The Effectiveness of Geoeduvid Website Learning Media on Spatial Intelligence Natural Disaster Mitigation in SMA

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ABSTRACT

Education is one of the benchmarks in achieving the progress of a country. Learning media that has used the latest technology is a website. The media designed in this research is the Geoeduvid Website for learning geography in high school. The formulation of the problem in the research is how the effectiveness of the Geoeduvid Website learning media for disaster mitigation spatial intelligence in high school. The purpose of the study was to determine the effectiveness of the Geoeduvid Website learning media for spatial intelligence of disaster mitigation in high school. The population used is all SMA and MA in Sragen. The research sample used was SMA Walisongo Karangmalang and MA Nurul Huda Gondang. The research sample technique used is probability sampling with cluster sampling type. Data collection techniques with tests, questionnaires, and documentation. Data analysis technique with quantitative descriptive.

Keywords: Geoeduvid, media, website.

INTRODUCTION

The progress of a nation is influenced by the education system applied in society. Education is a means to improve the quality of human resources. The quality of human resources can be seen from their knowledge and skills.

Education in Indonesia is still inferior to several countries in the Southeast Asian Region. Based on detik.com website data sourced from the U.S. News & World Report 2021 for the ranking of the best education systems in the world from 73 countries, then Indonesia is ranked 55. Then for Singapore's ranking, which is 21 and Malaysia, which is 39. One of the problems of education in Indonesia is influenced by the use of learning media applied in Indonesia. school.

Learning media are all objects that can be manipulated, seen, heard, read, or discussed along with the instruments used for these activities (Nurseto, 2011: 20). Learning media can be divided into two, namely online and offline. Online learning media uses an internet network that can connect students and teachers in learning activities.

Learning using internet technology serves to reduce the difficulties of conventional learning (Caesari, et al., 2020: 30). Learning using the internet is widely used by students and teachers, especially during the COVID-19 pandemic. The use of learning media with the internet can use several applications that have been developed such as Google Meet, Google Classroom, Zoom, Whatsapp Group, video conferencing, and telegram. Internet-based learning media can use smartphones or laptops owned by students.

Internet-based learning media, for example, are websites. According to (Rahman, Munawar, & Berman, 2014: 140) the first type of website is a Web Search engine that has the ability to search for documents according to keywords such as Google and Alltheweb. Website-based learning media

have been used to provide convenience to teachers and students in conveying knowledge. Website learning media can be accessed without being limited by time and place so that it is more practical. Websites that can be applied to learning Geography are Geoeduvid Websites.

Geoeduvid Website is a medium that can be applied in learning geography. The content on the Geoeduvid Website provides learning objectives, lesson plans, videos, material summaries, and practice questions. The Geoeduvid website is publicly accessible and free on the internet. The material in the Geoeduvid Website focuses on natural disaster mitigation.

Natural disaster mitigation is an important material in geography learning. Natural disaster mitigation is used for content on the Geoeduvid Website with the aim of encouraging students to improve spatial intelligence. According to Law Number 24 of 2007 Article 1 Paragraph 9, mitigation is a series of efforts to reduce disaster risk, both through physical development as well as awareness and capacity building in dealing with disaster threats. Natural disaster mitigation is important for students to learn in order to reduce the impact of losses caused by disaster events.

Based on data from the Indonesian National Disaster Management Agency (BNPB) from January 1 to June 29, 2022, 1925 disasters have occurred. These disasters caused 100 deaths, 685 injured, and 15 missing. The impact of losses caused by disasters can be reduced through the application of the Geoduvid Website learning media in schools, so that students' spatial intelligence can increase.

Based on the background of the problem, the formulation of the research problem is how the effectiveness of the Geoeduvid Website learning media on the spatial intelligence of natural disaster mitigation. The purpose of this study is to determine the effectiveness of the Geoeduvid Website learning media for spatial intelligence of natural disaster mitigation.

MATERIALS & METHODS

The type of research carried out is quantitative which is supported by primary data in the field. The research design used is true experimental with pretest-posttest control group design. Researchers can test before and after using the Geoeduvid Website learning media. The purpose of the pretest and posttest was used to test the effectiveness of the Geoeduvid Website learning media for spatial intelligence of natural disaster mitigation in high school.

