

# Designing Model of Disaster Mitigation Education for the Stimulation of Early Childhood Self Help Skills

Yuliani Nurani<sup>1\*</sup>, Niken Pratiwi<sup>1</sup>, Masruroh Masruroh<sup>2</sup>

<sup>1</sup>Early Childhood Education Program, Universitas Negeri Jakarta, DKI Jakarta, Indonesia

<sup>2</sup>Midwifery study program, Faculty of Health Sciences, Universitas Respati Yogyakarta, Indonesia

\*Corresponding Author: yuliani.nurani@unj.ac.id

*Abstract-- There need to be another effort to reduce disaster risk through disaster mitigation measures in Early Childhood Education (ECE) institutions. Through disaster mitigation education, the school stimulates students to be able to prevent disasters and respond to emergency wherever and whenever. This research aims to design a model of disaster mitigation education in early childhood educational institutions. This research type is research and development (R&D). The main data obtained from this research comes from educators and parents in ECE institutions in the 2020-2021 school year. The result of material experts' assessment on the products developed is that 80% of module and media developed are feasible used as a guide for early childhood disaster mitigation education. Limited teste conducted on teachers and children in small groups show that the module and media developed includes in 81.6% assessment category and it is highly feasible to be used in early childhood disaster mitigation education. The results of this research can be used as material to solve problems and donation of information relating to the Development of Disaster Mitigation Program for Early Childhood Education in the Institute of ECE.*

**Keywords:** Early Childhood Education, Model Design, Mitigation

## Introduction

According to the Law No.24 of 2007 [1] concerning Disaster Management, Disaster is an event or series events threatening and annoying life and society's life which is caused both natural/non-natural factor and human factor so that cause the fatalities and phycologist effect. Besides cause the fatalities and phycologist effect, disaster also change society's life pattern from normal to damaged condition, such as losing property as well damaged society's infrastructure [2].

National Disaster Management Authority (NDMA) note 1.586 of disaster types throughout 2019 [3,4]. The following is the graph describing the increasing and decreasing of disaster number in Indonesia in the last ten years from 2015 to 2020.

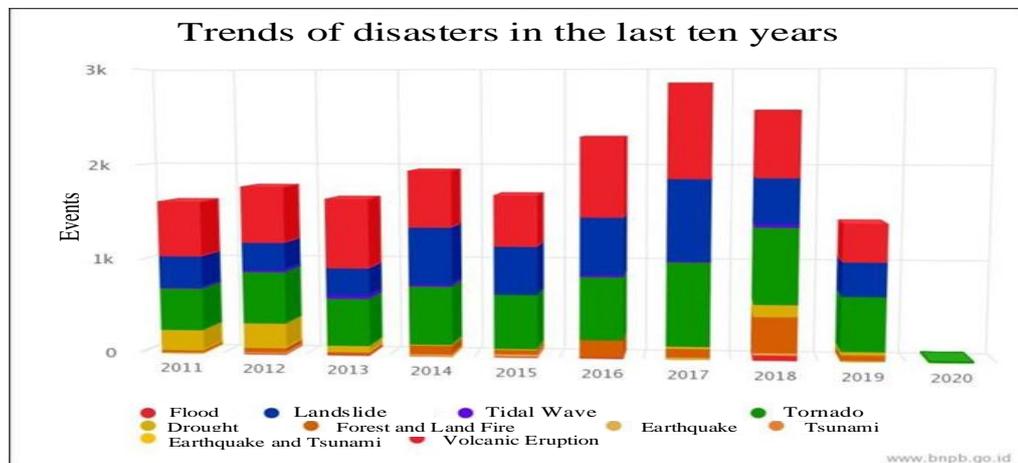


Figure 1 Graph of Increasing Disaster in Indonesia

In 2019, various disaster raises 325 death people, 113 losing people, 1.439 injury people and 996.143 people displaced and suffered. Physical damaged including 3,588 houses are severely damaged, 3,289 houses are moderately damaged, 15,376 houses are slightly damaged, 325 educational buildings are damaged, 235 religious facilities are damaged and 78 health facilities are damaged [3,4]. The statistical numbers have meaning that the threat of disaster continues to increase.

