

Enhancing Primary Students' Science Learning Outcome Utilizing Visual Multimedia

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Abstract

This study aims to improve 3rd grade students' science learning outcomes by learning to use visual multimedia. This research method uses classroom action research. The subject of this research was the third grade students of second semester of elementary school which conducted 30 students. Based on the results of research by using visual media, it have been found that the improvement learning outcome, seen from the initial average score before the action of 3rd grade class students from 65.5 to 83.83. The results of this study indicate that with the use of visual media can improve student learning outcomes.

Keywords: *Visual Multimedia, Primary Students' Learning Outcomes, Science*

1. INTRODUCTION

Science is concerned with how to systematically find out about nature, so science is not only the mastery of a collection of knowledge in the form of facts, concepts or principles but also a inquiry process. Science education is expected to be an aspect for students to learn about themselves and the environment, as well as the prospect of further development in applying it in everyday life. Science is a science that deals with systematic natural phenomena based on experimental results and observations made by humans (Artana, et al, 2015).

Carin and Sund (Trianto, 2007), defines science as systematic and organized knowledge regularly, universally, and in the form

observations data collection and experiments. Referring to the definition of science, it can be concluded that science there are four main structures namely the first attitude, curiosity about objects, natural phenomena, living things, and causality causing new problems that can be solved through the correct procedure. Furthermore, the second is the inquiry process, the problem-solving procedure through the scientific method; the scientific method includes the preparation of hypotheses, design, experiments or experiments, evaluation, measurement, and drawing conclusions. The third is the product, in the form of facts, principles, theories, and laws. Then the fourth is the application, the application of scientific methods and the science concept in

everyday life. These four elements are characteristic of intact science which cannot be separated from each other (Trianto, 2007).

The learning process of the four elements of science is expected to appear, so that students can experience the whole learning process, understand natural phenomena through problem-solving activities, scientific methods, and imitate the way scientists work in discovering new facts.

Recognizing the importance of science learning for students, it requires the involvement of students and teachers optimally in order to achieve a good learning process. One benchmark that students have learned well is if the student can learn what should be learned, so that the desired learning outcome indicators can be achieved by the students. In fact, there are not many learners who like the field of science study because it is difficult, the limited ability of learners, or because they are not interested in becoming a scientist or technologist (Trianto, 2007). Nevertheless, they still hope that science learning in schools can be presented in an attractive, efficient, and effective manner.

Teaching that is teacher centered, teachers only convey science as a product and learners memorize factual information. Students study science in the lowest cognitive domain (Marhadi, 2018). Students are not accustomed to develop their thinking potential. Facts on the ground show that many learners tend to be lazy to think independently (Trianto, 2007). This according to Hermita, N. et al, (2018) cannot make affective learning for students master the lessons as a whole, because in

essence memorizing is a remembrance skill that has limited retention. It also found the fact that teachers do not use the media in learning. Using media can actually help the learning process because the media presented can attract students' interest in learning. Because of students' learning outcomes was low, because students are not able to understand in their entirety.

Based on the observations found in schools and information from teachers that during the process of learning, especially on the material that is memorize (theory), the concentration of students are often dispersed and arise a sense of saturation resulting in feeling lazy. In this condition the teacher no longer acts as the only source of learning but the teacher acts as a learning designer who is required to be able to design the learning by utilizing various types of media and appropriate learning resources so that the learning process can run effectively and efficiently (Sanjaya, Vienna 2011).

Gagne And Briggs (Arsyad Azhar, 2011) implicitly say that the learning media includes tools physically used to convey the content of teaching materials, which consists of books, tape recorders, tapes, video cameras, video recorders, films, slides frames), photos, pictures, graphics, television, and computers. In other words, the media is a component of a learning resource or physical vehicle that contains instructional materials in a student environment that can stimulate students to learn. By considering the various uses of media and various media that has been described above, then researchers will try to use visual media. According to Sadiman Arief S. et

al (2009) said that visual media is a tool that can produce sounds and images that can attract the attention and interest of students to learn. The visual media used by researchers in learning is a kind of animated video. This is assumed by visual media students become more interested, especially if students are presented with some animations that have a short duration, have a good story content, and contain language that is easily understood, it will be able to attract students in understanding the subject matter. Visual media will making the presentation of teaching materials to students more complete and optimal so that students are expected to be more aware of learning materials learned so that student achievement will be more increased.

2. METHOD

The design of this study is a classroom action research according to Rapoport (Wiriaatmadja, Rochiati 2007), interpreting classroom action research to assist one in handling practical problems faced in emergency situations and assisting in the achievement of social science objectives by cooperation within a mutually agreed ethical framework.

In this study will be divided into four stages of planning, implementation, observation, and reflection. According to Arikunto, Suharsimi et al (2010), explains the stages in the implementation of classroom action research consists of four activities undertaken in the cycle of repetition is as follows:

- a) Planning is arranging a construction implementation of learning, syllabus, lesson plan, LKS, preparing test results and making observation sheet.
- b) Implementation is the planning implementation that has been conducted in the classroom is the implementation visual multimedia.
- c) Observation is done simultaneously with the implementation of action, observations conducted by researchers as observation and teachers as observers by using the observation sheet.
- d) Reflection on reviewing, viewing and considering the outcomes or impacts of actions, weaknesses, and shortcomings in learning using visual multimedia to make improvements at subsequent meetings.

Subjects in this study were third grade students in elementary school, with the number of students were 30 people, 16 boys and 14 girls.

The data obtained from this research are then analyzed to express the activity of teachers and students during the learning process by using visual multimedia and to observe the extent of achievement criteria.

