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The Influence Of The Problem Based Learning Model Assisted By The Canva Site Media On Students' Spatial Thinking Skills

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Abstract:*This study aims to analyze the effect of the Problem-Based Learning (PBL) model assisted by Canva Site media on the spatial thinking skills of high school students. The problem underlying this study is the low spatial thinking skills of students as seen from their limitations in understanding the relationship between geosphere phenomena in depth. The research method used is a quasi-experimental design with a posttest only control design. The subjects of the study consisted of two classes, namely the experimental class that implemented the PBL model assisted by Canva Site media and the control class that used the PBL model assisted by PowerPoint media. The results showed that students in the experimental class had a higher average posttest score than the control class. The highest posttest score in the experimental class was 100 and the lowest score was 55, while in the control class the highest score was 94 and the lowest score was 50. The One Way ANOVA test showed a significant difference ($p < 0.05$) between the two classes, indicating that the implementation of PBL assisted by Canva Site has a positive effect on students' spatial thinking skills. The conclusion of this study is that the PBL model assisted by Canva Site media is able to increase student engagement in learning and help them understand spatial concepts more effectively. The application of this model is recommended for use in other geography learning materials with the note that teachers need to prepare learning carefully so that the results obtained are optimal*

Keywords: Problem-Based Learning, Canva Site, Spatial Thinking

1. INTRODUCTION

In the era of globalization and digitalization , education hold role important in equip student with skills think critical , creative , and analytical use face challenge 21st century . In the context of learning geography , ability think spatial be one of skills the main thing to do developed , considering importance analysis space, environment and interaction between regions. However, the findings interview with geography teacher at State Islamic High School 2 Jember showing that learning geography Still dominated by the method less conventional emphasize formal objects of geography like spatial , environmental , and territorial . In addition , learning media like Canva which is used only limited to manufacturing presentation simple , without utilise feature interactive .

Problem Based Learning (PBL) is considered as an effective learning model For increase ability think spatial students [1]. This model involving student in breakdown problem real relevant with life everyday , so that can push participation active and collaborative [2]. The combination of PBL with interactive media as Canva Site is believed capable answer challenge learning 21st century [3]. Canva Site provides visual and interactive features that make it easier for teachers to convey material learning in a way interesting , at the same time allow student For access material in a way independent and organized [6].

Study This aiming For analyze influence Implementation of the PBL model assisted by Canva Site media on ability think spatial students , especially on the material mitigation and adaptation disaster [4]. This material relevant Because demand analysis deep spatial related impact disasters and appropriate adaptation strategies with condition environment . With Thus , research This expected can give contribution to development of learning models innovative capable increase skills spatial students , at the same time optimize use of digital media in learning geography.

2. METHOD

Types of research This is a Quasi- experiment . The main objective from method This is help participant educate find answer on problem through test directly . Research design in research This that is Posttest Only Control Design is design research used in study This . Current topic investigated and purpose study under consideration when choose design This . Two groups (R) were selected in a way random in design This . Group First get treatment using the PBL model assisted by Canva Site media, while group second using the PBL model without assisted by Canva Site media. The two classes used in this study were the experimental class and the control class. After the treatment was given, the results of the two groups were measured using the Posttest

3. RESULT AND DISCUSSION

This study was conducted over four meetings. Students' spatial thinking skills on the material "Disaster Mitigation and Adaptation" were measured by the posttest score carried out at the end of the meeting. Learning in class experiment implementing the Problem Based Learning model assisted by the Canva Site media temporarily class control using a learning model Problem Based Learning with PowerPoint media. Measurement of spatial thinking ability indicators in this study used 6 spatial thinking ability indicators according to Hyunh

and Sharpe 2013, including:1) Application , 2) Analysis , 3) Interaction Spatial , 4) Representation , 5) Scale and 6) Comprehensive [5].

In the learning process in class XI G as group experiment , at the meeting First student invited For observe as well as understand issues raised by teachers related to types disaster nature in Indonesia with rocky media Canva Site. Next , students requested For analyze the data and information that has been obtained from picture types disaster , regional video vulnerable disasters , and maps distribution disaster nature in Indonesia in 2024. Then student Work The same in group with use source reference or other materials as base For answer student worksheet questions that have been given . After that , the students presenting results discussion his group in front class and interact with other groups through ask answer as well as give response . Stage final from activity This is student make conclusion about material that has been discussed . A similar learning process was repeated in the second, third and fourth meetings but with different materials. In the second meeting, the learning material was the distribution and impact of disasters in Indonesia. Students were presented with a trigger image of a series of natural disasters in Indonesia until early August 2023 and presented with a case study video. natural disaster fire Teletubbies Hill on Mount Bromo and then discuss the impact of the disaster in Indonesia. The third meeting focused on analyzing disaster mitigation steps. Students were given pictures of fire disaster triggers, and videos of Fire Alert triggers and posters of natural and non-natural disaster mitigation steps. At In the fourth meeting, the learning material provided was identifying the environment, ecosystems and environmental ethics.

