

## The Effect Of Use Animation Media On Learning Outcomes In Science Learning Of The Fourth Grade Students Telkom Makassar

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### ABSTRACT

This research is a quantitative approach with the type of pre-experiment research that aims to determine (1) The description of the application of animation media in class IV A SD Telkom Makassar, (2) The description of the learning outcomes of students in class IV A SD Telkom Makassar, and (3) The effect of the application of animation media on the learning outcomes of students in class IV A SD Telkom Makassar. The independent variable in this study is the application of animation media, while the dependent variable is the learning outcomes of students. The population in this study were all grade IV students of SD Telkom Makassar as many as 83 people, while the sample was class IV A as an experimental class with 29 students with purposive sampling technique. The results of the research conducted can be concluded that (1) The description of animation media in class IV A SD Telkom Makassar took place effectively because the percentage category for each meeting increased. (2) The description of the learning outcomes of students in class IV A SD Telkom Makassar has increased. This is evidenced by the posttest scores of students in the high category after treatment while the pretest scores were in the medium category before treatment. (3) Data on the results of the study were obtained by giving a pre test and post test in the form of a multiple choice test. Based on the results of inferential statistical analysis obtained Sig. (2-tailed) from the results of the Paired Sample Test of 0.000, this value is smaller than  $\alpha = 0.05$ . It can be concluded that animation media has a significant effect on the learning outcomes of class IV A Telkom Makassar students.

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### INTRODUCTION

Education is an important means to improve the overall quality of human resources in ensuring the sustainability of a nation's development (Basri et al., 2018). Through education, various aspects of life are developed through the learning process. Various problems in the learning process need to be stabilized so that learning conditions can be created in accordance with the objectives to be achieved. Based on the objectives of national education set out in Law No. 20/2003 on the National Education System that "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".

Science education emphasizes the provision of direct experience and activities to develop students' competencies to be able to understand scientifically. The goal of natural science according to Bundhu (Amran & Muslimin, 2017) is a systematic way of knowing nature in the form of concepts, laws, principles and discovery processes. In order for this goal to be achieved, it is necessary to have developments in the education system, especially teachers who have the most important position in improving the quality of education.

Based on observations in the science learning process at SD Telkom Makassar, especially in the Let's Love the Environment lesson content, it can be seen that student activities during the learning process, especially during this pandemic, teachers only provide learning by using techniques and media that do not attract students' attention, as well as assignments that are given a lot so that students do not understand what has been taught.

This causes science learning to take place monotonously or less varied. Monotonous learning will make students feel bored and pay less attention to the lessons being delivered. Some students are less enthusiastic in participating in learning. Some students seem to pay less attention to the explanation from the teacher when

learning takes place. Some play and talk with friends, do their own activities, and lack concentration on the teacher's explanation. So that it makes students only 40% who reach above the minimum completeness value (KKM), and 60% of students get scores below the KKM, while the KKM value for science subjects determined by the school is 75.

Seeing this, there is a need for innovation in the learning process. One of the better ways that can encourage students to be more active in the learning process is through cooperative learning media. There are many kinds of cooperative learning media that can be used in the learning process, one of which is animation media. The use of animation media as a clearer learning media, so that students can receive the material better.

The author is interested in conducting a Non PTK research entitled The Effect of Using Animation Media on Science Learning Outcomes of Class IV SD Telkom Makassar.

## **1. Animated Media**

### **a. Defenition of Animated Media**

Animation according to Wahyono (Sidik; & Annisa, 2017) is basically moving objects to make them appear more dynamic. Before the era of computerization as it is now, animation was a complicated process and took a lot of time and energy. Animation is a moving image in the form of a set of images (objects) arranged in an orderly manner following a predetermined flow of movement at each time increment that occurs, the image or object referred to above such as humans, animals, or writing. Animation comes from the word "to animate" which means to make as if alive and moving. According to Eli (Inna Rizky, 2020) animation is a movie that comes from pictures that are processed or managed in such a way that it becomes a moving picture and has meaning when told. Animation media, which is one part of multimedia, is media that invites elements of sound, writing, and images that can move.

In addition, animation media has the ability to explain something complicated or complex and difficult to explain with only pictures and words. With this ability, animation can be used to explain a material that cannot be seen by the eye in real time by visualizing so that the material described can be illustrated. In addition, animation is also equipped with audio so that in learning students can maximize their respective learning styles. According to Good and Brophy (Febriani et al, 2015), each individual learns in different ways and is well applied in educational literature. This certainly makes the animation to be used in the teaching and learning process must be able to accommodate the differences in learning styles owned by students.

