

THE EFFECT OF USING ACTIVE LEARNING MEDIA ON THE LEARNING OUTCOMES OF SCIENCE AND TECHNOLOGY STUDENTS IN GRADE V SDN CIRACAS 07 MORNING EAST JAKARTA

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ABSTRACT

This study aims to determine whether or not there is an effect of using Active Learning Media on the science learning outcomes of fifth grade students. This research was conducted at SDN Ciracas 07 Pagi East Jakarta, class V A and Class V B even semester. The research sample included 32 students of class V A and 32 students of class V B at SDN Ciracas 07 Pagi East Jakarta who were taken using the Quasi Experimental Design method, namely to determine whether or not there was an effect of the application of Active Learning Media on science learning outcomes. The research instrument was a multiple choice objective test of 25 questions with four answer choices and 3 questions of essays. Based on the results of the study, it shows that there is an effect of Active Learning Media on the science learning outcomes of fifth grade students at SDN Ciracas 07 Pagi East Jakarta. Hypothesis testing using the t test obtained $t_{hitung} > t_{table}$ ($3.011 > 1.670$) at $\alpha = 0.05$ and $dk = 62$. It turns out that $t_{hitung} > t_{table}$ then H_0 is rejected and H_1 is accepted. Thus the results of this study conclude that there is an effect of Active Learning Media on the science learning outcomes of fifth grade students at SDN Ciracas 07 Pagi East Jakarta.

Keywords: *Active Learning Media, Learning outcomes, Science*

INTRODUCTION

According to researchers, the quality of teaching in schools is largely determined by teachers. And the teacher is an external factor that greatly influences student learning outcomes. The role of teachers for students at elementary school age cannot be replaced by other devices such as television, radio, and computers. Because students are living creatures of God who are developing who need adult guidance and assistance. So that teachers in teaching should not just teach but students must be able to understand the material conveyed by the teacher and can improve student learning outcomes.

Researchers relate to learning outcomes, because researchers have the view that by knowing student learning outcomes, teachers can find out the extent of the teacher's success in explaining material to students. Seeing from that connection, the teacher's efforts to foster enthusiasm for learning in students is a step so that the objectives of learning can be achieved properly which can be seen from the acquisition of learning outcomes. Students can also be more interested when the learning process takes place in a fun way, namely the teacher using active learning media during learning.

However, in observations made by researchers at Ciracas 07 Pagi East Jakarta State Elementary School to Class V teachers that the teaching and learning process at school is less understood and less interesting, because teachers rarely use learning media when Natural Science subjects take place. Teachers more often explain the material only with conventional methods so that children are easily bored in these lessons and find it difficult to understand the material because most of the content of the material is memorization and direct practice is required. So that students are less excited and low learning outcomes in learning science.

From the results of observations made by researchers, it was found that the average learning outcomes for Natural Science (IPA) subjects were very low, namely 65.00. Whereas

students are declared to have passed if they exceed the KKM score. The KKM value for science subjects in class V SDN Ciracas 07 Pagi East Jakarta is 70.00.

So as to overcome the problem of low learning outcomes and lack of understanding of science lessons experienced by fifth grade students of Ciracas 07 Pagi East Jakarta State Elementary School, during the science teaching and learning process the teacher is recommended to use active learning media so that students can improve learning outcomes and understand the science material delivered by the teacher.

From this background, the researcher will conduct a study with the title "The Effect of Using Active Learning Media on Science Learning Outcomes in Grade V Students of SDN Ciracas 07 Pagi East Jakarta".

The problem identification in this study is as follows:

1. What factors cause low student science learning outcomes?
2. What efforts do teachers make to improve students' science learning outcomes?
3. Has the teacher used learning media in teaching?
4. Is there an effect of the use of active learning media on science learning outcomes of Grade V SDN Ciracas 07 Pagi East Jakarta?

The formulation of the study in this research is, "is there an effect of the use of active learning media on the learning outcomes of Science Class V SDN Ciracas 07 Pagi East Jakarta?". The purpose of this study is to determine whether or not there is an effect of using active learning media on science learning outcomes.

