

INCREASING STUDENT CAPACITY THROUGH ONLINE 'EDUCATION AND TRAINING' OF COLLABORATION OF THEMATIC IN DISASTER RISK REDUCTION

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Abstract

The COVID-19 pandemic has changed our activities in all sectors, especially education. The policy of physical distancing forced the Government to implement an online learning system from home (daring), one of the learning methods that utilizes technology. There was a slight increase in student capacity after participating in a collaborative online guest lecture on disaster management, a subject of the Study Program of Islamic Community Development, IAIN Kudus, by inviting practitioners from the Regional Disaster Management Agency (BPBD) to one meeting. In line with the curriculum of independent study on an independent campus, Guest lectures can realize the optimum result in increasing student capacity in disaster risk reduction through technology, which "Education and Training" can learn through online thematic collaboration. This research aims to determine students' increasing capacity in disaster risk reduction through it. It targeted 30 students of the study program of Islamic community development, IAIN Kudus, who have or are studying disaster management subject. For three days (6JPL), the lecture used application technology like Zoom and Quizizz application. This research used a quantitative approach with a T-test (comparing pretest and posttest scores on knowledge) using SPSS v26. The study results have a higher mean value for the posttest (73.20) than the pretest (34.06). The mean paired samples test result was -39.14, with a significant value of $p < 0.01$. It shows

an essential difference before and after online education and training in collaboration. On the other hand, it means to increase students' capacity for disaster risk reduction.

Keywords: *Education, Training, Collaboration, Online, Covid-19*

INTRODUCTION

The impact of the COVID-19 pandemic has changed people's activities in various fields (Kam et al., 2020; Kirigia & Muthuri, 2020; Maghfirah, 2021; Mousavizadeh & Ghasemi, 2020; Oktavianti et al., 2020; Rohman & Andadari, 2021), in the field of education (Astafeva et al., 2020; Sahu, 2020), which results in the teaching and learning process not being carried out face-to-face. The implementation of the physical distancing policy has encouraged the Government to implement an online learning system. This condition sometimes results in students' boredom, which causes a decrease in enthusiasm for learning (Adi et al., 2021). Students' demotivation in the teaching and learning process will impact their lack of knowledge and make them vulnerable. Therefore, it boosts a lecturer's motivation, creativity, and innovation. Researchers who are part of academics, as well as practitioners in the field of disasters, try innovations by organizing collaborative learning methods between scholars and practitioners online. The first experiment was conducted during a guest lecture on the Disaster Management Course by inviting practitioners from BPBD Di Province. Yogyakarta. The guest lecture uses the Zoom meeting application and an interactive semi-talk-show teaching and learning process. It attracts students uniquely, as expressed by students in impressions and messages through a Google form shared by researchers shortly after finishing the guest lecture. In addition to giving color to the teaching and learning process through the Merdeka Belajar Kampus Merdeka Curriculum, there is a slight increase in student understanding. Student understanding is measured by holding pretests and posttests on disaster evacuation management materials. Figure 1 shows the mean pretest and posttest of students participating in the lecture. Figure 2 shows the paired sample statistics and their significance.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_Test	46.07	61	15.086	1.932
	Post_Test	51.48	61	15.688	2.009

Figure 1. Paired Samples Statistics

Source: Researchers, 2022 (SPSS V26 Data Processing Results)

	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1 Pre_Test Post_Test	-5.410	17.183	2.200	-9.811	-1.009	-2.459	60	.017

Figure 2. Paired Samples Test
 Source: Researcher, 2022 (SPSS V26 Data Processing Results)

The guest lecture, conducted online through the Zoom meeting application, created a technology-based interactive teaching and learning process. The Zoom meeting application is one of the online learning models that support the teaching and learning process during the pandemic and in the future. It can deliver teaching materials to students interactively and innovatively, even remotely. In addition, it also requires educators and students to continue to hone their skills in using renewable technology and give birth to new ideas that are fun in the teaching and learning process.

On a slight increase in learning from the mean pretest of 46.07 to the mean posttest of 51.48 with a significance level of $0.017 < 0.05$, they considered it was still lacking. Thus, conducting other experiments in three-day collaboration activities is necessary, carried out jointly between academics and practitioners of different agencies with their expertise.

Student Capacity Building: From Vulnerable To Resilient

Disaster management estuaries are disaster risk reduction. Urgent to make it happen with various efforts. One manifests disaster management courses at Institut Agama Islam Negeri (IAIN) Kudus. The hope is that the academic community can optimize its role in collaborating in disaster risk reduction.