### **b. Benefit of Animated Media**

Animation media has its own role in the field of education, especially in improving the quality of the teaching and learning process. The use of animated media in learning activities can provide a stimulus to learners or students to be more excited and motivated in learning and their attention is focused on the material explained by the teacher or educator.

According to (Sari and Samawi, 2014) the benefits or values of this animation media arising from the results of using animation media in a teaching and learning process are:

- (1) Animated media can facilitate or assist learners or students in understanding or learning very broad subject matter, which in animated media can contain various concepts, real facts, and certain principles related or related to the subject matter discussed by educators or teachers.
- (2) Animated media can also facilitate or assist an educator or teacher in explaining learning materials in class;
- (3) Animated media can also increase the satisfaction and success of learning students or students in accordance with the expectations or desires of each educator or teacher;
- (4) Animated media can also improve learning achievement of students or students, behavior or attitudes and ways of learning students or students who feel satisfied and successful with their learning activities or processes;
- (5) Animated media can also improve achievement in learning, attitudes or behaviors and effective ways of learning students or students and create or foster a very high perception of things that have been and will be learned.

### **c. Pros and Cons of Animated Media**

The advantages of animation media according to Wardani, 2013 (Yunita, 2017) are broader experience, increasing learning motivation, improving learning, wider interaction because there is animation so that communication between teachers and students is more interactive. Animation can be used to attract learners' attention if used appropriately.

The disadvantages of Animation Media according to Rivai, 2005 (Yunita, 2017) are that it requires sufficient creativity and skills to design animations that can be effectively used as learning media, requires special software to open it, teachers as communicators and facilitators must have the ability to understand their students instead of spoiling them with various learning animations that are quite clear without any learning effort from them or presenting too much information in one frame tends to be difficult for students to digest.

## **2. Learning Outcome**

### **a. Definition of Learning Outcome**

Learning outcomes are one of the important components in the learning process, because learning outcomes are a measure of the success of a learning process. Through learning outcomes we can find out the success or deficiencies in the learning process at school. Sudijono (Sutrisno & Siswanto, 2016) revealed that learning outcomes are an evaluation action that can reveal aspects of the thinking process (cognitive domain) can also reveal other psychological aspects, namely aspects of values or attitudes (affective domain) and aspects of skills (psychomotor domain) inherent in each individual learner. This means that through learning outcomes can be revealed holistically describing student achievement after learning. Participants are said to be successful in learning if students achieve the lesson objectives. In the world of education, learning outcomes are related to changes in students, both concerning cognitive, affective and psychomotor aspects (Pingge, 2018).

According to Kpolovie, Joe, & Okoto (Ricardo & Meilani, 2017), as one of the benchmarks for measuring the success of the learning process, learning outcomes reflect the results of the learning process which shows the extent to which students, teachers, learning processes, and educational institutions have achieved predetermined educational goals. Winkel (Anggraini Fitrianingtyas, 2017) suggests that learning outcomes are evidence of the success that students have achieved where each activity can lead to a distinctive change, in this case learning outcomes include activeness of process skills, motivation, and learning achievement.

To know that a learning process is successful, students must have certain abilities. Gagne (Parwati, 2018) suggests that learning outcomes are something that is owned by everyone whose capacity has a variety of skills. In this case, Gagne determines five categories or indicators of learning outcomes, namely (1) verbal information, (2) intellectual skills, (3) strategies, (4) attitudes, and (5) movement skills. According to some of the definitions of learning outcomes above, it can be concluded that learning outcomes are the final results that students have or obtain after they experience the learning process which is marked by a value scale in the form of letters or symbols or numbers, and this is usually used as a measure of whether or not the student is successful in learning.

### **b. Factors that influence learning outcomes**

The learning outcomes of a student (Kurniawan et al., 2018) can be influenced by several factors that play a role in it. The factors that influence learning are internal factors and external factors. Internal factors are factors that come from within a person while external factors are factors that come from outside the individual. Both factors can be an obstacle or support for student learning.

Slameto (kd.Ayuning Raresik, I Kt. Dibia, 2016) suggests, "factors that affect learning are generally grouped into internal factors and external factors". Internal factors in question are factors that come from within students which include physiological factors (physical) and psychological factors (psychiatric). External factors are factors that come from outside the learners, namely school factors.

From some of the above opinions, it can be concluded that the factors that influence learning outcomes are internal factors, namely factors that come from students and external factors, namely factors that come from outside students. So in order to get maximum learning outcomes, teachers must pay attention to these factors, especially in preparing appropriate learning strategies or media.

