

# Model of Children Readiness in Facing Volcanic Disasters

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## ABSTRACT

Model of Children Readiness in Facing Volcanic Disasters aims to be a reference for learning activities about disaster response and disaster awareness early on in the Early Childhood Education (ECE) which is expected to help children reduce the impact of volcanic disasters and preparedness in facing disasters that can come at any time without warning. The tests provided were simulations of ways to save themselves when a mountain erupted, such as how to wear a mask, recognize signs of a volcano eruption, recognize signs of evacuation, gathering points and activities carried out at the gathering point led by teachers waiting for help to arrive. Learning activities are carried out using the story telling method, the singing method, and the simulation method. From the results and discussion after the child is given a simulation and measured the attitude of the child facing a volcano disaster, it can be said that the child has a spiritual attitude, social attitude, knowledge, and excellent skills where the child is no longer afraid, confused, or anxious when the volcano is experiencing an eruption. Each child understands what to do when a volcano erupts and where to go when an earthquake occurs. This shows that the model of children readiness in facing volcanic disasters contribute significantly to children's readiness in disaster mitigation.

**Keywords:** Children readiness, early childhood education, natural disaster, volcanoes, disaster mitigation

## 1. PRELIMINARY

Formal which was pioneered respectively by Clarke and Emerson [1]. Disasters are events or series of events that threaten and disrupt people's lives and livelihoods, which can be caused by both natural and/ or non-natural and human factors, resulting in human casualties, environmental damage, property losses, and psychological impacts. (BNPB, 2008). A natural disaster is an event that we never know when to happen and can occur suddenly or through a process that takes place slowly. Natural disasters such as earthquakes, it is almost impossible to accurately predict when, where it will occur and the magnitude of its strength that it may bring. While several other disasters such as floods, landslides, droughts, volcanic eruptions, tsunamis and weather anomalies can still be predicted beforehand. Natural disasters always have a shocking effect and can cause many losses both soul and material. The surprise happened because of the lack of vigilance and preparedness in facing the threat of danger. In this sense, a disaster response is needed. There are four main factors that can cause many victims and large losses caused by natural disasters, namely: 1) Lack of understanding of

the characteristics of hazards, 2) Attitudes or behaviors that result in a decrease in the quality of natural resources (vulnerability), 3) Lack of information/early warning which causes unpreparedness, 4) Powerlessness/ inability to deal with the threat of danger.

According to National Disaster Management Agency (BNPB) data, 148.4 million Indonesian people live in earthquake prone areas, 5 million in tsunami prone areas, 1.2 million residents in volcano eruption prone areas, 63.7 million in flood prone areas, and 40.9 million people in areas prone to landslides. In Indonesia, there are 386 regencies/ cities in moderate to high hazard zones, 233 regencies/ cities are threatened by volcanic eruptions, 315 regencies/ cities are in medium-high danger areas of landslides. In 2016 there were 2,384 disasters, this number is increased compared to 2015 which has a case of 1,732 disasters.

One of the examples of volcanic disasters in Indonesia is Mount Sinabung (Karo language: Deleng Sinabung) is a volcano in the Karo Plateau, Karo District, North Sumatera, Indonesia. Sinabung, along with Mount Sibayak nearby are two active volcanoes in North Sumatera and being the 2nd highest peak in North Sumatera province. The height of Mt. Sinabung is 2,451 meters. This volcano has never been

recorded erupting since 1600, but suddenly it went active again when it erupted in 2010. The last eruption of this mountain occurred in September 2013 and lasted until now (2017). After the eruption of Mount Sinabung that occurred in Sukandebi Village, Simpang Empat District, Karo Regency, it was covered with volcanic ash. The thick ash disturbs the activities of the residents there. Impacts that occur due to eruption or eruption of Mt. Sinabung include pollution of the air with volcanic ash containing various gases, the number of plants damaged due to the volcanic ash of this sinabung caused many farmers to experience crop failure and even though there are plants that could survive, the quality has diminished since the economy of the population around Mt. Sinabung revolves on farming, many bridges are damaged as a result of the cold lava that damages the foundations of the bridge that are passed by cold lava so that the total movement of people who live around Mt. Sinabung are paralyzed. Problems that also occurs namely in the field of education including in the field of ECE, where volcanic eruptions can have a negative impact on the sustainability of children's education, especially children in areas affected by volcanic eruptions. The problem happened because of several causes, among others; first, there are some students and teachers who are also victims of volcanic eruptions, second, there are many children who have taken refuge with their parents, third, many school facilities on the slopes of the volcano are either destroyed or damaged by volcanic eruptions so they cannot be used again, and fourth, many school buildings are used as refugee locations so that they cannot be used for teaching and learning activities.

This paper aims to explain the description of the implementation of ECE Children Readiness Model in Facing Volcanic Disasters as part of the Disaster Preparedness School (SSB) program. SSB is a school that creates a learning atmosphere and learning process so that students actively develop their potential to have life skills in anticipating disasters through organizing and appropriate and effective steps (Lentera kecil, 2017).

## **2. METHODOLOGY**

This paper is based on the results of a model development trial conducted in North Sumatera using a qualitative approach. Data was collected through literature studies, observations, and interviews with a number of ECE teachers. Data analysis uses descriptive analysis.

