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The Influence of Using Flipbook Media to Increase Learning Activity and Understanding of Science Concepts of Grade VI Students

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ABSTRACT

Monotonous learning and non-varied learning media have an impact on the lack of student learning activity and low understanding of science concepts. The purpose of this study was to analyze the effect of using flipbook media on learning activity and understanding of science concepts of grade VI elementary school students. This study used a quasi-experimental research type with quantitative data analysis. The subjects of this study were grade VI students of Madukara District, Banjarnegara Regency. Sampling was carried out using a simple random sampling technique. The research sample was the experimental class at SDN 1 Kenteng and the control class at SDN 1 Bantarwaru, totaling 43 students in each class. The instruments in this study consisted of observation sheets and multiple-choice tests. The data analysis method used was descriptive analysis and inferential analysis using the t-test. The average value of the experimental class posttest learning achievement was 74.65, greater than the control class posttest, which was 70.70. The data shows that the sig.(2-tailed) value is 0.233 which is greater than 0.05, so H0 is accepted and H1 is rejected. This means that there is no significant difference in the average posttest score of the experimental class and the control class, even though there is a tendency for learning achievement to increase. The use of flipbook media also has no significant effect on increasing the learning activity and understanding of science concepts of grade VI elementary school students. The results of the t-test with a significance level of 0.05 (sig.> 0.05) indicate that the use of flipbook media is not effective. The finding of an insignificant effect is thought to be caused by classes with a large number of students and inadequate facilities and infrastructure.

Keywords: Flipbook Media, Learning Activity, Understanding of Science Concepts

INTRODUCTION

21st century education is expected to produce human resources who are competent in communication, collaboration, critical thinking skills and creative problem solving (Andrian & Rusman, 2019). Learning in the 21st century is adjusted to technological developments in competencies, learning objectives, media, and learning strategies (Jalinus et al., 2021). One technology that is quite good for use in learning is digital technology. The use of digital flipbook media can be used as a learning tool (Sari, W. N., & Ahmad, M., 2021). Flipbook learning media has an influence on student learning activity in grade VI science subjects (Redita Nur Aini,

et al., 2022). Flipbook is a media with an electronic format that can display interactive simulations by combining animation, text, video, images, audio, and navigation that makes students more interactive, so that learning is more interesting (Diani & Hartati, 2018).

Media is important in the learning process in the classroom to increase learning activity and understanding of science concepts. Student conceptual understanding is the ability of students to understand, explain something about a concept obtained from the knowledge they have learned, not just memorizing but in their own way (Uno. B, et al., 2018; 7). Teachers need to design and implement interesting learning for students so that students will be active in learning and easily understand science concepts. The problem that often arises and is experienced by students, especially grade 6, is the large number of science subject materials that must be learned and the lack of student learning activity causes students' understanding of science concepts to be weak. Students will have difficulty understanding the material or memorizing all the existing material. This is a challenge for teachers to maximize their ability to help students find solutions to these problems. Teachers play a very large role in delivering all lesson materials by optimizing the available time allocation.

Learning media provides many benefits for both educators and students so that they can facilitate the achievement of learning goals. According to Arsyad in Prastowo (2019: 104), the benefits of learning media include four types. First, learning media can clarify the presentation of messages and information so that it can facilitate and improve the learning process and outcomes. Second, learning media can increase and direct children's attention so that it can create learning motivation, more direct interaction between students and their environment, and the possibility for students to learn independently according to their abilities and interests. Third, learning media can overcome the limitations of the senses, space and time. Fourth, learning media can provide students with common experiences about events in their environment, and allow direct interaction with teachers, the community, and the environment, for example through field trips, visits to museums or zoos.

Learning that occurs in class VI SDN 1 Kenteng uses more lecture methods without being supported by other learning methods. Learning becomes monotonous because there are no varied teaching aids. Students are bored in class and less enthusiastic in following lessons and student learning activity decreases. Monotonous learning is a problem in the world of education that must be resolved immediately. Teachers must overcome this problem by using learning media that can make students more enthusiastic and active in the classroom. According to Arief S. Sadiman in Cahyawati (2015:14) that media is anything that can be used to convey messages from the sender to the recipient of the message. From this opinion, it can be said that media is a tool used to convey messages.

Based on the description above, the following problems can be formulated: (1) Is there an influence of the use of flipbook media on the learning activity of class VI students? (2) Is there an influence of the use of flipbook media on the understanding of science concepts in class VI? The objectives of this study are: (1) To analyze the influence of the use of flipbook media on the learning activity of students in class VI. (2) To analyze the influence of the use of flipbook media on the understanding of science concepts in class VI.

MATERIALS & METHODS

The research design used in this study is Quasi Experimental Research (quasi-experimental research). This research is a quasi-experimental research because not all external variables that affect the implementation of the experiment can be controlled by the researcher. The quasi-experimental approach design used is

pretest-posttest, control group design in Arikunto, (2006).

In this study, using one type of treatment in a quasi-experiment with the pretest-posttest control group design paradigm. The strategy used is to conduct an initial test or pretest given to both groups to measure the initial conditions. The experimental class was given treatment, while the control class was not given treatment. The posttest was given to both classes after the treatment was completed (Bambang Prasetyo and Lina Miftahul Jannah, 2005: 162).

