

Disaster concepts and mitigation based on the students of the language and arts faculty, universitas negeri semarang

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Submission date: 21-Jun-2021 01:33PM (UTC+0700)

Submission ID: 1609929303

File name: -_IOP_International_Conference_2021_-_Retno_Purnama_Irawati.pdf (905.02K)

Word count: 4478

Character count: 24645

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To cite this article: R P Irawati *et al* 2021 *IOP Conf. Ser.: Earth Environ. Sci.* **683** 012061

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Disaster concepts and mitigation based on the students of the language and arts faculty, universitas negeri semarang

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Abstract. Disaster mitigation, in accordance with the Republic of Indonesia Law Number 24 of 2007 article 47, is carried out to reduce disaster risk for communities in disaster-prone areas, which can be in the form of education, counseling and training, conventional or modern. The formulation of the issues to be discussed in this article is the concept of disaster and disaster mitigation according to the students from Faculty of Language and Arts of Universitas Negeri Semarang. The research subjects were Universitas Negeri Semarang's students, especially the students from the Faculty of Language and Arts. Data collection of this study were interviews and questionnaires. The data analysis technique of this study used qualitative descriptive techniques. 56% of students think that natural disasters are more dangerous than social disasters and non-natural disasters, because natural disasters cause huge losses, both soul and property. 70% of students think that the residence and campus environment are safe from the dangers of natural disasters, because natural disasters have never occurred and are not in disaster-prone areas. 65% of students think that disaster mitigation has not been implemented and the community does not yet know the procedures for rescuing themselves during a disaster.

1. Introduction

Disaster is the function of a seriously disrupted community. Disaster can be characterized by heavy losses in the economic, environmental, material, loss of life, and cause the inability of the community to overcome disruption with the resources they have [1,2]. Until now, there has been an increase in the frequency of natural disasters collectively, including tsunamis, hurricanes, floods, landslide and earthquakes [3]. Various factors that led to the increase in collective natural disasters include global climate change, environmental and ecological imbalances, increasing population density, urbanization, deforestation and desertification. Natural disasters result in increased levels of human suffering, loss of life, and economic losses [4]. According to the International Federation of Red Cross and Red Crescent Societies [4], in the last ten years nearly two billion people have been affected by the disaster. Between 1975 and 2004 the Asian region accounted for almost 89 percent of the population affected by natural disasters [5]. Environmental degradation, rapid urbanization, and social marginalization are some of the factors that contribute to the increasing loss of life due to natural disasters in many developing countries [6,3]. According to Benson et al [7], usually the poor and socially disadvantaged are the most vulnerable to the effects of natural disasters. Various social, political, cultural and economic factors that force them to live in disaster prone areas. Natural disasters are the source of difficulties even though they are temporary, cause suffering, and factors that contribute to continued poverty.

The National Disaster Management Agency (BNPB) noted, during 2018, there were 1,999 disaster events in Indonesia. BNPB predicts that the number of disasters will continue to increase until the end



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of 2018. The impact of the disaster is reported to be very large. 3,548 people died and lost, 13,112 people were injured, 3.06 million people were displaced and affected by the disaster, 339,969 houses were severely damaged, 7,810 houses were moderately damaged, 20,608 houses were slightly damaged, and thousands of public facilities were damaged. The Head of the Center for Data, Information and Public Relations BNPB revealed that disaster trends also tended to increase from year to year. The high danger of disasters, such as earthquakes, tsunamis, volcanic eruption, floods, landslides, droughts, forest and land fires, tornadoes and extreme weather, as well as the high vulnerability and low capacity cause high risk of disasters [8]. Central Java Province is the most affected province of natural disasters throughout 2018. Based on data from the National Disaster Management Agency, 578 natural disasters hit the Central Java province, as can be seen in the following diagram.

