3.1 Disasters and disaster preparedness schools

Etymologically, a disaster is a disturbance, deception, or something that causes (gives rise to) distress, loss, suffering, catastrophe, accident and danger. Another opinion is that disasters are *sunnatullah*, that is, God's will which cannot be changed and has nothing to do with creatures, for example earthquakes caused by the rupture of plates in the bowels of the earth, melting of icebergs at the poles (LPBPINU, 2011). This is in line with the words of Allah SWT which are contained in Surah al-Hadid verse 22: "There is no disaster that befalls on earth and (not) what you are but it was written in the book (*lauh mahfuzh*) before We created it." The second assumption is that disasters occur due to causality as Allah says in Surah Ash Shura verse 30: "And whatever disaster befalls you is caused by the actions of your own hands, and Allah forgives most (of your mistakes)."

According to RI Law No. 24 of 2007, a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused by natural factors, non-natural factors and human factors, resulting in human casualties, environmental damage, property loss, and psychological

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impacts (Irwan, 2009). In line with the Law, it is also stated that Disaster is a consequence of complex processes which is started from natural phenomena such as wind and rain (Sagala, 2010). This means that a disaster is a consequence of a complex process of natural phenomena, for example wind and rain.

So a disaster is an event that takes away comfort, tranquility, and an event that disrupts society and the environment whether it occurs due to natural or non-natural factors. Various disasters, including earthquakes, tsunamis, floods, landslides and volcanic eruptions, have caused people to flock to save themselves and flee to various places, one of which is schools. Postman and Weingater stated as quoted by Syaipul Sagala that: "school as institution is the specific set of essential functions that function in our society". Schools are defined as specific institutions with a set of basic functions in serving society. In line with this understanding, Ibtisam defines school as a second environment. Schools cannot be separated from the first environment, namely the family, so educational actors and the wider community (especially parents of students) must help each other and support policies at the school level.



Figure 1. Type Disaster

Disaster education activities in schools are an effective, dynamic and sustainable strategy in efforts to disseminate disaster education. Systemic, measurable and implementable efforts to improve the abilities of school residents will undoubtedly be able to reduce the impact of disaster risk in schools. The action plan carried out by the school is in the form of providing information to the community. This disaster prevention aims to make each region prosperous. In Surah Hud verse 61, it is explained that Allah has created humans from soil and made humans prosperous (Cholis, 2011). Prosperity means making the people of the earth prosperous and preserving the natural environment so that it can be enjoyed by children and grandchildren, but what happens is that humans exploit the earth, so that environmental damage occurs everywhere and has fatal consequences for life.

Law Number 24 of 2007 concerning Disaster Management, preparedness is a series of activities carried out to anticipate disasters through organization and appropriate and effective steps. Measures tailored to help at-risk communities save their lives and assets by alerting to disasters and taking appropriate action to address imminent threats or actual disasters. So disaster preparedness is the

activity of anticipating the arrival of a disaster with knowledge about disasters based on risk analysis that has been determined by the relevant parties. Disaster preparedness schools are schools that have the ability to manage disaster risks in their environment. Management capability is measured by having a disaster management plan (before, during and after a disaster), the availability of logistics, security and comfort in the educational environment, infrastructure and emergency system, which is supported by knowledge and preparedness capabilities, standard operational procedures, and early warning systems.

The concept of disaster preparedness schools is not only focused on the element of preparedness, but includes efforts to develop knowledge innovatively to achieve a culture of safety, security and resilience for all school members against disasters. The Disaster Preparedness School (SSB) concept has two main elements, namely a safe learning environment and preparedness of the school community. The aim of SSB is to build a culture of preparedness and a culture of safety in schools, as well as building resilience in facing disasters by the school community. A culture of disaster preparedness is an absolute requirement for realizing the development of SSB. This culture will be formed if there is a supporting system, there is a good planning, procurement and maintenance process for school facilities. It is hoped that the SSB concept developed by the KPB (Disaster Education Consortium) will become a reference for DRR (Disaster Risk Reduction) initiatives and community-based disaster management in general and school-based in particular (Indonesian Disaster Education Consortium, 2011).