The time of the research was carried out from January 1 to May 30, 2022. The determination of the time was in accordance with the academic calendar of the even semester in the education unit. The location of the research was carried out at SMA Walisongo Karangmalang. The address for SMA Walisongo Karangmalang is in Sungkul Village Rt 12/04, Plumbungan Village, Karangmalang District, Sragen Regency, Central Java Province, Indonesia. The research population is all students in SMA Walisongo Karangmalang. The research sample used is class XI IPS 1 and XI IPS 2. The sample technique used is probability sampling, which is a sampling technique that provides equal opportunities for the entire population to be a sample (A. Kurniawan, 2018: 286). The sample status for class XI IPS 1 is the control class, while class XI IPS 2 is the experimental class. The following is a research sample table :

Table 1. Research Sample.

Number	Sample	Number of Samples
1.	Control Class	20
2.	Experiment Class	25

Source: Data Processing, 2022

The data collection technique used is using test instruments and documentation. The test instrument uses a pretest and posttest to test the spatial intelligence of natural disaster mitigation for students. The pretest was carried out before the Geoeduvid website learning media was used. The next stage for the posttest is used after the geoeduvid website learning media is used. Documentation was used to take photos and

files during the research.

The data analysis technique used is descriptive statistics. Descriptive statistical data analysis using t-test and descriptive percentages to determine the effectiveness of learning media.

The t-test was used to determine whether the 2 sample groups had a significant difference in the level of probability of choice (A. Kurniawan, 2018: 252). The t-test is used to compare the difference in group mean (X1-X2) in determining the difference according to probability. The following is the t-test formula, namely:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Information :

t = t-count value

r = Correlation coefficient value

n = Number of observation data

Descriptive percentage data analysis was used to analyze the percentages obtained in the control and experimental classes. The descriptive percentage results can be used to compare the two classes so that it can be seen the effectiveness of the Geoeduvid Website learning media on students' spatial intelligence. The following is a descriptive percentage formula:

$$DP = \frac{n}{N} \, x \, 100\%$$

Information :

DP = Descriptive Percentage (%).

n = empirical score (score obtained).

N = ideal score/total number of ideal scores

Indicators of the effectiveness of learning media on spatial intelligence of natural disaster mitigation can be seen based on the minimum percentage of success obtained by students. The following is a table of indicators of learning effectiveness:

Table 2. Percentage of Learning Effectiveness

Number	Effectiveness Coverage	Minimum Percentage
1.	Mastery of student learning towards learning	65% of the total 100%

Source: Data Processing, 2022

Based on the table above, the learning media can be called effective if students get the

results of mastery learning from the test of at least 65%. The effectiveness of learning can be analyzed from the comparison of the percentage score between the experimental class and the control class. Learning media can be called effective if the percentage of the experimental class is higher than the control class.

RESULT AND DISCUSSION
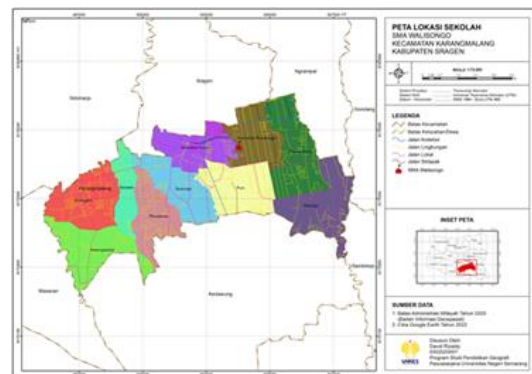## 1. Research Location

Figure 1. Map of Research Locations for SMA Walisongo Karangmalang

Source: Data Processing, 2022

SMA Walisongo Karangmalang has the status of a private school with accreditation B and uses the 2013 Curriculum, and has 2 majors, namely science and social studies. The implementation of learning is carried out for 6 days, namely Monday-Saturday. The number of classes is 12 classes with details of class X there are 4 classes, class XI there are 4 classes, and class XII there are 4 classes. The total number of male students is 165 and 184 female students. The location of SMA Walisongo Karangmalang is in Sungkul Village Rt 12/04, Plumbungan Village, Karangmalang District, Sragen Regency, Central Java Province.