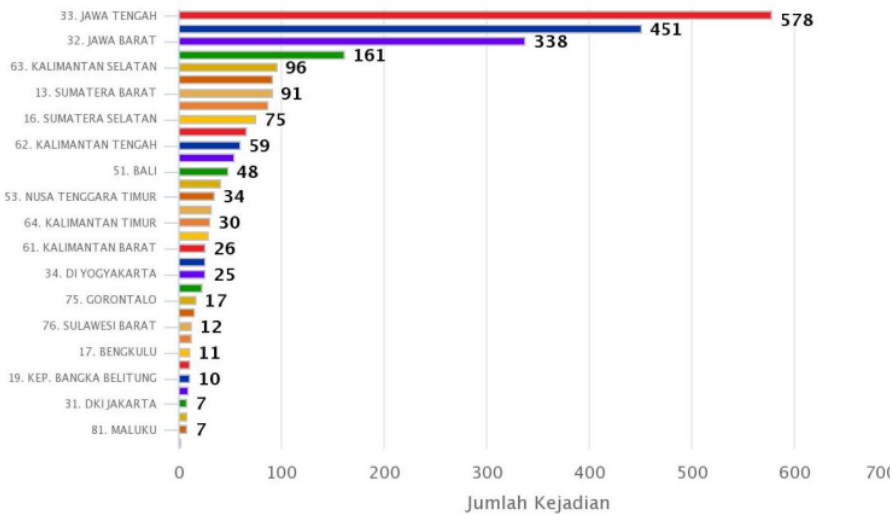


Figure 1. Number of disasters (source bnpb.go.id; dibi.bnpb.go.id/)

Floods and tornadoes are the first and second most frequent natural disasters that have hit Indonesia in the period 2000 to early 2019.

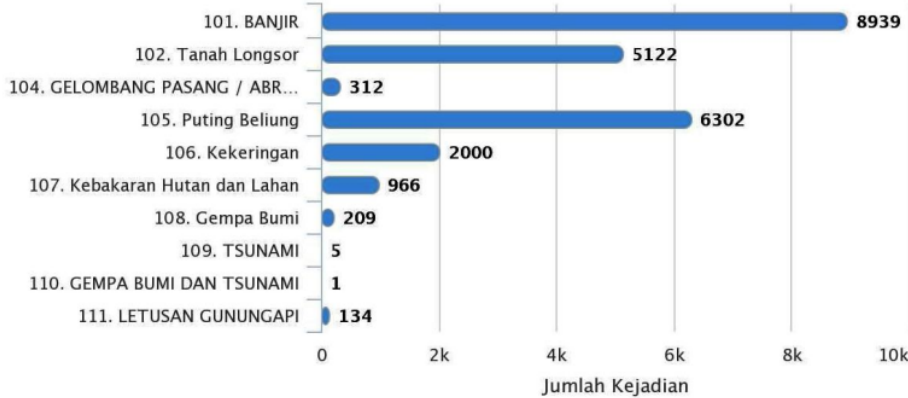


Figure 2. Type of natural disaster (source bnpb.go.id; dibi.bnpb.go.id/)

Disasters can be categorized into three levels, namely hazard, disaster, and catastrophe [9,10]. Disasters at level hazard are disasters that have not or have not caused casualties, but are a threat to

humans, such as earthquakes, floods, landslides, volcanic eruptions, and storms. At the disaster level, it is a type of disaster that occurs if it has taken many lives and property. If natural disasters occur worse, caused destruction of infrastructure and livelihoods, caused deaths that cover a very large area, it can be called catastrophe [11].

Natural disasters caused by natural conditions, such as earthquakes, tsunamis, hurricanes, and volcanic eruptions, which cannot be prevented, but the impact of disasters can be minimized through mitigation efforts. Non-natural disasters are disasters caused not by natural factors, can be avoided if humans can behave wisely. Whereas social disasters are disasters caused by human factors, such as war, conflict, and poverty [12].

Bogardi states that the high number of infrastructure damage and loss of life is the greatest danger from disasters. Natural and social construction conditions must be considered holistically because disaster risk cannot be separated significantly from trends, vulnerabilities, fragility, weaknesses, and deficiencies or lack of capacity [13]. Emphasis on disaster mitigation takes precedence over social rather than physical approaches. The emphasis of the social approach is more on proactive action than on reactive action. Proactive action focuses attention on maximizing internal structures in society rather than relying on external forces [14]. Disaster mitigation also takes the form of efforts to reduce vulnerability to natural disasters, through current and future policies and programs. These policies and programs must continue to be reviewed, evaluated and modified [15].

Disaster mitigation is very necessary and comprehensively designed for people living in disaster-prone areas. Mitigation is defined as actions taken before a disaster occurs, to reduce the impact of disasters and minimize loss of property and casualties, both through structural and non-structural approaches [16,17]. Mitigation, according to the Republic of Indonesia Law Number 24 of 2007 concerning Disaster Management, in an article one paragraph 9, is a series of efforts to reduce disaster risk, both through physical development and awareness and capacity building in the face of disaster threats. Structural mitigation is a disaster risk reduction effort through physical development and technical engineering of disaster-resilient buildings, while non-structural mitigation is a non-physical disaster risk reduction effort such as policy, community empowerment, institutional strengthening, caring, which is realized in disaster mitigation education [12,17]. In reducing disaster risk, non-structural mitigation is more sustainable because it provides security in the long-term, can be done by diffusion of disaster mitigation.

