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Increasing Students' Learning Outcomes Through the Use of Multimedia Projectors in Natural Science Subject Class IX SMP Negeri 6 Kendari

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ABSTRACT

Base on observations in class, it can be seen that student learning outcomes are still low. With this multimedia projector, it is hoped that students will not only listen, see and learn passively as has happened so far, so that with the use of this multimedia projector, they will be able to provide full learning facilities and create active, creative, effective learning situations. and fun so that students will be more interested in participating in the process of teaching and learning activities. The formulation of the problem is: "How to improve student learning outcomes through the use of multimedia projectors in science subjects for class IX SMP Negeri 6 Kendari?". This study aims to determine the improvement of student learning outcomes through the use of multimedia projectors in science subjects Class IX SMP Negeri 6 Kendari. This research has benefits for students, teachers and schools. This type of research is descriptive qualitative using a class action research design (CAR) which refers to the teacher's actions in learning activities. The research flow carried out in this study was two cycles. Each cycle consists of stages of planning, implementing actions, observing and reflecting. The results of the reflection in the first cycle will be the material for planning in the second cycle, and so on until the research is said to be successful.

The data sources of this research are students and teachers. Data collection techniques in this study were carried out using learning outcomes tests and observation sheets. The learning outcomes test in this study aims to determine student learning outcomes after learning is held using a multimedia projector. The test is given to students at the end of each cycle. The observation sheet serves to determine the activities of students and teachers during the implementation of learning by using a multimedia projector. The observation sheet is filled in by the observer in each learning process that takes place. This observation sheet consists of student observation sheets and teacher observation sheets. The data that has been collected is then analyzed by quantitative descriptive statistical analysis techniques.

From the test of student learning outcomes in cycle II, it can be seen that the average score obtained by students is 82.40 with a percentage of students' completeness that is 93%. The percentage of completeness is 93% already above the success criteria of 75%. The results of observing student activities are paying attention to the teacher's explanation 93%, listening to multimedia projector shows 100%, recording important material 90%, doing group work 93%, and irrelevant behavior decreases to 6%. The activity of students and teachers can be categorized very well.

Keywords: *Multimedia Projector, Learning Outcomes*

I. INTRODUCTION

Education plays a role in helping students in self-development, namely the development of all potential, skills, and personal characteristics in a positive direction, both for themselves and their environment. Education is not just about imparting knowledge, values or training skills. Improving the quality of education in schools is largely determined by students as students and teachers as educators. The success of learning in school can be seen from the learning outcomes of students at school. In addition, the success of student learning can be achieved due to several factors, including the activeness of students in learning, learning motivation, enthusiasm for learning, the ability of students to capture subjects, skills of students, school environment, teachers, learning strategies, learning facilities used in schools and many others.

Teachers are one of the determinants of educational success. Teachers are one of the most important human resources and greatly affect the quality of education. Teachers are the most influential component in the creation of

quality educational processes and outcomes. Without a teacher there is no learning. Without learning Education will not exist. It can be said that teachers are the spearhead of education.

According to Law Number 14 of 2005 concerning teachers and lecturers " Teachers are professional educators with the main task of educating, teaching, guiding, directing, training, assessing, and evaluating students in early childhood education through formal education, basic education, and education. medium". Furthermore, Dzakiyh Drajat stated about the teacher's personality as follows "every teacher should have a personality that will be emulated and imitated by his students, either intentionally or not". In addition, Sardiman also gives an understanding that "a teacher is someone who is able to carry out educational actions in an educational situation to achieve educational goals or an adult who is honest, physically and mentally healthy, moral, expert, skilled, open, fair and compassionate". From several experts who provide opinions about the notion of teachers, it can be concluded that teachers are educators with the task of educating, teaching, guiding, directing, training, assessing and evaluating students openly and fairly with compassion and having a personality that can be emulated by participants. educate.