The research method used in this research is Quasi Experimental Design. In this study included the type of Nonequivalent Control Group Design. In this design it is almost the same as the pretest-posttest control group design, only in this design the experimental group and control group are not randomly selected.

In this study conducted at SDN Ciracas 07 Pagi East Jakarta, the researcher used a random sample, because the researcher assumed that the ability of students in class V A, V B, and V C was almost the same. So the researcher chose randomly, namely the sample of class V A (control class which was not given treatment using active learning media totaling 32 students), class V B students (experimental class which was given treatment using active learning media totaling 32 students).

THEORETICAL STUDY

Education according to UUSPN No. 20 of 2003, in the book Syaiful Sagala (2018): "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and State."

Ariani, Niken, and Dany (2015) State that in education there are certain levels such as elementary school, junior high school, high school. Arsyad, Suharsimi stated that primary school education is subdivided into three, namely Early Childhood Education, Kindergarten, and Elementary School.

In elementary school has a goal that is "Can provide basic provisions for the development of life, both personal and community life. Arikunto (2019), Suharsimi (2019) states that in addition it is also to prepare students to take part in education at the junior high level and equip basic attitudes, knowledge and skills.". To achieve these goals in elementary schools, various subjects are taught including Indonesian Language, Natural Sciences, Social Sciences, Civics, and Mathematics. According to Aunurrahman (2017) Natural Science (IPA) is an important role in everyday life which is very useful for knowing the life of living things.

According to Ahmad Susanto (2018) states that: "Science is a human effort in understanding the universe through precise observations on targets, as well as using procedures and explained by reasoning so as to get a conclusion."

Natural Science (IPA) is a concept of natural learning and has a very broad relationship related to human life. According to Sрни M. Iskandar (2017), "Science consists of a collection of scientific products and a series of scientific processes based on scientific attitudes. Science products include facts, concepts, principles and theories".

Harjanto (2017) argues that when teachers use effective learning approaches and also use active learning media, it is expected that students can better understand the material presented by the teacher and students are also happier with science subjects, and students will certainly be more active in class and finally get maximum science subject scores.

Jufri, Wahab (2019) argues that science learning plays a very important role in the educational process, because science has an effort to arouse the human spirit and ability to develop science and technology as well as an understanding of the universe which has many facts that have not been revealed and become new natural science and can be applied in everyday life according to Jihad, Asep and Abdul Haris (2018).

Science learning is not solely oriented towards the material (product) approach but how the process of obtaining the product. But in reality, science learning today only studies science as a product, memorizing concepts, theories and laws. As a result, science as a scientific process and scientific attitudes are not touched in learning.

According to Sadirman (2017) If this condition continues, it will affect student learning outcomes in science learning and will have an impact on other lessons. Seeing this alarming condition, there is a need for improvement in the teaching and learning process. A teacher who plays a decisive role in providing teaching must be able to create conditions for effective learning activities so that students easily learn lessons. However, in the teaching and learning process, teachers still use conventional learning models. This is emphasized by Ahmad Susanto's opinion (2018) that; "The learning process that has occurred so far has not been able to develop students' thinking skills. The implementation of the learning process that takes place in the classroom is only directed at the ability of students to memorize information, students' brains are forced only to remember and hoard various information without being required to understand the information obtained to connect it with situations in everyday life "

According to Ahmad Susanto (2018) "Learning is not just remembering or memorizing, but broader than that is experiencing.". So learning by rote the results only appear in the form of the ability to remember the lesson so that it is less able to apply and develop into a new, more useful thought.

According to Slameto (2018) One of the modern definitions of learning. According to Aunurrahman (2017) states that; "Learning is a process carried out by individuals to obtain a new change in behavior as a whole, as a result of the individual's own experience in interaction with the environment."