Disaster mitigation diffusion teaches actions that can be carried out before a disaster (pre-disaster), when a disaster occurs, and after a disaster (post-disaster). Disaster mitigation in the pre-disaster phase includes preventive measures that can reduce the widespread impact of disasters [12]. Diffusion of disaster mitigation is very important for the community, especially for students in Universitas Negeri Semarang. UNNES Rector Regulation No. 22 of 2009 concerning UNNES as a Conservation University and UNNES Rector Regulation No. 6 of 2017 concerning the Conservation Spirit of UNNES, clearly spells out all activities of Universitas Negeri Semarang academics in the Tridharma Perguruan Tinggi program as an implementation of conservation insight. The academic community's concern for disasters and mitigation is in line with UNNES's vision to become a conservation-minded university.

Disaster mitigation diffusion is carried out with the aim of (1) providing information to students about correcting knowledge about disasters, (2) giving an understanding of systematic protection, (3) equipping students through practical training on how to protect themselves and how they can respond to the disaster appropriately and fast. Diffusion of disaster mitigation can be through schools, universities, or directly to the general public. Disaster mitigation itself consists of several stages, namely the pre-disaster stage, the stage when disaster or emergency, and the post-disaster stage [10]. In the initial stage, a preliminary study needs to be done to find out the students' understanding about the concept of disaster and disaster mitigation, after students take a course in Conservation Education. The formulation of the issues to be discussed in this article is the concept of disaster and mitigation based on the students of the Faculty of Language and Arts Faculty, Universitas Negeri Semarang.

2. Methods

The result¹⁵ of the research presented in this paper use a combination of qualitative and quantitative methods, it is hoped that through this study, comprehensive data can be obtained. The research subjects were Universitas Negeri Semarang's students, especially the students from the faculty of language and arts, who had taken the Conservation Education Course. Data collection of this study was interviewed and questionnaires. The data analysis technique of this study used qualitative descriptive techniques. Data analysis in this paper uses statistical calculations of respondents' answers to questionnaires, which are analyzed qualitatively. This analysis technique by describing the data then concludes.

3. Results and Discussion

3.1. Profile of the respondent

The subjects of this study were 187 UNNES students who had taken the Conservation Education Course. About 187 students were divided into 115 students (or 61% of respondents) from Foreign Languages and Literature majors and 72 students (or 39% of respondents) came from other study programs outside Foreign Language and Literature majors. When viewed from the class of lectures, 187 students were divided into 83 students (44% of respondents) came from the class of 2016; 60 students (32% of respondents) constitute 2017 class; 22 students (12% of respondents) came from the 2015 class; 14 students (7% of respondents) from class 2018; five students (3% of respondents) were in the class of 2014; and three students (2% of respondents) came from class of 2012. Then, based on the gender of the respondents, it would be seen that 140 students (75% of respondents) were female and 47 were students (25% of respondents) were male.

3.2. Student Understanding of Disaster and Disaster Mitigation

The research team submitted six questions to students regarding disasters and disaster mitigation. The questions asked are (1) student's understanding of the concept of disaster, (2) the opinions of students about the most dangerous disasters between natural disasters, non-natural disasters, or social disasters, (3) the views of students about safe living and learning environments from the threat of natural disasters, (4) the views of students about the living environment and learning places that are safe from the threat of social disasters and non-natural disasters, (5) students' understanding of disaster mitigation, and (6) student views on disaster mitigation that has been carried out in society today.

The first question is the view of students about the concept of disaster. About 187 students who were respondents in this study, gave very diverse explanations. The answers of various students are then classified so that they can be grouped into five answer groups. The student answers can be seen in the following table.