## **3. DISCUSSION**

Model of Children Readiness in Facing Volcanic Disasters aims as a reference for learning activities about disaster response and disaster awareness early on in ECE institutions that are expected to help children reduce the

impact of volcanic disasters as well as readiness in dealing with disasters that can come at any time without warning. In this model the activities are carried out through simulation methods and guidance techniques on the signs of volcanic eruptions and actions that children must take. Simulation and guidance activities carried out through conditioned and unconditioned activities (actual events) with 3R approach (Ready of children, Ready of teachers, and Ready of schools). It says the child is ready if the child already knows how to save themselves when disaster happens. The teachers is ready if the teacher already knows about the knowledge to save themselves when a disaster comes but also knows how to teach it to children, and the school is ready if the school already has a learning program about disasters in its curriculum and in educational calendar.

There are four competencies that must be realized by young children in preparing to face this volcano disaster which were adopted from the Indonesia 2013 ECE curriculum (Kementerian Pendidikan dan Kebudayaan Republik Indonesia [Kemendikbud RI], 2013), namely: 1) spiritual attitude, 2) social attitude, 3) knowledge, and 4) skills. Spiritual competence is the attitude that children do, such as taking the attitude of praying at the meeting point guided by the teacher, giving thanks for the protection of God even though there is always a volcanic eruption. Social attitude competence is showing self-ability to adjust to the situation, knowing the feelings of friends and responding naturally/not panicking and can calm fellow friends, wanting to share with others in using disaster response tools and materials, and being cooperative with friends. Knowledge competence, is when children can mention the definition of a volcano, know the positive and negative impacts of volcanic eruptions, recognize the signs of a volcano before it erupts. And lastly Skill competence, is when children are able to use masks and can save themselves when an earthquake and hot clouds comes down.

ECE Children Readiness Model in Facing Volcanic Disasters is done through several learning methods such as: 1) Storytelling Method, 2) Singing Method, and 3) Simulation Method. The method of storytelling is one of the learning methods commonly used in ECE institutions. The method of telling a story is one way in providing learning experiences to children by telling stories to children orally. Story material can be taken from several story books relating to the readiness of ECE children in facing volcanic disasters. For example, a book that tells the story of a volcano erupting. Singing method is a fun activity for early childhood because through singing children will be free to express their thoughts and feelings. The method is implemented through singing songs that can be sung together that relate to the courageous attitude toward disaster accompanied by movements (movements and songs). The simulation method is carried out by practicing

matters relating to disaster risk reduction carried out both inside the classroom (indoor) or outside the classroom (outdoor) which is called as an evacuation simulation using tools and evacuation marks to the gathering point. Evacuation in this case is an action to make students stay away from threats or very dangerous events such as volcanic disasters. Standard Operating Procedures (SOP) in evacuation are as follows; *first*, the teacher tells the children that a volcanic eruption has occurred, for example, by sounding an alarm or some other device; *second*, children immediately line up and walk towards the evacuation route to the gathering point in a calmly manner; and *third*, if the conditions outside the classroom does not look safe the teacher asks the children to remain in the classroom. SOPs when children arrive at the gathering point are as follows; *first*, the teacher calms the children; *secondly*, pray; *third*, singing (if possible); *fourth*, playing together (teachers and children can use tools and materials that have been prepared in an emergency bag), and *fifth*, must use a mouth cover (mask). The most obvious impact of a volcano disaster is the occurrence of many physical casualties, fatalities. In a disaster situation like this, children are the most vulnerable parties exposed to psychosocial and medical problems because their defense mechanisms are still weak. Volcanic disasters cannot be predicted when they will come and with the uncertainty of the coming of this disaster, children must have a good vigilance and knowledge about volcanic disasters, and mental preparedness and strategies are needed when a disaster occurs.

The results for the Model of Children Readiness in Facing Volcanic Disasters can be explained as follows. First, children already have a spiritual attitude such as no longer crying and panicking when the mountain erupts, they are calm and can pray to God. Children are also able to encourage and invite their friends to pray and sing together. Secondly, children already have a very good social attitude such as being able to calm a friend who is still panicking, willing to share a place, and willing to work together when going to the meeting point. Thirdly, children already have good knowledge such as getting to know the mountain, understanding signs of evacuation, understanding the positive and negative impacts of volcanoes, knowing signs of when volcanoes will erupt. Fourth and lastly, children already have the skills in terms of using masks, wearing jackets and hats to protect themselves, and are skilled in following directions for evacuation.

#### 4. CONCLUSION

Natural disasters such as volcanic eruptions are frightening, which can cause trauma for young children. The handling done by the ECE centers when the child is still in school like children are supervised by the teacher so that the children does not play outside the room, the teacher invites

the children to not be afraid by giving various activities such as cutting, sticking, drawing. The teacher invites the child to calm down and pray, children are invited to sing along to music, children bring and use masks to prevent breathing in volcanic dust or ECE centers provide it in case the children didn't bring the masks. In this model, children have a readiness in facing volcanic disasters which can be referred to as disaster awareness and disaster response preparedness.

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