Monitoring the conditions which have been exposed above, all society's elements such as environment, finance, industry, transportation, construction, farm, education and health should contribute in preventive action by implementing disaster prevention education through disaster mitigation [5,6].

As society living in the country by disaster prone status, all society should know the knowledge about the disasters. This society means parents, mature and teenage people even early childhood. The knowledge about disaster should be known by society including the characteristic of disaster, decreasing disaster risks, ready action when disaster strikes, and disaster management [7,8]. Decreasing disaster risk also need to be conducted through formal path and one of them is school institution.

On the field situation, when the disaster strikes, educational service is often ignored. Therefore, educational institution should be the place holding strongly the knowledge about disaster mitigation. This case can be manifested by ensuring the existence of the access and learning environment, the continuity of learning activity, teacher and education staff availability, and adequate educational polity accompanied with strong coordination among institutions, the role as well society and analysing educational need, response strategy as well monitoring and evaluation. In addition, implantation 3 important pillars shared by the

Disaster Safe Education Unit regarding policies and planning in education sector, including school facilities is save, disaster management at school, as well prevention and decreasing disaster risk education [9]. This case indicates that school has important role in implanting preparedness to students.

Based on the facts above, it needs another effort to decrease disaster risk through disaster mitigation in ECE institution. Through disaster mitigation education, the school stimulating students to be able to prevent disaster and emergency response whenever and wherever. The strategy of disaster mitigation program in EDE institution as an effort by understanding that the early childhood has specific need in facing the disaster hazard. The effort is committed by inviting children to participate actively appropriate with their capacities and interests.

### Research Method

This research is Research and Development, to develop the curriculum program. This research uses the research by research design of disaster program development and curriculum in EDE institution in several areas of disaster-prone. The successfulness indicator from this research is the increasing of knowledge, attitude and skill concerning disaster mitigation in EDE institution.

Main data obtained in this research comes from teacher and parents in EDE institution in 2020-2021 school year as the subject in this research, teacher is served as an actor. The data needed in this research is about school documentation, school location, school facilities, data of teacher, parents and students.

The technique of data analysing used in this research is by used expert view technique. Expert view is a step to doing reviewing or observation toward the product developed by the researcher. It aims give the input in order to increase the quality of the research product. The criteria used to reveal the success of knowledge, attitude, and teacher's skill, parents and students is appropriate with the standard criteria proposed by Nurkencana [10] :

Table 2. Score Range of Assessment Instrument of Material Expert, Media Expert, and Teacher's Assessment.

Score Range	Assessment Criteria
100% - 76%	Very good
75% - 51%	Good
50% - 26%	Enough
25% - 0%	Poorly

### Research Result

The development of curriculum document creative game contains activity program appropriated with the 2013 curriculum and Education Unit Level Curriculum of Early Childhood Education; therefore, it produces the lesson plan through creatives game activity. This program aims to cultivate children's knowledge and attitude toward earthquake and

tsunami disaster by the series game activities which is attractive, pleasure and focus on children as well is able to cultivate the growth aspect of early childhood [11]. The following is the description of the content from curriculum document of active game developed by the researcher team:

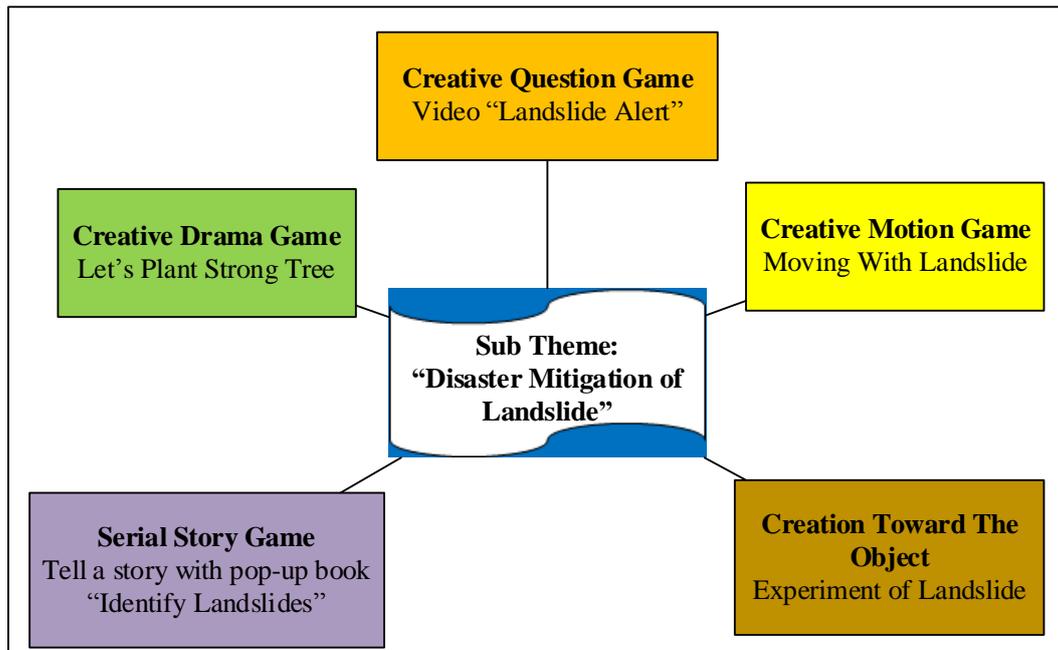


Figure 2. Material Development about landslide Disaster Mitigation

This research use expert view and limited testing. Expert view is a stage to conducted review or observation toward a product developed by the research. It aims to give input in order to increase the research's quality product. The result of data obtained can be described as follow:

Table 2. The Result Assessment of Product Development

Types of Product	Material Expert	Media Expert	Limited Testing
Disaster Mitigation	75%	83%	80%
Module of early Childhood			
Digital Book	80%	85%	82%
Animation Video	85%	80%	85%

Product assessment for material and media expert is conducted through filling instrument consisting of clarity aspect, material and appropriateness. Meanwhile the validation questionnaire of the media expert product consists of clarity aspect, content, attractiveness and appropriateness. The questionnaire is provided through google form. It is conducted to know the accuracy of written document product consisting of the series activities active game about disaster mitigation as well animation learning video (motion graphic). Limited testing is conducted in teacher of early childhood education and early childhood in small group. Questionnaire provided to teacher is conducted through google form. Product testing is conducted, teacher give suggestions, critics, and input in order to know its deficiency. The deficiency is revised and improved to get maximal result and the product is reliable implemented in teaching learning process activity in ECE institution.

The result of assessment from material expert toward the product developed is 80 percent of module and media developed is really reliable used as a guide for disaster mitigation education of early childhood. Media expert also give assessment which is about 82.7 percent toward the module and media developed. Limited testing conducted in teacher and children in small group obtained the assessment which is about 82.3 percent for module and media developed. This case show that the module and media developed includes in assessment category 81.6 percent and it is really reliable to be used in disaster mitigation education of early childhood.

The development of learning program for early childhood is conducted through active game activity, therefore children are able to exploration freely and able to know concerning anything existing in environment such as natural phenomena which is able to show up whenever and wherever, therefore it needs the knowledge about disaster mitigation effort for early childhood in ECE institution appropriating with the children's growth. Besides teacher in the institution, parents also have important role in providing the knowledge as well the model toward the children relating with preventive action about disaster. Children's time spends more with parents at home. Therefore, by habituation in EDE institution as well at home, parents and teacher are able to create save culture toward disaster and able to do preventive and curative action if something happened coming suddenly.