Table 1. Student's understanding of the concept of disaster

| Student Response | Number of Answers | Percentage |
|--|-------------------|------------|
| Something that causes or causes trouble, loss or suffering for humans | 40 | 21 |
| ¹⁶ Events or series of events that threaten and disrupt the lives and sources of income of the community | 36 | 19 |
| A series of events that have resulted in human casualties, environmental damage, property losses, and psychological impact | 89 | 48 |
| The consequences of sinful acts and violations of God's rules are increasingly out of control | 12 | 6 |
| Pure natural phenomena and no business with religion in the form of sin or immorality committed by humans | 10 | 5 |

Based on the students' answers, which can be seen that most students explain the concept of disaster as a series of events that result in human casualties, environmental damage, property losses, and psychological impacts. The students did not provide a more detailed explanation of the causes of the disaster, but rather looked at the effects of the disaster.

The second question is the opinions of students about the most dangerous disasters between natural disasters, non-natural disasters, or social disasters. Student answers that are very diverse can be grouped into six groups of answers, as can be seen in the following table.

Table 2. The most dangerous disasters between natural disasters, non-natural disasters, or social disasters

| Student Response | Number of Answers | Percentage |
|--|-------------------|------------|
| Natural disasters because the occurrence of natural disasters cause great losses, both soul and property | 48 | 26 |
| Natural disasters because natural disasters are difficult to detect so it is difficult to prevent huge losses | 51 | 27 |
| Non-natural disasters (such as failing technology, failing modernization, epidemics, and disease outbreaks), because it causes chaos in people's lives which results in enormous material losses | 18 | 10 |
| Non-natural disasters because humans are very dependent on non-natural aspects, so that it will cause chaos in human life | 2 | 1 |
| Social disasters because social disasters cause fear and trauma to people that are difficult to repair. | 51 | 27 |
| Social disasters because social disasters cause social vulnerability which results in many casualties and losses | 17 | 9 |

Based on student answers in the table above, which can be seen that most students (as many as 99 students or 53% of respondents) state that natural disasters are the most dangerous type of disaster. Students assess that natural disasters cause most harm to humans, both property losses and loss of life. The second most answer about the most dangerous disaster is a disaster due to social factors. A total of 68 students or 36% of respondents stated that social disasters were dangerous because the impact they caused was very traumatic and difficult to repair.

The third question is the view of students about safe living and learning environments from the threat of natural disasters, as can be seen in the following table.

Table 3. The view of students about safe living and learning environments from the threat of natural disasters.

| Student Response | Number of Answers | Percentage |
|--|-------------------|------------|
| Very secure because while I stay at home, I have never experienced a natural disaster and not been in a disaster-prone area | 30 | 16 |
| Very secure because the environment where I study (campus and boarding) has never been a natural disaster and he is not in a disaster-prone area | 25 | 13 |
| Secure, because, despite heavy rains, hurricanes, but my residence has never been affected by natural disasters | 53 | 28 |
| Secure, because, despite heavy rain, hurricanes, but my place of study (campus and boarding) has never been affected by natural disasters | 49 | 26 |
| It is not secure because my residence is in an area prone to natural disasters (circle right: areas prone to landslides, prone to drought, prone to flooding, coastal edges, high mountains, and prone to hurricanes). | 18 | 10 |

| | | |
|---|----|---|
| It is not secure because my place of study (campus and boarding) is in an area prone to natural disasters (circle right: areas prone to landslides, prone to drought, prone to flooding, coastal edges, high mountains, and prone to hurricanes). | 12 | 6 |
|---|----|---|

The most answers shown that students always feel a sense of security in their homes and campuses, for about 102 students or 54% of respondents.

The fourth question is the view of students about the living environment and learning places that are safe from the threat of social disasters and non-natural disasters. Student answers can be seen in the following table.

Table 4. The view of students about the living environment and learning places that are safe from the threat of social disasters and non-natural disasters

| Student Response | Number of Answers | Percentage |
|---|-------------------|------------|
| It is very secure because the people around me are very tolerant and not vulnerable to division. There have never been acts of terror, threats of violence, and riots | 26 | 14 |
| It's very secure because the people in my neighborhood and my college are really concerned about the cleanliness of the environment, so that the preservation of nature is maintained | 17 | 9 |
| Secure, while I stay and study, there were never extraordinary events that caused chaos, fear, and trauma to the people around me | 49 | 26 |
| Secure, while I stay and study, people's lives were normal, even though there were several crimes, but they did not make people nervous | 58 | 31 |
| Insecure, because the people around me are now easily incited, easily complacent with hoaxes, so it is very vulnerable to widespread chaos and chaos | 17 | 9 |
| It is not secure because people are currently in a life that is all modern and highly dependent on technology. The technological failures and modernization will cause chaos of society that is widespread and spread to all fields | 20 | 11 |

Based on the student's answers, which can be seen that majority of students (as many as 107 students or 57% of respondents) stated the feeling of being secure from the occurrence of social disasters and non-natural disasters.