As an educator, the teacher must be able to ensure that the material presented can be well absorbed or understood by students. In transferring knowledge, a teacher requires special knowledge and skills in the field of teaching. Because it is the teacher who will help students achieve good results. This means that teachers must master the class, master various types of learning methods, and be able to use learning media optimally in order to carry out interesting learning for students.

Transfer of knowledge from teachers to students can run smoothly when accompanied by interesting media. Learning media is one source of learning that helps teachers transfer knowledge quickly. Various forms of learning media can be used by teachers as learning resources, both audio, visual, and audio visual.

So far, there are still teachers who have not used interesting learning media. Where the teacher is the only source of learning that transfers knowledge to students, while students are more likely to be recipients. Learning like this can no longer meet the needs of students in learning. The rapid development of science and technology has resulted in many new learning resources, as well as changes in learning that are no longer centered on teachers, but on students. The use of appropriate media is expected to create meaningful and fun learning so that it can motivate students in learning. Good media are media that are in accordance with the learning material. Hamalik (in Arsyad 2011) suggests that "the use of learning media in the teaching and learning process can generate new desires and interests, generate motivation and stimulation of learning activities, and even bring psychological effects on students". A similar opinion was also expressed by Rusman (2011), that: teachers in the current era of information and communication technology are not just teaching (transfer *of knowledge)* but must be learning managers. This means that every teacher is expected to be able to create learning conditions that challenge the creativity and activities of students, motivate students, use multimedia, multimethod, and multiple sources in order to achieve the expected learning objectives.

In the field of education, especially in learning, the use of computers is mandatory and is no longer a new thing. The presence of this learning media has helped the teacher's task a lot. In current learning, teachers must be able to use technology as a learning medium. Currently we can see the development of learning media that are developed more sophisticated and more modern, such as LCD Projector Media (Liquid Crystal Display), YouTube movies/videos, smart phones and other digital learning media.

With the various types of media available, the author wants to examine one of the media that has been developed more sophisticated and modern and is used by educational institutions, namely projector media. Projector media is a tool that is often used for presentation media, because it is capable of displaying large images, even though this projector media has just been developed, it can be said that quite a lot of institutions, both academic and non-academic, are using this media. By using a multimedia projector, teachers can display PowerPoint presentations as well as pictures and learning videos in the classroom. Through the advantages of this projector media, it is hoped that the learning process can take place effectively in realizing learning objectives.

Science subjects refer to developments in the field of technology and communication that continue to grow rapidly. This development has a major influence on various lives, even human behavior and activities now depend a lot on information and communication technology. For this reason, in science learning, media is needed that is in accordance with the development of science and technology. Through the use of a multimedia projector, it is expected to improve student learning outcomes in the learning process.

From observations in class, it can be seen that student learning outcomes are still low. With this multimedia projector, it is hoped that students will not only listen, see and learn passively as has happened so far, so that with the use of this multimedia projector, they will be able to provide full learning facilities and create active, creative, effective learning situations. and fun so that students will be more interested in participating in the process of teaching and learning activities.

Previous relevant research that supports this research is research that has been carried out by Ami Saputra with a thesis entitled the use of multimedia to improve the learning outcomes of class VII students of SMP Negeri 1 Way Krui Pesisir Barat Regency 2015/2016 academic year. From the results of this study, it can be concluded that the use of multimedia can improve student learning outcomes for PAI class VII D at Way Krui Pesisir Barat State Junior High School. This can be seen by the increase in student learning outcomes as much as 87.5%. Student learning outcomes began to increase from each cycle, the first cycle was 58.3%, and the second cycle was 87.5% with a total of 24 students.

The use of multimedia projectors is also expected to be able to bring real conditions of learning in the classroom, so that it does not cause various interpretations by students. Based on the problems that the authors describe above; the authors take a title "Improving student learning outcomes through the use of multimedia projectors in science subjects for class IX SMP Negeri 6 Kendari".