Disaster risk reduction can be done by reducing vulnerability (McEntire, 2012) and increasing the capacity (Cox & Hamlen, 2015). Identifying vulnerabilities and capacities based on indicators close to students as part of the academic community is necessary. Students who have been and are studying disaster management have to be able to identify vulnerabilities and their capacities following the context of disaster management.

Presenting field facts about vulnerable groups and their characteristics led students to self-identify. Identification was carried out independently, accompanied by

the first speaker, based on indicators of individual and economic vulnerability (Chen et al., 2007). Lacking skills and knowledge and dependence on others seem to be individual vulnerabilities (Dewa et al., 2021; Faisal et al., 2021; Henderson & Hildreth, 2011; Huang et al., 2013). Financial vulnerability is usually the difficulty of meeting the needs of life independently, the difficulty of finding a job, and the status of unemployment.

Furthermore, students have the skills that the Islamic Community Development Study Program graduates at IAIN Kudus must possess. The skills in question include leadership, dealmakers, communication, problem-solving, and analytical skills (including disaster risk analysis). This skill aligns with the needs of individuals and communities to increase capacity in disaster risk reduction.

Based on the identification, students who have studied disaster management courses in the IAIN Kudus Islamic community development study program are still categorized into vulnerable groups and will continue to be susceptible if they do not develop an increased capacity. One of the efforts to improve student capacity is to provide thematic education and training on disaster risk reduction with a learning model that is more interesting and different from the usual classroom atmosphere. The form of learning in question is education and training directly from experts through person-to-person collaboration between academics and practitioners. So students can minimize their vulnerabilities and become resilient.

Online Education And Training Thematic Collaboration In Disaster Risk Reduction.

It has several supporting materials to increase students' capacity of the IAIN Kudus Islamic Community Development Study Program in disaster risk reduction. The first supporting material is education on implementing disaster management in life, knowing risks, and training on analyzing disaster risks in the student's domicile area. This lecture is guided directly by disaster management lecturers of the Community Development Study Program in collaboration with the Emergency Staff of BPBD Yogyakarta Special Region Province. The second supporting material is sharing the experience of the 2018 West Nusa Tenggara earthquake, providing education about the abilities that superior facilitators must possess, and providing training on "rembuk warga." Collaboration between disaster management lecturers of the Islamic community development study program IAIN Kudus and the Acceleration Team for The

Completion of West Nusa Tenggara Earthquake-Resistant House Construction at this second online education and training of supporting materials.

a. Implementation of Disaster Management (DM)

In the material for organizing DM, students must know the legal basis for implementing disaster management. The legal basis is Law No. 24/2007 concerning Disaster Management, Presidential Regulation of the Republic of Indonesia No. 8/2008 concerning the National Disaster Management Agency, PP No. 21/2008 concerning the Implementation of Disaster Management, PERKA BNPB No. 17/2011 concerning Guidelines for Disaster Management Volunteers, PERKA BNPB No.1/2012 concerning public housing of Disaster Resilient Villages.

In addition, students get to know the elements of DRR in the campus and residential environment to be able to increase the active role of students in disaster risk management (assessing and analyzing hazards, capacities, vulnerabilities, and risks) so that they can make preventive efforts such as reducing vulnerability and increasing their capacity independently (Arifin et al., 2021; Kyle, 2020; Orleans Reed et al., 2013; Pfefferbaum et al., 2015). Students also contribute to being more observant in seeing the emergence of a potential disaster by providing knowledge about implementing disaster management in three stages, namely pre-disaster, during emergency response, and post-disaster.

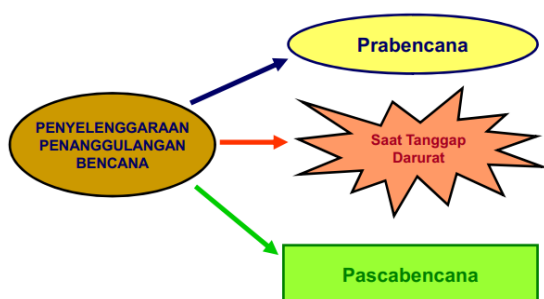


Figure 3. Disaster Management Cycle

b. Lesson Learned: West Nusa Tenggara earthquake (NTB)

Hopefully, With the material online education and training, students will be able to find out the source of the earthquake disaster in NTB Province in 2018, the need for a facilitator when a disaster occurs, and what abilities the facilitator should have.