## **3. Science Learning in Elementary School**

### **a. Definition of Science Learning**

Science can be interpreted literally as science, science is scientific knowledge. The definition of Science according to Wisudawati (Kumala, 2016) is having a rational, and objective nature. According to Sulistyorini (Widiantono, 2017), science learning in elementary schools emphasizes providing direct learning experiences through the use and development of process skills and scientific attitudes.

According to Permendiknas No. 22 of 2006 (Fatonah, 2014: 9) competencies in SD / MI science learning, can be separated into 5, namely (1) mastering knowledge about various types and

characteristics of the natural environment and the artificial environment in relation to its use for daily life; (2) develop science process skills; (3) develop insights, attitudes and values that are useful for students to improve the quality of daily life; (4) develop awareness of the interrelationship between science and technology capabilities with the state of the environment and its utilization for real daily life; and (5) develop students' ability to apply science and technology and skills that are useful in daily life and to continue their education to a higher level.

From the description of the definition of science above, it can be concluded that Natural Science (IPA) is learning based on principles, processes that foster scientific attitudes through observation, discussion, and simple investigations..

### **b. Science Learning Objectives**

Every learning in a subject must have a goal to develop all three aspects of learning outcomes. As the learning objectives of science according to BSNP 2013 according to Susanto (Basri et al., 2018) as follows:

- 1) To gain confidence in the greatness of God Almighty based on the existence, beauty and order of His natural creation.
- 2) Develop knowledge and understanding of science concepts that are useful and can be applied in everyday life
- 3) Develop curiosity, positive attitude and awareness of the interrelationship between science, environment, technology and society
- 4) Develop process skills to investigate the natural world, solve problems and make decisions
- 5) Increase awareness to participate in maintaining, protecting and preserving the natural environment
- 6) Increase awareness to appreciate nature and all its order as one of God's creations
- 7) Acquire knowledge, concepts and skills of science as a basis for continuing education to junior high school.

## **METHOD**

The research design used in this research is Non PTK (Classroom Action Research) with a quantitative research approach. The type of research used is Pre-Experiment or commonly called an experiment that is not real (pseudo). This research was conducted at SD Telkom Makassar. The sample of this research is 4th grade students of SD Telkom Makassar with a total of 29 students consisting of 17 female students and 12 male students. This research was conducted for 4 meetings, namely the first meeting of Pre-Test, the second and third meetings of Treatment, and the fourth meeting of Post-Test.

Data collection techniques used in this study are While the success in the classical there is a score of the results indicator, namely 80% of students who are at least 75 according to observation, documentation, and tests. The types of data obtained in this study are qualitative data and quantitative data. Qualitative data is data obtained from teacher and student activities in the form of observation sheets. While quantitative data is data obtained from the results of tests given to students.

The indicators of the success of this study include indicators of the process and learning outcomes after the application of animation media. In terms of the process, it is characterized by teacher activity and student activity during the learning process. This research is said to be successful if the results of observations of student learning activities have increased. In connection with the success of the process is determined based on the standard criteria put forward by Arikunto (2013).

Table 1. Indicators of Completeness and Incompleteness of Learning Outcomes

21% - 40%	Less effective
41% - 60%	Fairly Effective
61% - 80%	Effective
81% - 100%	Very effective

While the indicator of success in the results is that classically there are 80% of students who get a score of at least 75 according to the standard minimum completeness criteria (KKM) on the content of science lessons after the application of animated media.

Table 2. Indicators of Completeness and Incompleteness of Learning Outcomes

Value range	Category
75 – 100	Completed
0 – 74	Incomplete

(Sumber: SD Telkom Makassar)

If classically 80% or more students in a class reach the KKM score of 75 and above, then the learning is considered complete and there is an influence of animation media on student learning outcomes.

## RESULTS AND DISCUSSION

### Research results

The research was conducted for approximately 2 weeks starting from the process of giving the pretest (initial test) until the research process was completed with 4 meetings with students and accompanied by teachers online. The first meeting was given a pretest (initial test). The second and third meetings were given a learning process treatment using animated media. And the fourth meeting was given a posttest (final test) to find out whether there were differences in student learning outcomes before and after being given treatment in the form of animated media.