In order for students to avoid rote learning, meaningful learning must be created. According to Aunurrahman (2017) that "Learning is said to be meaningful if the information that students learn is arranged in accordance with the student's cognitive structure so that they can connect the new knowledge with their cognitive structure.". In order for students to understand in learning science, teachers must use the right method to be used during the teaching and learning process and be supported by the use of learning media so that students explore the material more and can do the evaluation given by the teacher.

The suitable learning media in learning science is to use active learning media. According to Arsyad (2015), states that "Media are all forms and channels used to convey messages or information." If the media carries messages or information that has instructional purposes or contains teaching purposes, the media is called learning media.

Learning media that carry messages or information are supported by a statement from Arief S. Sadirman (2017) that "Active learning media is anything that can be used to channel messages from sender to receiver so that it can stimulate thoughts, feelings, attention, interests, activate students in such a way that the learning process occurs."

This is emphasized by Syaiful Sagala (2018) stating that, "By recognizing active learning media and understanding how to use them, it will greatly assist the task of teachers in increasing effectiveness and activity in the learning process."

In addition, according to Arief S. Sardiman (2017), there are several types of media that are commonly used in teaching and learning activities, especially in Indonesia, namely "Graphic media, audio media, and silent projection media.". The practical benefits of using learning media in the teaching and learning process are that active learning media can clarify the presentation of messages and information so that it can facilitate and improve the learning process and results. And also active learning media can increase and direct children's attention so that it can generate learning motivation, more direct interaction between students and the environment, and the possibility of students to learn individually according to their abilities and interests.

In using active learning media, there are also advantages and disadvantages. According to Niken Ariani and Dany Haryanto (2015), stated that; "Active learning media has advantages, among others; (1) Can clarify a subject matter in any subject and for any age level, so as to prevent or correct misunderstandings. (2) Can avoid verbalism. (3) Stimulate students' interest to get to know and explore a subject matter better. (4) Make an abstract thing more concrete. (5) Can be one of the factors causing changes in behavior in students. (6) Teaching and learning activities can be carried out (transferred) outside the classroom. While the shortcomings of active learning media include: (1) Requires special storage and maintenance. (2) Requires special skills for the manufacture and use of certain media. (3) Explanations that are not detailed by the teacher can lead to diverse interpretations. (4) It costs money to procure.

After the teacher uses active learning media during the teaching and learning process, the teacher evaluates the learning outcomes to determine the level of understanding and success of students in learning the material that has been delivered by the teacher.

In the teaching and learning process, there must be an evaluation or measurement of the extent to which students understand the material that has been delivered by the teacher. Learning outcomes are usually used as a measuring tool to determine how far someone has mastered the material that has been taught. This is supported by Harjanto's (2017) opinion that, "Evaluation is an assessment of the growth and progress of students towards the goals set out in law".

In the evaluation, of course, to find out the learning outcomes that are supported according to Nawawi in Ahmad Susanto (2018) states that "Learning outcomes can be interpreted as the level of student success in learning subject matter at school which is expressed in scores obtained from test results knowing a certain amount of subject matter."

According to Sugiyono (2018) in learning outcomes there are factors that influence learning outcomes. As stated by Walisman in Ahmad Susanto states At the stage of learner development according to Piaget in Wasty Soemanto (2016) that "At the age of 0-2 years at the motor sensory level, at the age of 2-7 years at the preoperational level, at the age of 7-11 years at the concrete operation level, and at the age of 11 years and over it is the formal operation level.". Fifth grade elementary school students have entered the level of concrete operations. Where children can already know mathematical symbols, but cannot yet deal with abstract things. So that grade V elementary students still need learning with concrete objects.

From the results of observations made by researchers, it was found that the average learning outcomes for Natural Science (IPA) subjects were very low, namely 65.00. Whereas

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So as to overcome the problem of low learning outcomes and lack of understanding of science lessons experienced by fifth grade students of Ciracas 07 Pagi East Jakarta State Elementary School, during the science teaching and learning process, teachers are recommended to use active learning media so that students can improve learning outcomes and understand the science material delivered by the teacher.