Learning in class XI I in action as class control implemented using the Problem Based Learning model Power Point media assistance . The material taught in the control class is the same as that given in the experimental class. After the delivery of the material is completed in the first to fourth meetings, it is continued with the implementation of a posttest to measure students' spatial thinking skills. This posttest is carried out at the last meeting, namely the fourth meeting in each class. The following are the results of the posttest of students' spatial thinking skills

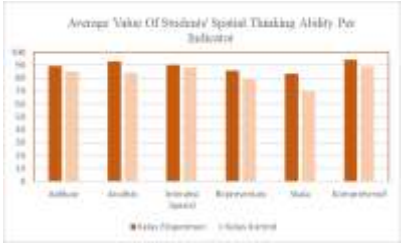

Figure 1. Average Value of Student's Spatial Thinking Ability

The diagram presented shows a comparison of the average value of spatial thinking skills between the experimental class and the control class. The experimental class, which uses the Problem-Based Learning (PBL) model assisted by Canva Site media, has a higher average value compared to the control class, which uses the conventional learning model assisted by PowerPoint.

Visually, the bar or line representing the average value of the experimental class looks higher, illustrating the success of the PBL model assisted by Canva Site media in improving students' spatial thinking skills. These results indicate that the use of interactive and innovative media can have a positive impact on the learning process, especially in facilitating students to analyze spatial relationships, understand the concept of the geosphere, and solve problems critically.

This diagram supports the research conclusion that the PBL model assisted by Canva Site is more effective than conventional methods in improving students' spatial thinking skills

Before the ANOVA analysis was conducted, a normality test was first conducted to ensure that the spatial thinking ability data were normally distributed. The results of the normality test in the experimental class showed a Test Statistic value of 0.182 with an Asymp. Sig. (2-tailed) of 0.265, while in the control class a Test Statistic value of 0.222 was obtained with an Asymp. Sig. (2-tailed) of 0.057. Both Asymp. Sig. values were greater than 0.05, so it can be concluded that the spatial thinking ability data in both classes were normally distributed. Furthermore, a homogeneity test was conducted to ensure that the data variance in both groups was homogeneous. The test results showed that all P (Sig.) values were greater than 0.05, which indicated that there was no significant difference in the data variance between the experimental and control groups. With Thus, it can concluded that the data is homogeneous across all testing (mean, median, and trimmed mean).

After fulfilling assumption normality and homogeneity , ANOVA test was carried out to test the influence of the Problem Based Learning learning model assisted by the Canva Site media on ability think spatial students . following is ANOVA test results

Table 1. ANOVA Posttest Test of Spatial Thinking Ability of Experimental and Control Class Students

ANOVA

Students' spatial thinking ability scores

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1232.053	1	1232.053	10,071	.002
Within Groups	9052.737	74	122,334		
Total	10284.789	75			

The results of the ANOVA test show mark *F* of 10,071 with *p-value (Sig.)* of 0.002. Because the value *p-value* more small from level significance 5% (0.05), then the null

hypothesis (H_0) is rejected , and the hypothesis alternative (H_a) is accepted . With Thus , it can concluded that there is significant influence from application of the Problem Based Learning learning model assisted by the Canva Site media to ability think spatial student.

4. CONCLUSION

Study This show that application of learning models Problem Based Learning assisted by Canva Site media significant influential to improvement ability think spatial students . Results of the analysis show that the average ability think spatial students in class experiments that use learning models This more tall compared to with class control that uses method learning PowerPoint based .

ANOVA test was conducted produce mark significance of 0.002 ($p < 0.05$), which indicates existence difference significant between second group . Learning model based on Canva Site media supported issues allow student For more active involved in the process of solving problem , improve understanding they to draft spatial , as well as push skills think critical , analytical , and collaborative .

This result strengthen importance innovation in teaching strategies and the use of interactive learning media For increase involvement students . Canva Site Media, with its visual and interactive features , are proven effective in help student understand draft spatial , visualizing connection interphenomenon geosphere , and increase skills think century 21st. Therefore that , implementation of learning model This recommended For increase quality learning geography , in particular in development ability think spatial student.

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