## **Conclusion**

This research result can be made as a material to solve the problem and donation information relating with the program development of disaster mitigation for early childhood in EDE institution. Disaster preparedness or response can be introduced through several activities and strategies. This research will develop educational model by emphasize on game activity which is able to be one of the ways to conducted disaster mitigation. Game activity consisting of knowledge improvement about definition, impact, and skill of disaster mitigation, therefore teacher and students can do simple stimuli quietly without being panic. Model of disaster mitigation education curriculum base active game and digital media as an effort in decreasing disaster risk. The understanding about disaster mitigation is important to be thought to early childhood which is able to be integrated in learning in classroom, as well input the role of local culture supporting as an effort in utilize local culture.

**REFERENCES**

- [1] Undang-Undang No. 24 Tahun 2007 tentang Penanggulangan Bencana
- [2] Anggarasari, Nandhini Hudha dan Rikha Surtika Dewi. 2019. "Mitigasi Bencana Pada Anak Usia Dini. *Jurnal Pendidikan : Early Childhood*. Vol. 3. No. 1. PP 1-9.
- [3] BNPB. 2019. 1.586 Kejadian Bencana Menyebabkan 438 Jiwa Meninggal dan Hilang Terjadi Selama Tahun 2019. [www.bnpb.go.id/1586-kejadian-bencana-menyebabkan-438-jiwa-meninggal-dan-hilang-terjadiselama-tahun-2019](http://www.bnpb.go.id/1586-kejadian-bencana-menyebabkan-438-jiwa-meninggal-dan-hilang-terjadiselama-tahun-2019) ( 29 Februari 2020 pukul 15.05 WIB)
- [4] Buku Saku Tanggap Tangkas Tangguh Menghadapi Bencana. 2015. Badan Nasional Penanggulangan Bencana. <http://bnpb.cloud/dibi/grafik1a> diakses pada tanggal 13 Februari 2020 Pukul 10.00 WIB
- [5] Amelia, Lina, Fitriah Hayati, Sri Milfayetti, dan Ichsan. 2019. "Analysis of the Use of Kindergarten Watching Siaga Bencana Learning Model for Structured Positive Thinking Ability on Early Childhood". *Budapest International Research and Critics Institute-Journal*. Vol. 2. No. 3. PP. 379-387.
- [6] Dreier, M., Chaudron, S., Beutel, M. E., Schaack, C., Müller, K. W., & Wölfling, K. (2014). Young children (0-8) and digital technology. A qualitative exploratory study - National Reoprt - Germany. November. [www.verhaltenssucht.de](http://www.verhaltenssucht.de)
- [7] Apriliani, Dewi. 2017. Pendidikan Mitigasi Bencana di Kabupaten Klaten, Jawa Tengah. *Jurnal Kebijakan Pendidikan*. Edisi 8 Vol.VI. PP 897-904.
- [8] Nuttall, J., Edwards, S., Mantilla, A., Grieshaber, S., & Wood, E. (2015). The role of motive objects in early childhood teacher development concerning children's digital play and play-based learning in early childhood curricula. *Professional Development in Education*, 41(2), 222–235. <https://doi.org/10.1080/19415257.2014.990579>
- [9] Palaiologou, I. (2016). Children under five and digital technologies: implications for early years pedagogy. *European Early Childhood Education Research Journal*, 24(1), 5–24. <https://doi.org/10.1080/1350293X.2014.929876>
- [10] Warda, Ningsih. 2009. Meningkatkan Keterampilan Menulis Karangan Argumentasu Menggunakan Pendekatan Proses pada Mrid Kelas V SD. Makasar: UNM
- [11] Nurani, Yuliani. (2010). Bermain Kreatif Berbasis Kecerdasan Jamak. Indeks