




# Potential of Higher Education Institutions in Disaster Risk Reduction

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## Abstract

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**BACKGROUND:** Indonesia is a country that has many potential disasters, so it was often referred to as the supermarket disasters. Every individual, group, and community need to have preparedness in dealing with disasters. Preparedness can be done through training that is carried out in a planned, academic, and periodic manner. So far, there is no habit of conducting disaster simulations or field rehearsals at the Health Polytechnic of the Ministry of Health in Surabaya. The identification of the potential of this higher education institution is the first step in preparing the field rehearsal module plan.

**AIM:** The final goal is to develop a disaster preparedness module, design institutional policies, and form a community disaster preparedness team.

**MATERIALS AND METHODS:** In this study, a quantitative design was used, with a descriptive approach, which aims to identify the potential of higher education in disaster risk reduction (DRR) efforts. The population and sample are focus group discussion (FGD) participants and disaster mitigation experts/experts. The research variables were obtained from the results of the literature studies and FGD. Furthermore, the identification results are used to compile a module that can be used for field rehearsal guidelines. Modules are obtained in three ways: Identification, FGD, and expert consultation. The variables of this research are the existence of disaster courses, the presence of disaster course lecturers, the competence of lecturer training, the existence of training modules for lecturers, and the diversity of potential sources of disaster.

**RESULTS:** The results of the study show as follows: 96% of campuses at the Health Polytechnic of the Ministry of Health in Surabaya have disaster courses. Lecturers of disaster courses are all from within the study program as much as 63%, a mixture of inside and outside the study program as much as 31%, and a mixture of lecturers from inside and from guest lecturers as much as 6%. Lecturers have never attended disaster training 52%. Campuses that have never been on campus simulations are 43% and have held simulations but not regularly once a year = 31%. As many as 90% of lecturers stated that they strongly agreed to hold disaster simulation training. About 34% of campuses have the potential for three kinds of disasters.

**CONCLUSION:** The identification results in this study indicate the importance of the existence of disaster courses, the presence of disaster course lecturers, the competence of lecturer training, the existence of training modules for lecturers, and the diversity of potential sources of disaster. It is necessary to prepare a disaster preparedness training module in an effort to reduce disaster risk.

## Introduction

The current disaster management paradigm emphasizes community empowerment so that it allows the community to become the subject of help, not the object that needs help. Elements in society that need to be empowered are families, groups, and communities [1] Community preparedness needs to be improved in an effort to reduce disaster risk (disaster risk reduction [DRR]). Disasters can be natural or man-made disasters such as earthquakes, hurricanes, regional conflicts or wars, and even outbreaks of infectious diseases [2]. Disaster is a serious threat or major destruction to the community, which causes huge losses resulting in paralysis of the community's functions and abilities in many aspects [3].

Indonesia is one of the countries with potential disaster prone. Data show that 20% of Indonesia's

territory is flood-prone area, 4% is volcanic-prone area, and 49% is volcanic-prone area and earthquake-prone area [4].

Before conducting simulation training, it is necessary to identify the potential possessed by higher education institutions. So that, simulation planning can be done properly. Disaster preparedness training is useful so that everyone can understand risks, be able to manage threats so that they can contribute to encouraging community resilience from disaster threats. The culture of the Indonesian people that prioritizes social interests, mutual cooperation, and mutual trust is the adhesive value of social capital that has been tested and continues to be nurtured, both the ability of individuals, groups, and the community collectively is a capital for DRR [5].

Campus capacity in dealing with potential disaster risk is related to its ability to plan, analyze, and

implement DRR activities. Therefore, the academic community needs briefing to improve preparedness, through various mitigation strategies [6].

This study seeks to identify the potential of higher education institutions, before preparing a device in the form of a module that is used to conduct disaster preparedness training. It is hoped that the tools produced from this research can be applied to individuals, groups, and communities so that they have disaster preparedness [7].

## Materials and Methods

This research has been designed as the initial stage of a series of research on the design of disaster preparedness training in an effort to reduce disaster risk. This study uses a quantitative design, with a descriptive approach, which aims to identify the potential of higher education in efforts to reduce disaster (DRR). The population and sample are focus group discussion (FGD) participants and disaster mitigation experts/experts. The research variables were obtained from the results of the literature studies and FGD. Furthermore, the identification results are used to compile a module which will later be used as a guide for field rehearsals (disaster simulation). Modules are obtained in three ways: Identification, FGD, and expert consultation.

Research variables that have been designed: The existence of disaster courses, the presence of disaster course lecturers, lecturer training competencies, the existence of training modules for lecturers, and diversity of potential sources of disaster.

