

# Environmental Disaster Education at University: An Overview in New Normal of COVID-19

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## ABSTRACT

Pandemic Coronavirus Disease (COVID-19) is a non-natural disaster that occurs globally. Disaster mitigation efforts need to be made when entering a new normal life after the physical distancing policy is relaxed. The purpose of this study was to describe the knowledge and participation of students in disaster mitigation activities during the new normal period. The research method used descriptive, data collection techniques through Google Form with a sample of 54 students. The results showed that learning of disaster mitigation education is not maximally taught at the university level with a percentage of 57.4% for students, who did not receive disaster mitigation education. However, as many as 51.9% of students had attended training in disaster education. Disaster mitigation education was important to do when a new normal period. That is because students are one component that has a role to convey various information about the disaster, especially COVID-19. This study concludes that knowledge and student participation in disaster education still needs to be improved. The suggestion from this research was necessary to develop innovative learning tools for disaster mitigation education in the new normal era of COVID-19.

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## 1. INTRODUCTION

The geographical location of the country of Indonesia is often hit by natural disasters that often occur in various regions of Indonesia. The countries that are in the location and the ring of fire so it is prone to disasters and causes disasters to occur easily. The level of vulnerability to natural disasters is one of the factors that most influence the occurrence of disasters because new disasters will occur when the Vulnerable Conditions (Pickett et al., 2019; Rachmawati & Budiarti, 2016). All the people who are probably engaged with disaster situations have a responsibility to develop their capability to prepare, mitigate, respond, and recover. Effective mitigation and preparedness can greatly reduce the threat posed by disasters and post-disaster response will help to reduce

the impact of disasters in both the economic and social sectors of a country (Thayaparan et al., 2014). The danger of disaster will also be divided again if the awareness of every citizen is not heeded, the danger of a natural disaster will easily occur because of natural disasters caused by the human activity itself. The disaster that hit shortly is a non-natural disaster, namely Coronavirus Disease (COVID-19).

COVID-19 which occurs in Indonesia even the pandemic in the world. This disaster was a global pandemic that began its spread from the Wuhan, China (Ni et al., 2020; Salzberger et al., 2020; Tian et al., 2020). COVID-19 has rapidly been spreading all over the world and which has made every sector of human life to

immediately feel its impact (Sintema, 2020). Therefore disasters will occur anytime and anywhere so that the community must always be careful and continue to understand the importance of the participation of Indonesian people in disaster mitigation against the community itself. Disaster mitigation is simply an aspect of disaster planning and management before and after a disaster, known as a disaster management cycle that aims to prevent loss of life and reduce the suffered by humans (Januriyadi *et al.*, 2019; Prabawadhani *et al.*, 2016; Rahmayanti *et al.*, 2020; Shalihati, *et al.*, 2016).

A very important role for the younger generation as well as the community and authorities regarding mitigation education aimed at disaster risk and reducing damage. Disaster mitigation becomes important because if a disaster occurs, the community will certainly lose property and lose economic resources (Berger *et al.*, 2018; Crow & Albright, 2019). Disaster mitigation itself includes both planning and implementing various actions to reduce risks that have been ignored by many young people, communities, and government. Even though in the pre-disaster stage it is very important because before the disaster has been prepared to minimize the impact of the before and after the disaster.

Disaster mitigation education is very important and needed by young people and the community because there is a Disaster Mitigation program in areas which is very important to do socialization for the community to minimize the impact of disasters (Onuma *et al.*, 2017; Rachmawati & Budiarti, 2016; Rae, 2016). The level of preparedness and education on environmental disasters for any country and community can influence the extent of the impact of disasters. This reflects the importance to educate university students involved in disaster management activities with the appropriate knowledge and skills. Thus possessing adequate knowledge on disaster management is a key requisite for the younger generation because it will help them to understand the process of mitigation and recovery. As a scientific community and a gathering place for disaster experts, sociologists, geopolitics, doctors and medical personnel, psychologists, economists as well as reconstruction and rehabilitation experts, the role of universities is very important to support the government in disaster management in Indonesia. When entering the new normal era after several months of physical distancing during COVID-19, it is necessary to do innovation and further description of students' understanding of disaster mitigation.