II. LITERATURE REVIEW AND HYPOTHESES

2.1. Learning Media

According to Riyana (2009) "learning media is a message-carrying technology that can be used for learning purposes, physical facilities to deliver learning materials, as well as communication facilities in printed and visual form along with the hardware". Furthermore, Hisbiaytul (2017) explains that "learning media is a tool to provide incentives for students so that the learning process occurs'. Then Kustiawan explained "learning media are everything that can be used to channel messages that can stimulate the thoughts, feelings, attention, and willingness of students to learn and are communication tools used in the learning process to bring information in the form of teaching materials from teachers to students so that students become more interested in participating in learning activities. Furthermore, Kustiawan (2016) explains the functions of learning media in general and specifically as follows:

The general function of learning media is to carry messages from teachers to students in order to achieve learning objectives. The specific functions of learning media are as follows:

1. to attract students' attention
2. to clarify the delivery of the message
3. to overcome the limitations of space, time, and cost
4. to avoid verbalism and misinterpretation
5. to activate and streamline student learning activities

From the above definition, it can be concluded that learning media are everything that can be used to convey messages or information in the knowledge transfer process so that it can stimulate the attention and interest of students to learn.

The following will describe the types of media according to Leshin, Pollock, and Reigeluth (in Arsyad, 2011).

a. Human Based Media

Human-based media is the oldest media used to send and communicate messages or information. Examples are teachers, instructors, tutors, role playing, and group activities. One well-known example is Socrates' tutorial style. This system can be combined with other visual media. This media is especially useful for the purpose of changing attitudes or wanting to be directly involved with monitoring student learning.

b. Print-Based Media

Interactive text-based learning became popular in the 1960s. Learning designers must strive to make material with text-based media interactive. Examples of print-based media include textbooks, guide books, work/exercise books, journals, magazines, and loose sheets.

c. Visual Based Media

Visual-based media can be:

1) a representational image such as a drawing, painting or photograph that shows how something looks like;
2) diagrams depicting the relationship of concepts, organization, and structure of the content of the material;
3) a map showing the spatial relationships between elements in the content of the material;
4) graphs such as tables, graphs, and charts that present an overview/trend of data or the interrelationships of a set of images or numbers.

d. Audio-Visual Based Media

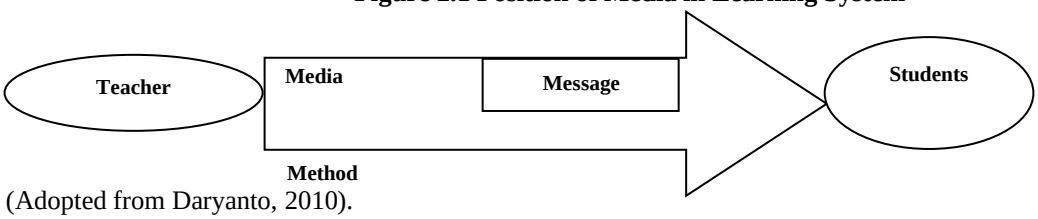
Audio-visual-based media that describes or visualizes the subject matter. Examples are videos, films, *slides* with tape, and television.

e. Computer Based Media (Multimedia)

Computer-based media are computer- assisted teaching and interactive videos. Multimedia is the use of more than one media, in the form of a combination of text, graphics, animation, sound, and video. This combination is a unit that together displays information, messages, or lesson content.

In the learning process, the media has a function as a carrier of information from the source (teacher) to the recipient (student). Media functions in the learning process are shown in the following figure;

Figure 2.1 Position of Media in Learning System



(Adopted from Daryanto, 2010).