The research implementation procedure begins with determining the research sample from a number of grade VI Elementary School students in Madukara District. In this study, the two classes were divided into an experimental class and a control class. Both classes were given a pretest that measured the students' initial abilities before carrying out learning activities. The experimental class received treatment using flipbook media. In the control class, students were not given treatment so that students worked on the pretest and posttest without any treatment. In the post-experimental stage, students in the experimental and control classes worked on the posttest. This posttest was conducted with the aim of seeing the difference in the abilities of students who were given treatment and those who were not given treatment. The questions used in the pretest and posttest were the same.

The population used in this study were grade VI elementary school students in Madukara District.

The number of samples in this study was 86 students consisting of 43 students from SDN 1 Kenteng as the experimental class and 43 students from SDN 1 Bantarwaru as the control class.

The sampling method in this study used Probability Sampling with the Simple Random Sampling technique. According to Sugiyono (2019), Simple Random Sampling is a sampling technique from population members that is carried out randomly without considering the strata in the population. Each member of the population has an equal chance of being selected as a sample. Test assessment techniques can be written tests, oral tests, and performance tests (Arifin, 2014). In this study, using a written test assessment technique.

The testing of this research hypothesis consists of a paired t-test (paired simple t-test) and an independent t-test (independent t-test).

The paired t-test (paired simple t-test) was conducted to test whether there was a significant difference in the pretest and posttest data. The formulation of the paired t-test hypothesis (paired simple t-test) on the science concept understanding variable is as follows:

H0 = There is no significant difference in the mean of the pretest and posttest data for understanding the science concept

H1 = There is a significant difference in the mean of the pretest and posttest data for understanding the science concept

H0 is accepted if the sig. value is > 0.05 and conversely H0 will be rejected if the sig. value is < 0.05. The proof of this paired t-test uses the help of the SPSS 22 application.

After carrying out the paired t-test, the next procedure is to carry out the independent t-test. The independent t-test was conducted to determine whether there was a difference in the mean of the pretest and posttest data in the experimental and control classes.

The formulation of the independent t-test hypothesis for understanding science concepts is as follows:

H0 = There is no significant difference in the mean of the science concept understanding test data in the experimental and control groups

H1 = There is a significant difference in the mean of the science concept understanding test data in the experimental and control groups

The criteria for drawing conclusions in this independent t-test procedure are that H0 is accepted if the sig. (2-tailed) value is > 0.05 and conversely H0 will be rejected if the sig. (2-tailed) value is <0.05. The

independent t-test implementation procedure is also carried out using the SPSS 22 application.

RESULT

This study was conducted to determine the effect of using flipbook media to improve the activeness and understanding of science concepts in elementary school Madukara District grade VI students.

1. The Effect of Using Flipbook Media to Improve Learning Activeness
   Analysis of observation data on student learning activeness in the experimental class was carried out by comparing the initial observation data and the final observation data.
   From the observation data on student learning activeness, it can be seen that the overall learning activeness data of students in the experimental class, the final activeness (71.16%) was higher than the initial activeness (56.51%). This explains that the average value of students after being treated using flipbook media increased by an average of 14.65%.
2. The Effect of Using Flipbook Media to Improve Understanding of Science Concepts in Grade VI Students
   The average posttest value of understanding science concepts in the experimental class after being treated was 74.65 while the average pretest value before being treated was 64.65. The data on the variable of understanding science concepts shows a significance of 0.000. Because the significance is less than 0.05, H0 is rejected and H1 is accepted, namely there is a significant difference in the mean of the pretest and posttest data on the understanding of the science concept of the experimental group. This explains that flipbook media has a significant effect on the understanding of science concepts of grade VI students.
3. The Effect of Using Flipbook Media to Increase Learning Activity and Understanding of Science Concepts of Grade VI Students.
   The average value of learning achievement posttest understanding of science concepts in the experimental class is 74.65, greater than the posttest of the control class, which is 70.70. The data shows that the sig. (2-tailed) value is 0.233 which is greater than 0.05, so H0 is accepted and H1 is rejected. The results of the independent t-test of the posttest data on understanding the science concept in the experimental group and the control group show a sig. (2 tailed) value of 0.233. Since the significance value is more than 0.05, H0 is accepted and H1 is rejected, which means that there is no significant difference in the mean posttest data on understanding science concepts in the experimental group and the control group, even though there is a tendency for learning outcomes to increase. The use of flipbook media also has no significant effect on increasing learning activity and understanding of science concepts in grade VI elementary school students. The results of the t-test with a significance level of 0.05 (sig. > 0.05) indicate that the use of flipbook media is not effective. The finding of an insignificant effect is thought to be caused by classes with a large number of students and inadequate facilities and infrastructure.

CONCLUSION

Based on the description of the research results and discussion above, the conclusions in this study are:

1. The use of flipbook media to improve student learning activity has a different effect on the final observation and initial observation in the experimental class.
2. The use of flipbook media to improve the understanding of science concepts of grade VI students has a different effect on the average posttest and pretest scores in the experimental class. The

average posttest score is higher than the pretest score.

3. The effect of using flipbook media to improve learning activity and understanding of science concepts in the experimental group and control group has a tendency for learning achievement to increase, but the use of flipbook media does not have a significant effect.

Declaration by Authors

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