### 3.2 Schools in disaster-prone areas

The phenomenon of people living in dangerous places such as close to active volcanoes, on unstable slopes where landslides may occur, or close to rivers that can flood becomes a common consideration because life with the risk of danger has an impact significant (Permensos). As an individual who is in an area that has the potential for loss, we need to be careful in all matters to anticipate it through appropriate and effective steps.



Figure 2. Disaster preparedness pictures for children

This step is one element in the disaster management process which focuses on the process of preparing the community's capacity to be able to carry out emergency response activities quickly and appropriately in a pro-active manner, before a disaster occurs (Deny, 2006). The pre-disaster phase (preparedness phase) is a period of good preparation by thinking about and taking various actions to minimize losses incurred as a result of a disaster and making plans. The following is a portrait of disaster-prone areas and how early childhood education institutions provide knowledge about environmental conditions:

- a. Area prone to volcanic eruptions. Namely by introducing students to volcanic eruptions, signs of volcanic eruptions, actions when an eruption occurs and actions after a volcanic eruption. The eruption of Mount Merapi started from magma which was under pressure and became thinner than the layer below the crust. This process causes the magma to gradually move upward and often reaches gaps or cracks in the crust. Signs that a volcano has erupted include changes in activity around the peak, vibrations heard, withering of plants on the slopes of the mountain, the appearance of abnormal odors such as sulfur, wedhus gembel (hot clouds), lava flows, and others. Actions when a volcano erupts include following the advice to evacuate, if you are outside, protect yourself from objects sprayed by the eruption, protect yourself from ashfall, wear a mask or a wet handkerchief. After the volcanic eruption ends, what you do is return home if the situation is safe, clean the roof from the ash deposits, help the people around you.
- b. Area with potential for earthquakes. Schools teach about earthquakes, actions to take. Earthquakes are vibrations or shocks that occur due to activity within the earth, the ground we stand on, generally in the form of magma activity and shifts in the earth's plates. What causes earthquakes is when the rocks at the plate boundaries slowly pile on top of each other, pressure builds up. Eventually the rock disintegrates, which releases energy in the form of shock waves or seismic waves. Earthquakes are also caused by tectonic processes due to movement of the earth's crust or plates (tectonic earthquakes), volcanic activity, and nuclear explosions. Actions to take during an earthquake: protect your head and immediately look for shelter, look for objects to use as a shield to protect your head. You can run outside if you have planned that it is safest, however, if there is not enough time, stay indoors and look for shelter. If you are still sleeping when an earthquake occurs, immediately protect your head with a pillow and then go under the bed. If the house is on a cliff or valley of a hill, be aware of the danger of landslides that may occur. If your house is on the beach, you must prepare an escape route to a higher area to avoid the danger of a tsunami. If the position is outdoors, then what you need to do is look for spacious land, which is far from buildings, tall trees, and electricity cables, tunnels and bridges. Stay away from cracks in the ground caused by earthquakes, because they can be life-threatening. Stay away from places that may slide or be hit by an avalanche, such as steep cliffs.

