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The Effect of Media Picture and Video on Mathematics Learning Outcomes of Fifth Grade Elementary School Students in Sayung District, Demak Regency

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Abstract: This study aims to determine the effect of image media, video media, as well as image media and video media on offline learning on mathematics learning outcomes for fifth-grade elementary school students in Sayung District, Demak Regency. Knowing the effect of video media on offline learning on mathematics learning outcomes for fifth-grade elementary school students in Sayung District, Demak Regency. Knowing the difference in the effect of image media and video media on offline learning on mathematics learning outcomes for fifth-grade elementary school students in Sayung District, Demak Regency. This type of research is an experiment with a quasi-experimental method, the researcher uses a pretest-posttest control group design namely the combined design of the pretest-posttest group design with static group comparison. With the classical assumption analysis of normality test and homogeneity test. The experimental class at Public Elementary School No. 1 Timbulsloko, Public Elementary School No. 2 Timbulsloko, Public Elementary School No. 1 Tugu, Public Elementary School No. 1 Surodadi and Public Elementary School No. 2 Surodadi, was in the control class at Public Elementary School No. 2 Tugu. The data collection technique in this study was a test used to determine learning outcomes. The data analysis used is a t-test, the results show there is a difference in the average posttest between the control class and the experimental class, but there is no difference in the average pretest between the control class and the experimental class. In conclusion, picture and video learning media can improve student learning outcomes.

Keywords: Effect, picture and video media, learning outcomes, mathematics

1. Introduction

One of the efforts to achieve national education goals is to innovate in learning. The innovation that can be done is by using learning media at the time of learning at school. Learning media has a big role in the success of the goals of education. The use of teaching media is essentially aimed at increasing the efficiency and effectiveness of teaching. With the help of media, students are expected to use as many senses as possible to observe, hear, feel, absorb, appreciate and ultimately have a number of knowledges, attitudes and skills as a result of learning (Bicen & Taspolat, 2019).

Image media is one of the media that can be seen, which consists of two dimensions, has length and width. Image media can be designed according to the material being studied. The use of picture media is one of the efforts of the teacher to involve students intellectually and emotionally with a high percentage of orderliness. By systematically solving the problems posed or presented by the teacher (Meehan et al., 2015). The benefits of media are basically to make the learning process easier and more interesting; the learning process becomes more interactive, effective, and efficient, and can also improve the quality of learning outcomes (Yuliansih, Arafat, & Wahidy (2021). This video-based media is designed using development principles that take into account various aspects that affect the success of learning with the hope of making students motivated in learning, optimizing the potential of the body and soul of students when learning takes place and can be used according to the level of students' thinking speed in understanding the material and their needs (Sulasteri, Rasyid, & Akhyar, 2016).

In addition to image media, video media also has a great influence on learning outcomes. The reasons why learning videos are appropriate to be used as learning media are as follows 1) efficient use of class time, 2) more active learning opportunities for students, 3) videos can help explain the material clearly, 4) each individual's learning style is

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different so that with videos all these aspects are fulfilled, and 5) reducing the burden on teachers to use the lecture model in the teaching and learning process (Mudasih & Subroto, 2019).

The learning atmosphere in the classroom that is less fun (serious) inhibits students from enjoying learning because the use of models, methods have not adapted to the characteristics of students, even the use of learning media is not maximized properly, this can be seen during the learning process the teacher only uses the lecture and storytelling learning model, while the students were silent and listened to the teacher's speech. This situation makes students feel bored and bored with the learning activities they do, and according to the narrative, almost some fourth-grade students say that Mathematics is a difficult and boring subject (Harun et al., 2021).

The aims of this study were 1) to determine the effect of picture media on offline learning on the mathematics learning outcomes of fifth grade elementary school students in Sayung District, Demak Regency, 2) to determine the effect of video media on offline learning on mathematics learning outcomes of fifth grade elementary school students in Sayung District, District of Sayung Regency Demak, and 3) knowing the difference in the effect of image media and video media on offline learning on mathematics learning outcomes for fifth grade elementary school students in Sayung District, Demak Regency.

2. Literature Review

The study of mathematics is crucial in school and is useful in daily life. Mathematics is one of the subjects taught to elementary school kids (Suciani, Rati, & Sudatha, 2020), because mathematics is so directly tied to daily life, it must be introduced to students at an early age. According to Hunt et al. (2016), mathematics is a science that explains numbers and calculations, numerical problems, regarding quantity, studying the relationship of patterns, shapes, and structures, means of thinking, collection of systems, and structure of tools. Unconsciously, mathematics has entered into the world of children before entering the world of school. According to Nurmawati et al. (2020), learning mathematics in primary schools prepares students to apply theorised knowledge to situations that may arise at home or in the community. Additionally, mathematics can sharpen students' critical thinking skills when it comes to problems involving numbers, patterns, shapes, tables, and other concepts.

In order for mathematics learning to be more meaningful, Brandt et al. (2013) claims that certain supporting variables are necessary. One of these factors is the learning environment for both the teacher and the pupils. The reason for this is that many pupils still refuse to study maths. Since they are unable to respond to the questions, the teachers often reprimand them. The teacher is unable to engage kids in learning mathematics through media. However, many students find it challenging to master mathematics since the abstract concepts are challenging for them to grasp, which causes student learning outcomes to be below average. According to a study by Yulaikah & Kusumawati (2021), mathematics is one of the challenging and terrifying disciplines, making students feel uneasy and forced to learn. It might have an indirect impact on how well students learn.