The Flores Ascending Fault or Flores Back Arc Thrust was the cause of the last earthquake in NTB Province. The fault has caused several large earthquakes, each

of which has a magnitude of 6.4, 7.0, 6.5, and 6.9, which resulted in damage to home buildings. Based on preliminary reports from the District/City, the number of houses severely damaged, moderately damaged, and lightly damaged was around 167,961 units.

Furthermore, the President issued Presidential Instruction Number 5 of 2018 concerning the Acceleration of Rehabilitation and Reconstruction after the Earthquake Disaster in West Lombok, North Lombok, Central Lombok, East Lombok, Mataram City, and Affected Areas in West Nusa Tenggara Province. Fund (DSP) financing sources at the National Disaster Management Agency, following BNPB Regulation Number 2 of 2018, decided to use ready-to-use to accelerate the repair of disaster victims' homes. At the coordination meeting on October 24, 2018, the Regional Government (Provincial Government and the regency/city Government) should immediately recruit 1000 facilitators with distribution as needed.

METHODOLOGY

This study used a quantitative method with the experimental model. The subject of this study is a student of the Islamic Community Development Study Program IAIN Kudus who has been and is taking disaster management. The sampling technique in this study used a simple random sample technique. In this technique, a sample is taken randomly without regard to a stratum of a population that has only one feature (homogeneous or relatively homogeneous) (Creswell, 2013; Sugiyono, 2014). Researchers use a simple random sample technique because the research population is relatively homogeneous, namely students of the Islamic Community Development Study Program who are and have taken disaster management courses. Then, Researchers divided thirty students based on the predetermined into separate groups.

The experimental model used is *pre-experimental one-group pretest-posttest* (Sugiyono, 2014). Figure 4 shows the experimental model.



Figure 4. The experimental model
Source: (Creswell, 2013; Sugiyono, 2014)

Researchers test improved student comprehension before and after receiving *treatment* through online education and training using the Zoom application *meeting* for 3 (three) consecutive days with 6 (six) JPL. The material provided is related to disaster risk reduction with different speakers daily. It uses interactive learning patterns to give

such material as *semi-talkshows* and conduct tests with the application *quizizz*. Every day before education and training begin, researchers conduct a *pretest* on the sampled students to know their initial understanding of the material to be delivered. After that, the students attended education and training and ended with a *posttest* to determine the increase in student understanding.

Data was collected using the exam/test method based on the research model. One of the instruments used in data collection with the test method is in the form of test questions (Riduwan, 2013). In this study, the test questions used as multiple choice questions amounted to fifteen items by utilizing the application *Quizizz*. Multiple-choice questions are made according to indicators of competence achievement in disaster risk reduction to avoid deviating from the material— the expert consideration (*expert judgment*) validities of multiple-choice questions. Testing the validity of multiple-choice questions totaling fifteen items through expert consideration is declared valid. This research used valid question items. The data obtained used animate A paired test (*paired sample t-test*). The paired test results from the same sample, namely a group of thirty students, with the hypothesis H_0 = no increase in the results, *pretest* to *posttest* after *treatment*, and H_1 = an increase in the yield *pretest* to *posttest* after *treatment*.

RESULTS AND DISCUSSION

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE_TEST	34.0563	30	11.56941	2.11228
	POST_TEST	73.1977	30	13.29774	2.42782

Table 1. Paired Samples Statistics

Paired Samples Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	PRE_TEST - POST_TEST	-39.14133	16.61409	3.03330	-45.34514	-32.93753	-12.904	29	.000

Figure 5. Paired Samples Test

Based on the results of statistical calculations of paired tests (Table 1 and Figure 5), the count is -12.904, and t_{table} (sign=0.000) with a df of 29 is 2.045. The comparison between t_{count} and t_{table} , i.e., $t_{count} (-12.904) < -t_{table} (-2.045)$ with probability values (*sig.*) 0.000 less than 0.05. From the comparison, it is concluded that H_1 is accepted and H_0 is

rejected, which means there is an increase from *pretest* results to *posttest* after treatment, so online education and training in thematic collaboration can be used as a learning method.

Thematic collaboration *online* education and training learning methods are a breakthrough that provides absolute freedom for students and *Penta helix* to increase capacity (knowledge). Both in terms of time, location, and collaboration.

CONCLUSION

Educators need innovation and creativity in the learning process to create attractive, fun, and accessible learning for students to understand. Digital *Zoom meeting* technology was used. One of the innovations has been bringing in guest lecturers to open students' horizons further. From the *pretest* and *posttest results*, it can be concluded that the use of digital technology significantly influences the development of education and training of students of the IAIN Kudus Islamic Community Development Study Program.

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