- c. Areas with potential for flooding. Namely knowing about floods and the actions taken. Flooding is an event of overflowing water that inundates the surface of the land, whose height exceeds normal limits. Floods can be caused by high rainfall, reduced water catchment areas due to deforestation, residential development, poor waste management and drainage, and so on. To reduce the risk of flooding, plant lots of trees, keep water and waste channels clean, and collaborate with communities outside flood areas to protect water catchment areas. Meanwhile, the action when a flood occurs is to immediately escape to a safe place, if possible invite family members or people around you to save yourself, save valuables so they are not damaged or carried away by the flood. Actions after a flood occurs, namely paying attention to the cleanliness of the water that people use in their daily lives, always washing their hands with soap and clean water before cooking or eating, after handling anything that has been contaminated by flood water, cleaning the house after a flood using soap. and anti-bacterial drugs. Actions to maintain cleanliness include building a fence around the clean water area to prevent animals from entering, burning rubbish that can be burned, and rubbish that cannot be burned and planted in a special hole.
- d. Area with potential for landslides. It is important for schools to introduce their students to landslides and what actions should be taken. A landslide is the movement of a mass of soil or rock, or a mixture of both, down or off a slope due to disruption of the stability of the soil or rock that makes up the slope. The main causes of landslides are the gravity of activities that influence landslides, cutting cliffs during mining on steep slopes, dumping of landfill in slope areas, failure of retaining wall structures, deforestation, agricultural systems that do not pay attention to safe irrigation, development areas that violate spatial planning regulations, poor drainage systems. Geological conditions also cause landslides such as weathered rocks, land slopes, elements or types of soil layers, earthquakes, Mount Merapi, and others. Topographic conditions are the slope of the land surface such as valleys, slopes and hills. Water system conditions, namely accumulation of water volume or mass, dissolution and hydrostatic pressure, and others. To reduce the risk of landslides, it is necessary to avoid disaster-prone areas as a place to live, increase or improve and maintain drainage, both surface water and ground water (the function of drainage is to keep water away from slopes, prevent water from seeping into slopes or draining water from inside out). slopes), planting trees, compacting the soil around housing. These preparedness measures include not cutting down or destroying forests, planting plants with strong roots, such as neem, bamboo, vetiver, lamtoro, then making rainwater channels, building retaining walls on steep and steep slopes.
- e. Areas with potential for drought. In areas that have the potential for drought, it is important for schools to introduce their students to drought. The potential danger of drought in question is the amount of water available for the needs of humans, plants and livestock. Drought is usually

influenced by several physical factors, namely land form, rainfall, depth of groundwater, and topsoil texture which influence the ability to absorb rainwater. Drought is defined as a temporary reduction in water supplies below normal, both in the atmosphere and on the ground surface. The cause of drought is a decrease in rainfall over a long period caused by the interaction of the atmosphere and the ocean and due to irregularities in sea surface temperatures such as those caused by the El Niño phenomenon. Drought results in insufficient water needs for human activities. Drought has serious consequences on planting patterns, irrigation patterns, irrigation operation patterns and management of other surface water resources. Serious disruption of cropping patterns will in turn threaten community food security. Before a drought occurs, we need to take action to utilize existing water sources more efficiently and effectively, prioritizing the use of water sources that are still available as raw water for clean water, planting as many shrubs as possible on every inch of land in our neighborhood, making reservoirs adapted with environmental conditions, increasing water absorption by not covering all surfaces with cement plaster or ceramic tiles, water saving campaigns, water saving movements, protecting water sources, protecting water sources for development, water harvesting and water conservation. Water harvesting is a method of collecting or storing rainwater or surface runoff water during times of high rainfall for use during times of low rainfall. Water harvesting must be followed by water conservation, namely using water that has been harvested sparingly according to need. The target of drought disaster management is aimed at water availability and the impacts caused by drought. Overcoming water shortages can be done through the construction of drilled wells to obtain water, the provision of drinking water using tankers, the sowing of artificial rain in rain catchment areas, the provision of water pumps, and arrangements for providing water to agriculture on an emergency basis (such as rolling mills). Recovery activities include assistance with agricultural production facilities, working capital assistance, food assistance and medical services, construction of water infrastructure, such as reservoirs, rubber weirs, efficient use of water.