According to the results of research conducted Rahmayanti *et al.* (2020) which states that the importance of the innovative education model needed in the context of disaster mitigation especially in the COVID-19 pandemic situation. Learning model such as Disaster Mitigation of Flood Based on Online Learning (DIFMOL), it becomes a solving the problem of conventional distance learning difficulties (e-learning) during COVID-19 situations by using descriptive research methods or data collection

techniques through Google Form. Based on this, the purpose of this study was to describe the knowledge and participation of students in disaster mitigation activities in the COVID-19 era.

## 2. MATERIALS AND METHODS

This study used a descriptive research design using a survey study approach conducted in June 2020. The descriptive research design which is used in the study aimed to determine the knowledge of students about disaster mitigation education. Data collection was a procedure carried out systematically and standardized to be able to obtain data.

In this regard, based on the type of research and the types of data sources used and those that have been determined, the data collection technique in this study used a questionnaire that will be distributed to 54 respondents. The type of questionnaire that will be given to respondents is a test, which has 15 questions. The data used in this study are primary, that is data obtained directly using descriptive research methods or data collection techniques through Google Form and secondary data, namely data obtained from the results of other people's research or the official website of the property the government and other trusted electronic media.

## 3. RESULTS AND DISCUSSION

In this study, it was found that following the results of data processing research conducted on student knowledge regarding disaster education in college (Campus) is very low. This is evidenced in Table 1 that, the study was conducted with a sample of 54 different students with tertiary level different in all regions of Indonesia have proven that learning disaster mitigation education is not maximally taught in college living with a value of 57.4% (31 students) and 42.6% (23 students). Whereas in training and seminars the level of student participation was higher for students to take part in activities in the form of seminars and training on disasters with 51.9% (28 students) and 48.1% (26 students). Furthermore, the characteristics of students about disaster simulation activities participated by students in tertiary institutions were also not good because the number 46.3% (25 students) answered that they had participated in a simulation of disasters while in the figure of 53.7% (29 students) never followed a simulation about a disaster in college.

The results of this study can also prove that higher education institutions by using a sample of 54 students with different tertiary institutions to prove that disaster mitigation education is not maximally taught on campus. Data showed table 1 that 57.4% (31 students) never received teaching material on disasters while 42.6% (23 students) received teaching material on disaster mitigation education. So that the understanding of students about mitigation education is not maximally taught on campus and this is very contrary to the *tri dharma* of higher education. The knowledge level score for each item for more details can be seen in Table 2. In general, students' knowledge scores still need to be improved to be better. Certainly by providing a lot of education to students about the importance of planning education.

**Table 1.** Characteristics of Category Students About Disaster Education

No	Characteristics	f	%
	Gender:		
1	Male	34	63%
	Female	20	37%
	Have you ever had a Disaster-related Subject:		
2	Yes	23	42,6%
	No	31	57,4%
	Have you attended training in disasters:		
3	Yes	28	51,9%
	No	26	48,1%
	Have you ever taken a self-rescue simulation during a Disaster:		
4	Yes	25	46,3%
	No	29	53,7%

**Table 2.** Student Knowledge about Disaster education

No	Knowledge level	f	%
1	True	45	83,3%
	False	9	16,3%
2	True	21	38,9%
	False	33	61,1%
3	True	54	100%
	False	0	0%
4	True	27	50%
	False	27	50%
5	True	44	81,5%
	False	10	17,5%
6	True	49	40,7%
	False	5	9,1%
7	True	25	46,3%
	False	29	53,7%
8	True	50	92,6%
	False	4	7,5%
9	True	35	64,8
	False	19	35,2%
10	True	28	51,9%
	False	26	48,1%
11	True	36	66,7%
	False	18	34,4%
12	True	10	18,5%
	False	44	81,4%
13	True	26	48,1%
	False	28	51,9%
14	True	15	27,8%
	False	39	72,2%
15	True	27	50%
	False	27	50%
	Total	54	100%