DISCUSSION

The following are the differences in the results of the pre-test and post-test data in the experimental and control classes. These differences include the difference in the lowest score of 40 obtained by the pre-test in the experimental class and the lowest score of 30 obtained by the pre-test in the control class.

Table 1. Comparison of Post Test Data for Control Classes and Experimental Classes

DATA RESULTS	CONTROL CLASS		EXPERIMENTAL CLASS	
	Pre Test	Post Test	Pre Test	Post Test
Low Value	30	50	40	58
High Score	80	96	85	98
Average	59,593	75,09	66,937	83,531
Standard Deviation	13,033	11,31	11,827	9,708

Normality testing of learning outcomes is done with chi squared. From the calculation results obtained the price χ^2_{hitung} for the experimental group obtained the price χ^2_{hitung} of 5.388. While testing in the control group χ^2_{hitung} of 4.04.

In the experimental group with $n = 32$ and the significance level $\alpha = 0.05$. Because $\chi^2_{hitung} < \chi^2_{(0.95(3))}$ which is $5.388 < 7.81$. then H_0 is accepted. This means that the sample used comes from a population with a normal distribution.

In the control group with $n = 32$ and the significance level $\alpha = 0.05$. Since $\chi^2_{hitung} < \chi^2_{(0.95(3))}$ which is $4.04 < 7.81$ (Appendix No. 16, page 118), then H_0 is accepted. This means that the sample used comes from a population with a normal distribution.

Normality Test in the experimental class $\chi^2_{hitung} < \chi^2_{(0.95(3))} = 5.388 < 7.81$, declared normal and for the control class $\chi^2_{hitung} < \chi^2_{(0.95(3))} = 4.04 < 7.81$, . So for the experimental class and control class are normally distributed.

Homogeneity of the two groups was done with Fisher's test. From the calculation results obtained $F_{table} = 1.121$, Price $F_{hitung} = 1.824$ with db. numerator = $32-1 = 31$ and db. denominator = $32-1 = 31$ and the significance level $\alpha = 0.05$. Because $F_{hitung} < F_{table}$ is $1.121 < 1.824$ then H_0 is accepted. It can be concluded that the sample data in the control and experimental classes come from populations that have the same or homogeneous variants, so the data is called homogeneous. And the data is declared homogeneous.

The homogeneity test calculation states that $F_{hitung} = 1.121 < 1.824 = F_{table}$ and the data has met the criteria, so the data is declared homogeneous.

The results of the t-test calculation in this study obtained all data analysis requirements met (normality and homogeneity). Hypothesis testing in this study used the t test at a significant level of $\alpha = 0.05$ with $(dk) = 62$. Hypothesis testing, it turns out that the value of $t_{hitung} = 2.349$, t table $(62) = 1.670$. t table is smaller than t_{hitung} , namely t table $(62) = 1.670 < t_{hitung} = 2.349$ (Appendix No. IX. 19, page 125), it can be concluded that H_0 is

rejected and H1 is accepted, thus there is a significant effect of the use of active learning media on science learning outcomes in grade V students at SDN Ciracas 07 Pagi East Jakarta.

The results of the research obtained are that there is a positive increase in science learning outcomes that increase and by using active learning media in science lessons on simple aircraft material can stimulate students' interest in getting to know and explore material such as students being more enthusiastic and active during lessons and the learning process becomes not boring and attracts students' attention. This is emphasized by Niken Ariani and Dany who state that; Active learning media has advantages, among others, can clarify a material, can stimulate students' interest to get to know and explore a subject matter, and others.

CONCLUSION

Based on the results of this study, it can be concluded that H1 is accepted and there is an effect of using active learning media on science learning outcomes in grade V students of SDN Ciracas 07 Pagi East Jakarta.

Suggestions for teachers are advised to use active learning media, especially in science subjects in grade V elementary schools. And for further research, it can develop and refine this research in the future. It is hoped that this research can provide a reference for other researchers who are interested in improving the quality of the teaching and learning process.

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