### Learning Process Implementation Observation Results

The implementation of the science learning process was carried out for 4 meetings, namely meeting I by giving a pretest online using zoom. The second and third meetings, giving treatment in the form of learning using animated media online. And the fourth meeting gave a posttest online using zoom. The pretest is conducted to measure students' initial learning outcomes in science learning, especially in the material on how to preserve the environment before a treatment is applied, while the posttest is conducted to measure students' final learning outcomes in science learning after a treatment is applied. This treatment is applied during the learning process such as displaying animated videos through zoom. Then students observe the animated media displayed. Before students receive treatment, each student must have a worksheet that has been distributed via Whatsapp group. Furthermore, it is explained how to preserve the environment through online learning using zoom.

This observation is carried out to obtain data related to the use of animated media in science lessons as well as activities that occur in the learning process which includes an observation sheet for the implementation of the learning process of the research class, namely class IV SD Telkom Makassar. The observation data can be seen as follows:

Table 2 Description of Learning Implementation Observation

Meeting	Percentage
1	66,66 %
2	73,33%
Average	69,99%

Sumber : Lembar Observasi (Lampiran)

Based on table 4.4, it can be seen that the implementation of learning at the 1st meeting was 66.66% including in the effective category. The implementation of learning at the 2nd meeting was 73.33%, including the effective category. And the average learning implementation is 69.99% including in the effective category.

### Description of Pretest Data on Learning Outcomes

The pretest of student learning outcomes was conducted on Thursday, October 08, 2020 with a total of 29 research subjects. After the pretest data was obtained, it was processed using the help of the IBM SPSS Statistic Version 2.1 program, to find out the data description of the students' pretest scores in science learning. Pretest result data can be seen in the following table

Table 3 Description of Pretest Score

Descriptive Statistics	Statistical Value
Sample Quantity	29
Lowest Score	30
Highest Score	90



Average (Mean)	57,24
Range	60
Standard Deviation	16,124
Median	60
Mode	35

Sumber: IBM SPSS Statistic Version 21.0

Based on table 4.2, it can be seen that the average (*mean*) before using the media (*pretest*) amounted to 57.24. While the mean (*median*) is 60 and the mode (*mode*) is 57.24. The standard deviation (*standard deviation*) is 16.124, the highest (maximum) value obtained is 90 while the lowest (minimum) value obtained is 30 and the range of values (*range*) between the highest value and the lowest value is 57.24.

The frequency distribution of learning outcomes *Pre Test* of class IV students can be seen in the following table

Table 4.3 Distribution and Percentage Score of *Pre Test Score*

No	Skor	Kategori	Frekue	Percentage
1	85	Very	1	3,44 %
2	70	Good	4	13,79 %
3	55	Simply	10	34,48 %
4	40	Less	7	24,13 %
5	≤	Very	7	24,13 %
Total			29	100%

Sumber: IBM SPSS Statistic Version 21.0

Based on table 4.3 frequency, it is known that students who have scores in the very good category are 1 person with a percentage of 3.44%. The number of students who obtained a good category was 4 people with a percentage of 13.79%, the number of students who obtained a fairly good category was 10 people with a percentage of 34.48%, and the number of students who obtained a poor category was 7 people with a percentage of 24.13%, and the number of students who obtained a very poor category was 7 people with a percentage of 24.13%. Based on the descriptive analysis that has been done, it can be concluded that the *pretest* results are in the good category, this can be seen based on the average value (mean) of overall learning outcomes which is 57.24%.

### Data Description *Posttest* Learning Result

Post test was conducted to determine the condition of students' final learning outcomes after using animation media in science learning. The posttest was given in the form of a test in the form of multiple choice questions totaling 20 items. The research subjects were fourth grade students of SD Telkom Makassar, totaling 29 students. Data on the results of the posttest can be seen in the following table:

Table 4.4 Description of Posttest Scores

Descriptive Statistics	Statistical Value
Sample Quantity	29
Lowest Score	50
Highest Score	100
Average (Mean)	77,24
Range	50
Standard Deviation	13,335
Median	80
Mode	70

Sumber: IBM SPSS Statistic Version 21.0

Based on table 4.4, it can be seen that the average (mean) after using the media (posttest) is 77.24. While the median (median) is 80 and the mode (mode) is 70. Standard deviation (standard deviation) is 13.335, the

highest (maximum) value obtained is 100 while the lowest (minimum) value obtained is 50 and the range of values (*range*) between the highest value and the lowest value is 50.