### Population

The population has been designed as FGD participants as many as 49 respondents, namely, 20% of the leadership elements, 40% of course lecturers, and 20% of other participants (students, education staff).

The analysis was carried out descriptively to describe each research variable, the target population, and the research location using the tendency central [8].

## Results

Characteristics of respondents participating in FGDs were seen in terms of age, gender, years of service, recent education, and employment status. Where the results showed 40% aged 25–40 years, 10% male and 90% female, 70% of participants have

a bachelor's degree; working period of 3–10 years as much as 70%, and civil servants as much as 45%.

This shows that respondents in the categories of productive age, undergraduate education, and long working experience as observers of children have the capacity to become FGD participants.

The description of the results of the identification of the potential of higher education institutions in reducing disaster risk is obtained by data as shown in the table below.

The explanation from Table 1 shows the existence of disaster courses in each campus, showing that 49 respondents stated that there were 96% disaster courses, while those who stated that there were no disaster courses were 4%.

**Table 1: Description of the results of the identification of the potential of higher education institutions in reducing disaster risk**

Variable	Number	%
Disaster course		
a. There is not any	2	4
b. There is	47	96
Amount	49	100
The presence of lecturers for disaster courses		
a. Mix of inside and outside Prodi	15	31
b. Mix of lecturers from within, from outside and from guest lecturers	3	6
c. From within the entire product	30	61
Amount	33	67
Lecturer training competencies		
a. Not all	26	53
b. Some already	12	24
c. It's all	12	24
Amount	24	49
There is a training module for lecturers	0%	
a. Agree	5	10
b. Strongly agree	44	90
Amount	49	100
Number of types of disaster hazards that potentially threaten on various campuses		
a. 1 Kind	13	27
b. 2 Kinds	11	22
c. 3 Kinds	17	34
d. 5 Kinds	2	4
e. >5 Kinds	6	12

The results showed that 49 respondents who were interviewed informed that all lecturers of disaster courses came from within the study program = 63%, a mixture of inside and outside the study program = 31%, and a mixture of lecturers and guest lecturers as much as 6%.

Of the respondents who were interviewed, they informed that they had attended disaster training = 24%, had never attended disaster training = 52%, and some had attended = 24%.

The results showed that higher education institutions that had carried out disaster simulations = 8%, had never simulated = 43%, had conducted simulations regularly once a year = 18%, and had held simulations but not once a year = 31%.

The results showed that all respondents informed that lecturers who agreed to hold the training = 10% and those who strongly agreed = 90%. No respondents stated that they did not agree with the training.

The results showed that there was a total volume of potential disasters on campus 1 of 27%; two kinds of disaster potential = 23%, three kinds of disaster

potential = 34%; five kinds of disaster potential as much as 4%, and more than five kinds of disaster potential as much as 12%.

## Discussion

The potential to be optimized in dealing with disasters for higher education institutions is very strong. In all campuses, Poltekkes Surabaya already has disaster courses. This is certainly very positive in reducing disaster risk. High community participation is a capital in reducing disaster risk [9]. The results of the study show that 96% of disaster courses are on campus.

The identification results show that on campuses that have lecturers for disaster courses, they can come from within the study program itself, from other study programs and can also bring in guest lecturers. This is very good in sharing disaster knowledge.

The capacity of lecturers in disaster courses has an important role in efforts to DRR. The results showed that as many as 24% had attended disaster training, as many as 52% stated that they had never attended disaster training. This means that capacity building is needed for lecturers to conduct disaster training according to lecturer capacity standards. Because if they don't have good capacity, they will have difficulty in efforts to DRR [10]

The results of the study show that there are still very few campuses that have regularly held disaster simulations every year. This can result in high levels of vulnerability and reduced capacity when dealing with disasters. In fact, there are still many who have never held a disaster management simulation on campus. One indicator of a strong institution is that it has conducted a disaster simulation once a year [11].

The implementation of disaster simulation is very important to involve lecturers of disaster courses. The results showed that 90% strongly agreed to hold disaster simulation training, while 10% agreed to hold training. This shows the high enthusiasm of the academic community in implementing disaster simulations.

The existence of campuses that are not located in one location can provide an illustration of the difference in the number of potential disasters that are felt to be threatening. The results showed that only 27% stated that there was one potential disaster on their campus, while those who state three types of disaster threats are 34%, and those above five types of disasters that threaten as much as 12%.

## Conclusion

The identification results in this study indicate the importance of the existence of disaster courses, the presence of disaster course lecturers, the competence of lecturer training, the existence of training modules for lecturers, and the diversity of potential sources of disaster.

It is necessary to prepare a disaster preparedness training module in an effort to DRR. It is necessary to involve lecturers in the preparation of the research module.

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