The practical benefits of using learning media in the learning process according to Arsyad (2011) are as follows:

a. Learning media can clarify the presentation of messages and information so that they can facilitate and improve learning processes and outcomes;
b. Learning media can increase and direct children's attention so that it can lead to learning motivation, more direct interaction between students and their environment, and the possibility of students to learn independently according to their abilities and interests.
c. learning media can overcome the limitations of the senses, space, and time;
d. objects or objects that are too large to be displayed directly in the classroom can be replaced with pictures, photos, slides, reality, films, radio, or models;
e. objects or objects that are too small that are not visible to the senses can be presented with the help of a microscope, film, slide, or picture;
f. rare events that happened in the past or happened once in tens of years can be displayed through video recordings, films, photos, slides as well as verbally;
g. very complex objects or processes such as blood circulation can be shown concretely through films, pictures, slides, or computer simulations;
h. events or experiments that can be harmful can be stimulated by media such as computers, films, and videos;
i. natural events such as volcanic eruptions or processes that in reality take a long time such as the process of a cocoon becoming a butterfly can be presented with recording techniques such as *time-lapse* for films, videos, slides, or computer simulations;
j. Learning media can provide students with a common experience about events in their environment, and allow direct interaction with teachers, the community, and their environment.

Learning media can enhance the learning process of students in teaching which in turn is expected to enhance the learning outcomes achieved. There are several reasons why learning media can enhance the learning process of students. The first reason relates to the benefits of teaching media in the learning process of students, among others:

a. teaching will attract the attention of students so that it can foster learning motivation;
b. teaching materials will have a clearer meaning so that they can be better understood by students, and enable students to master teaching objectives better;
c. teaching methods will be more varied, not merely verbal communication through the utterance of words by the teacher, so that students do not get bored and the teacher does not run out of energy, especially if the teacher teaches for every hour of the lesson;
d. students do more learning activities, because they do not only listen to the teacher's description, but also other activities such as observing, doing, demonstrating, and others (Sudjana & Rivai, 2010).

In addition, the contribution of learning media according to Kemp and Dayton (in Daryanto, 2010) are:

a. delivery of learning messages can be more standardized;
b. learning can be more interesting;
c. learning becomes more interactive by applying learning theory;
d. learning implementation time can be shortened;
e. the quality of learning can be improved;
f. the learning process can take place whenever and wherever needed;
g. positive attitudes of students towards learning materials and the learning process can be improved;
h. The role of the teacher has changed in a positive direction.

2.2. Multimedia Projector

Multimedia according to the etymology or origin of the language is derived from the word multi (latin) "multus" which means many or more than one. And media (latin) comes from the Latin word medius which is the plural form of the word "medium", which means an intermediary or introduction. In this sense, teachers, books, and the school environment are media. (Sadiman, et al). Multimedia is the use of computers to present and combine text, sound, images, animation, audio, and video with tools and links so that users can navigate, interact, create, and communicate. Multimedia is often used in the world of informatics. (Wikipedia). Furthermore, Mayer (2001) defines multimedia as the presentation of material using words as well as pictures. Multimedia means the presentation of material using two or more delivery tools. The focus is on the physical system used to transmit the message. For example, computer screens, *amplified speakers,* projectors, *video recorders,* whiteboards, and human voice contact. In computer-based multimedia, for example, material can be presented through screens and *speakers.*

Multimedia displays learning materials with techniques that combine all the advantages of audio and visual media equipment with various presentation techniques that utilize computer technology and *LCD projectors* as the main equipment (Gintings, 2010). Multimedia is simply defined by Arsyad (2011) as more than one medium. It can be a combination of text, graphics, animation, sound, and video. The information conveyed through this multimedia is in the form of a living document, can be viewed on a monitor screen or when projected onto a wide screen via an *overhead projector,* and can be heard by voice, seen by its movement (video or animation).

There are three views on multimedia messages according to Mayer (2001), namely:

a. Delivery medium

Multimedia means the presentation of material using two or more delivery tools. The focus is on the physical systems used to transmit messages. Examples include computer screens, *amplified speakers,* projectors, *video*

recorders, whiteboards, and the human voice. In computer-based multimedia, for example, material is presented through a screen and *speakers.*

b. Presentation mode

Multimedia means the presentation of material using two or more presentation modes. The focus is on how the material is presented, how words and images are used. In the multimedia -based computer, for example, the material is presented in *a verbal* narrative or text on the screen and *pictorial* as graphics or video projection.

c. Sensory modalities

Multimedia means two or more sensors (sensory devices) that are involved in students. This view focuses more on the sensory tools used by students to capture material, for example by using the eyes and ears. In computer-based learning, for example, animation can be captured visually and narration can be captured auditory.