Table 4.5 Distribution and Percentage Score of Post Test Values

No	Skor	Kategori	Frequency	Persentase
1	85	Very	6	20,69 %
2	70	Good	12	41,38 %
3	55	Simply	7	24,14 %
4	40	Less	4	13,79 %
5	≤	Very	0	0 %
Total			29	100 %

Sumber: IBM SPSS Statistic Version 21.0

Based on table 4.5 of the frequency, it is known that the number of students who obtained very poor category scores did not exist. While the number of students who obtained the less good category was 4 people with a percentage of 13.79%. The number of students who obtained a fairly good category was 7 people with a percentage of 24.14%, the number of students who obtained a good category was 12 people with a percentage of 41.38%, and the number of students who obtained a very good category was 6 people with a percentage of 20.69%. Based on the results of the descriptive analysis that has been carried out, it can be concluded that the results of the posttest in science learning are in the very good category, this can be seen based on the average value (*mean*) of overall learning outcomes totaling 77.24.

## Discussion

### 1. Overview of Animation Media in Science Learning class IV SD Telkom Makassar

The learning process by applying animation media in class IV of SD Telkom Makassar took place effectively. The use of animation media has a positive influence on student learning outcomes. This is evidenced by observations made during the online learning process both through the zoom application and whatsapp messenger. Based on the results of observations made at the first meeting there are still some things that have not been implemented with a percentage of implementation of 63.33% which is in the effective category. While at the second meeting it increased to a percentage of 73.33%.

This achievement has not reached 100% due to various unfavorable situations and conditions. However, from the results of this observation, it can be concluded that the learning process using animated media took place effectively with an increasing percentage for each meeting. As in the learning process not all students join due to a technical network that is less supportive, so the researcher must explain again to students who are late to join in zoom or explain again personally. However, from the results of this observation, it can be concluded that the learning process using animation media is effective with an increasing percentage for each meeting.

### 2. Student Learning Outcomes in Science Learning by using Animated Media in class IV SD Telkom Makassar

Student learning outcomes in science learning by using animation media in class IV SD Telkom Makassar have increased. This is evidenced from the initial test (*pretest*) and the final test (*posttest*) that has been done. The initial test (*pretest*) which was carried out online using the zoom application on October 08, 2020 showed that the average value (*mean*) was 57.24 and the standard deviation was 16.124. Based on the frequency table, it is known that there is 1 person in the very good category, 4 people are in the good category, 10 people are in the good enough category, 7 people are in the less good category, and 1 person is in the bad category. 7 people were in the very poor category. Based on the results of the descriptive analysis, it was concluded that the *pretest* was in the good category.

Meanwhile, the results of the final test (*posttest*) which was carried out online using the zoom application on October 15, 2020 showed that the average value (*mean*) was 77.24 and the standard deviation was 13.335. Based on the frequency table, it is known that there are 6 people in the very good category, 12 people in the good category, 7 people in the moderately good category, and 4 people in the poor category. Based on the results of the descriptive analysis, it is concluded that the *posttest* is in the very good category.

So by using animation media, science learning outcomes are improved. From before treatment, the animation was in the category of good learning outcomes with an average of 57.24 to after treatment, the animation media was in the category of very good with an average of 77.24.

### 3. The Effect of Animation Media on Student Learning Outcomes in Science Learning class IV SD Telkom Makassar

In the inferential statistical analysis, first the assumption test was carried out, namely the normality test. Normality test of *pretest* and *posttest* student learning outcomes using the *Shapiro Wilk Normality Test* test with the results of all data normally distributed. After conducting these tests, hypothesis testing was carried out.

Based on hypothesis testing with inferential statistics, it shows that there is a significant influence on student learning outcomes after the use of animated media in the learning process. The results of hypothesis testing are done by comparing probability values. Obtained a significant value of the answer to the question *pretest* and *posttest*, a probability value of  $0.000 < 0.05$  means  $H_0$  is rejected and  $H_a$  is accepted. So it can be concluded that there is an effect of animation media on student science learning outcomes in class IV A SD Telkom Makassar.

The results of this study are in line with previous research conducted by Liza Yunita (2017) with the title "The Effect of Using Animated Media on Student Activity and Learning Outcomes on Digestive System Material at SMP 1 Darussalam". The results showed a significant effect in the application of animated media on student science learning outcomes at SMP 1 Darussalam.

### CONCLUSION

Based on the results of the research conducted, several things can be concluded, among others :

1. The description of animation media in science learning in class IV A SD Telkom Makassar, has a positive influence as evidenced by the results of observations made at each meeting experiencing an increase from the effective category to very effective.
2. Student learning outcomes after the application of animated media are more improved. This is evidenced by the *pretest* value in the good category while the *posttest* value is in the very good category.
3. There is an effect of using animation media . This is because there is a significant difference between the values of *pretest* and *posttest* after applying animation media. This is also because the probability value is smaller than 0.05.

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