- f. Tsunami potential area. Areas with potential for tsunamis have a protection system, namely mangrove forests, sand dunes, lagoons and sandbars. This landform is able to reduce the energy of tsunami waves so that sea water does not reach far to land and reduces the rate of tsunami exposure. Tsunami comes from the Japanese word tsu meaning harbor, nami meaning wave so it is generally interpreted as a large sea tide in a harbor. A tsunami is a sea wave that can be caused by the movement of land layers on the seabed. This shift can be caused by tectonic earthquakes, volcanic eruptions on the seabed, landslides on the seabed and powerful explosions. Tsunamis are usually preceded by a very strong earthquake, then sea levels drop suddenly and then strong waves occur. The impact of the tsunami disaster was flooding, damage to facilities and infrastructure, loss of life and environmental pollution. Signs of a Tsunami are the sudden receding of sea water on the coast which is preceded by a large earthquake, the smell



of wind smelling of salt or hard sea water, and loud rumbling sounds. After recognizing this sign, tell everyone to evacuate immediately because a tsunami can occur quickly and the time to evacuate is very limited. When a tsunami occurs, the action that needs to be taken is if you are on the beach or near the sea, and feel the earth shaking, immediately run to a high place and far from the beach, save yourself, don't pay attention to your belongings, if you are dragged by the tsunami, you should look for objects float that can be used as a raft. After the tsunami stops, the actions that must be taken are to stay in a safe place, stay away from areas that have experienced damage unless they have been declared completely safe, provide help to those who need it. Tsunami impacts can be minimized by not living in coastal areas that slope more than 10 meters from sea level. It is recommended to plant plants that can withstand waves such as mangroves, palms, Ketapang, waru, banyan trees. Following the land use regulations that have been determined by the local government, create multi-storey buildings with a safe room at the top, try to ensure that the wide walls are not parallel to the coastline.

- g. Areas with potential for dengue fever epidemics. Dengue fever is carried by mosquitoes and its presence is greatly influenced by environmental health. This is a threat of disaster caused by the spread of infectious diseases that break out in a certain area and at a certain time. Outbreaks of infectious diseases can have a very wide impact on society in the form of the number of illnesses, if not controlled then the outbreak can attack the community in very large numbers, the number of deaths if the number of sufferers is not successfully controlled then the number of deaths will increase, economic aspects that have an impact on the decline of economic, political aspects that will cause public unrest because they are exploited by certain parties to create unstable conditions.

Reducing the risk of disease outbreaks includes preparing the community, including government officials, to understand the risks if an outbreak occurs and how to deal with an outbreak, one of which is by carrying out continuous outreach activities, preparing adequate legal products to support prevention efforts, quick response and countermeasures if an outbreak occurs, prepare facilities and infrastructure for countermeasures such as professional human resources (health workers, medical personnel). To be prepared for the threat of disease outbreaks, you need to check your personal health. Prevention of transmission can be done by maintaining personal hygiene and the environment where you live, for example making it a habit to wash your hands with soap, regularly cleaning the house and the environment from objects that could become a breeding ground for disease germs. The schools with the potential for disasters above provide education to students using the cycles contained in the disaster cycle, namely knowledge before a disaster occurs with an introduction to the disaster, knowledge when a disaster occurs with an introduction to action efforts if a disaster occurs and post-disaster knowledge is carried out with an introduction to post-disaster actions. disaster.



Efforts made in the education sector for disaster preparedness include promoting knowledge about disaster risk reduction into the education curriculum to reach young people and children, promoting the implementation of local level risk assessments and disaster preparedness programs in schools and secondary education institutions, promote the implementation of programs and activities in schools for learning about how to minimize the effects of hazards, develop training and learning programs on disaster risk reduction targeting specific sectors, promote community or school-based training initiatives by considering the role of volunteers as appropriate to increasing local capacity in mitigating and dealing with disasters, ensuring equal access to opportunities to obtain training and education for women and the vulnerable, promoting training on gender and cultural sensitivity as an inseparable part of education and training on disaster risk reduction. The function of schools that introduce disasters is to strengthen children and help build greater awareness in society, school building facilities that can save lives and protect children as the nation's next generation from natural disasters and help the country move towards achieving its goals. millennium development. Schools must also be able to protect the nation's future generations from disasters. Schools have strategic value because they are believed to have a direct influence on the younger generation.