According to Wikipedia, "In the field of education, multimedia is used as a medium of teaching, both in class and independently or self-taught." The benefits of multimedia in well-designed learning help students build mental models that are more accurate and effective than text. Shephard (in Shank, 2005) shows the benefits of good multimedia, namely: (1) alternative perspectives; (2) active participation; (3) accelerated learning; (4) retention and application of knowledge; (5) skills in problem solving and decision making; (6) understanding the system; (7) higher order thinking; (8) autonomy and focus; (9) control over the redundant steps and sequencing of information; (10) access to support information.

2.3. Learning Outcomes

Learning outcomes are the most important part of learning. Nana Sudjana (2011) defines that "student learning outcomes are essentially changes in behavior as a result of learning in a broader sense covering the cognitive, affective, and psychomotor fields". Furthermore, Dimyati and Mudjiono (2013) also stated that "learning outcomes are the result of an interaction between acts of learning and acts of teaching. From the teacher's perspective, the act of teaching ends with the process of evaluating learning outcomes. From the learner's perspective, learning outcomes are the end of teaching from the top of the learning process." Therefore, it can be concluded that learning outcomes are a form of growth or change in a person's self which is expressed by new behavior thanks to new experiences. Learning outcomes are the result of a complex process of planning, implementing and evaluating learning outcomes.

2.4. Effect of Multimedia Projector on Learning Outcomes

The rapid development of technology makes everything much easier and more practical. The number of new findings in the world of technology makes it easier for various kinds of activities carried out in human daily life. The ease of accessing information in various media is closely related to the term multimedia. For the *millennial* generation who are creative, innovative, and like new things, enjoy multimedia presented in the world of technology and information. Submission of interesting information to the public is the main weapon for multimedia. Arsyad (2011), explains "the purpose of multimedia is to present information in a form that is fun, interesting, easy to understand, because as many senses as possible, especially ears and eyes, are used to absorb that information". Multimedia Projector is a projection tool that is able to display media elements such as images, text, video, power point media, either separately or in combination between media elements and can be connected to other electronic devices used by teachers for presentation media that is to distribute messages. and can stimulate the thoughts, feelings, and willingness of students so that it can help the learning process occur in him. Multimedia projector is one of the learning media capable of influencing student learning outcomes. The use of learning media, especially a good multimedia projector media, will affect the smooth achievement of the teaching and learning process in schools.

2.5. Dynamic Electricity in Daily Life

Dynamic electricity is electricity that can change or can move and is often called electric current. The electric current is sourced from a stream of electrons that continuously flows towards the positive pole from the negative pole, from high potential to low potential with a potential or voltage difference source. An object that has a more positive electric charge will have a higher potential or voltage as well. Meanwhile, objects that have more negative charges will have lower voltages. Two places that have a voltage difference will be able to generate an electric current, provided that the two places are connected by a conductor. Potential difference is generally referred to as voltage. Electric current can be divided into two types, namely alternating current (AC) and one-way current (DC).

Electric current usually flows through a conducting wire per unit time. The amount of electric current that flows in a certain time is called the electric current (I). The electric current entering a branched circuit will be equal in value to the strong current coming out. Meanwhile, in a series circuit, the current will have the same value at each end of the resistance. The theory is called Kirchhoff's Law. If the voltage source is greater, the greater the current that can flow. Meanwhile, if the resistance value is enlarged, it will certainly make the current flow decrease or decrease. between part A and part B. The electric current seems to be in the form of a positive charge from a higher potential to a lower potential. In fact, positive electric charge cannot move. Negative electric charge (electrons) that can move. (Ministry of Education and Culture. Book of Natural Science Students for SMP/MTs class IX. Jakarta: Kemendikbud).