- a) Students' learning outcome

Students' learning outcome can be find with formula bellow:

$$S = \frac{R}{N} \times 100 \text{ (Purwanto, Ngalim 2009)}$$

Information:

S = expected score

R = score of correct answer

N = total score

- b) Average score

Class average score can be find by this formula:

$$X = \frac{\sum X}{\sum N} \text{ (Aqib, Zainal dkk 2009)}$$

Information:

X = class average score
 $\sum X$ = total students' score
 $\sum N$ = number of score

c) Improvement students' learning outcome

Improvement students' learning outcome by this formula:

$$P = \frac{\text{Posrate} - \text{Baserate}}{\text{Baserate}} \times 100 \%$$

(Aqib, Zainal dkk: 2009)

Keterangan :

P = improvement percentage
 Posrate = score average after treatment
 Baserate = score average before treatment

3. RESULT AND DISCUSSION

This research was conducted at each meeting in both cycles using learning multimedia, namely visual multimedia. The use of visual media can increase children's attention because the videos that are shown have interesting images. Therefore, children will be afraid to miss the

course of the video if they miss by shifting their concentration and attention. This agrees with Fujiyanto, Ahmad (2016) that visual multimedia that displays the reality of material can provide a real experience to students when learning so that it encourages self-activity. To find out whether visual media can improve student learning outcomes, at the end of learning students work on evaluation questions and work on daily test questions in each cycle.

Science Learning Outcome Analysis

Students' learning outcomes after using visual multimedia, based on the results of the cycle I daily tests, and II seen student scores increase in each cycle. On the daily test I the average score of students was 71.83 with students who did not reach students score minimum and on the second daily test increased with the average score of students was 83.83 and students who did not reach the students score minimum third students. The following is the acquisition of learning outcomes of cycle I, and cycle II.

Table 1. Students' learning outcome first and second cycle

Description	First cycle	Second cycle
Average score	71,83	83,83
Students unsuccessfull	9	3

Based on the table above it can be seen that student learning outcomes are increasing. The occurrence of increasing student learning outcomes is due to the use of visual multimedia in the teaching and learning process. The use of visual media in classroom

learning can be useful to motivate students to improve learning outcomes achieved in the form of knowledge (cognitive), attitude (affective) and skills (psychomotor) (Sidi, Jatmiko 2016).

(2) Student Learning Completeness
 Completeness of student learning outcomes from test I and test II also increased. To see the comparison of the increase in completeness of student learning

outcomes based on test in cycle I, and II after using visual multimedia in the third grade elementary school 2017/2018 Academic Year seen in the table below:

Tabel 2. Students' Learning Outcome Before and After Treatment

No	Steps	Number of students	students' learning outcome		
			Success	Unsuccessful	Classical
1	Basic score	30	10 (33,33%)	20 (66,67%)	Unsuccessful
2	SiklusI	30	21 (70%)	9 (30%)	Unsuccessful
3	SiklusII	30	27 (90%)	3 (10%)	Success

Based on the table above, it is seen that student learning outcomes increase from the basic score to cycle I, and II. Students are said to be complete individually if students get a score of 75 or more according to the Minimum Completeness Criteria that has been established by the school. Trianto (2011) said that classical completeness is said to be complete if 85% or more of all students who reach

the KKM after learning to use visual multimedia in third grade.

(3) Improving Learning Outcomes

To find out the improvement of learning outcomes of students in cycle I, and II by using visual multimedia in third grade viewed from the results of student learning that is a daily test conducted 2 times namely daily cycle I, and daily repetition cycle II. The following table 3 increases student learning outcomes.

Tabel 3. students' learning outcome cycle I and II

No	Stage	Students	Average	Improvement	
				score I	score II
1	Basic score	30	65,5		
2	Cycle I	30	71,83	9,66%	27,98%
3	Cycle II	30	83,83		

Based on the table above learning by using visual multimedia has increased student learning outcomes from basic scores to cycle II. This can be seen from the average value of the base score of 65.5 which increased to 83.83 in the second cycle daily test with an increase of 27.98%. So based on the data above it can be concluded that the use of visual media can improve student learning outcomes.

Based on the analysis of student learning outcomes from basic scores to cycle II, it was obtained data that there was an increase in science learning outcomes after the use of this visual media and the mastery of both individual and classical learning also increased in each cycle.

Based on the description of the results of the above research shows that the use of visual media has a

positive effect on the learning process and student learning outcomes. So it can be concluded that the action hypothesis is in accordance with the results of the study because the use of visual media can improve the learning outcomes of third grade students in elementary school.

4. CONCLUSION AND RECOMENDATION

Conclusion

Based on data from classroom action research using visual media, it can be concluded that using visual media can improve science learning outcomes for third grade elementary school students. Student learning outcomes have increased. The average learning outcomes in the pre-action preliminary data were 65.5 increased in the first cycle to 71.83 with a percentage increase of 9.66%, and increased again in the second cycle to 83.83 with an increase of 27.98%. Increasing learning outcomes also affect the completeness of individual and classical learning outcomes. In the first cycle, 21 (70%) students were completed and 9 (30%) students were not complete. Furthermore, in the second cycle students who complete totaled 27 (90%) students and students who did not complete 3 (10%) students.

Recommendation

From the results of the conclusions, the researchers provide the following recommendations:

1. The use of visual media can be used as an innovation in the learning process that can be applied by the teacher, because

through this media can increase teacher activity and student activities in the learning process.

2. The use of visual media can improve student learning outcomes. Therefore, this media can be used as an alternative implementation of learning in science learning in an effort to improve the quality of the learning process.

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