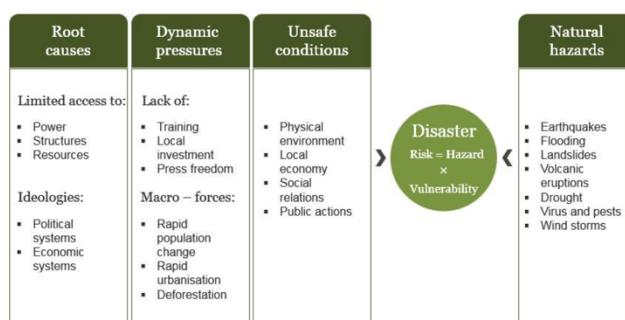


Figure 3. Disaster risk formula

Integration in the curriculum is very helpful in efforts to build awareness of disaster risks from an early age. To protect children from the threat of natural disasters, two priorities are needed, namely education to reduce disaster risks and school safety and security, but in action, the two priorities are interrelated. According to the National Curriculum Center, nine objectives of DRR (Disaster Risk Reduction) education are identified, namely developing humanitarian values and attitudes, developing attitudes and concern for disaster risk, developing understanding of disaster risk, social vulnerability, physical vulnerability, behavioral vulnerability and motivation, increasing knowledge and skills. for disaster risk prevention and reduction, responsible management of natural resources and the environment, and adaptation with collectives, increasing disaster preparedness knowledge and skills, increasing disaster emergency response capabilities, developing readiness to support community rebuilding when disasters occur and reducing the impacts caused due to the occurrence of disasters, increasing the ability to adapt to large and sudden changes. School as an educational institution can function

as a medium of information in changing people's thinking and behavior patterns to reduce disaster risk. Knowledge of disaster management at the school level is a basic need in reducing the risks that may be faced if a disaster occurs. Schools as a medium for introducing knowledge are expected to be able to absorb and apply knowledge of disaster preparedness. The important role of teachers as transmitters of disaster preparedness information to students at school. The distribution of knowledge and practice of disaster preparedness can be done using very simple methods and the role of teachers in packaging disaster preparedness information is important to continue to develop. With good knowledge and skills and attitudes, it is hoped that the school community will be better prepared to face all the risks posed by disasters. The teacher's responsibility is to provide education, provide knowledge, and develop a sense of concern for disaster preparedness in their students. This preparedness aims to overcome disasters. The stages of implementing disaster management consist of three stages: first, the pre-disaster stage, namely the stage in a situation consisting of no potential disaster and potential disaster. The second stage is during an emergency response, namely a situation where a disaster occurs. The third stage is the post-disaster period, namely the time after a disaster occurs. These three stages are a never-ending cycle. Disaster management activities are carried out throughout the cycle. When a disaster occurs, people take action to help or respond to disaster emergencies. Sometimes, help is too late, resulting in casualties. In this disaster cycle, action can be taken to avoid losses and many victims. Thus, schools in disaster-prone areas carry out disaster preparedness because it is an educational process that equips students with various knowledge so that they are able to anticipate unbalanced environmental conditions.

#### 4. CONCLUSION

By introducing elements of disaster preparedness in disaster-prone areas in educational institutions, four pillars of education will be realized, namely (1) Learning to know is not limited to knowing and having as much information material as possible, storing and remembering it forever in accordance with implementation instructions, but the ability to understand the meaning behind the teaching material they receive, for example children can be invited to learn to anticipate. (2) Learning to do is a logical consequence of learning to know. Students are expected to be able to develop work, as well as how to develop theories or intellectual concepts. (3) Learning to be can make students become scientists so that they are able to explore and determine the value of their own lives in society as a result of their learning. (4) learning to live together leads a person to live in society and become an educated person who is beneficial to both himself and society. It is hoped that students will be aroused in their interest in learning to live together.

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