2. t-Test Results

Table 3. Pretest and Posttest t-test results

	t	Sig.	Information
Before being introduced-After being introduced	-5,448	**0,47**	Received

Source: Data Processing, 2022

The results of the data analysis showed a t value of -5.448 and a significance value of 0.47. The significance value meets the requirements < 0.05 so that it is significant, the conclusion of the data states that the

Geoeduvid Website learning media is effective for students in learning geography in high school.

3. Descriptive Results Percentage
A. Pretest stage

Table 4. Results of the Pretest Percentage of Control Class

Percentage *cut off*	Total students	Percentage
95 %	0	0%
80 %	3	15%
65 %	5	25%
< 65 %	12	60%%
Total	**20**	**100 %**

Source: Data Processing, 2022

Based on the results of the data above, it can be analyzed the percentage of student learning completeness in the control class. The percentage in the control class showed that students who managed to get above 65% were 8 students or 40%. Furthermore, for students who have not succeeded as many as 12 students or 60%.

Table 5. Results of the Percentage of Pretest Experiment Class

Percentage *cut off*	Total students	percentage
95 %	0	0%
80 %	5	20%
65 %	4	16%
< 65 %	16	64%
Total	**25**	**100 %**

Source: Data Processing, 2022

Based on the results of the data obtained by the experimental class, there can be an acquisition of the percentage of students. The percentage results show that students who have achieved learning mastery above 65% are 9 students or 36%. Furthermore, for students who have not succeeded as many as 16 students or 64%.

B. Posttest Stage

Table 6. Results of the Percentage of Posttest Control Class

Percentage *cut off*	Total students	percentage
95 %	0	0%
80 %	3	15%
65 %	7	35%
< 65 %	10	50%%
Total	**20**	**100 %**

Source: Data Processing, 2022

Based on the results of the posttest data above, the percentage of students in the control class can be obtained. The results of the data show that students who managed to achieve completeness above 65% were 10 students or 50%. The next result of students who have not achieved complete learning is 10 students or 50%.

Table 7. Results of the Percentage of Posttest Experiment Class

Percentage *cut off*	Total students	percentage
95 %	0	0%
80 %	11	44%
65 %	9	36%
< 65 %	5	20%
Total	**25**	**100 %**

Source: Data Processing, 2022

Based on the results of the data above, the percentage of student learning completeness in the experimental class is obtained. The results of the data show that students who have achieved learning mastery above 65% are as many as 20 students or 80%. The results of student data that have not been successful are as many as 5 students or 20%.

DISCUSSION

Based on the results of the calculation of the data obtained in the study, it can be analyzed that the experimental class is higher than the control class. The experimental class results were higher than the control class because of the use of different learning media. The experimental class uses the Geoeduvid Website learning media, while the control class uses conventional learning media. Learning media Geoeduvid Website is applied in the experimental class so that students are more motivated to learn to improve spatial intelligence of natural disaster mitigation.

Learning media Geoeduvid website provides a variety of interesting content. The content on the website is a summary of material, natural disaster mitigation videos, and practice questions. Interesting content can motivate students so that it affects student learning completeness.

The results of students' spatial intelligence in the control class showed lower data because they used conventional learning media. The media used in the control class is less attractive to students, thus affecting the number of students who have not succeeded in learning. The learning media used in the control class are conventional

such as using a blackboard, markers, working papers, and worksheets.

The results of the posttest data between the experimental class and the control class have different ratios. The results of the posttest percentage of students who succeeded in achieving learning completeness in the experimental class were 80%, then for the control class it was 50%. These results indicate that the Geoeduvid Website learning media is effective compared to conventional learning media.

CONCLUSION

Based on the results of research that has been carried out on learning media, it can be concluded that the Geoeduvid Website is declared effective compared to conventional learning media. Learning media Geoeduvid Website can encourage students to study natural disaster mitigation materials, so that it can affect students' spatial intelligence.

Website-based learning media connected to the internet can make it easier for students to gain knowledge. Websites can be connected with various information on the internet so that students are more interested in finding new knowledge. Through this research, it is hoped that the development of website-based learning media can increase the spatial intelligence of natural disaster mitigation for students.

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