The fifth question about disaster is student's understanding of disaster mitigation, as presented in the following table.

Table 5. Student's understanding of disaster mitigation

| Student Response | Number of Answers | Percentage |
|---|-------------------|------------|
| Efforts to reduce disaster risk, both through physical development and awareness and capacity building in the face of disaster threats | 68 | 36 |
| Appropriate planning efforts to minimize the negative impact of disasters on humans | 26 | 14 |
| Efforts to reduce and prevent the risk of loss of life and property through both structural and non-structural approaches | 23 | 12 |
| Efforts and activities carried out to reduce and minimize the consequences of disasters, which include preparedness, alertness and various abilities to overcome them | 31 | 17 |
| Don't know, we have never read and searched for material about disaster and disaster mitigation | 39 | 21 |

The last question aims to find out the student views on disaster mitigation that is carried out in society today, as presented in the following table.

Table 6. The student views on disaster mitigation that is carried out in society today

| Student Response | Number of Answers | Percentage |
|---|-------------------|------------|
| Good, disaster mitigation has been carried out and the community has understood the procedures for rescuing themselves in the event of a disaster | 31 | 17 |
| Good, disaster mitigation has been included in the material taught in formal schools | 26 | 14 |
| Good, disaster mitigation is already under way and in disaster-prone areas put evacuation symbols | 57 | 30 |
| Not good, disaster mitigation has not been running and the community does not yet know the procedures for rescuing themselves during a disaster | 25 | 13 |
| Not good, the material about disaster mitigation and mitigation has never been specifically taught in learning in formal schools | 20 | 11 |
| Not good, disaster mitigation has not become a part of people's lives so it is often ignored | 8 | 4 |
| I don't know whether there is disaster mitigation or not | 20 | 11 |

4. Conclusion

The students (as many as 165 students or 89% of respondents) expressed their views on disaster as a series of events that caused suffering to humans. Suffering for humans is disrupting human livelihoods, causing human casualties, environmental damage, property losses, and psychological impacts. The view of the majority students is in line with the theory of the definition of disaster. While 12 students or 6% of respondents has different views. Disasters are the result of human sins committed and violations of God's rules are increasingly out of control. The views of the students contradict the theory of disaster.

Based on student answers in the table above, which can be seen that most students (as many as 99 students or 53% of respondents) state that natural disasters are the most dangerous type of disaster. Students assess that natural disasters cause most harm to humans, both property losses and loss of life. The second most answer about the most dangerous disaster is a disaster due to social factors. A total of 68 students or 36% of respondents stated that social disasters were dangerous because the impact they caused was very traumatic and difficult to repair.

The third question is the view of students about safe living and learning environments from the threat of natural disasters. As many as 157 students or 84% of respondents had a feeling that the environment around their homes and campuses was protected from natural disasters. Even though they live in mountainous areas, or on the coast, or in urban centers, natural disasters have never occurred and are not in disaster-prone areas.

The fourth question is the view of students about the living environment and learning places that are safe from the threat of social disasters and non-natural disasters. About 150 students or 80% of respondents has a feeling that the environment around their homes and campuses is protected from social disasters and non-natural disasters. The community around them is a tolerant society, life runs normally, even though there are some crimes, but it does not cause unrest in the community.

The fifth question about disaster is student's understanding of disaster mitigation. About 148 students or 79% of respondents has understood the concept of disaster mitigation. According to students, disaster mitigation is a series of activities to reduce the impact caused by disasters. However, as many as 39 students or 21% of respondents does not understand the concept of disaster mitigation because they have never received disaster mitigation learning and have never sought information about disaster mitigation.

The last question aims to find out the student views on disaster mitigation that has been carried out in society today. About 114 students or 61% of respondents considered that disaster mitigation was going well. The reasons stated that disaster mitigation is taught in formal schools and self-rescue symbols are provided in public places, as a sign that mitigation efforts have been made. About 53 students or 28% of respondents considered that disaster mitigation activities had not gone well. Disaster mitigation has not been running and the community does not yet know the procedures for rescuing themselves during a disaster. Disaster mitigation has never been specifically taught in learning in formal schools and has not become a part of people's lives so it is often ignored.

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