Nowadays the education system of the modern world is going through some massive changes (Rahman, 2019). Education is an activity and learning process to develop or increase knowledge, the higher the level of one's education, the better the level of knowledge (Bustami *et al.*, 2018; Cheng & Monroe, 2012; Chouhan *et al.*, 2017; Sandberg & Ohman, 2011; Sethusha & Lumadi, 2013). Conversely the lower level of one's education, the less good the level of knowledge, so that one's education will affect knowledge because in the education process there is a learning process towards something. Including relating to disaster

education, in this case, disaster mitigation education becomes an important role to convey various knowledge relating to disaster mitigation. An understanding of disaster mitigation can reduce loss and loss of life (Ramadhan *et al.*, 2019).

Furthermore, the important role of disaster education needs to be developed by universities, especially those in locations or regions prone to disasters. Different methods of training can be used in this regard. Effective training can prevent or reduce the effects of some disasters. Trained people can protect themselves and others better. Therefore,

the rate of human and financial loss due to disasters is reduced, which is regarded as a prime issue for vulnerable people although it has been less emphasized and there is no comprehensive training program (Torani et al., 2019). Additionally, Disaster education is effective at all stages of the crisis, but its impact is even more in preparation. Therefore, more educational planning should be considered at this stage (Rundmo & Nordfjærn, 2017). Disaster Education aims to reduce the risk of disasters including the potential for disasters and the history of disasters that have occurred in the region, forms of anticipation, increasing knowledge and awareness of the signs of disasters (Pouyanfar et al., 2019; Sharpe & Kelman, 2011; Siriwardena et al., 2013; Sutter & Smith, 2017). Therefore, the campus is also one of the formation areas for agents of change who are character and professional in the context of students' understanding of disaster mitigation education and disaster risk reduction. Furthermore, the campus also has a *Tri Dharma* College that aims to encourage the creation of campuses and communities that are safe and resilient to disasters.

The role of students and campus residents as agents of change can play an active role in the internal environment of the campus and the community to make awareness efforts about the importance of understanding and good knowledge about disaster mitigation education, especially when entering the new normal era after the COVID-19 pandemic. Students become one of the parties who have an important role in spreading various information about the importance of disaster mitigation because students can move in various fields in the community. Students can also apply various innovations to drive environmental education on campus (Freed, 2018; Ichsan et al., 2020; Jonell et al., 2016; Meyer, 2016).

Disaster mitigation education when entering the new normal era needs to be intensified especially about efforts to reduce the impact of COVID-19. This effort must continue to be done through education regarding COVID-19 prevention efforts. In this study, student knowledge has been measured and showed that students' knowledge scores need to be improved by developing various learning tools. Similarly, Torani et al., (2019) found that Indonesian students have insufficient knowledge about environmental education and disaster management. Therefore, it was suggested that teaching about environmental education and disaster mitigation to students is a very important thing to do to enhance students' understanding and positive attitude towards the environment. The development of this learning tool will have an impact on improving the quality of disaster mitigation education. That is because to improve the ability of disaster mitigation it is necessary to develop various technology-based learning tools (Nissim et al., 2016; Quieng et al., 2015; Seema et al., 2019; Urbani et al., 2017).

#### 4. CONCLUSION

Based on the results of the study showed that disaster mitigation education is not maximally taught. Students' knowledge needs to be improved because therefore students are required to take part in activities such as disaster simulations, and seminars and training on disaster preparedness, for example, disaster response sirens and evacuation routes. Suggestions from this research are that in the future, it is necessary to develop various learning tools to support disaster mitigation education efforts at the

university level. Besides, it is necessary to carry out a more detailed measurement innovation regarding student skills in disaster mitigation.

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