The process of teaching and learning can be used to determine learning outcomes. It is necessary for the teacher to employ a specific approach or technique during the teaching and learning process. According to Khairani, Sutisna, & Suyanto (2019), video media is a medium used by teachers to facilitate the delivery of the lesson plan. Students can view and hear sophisticated media like video, which allows for learning through either listening to audio or viewing visuals (Isnaini & Azhar, 2021). Learning video media, which combines moving pictures and sound, makes it simpler for students to understand multimedia lessons since they can directly see the image or topic being taught while also listening to its explanation. Video media are utilised to explain ideas that have already been presented in an audiovisual format because fifth-graders will undoubtedly be interested in learning if the media is engaging for them and simple for them to understand (Hendrowati & Faelasofi, 2021). Along with accompanying images of the material, video media also stress the subject.

3. Methodology

The type of research used in this study is included in experimental research. Experimental research is research that is intended to determine whether there is a result of "something" imposed on the research subject. This study uses quantitative research that aims to test the hypothesis of the data that has been collected in accordance with the previous theories and concepts.

This research will be carried out in public elementary schools throughout Sayung District, Demak Regency and the research sites are in 6 elementary schools in Sayung sub-district, Demak district, namely Public Elementary School No. 1 Timbulsloko, Public Elementary School No. 2 Timbulsloko, Public Elementary School No. 1 Tugu and Public Elementary School No. 2 Tugu. Public Elementary School No. 1 Surodadi and Public Elementary School No. 2 Surodadi Analysis of the data used is normality test and homogeneity test.

4. Results and Discussion

This study consisted of two classes, namely the control class and the experimental class, before the implementation of learning, the control and experimental classes were first given the same pretest questions. Students are also explained about the materials and media used in learning.

At the beginning of the lesson the teacher gave apperception to find out the extent of students' knowledge about the meaning. The teacher conveys the learning material in front of the class using image learning media. Students pay attention to the explanation of examples of work with picture media and ask questions about the material presented. The teacher gives a posttest after giving the material and examples explained.

Learning in the experimental class using video learning media. Students are taught to watch the video carefully and are asked to re-explain. Students are asked to work on the problem in the way presented in the "butterfly way" video. Then the teacher guides how to solve it, after the delivery of the material is complete, the next step is to give posttest questions like the questions given to the control class.

Table 1: Pretest-posttest scores for the control and experimental classes

Description	Control Class		Experiment Class	
	Pretest	Posttest	Pretest	Posttest
Minimum Value	20.00	33.33	20.00	53.33
Maximum Value	46.67	53.33	53.33	100
Average	32.25	42.16	31.20	84.44
Varians	45.71	37.17	63.63	120.188
Std. Deviation	6.76	6.097	7.98	10.96

The results of testing the students' pretest hypothesis showed that there was no significant difference between the control class and the experimental class. There was no difference because the two classes at the first meeting used the same conventional learning media. However, the posttest scores showed a significant difference between the control class and the experimental class, this was due to the two classes using different learning media.

Based on the posttest test, learning media using video has an effect on student learning outcomes in fractional material, it can be seen that the increase in learning outcomes is higher than student learning outcomes using image media alone.

Through video learning media students can learn more fun and are more interested in learning. According to Nadeak & Naibaho (2020) the advantages of learning video media can be utilized by the wider community, by accessing it on Youtube social media, videos can be used for a long period of time and at any time if the material contained in this video is still relevant to the existing material, learning media simple and fun, and can help students understand the subject matter and help teachers in the learning process.

The factors that cause the image media to be weaker are 1) solely visual media, 2) the size of the picture is often not appropriate for teaching in large groups, 3) requires the availability of sources of skills and foresight of teachers to be able to use them, 4) only emphasizes eye sense perception, 5) pictures of objects that are too complex, less effective for learning activities, 6) very limited in size for large groups, 7) requires limited resources and foresight skills to be able to use it.

Based on the description above, it shows that different treatments cause different final results. Thus, it is proven that the use of video learning media can improve learning outcomes higher than image media. This is evident when viewed from the results of the posttest scores produced by students in the experimental class which were higher than the control class using image media.

5. Conclusion

Based on the research data, it can be concluded that there is no effect of image media on offline learning on mathematics learning outcomes for fifth grade elementary school students in Sayung District, Demak Regency, seen from the significance of 0.496 and 0.473 whose significance is above 0.05 or tcount 0.683 and 0.720 below t-table, namely 1.658, then H0 is accepted, which is not there is a difference in the average pretest between the control class and the experimental class and there is an effect of video media on offline learning on the mathematics learning outcomes of fifth grade elementary school students in Sayung District, Demak Regency. It can be seen that the significance is 0.000, the significance is below 0.05 or tcount is 21.761 and 25.854 above t-table, which is 1.658, so H0 is rejected, that is, there is an average difference. posttest between the control class and the experimental class. There is a difference in the average posttest between the control class and the experimental class, but there is no difference in the average pretest between the control class and the experimental class.

Based on the findings and analysis, it can be said that children in the Fifth Grade Elementary School Students in Sayung District, Demak Regency who are taught in picture and video media assisted classrooms demonstrate significantly different learning outcomes. The researchers draw the conclusion that the use of learning media, specifically pictures and videos, has an impact on the learning outcomes of fifth grade elementary school students in Sayung District, Demak regency. This conclusion is based on the outcome of statistical analysis data, theory, and previous relevant research as well as the result above.

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