III. RESEARCH METHODS

3.1. Research Type

This type of research is descriptive qualitative using a class action research design (CAR) which refers to the teacher's actions in learning activities. The reason for choosing this method is because the purpose of this study is in line with the objectives of CAR, namely to improve the quality of the learning process and outcomes.

Arikunto (2013) explains that a CAR cycle consists of four steps, namely: (1) planning, (2) implementation, (3) observation and (4) reflection. In this study, the PTK model used is the model developed by Kemmis and Mc Taggart (1982). The author uses this model because this model is famous for its self-reflection spiral cycle process. The PTK research stage consisted of (1) Planning (Planning*)*, (2) action (Action*)*, (3) Observation (Observation*)*, and (4) Reflection (Reflection*)*.

The research flow carried out in this study was two cycles. Each cycle consists of stages of planning, implementing actions, observing and reflecting. The results of the reflection in the first cycle will be the material for planning in the second cycle, and so on until the research is said to be successful.

This research was conducted at SMP Negeri 6 Kendari which is located at Jl. RA. Kartini, Kessi lampe Village, Kendari District, Kendari City, Southeast Sulawesi.

3.2. Research Time and Place

This research lasted for six months, starting from July to December 2017. The activities carried out by the researchers included problem identification, preparation and revision of research proposals, implementation of actions, and preparation of research reports. This research was carried out at SMP Negeri 6 Kendari. Jl. RA. Kartini Kessi lampe Village.

3.3. Research subject

The subjects in this study were students of class IX B SMPN 6 Kendari totaling 30 people, consisting of 17 boys and 13 girls.

3.4. Research procedure

The implementation of the research begins with initial observations in the classroom during the learning process. Furthermore, a discussion was held with the collaborator teacher of science subjects named Nafiuddin, S.Pd., regarding the situation and motivation of students in participating in science learning. From the results of observations and interviews obtained information that students are less motivated in participating in learning because the media used is less attractive. Furthermore, researchers and teachers decided to conduct an experiment using multimedia learning in one of the existing classes.

Next, the researchers prepared a Learning Implementation Plan (RPP). This plan contains work procedures that will be carried out by researchers in each learning session. RPP is prepared based on the syllabus for science subjects. The lesson plans that will be used in the experimental class and control class are different. The difference is in the media used. Carry out learning activities. The experimental class uses learning multimedia while the control class does not use learning multimedia. The research was carried out in four meetings. Each meeting is two hours of lessons.

The first meeting was held on November 6, 2017. The material on this meeting, namely the flow of electricity flows due to the difference of potential electrical and circuit electricity consists of two types, namely a series of series and parallel circuits. Learning begins by asking the material that has been studied previously. Next, the researchers displayed pictures of series and parallel electrical circuits. Students then identify the differences between the two and provide conclusions about the meaning, weaknesses, and strengths of each. After that, the researchers re-shown the image of the electric current flowing because of the difference in electric potential. Students again identify the electric current. This lesson ends with the provision of material conclusions.

At the second meeting on November 9, 2017 discussed the material. The magnitude of the electrical resistance of a wire is influenced by the type of resistance of the wire, the length of the wire, and the cross-sectional area of the wire. Electrical energy can be converted into other energy, for example a fan that is able to convert electrical energy into motion energy. Conversely, other energy can be converted into motion energy, for example chemical energy in the accumulator (ACCU) can be converted into electrical energy and alternative sources of electrical energy are obtained from energy sources that are abundant in nature, for example from solar energy, wind energy, water energy, bioenergy., and nuclear. The lesson begins with the researcher's questions about examples of forms of energy change. Students enthusiastically provide answers. The next researcher displays pictures of objects that transmit electrical energy. Students are given the opportunity to ask questions that they do not understand. Furthermore, students are divided into groups to look for energy sources. After that, three pictures were shown again showing the energy changes. The lesson was closed by answering together the results of the discussion that day.

3.5. Data Collection Techniques

Data collection techniques in this study were carried out using learning outcomes tests and observation sheets.

1. Study result test

The learning outcomes test in this study aims to determine student learning outcomes after learning is held using a multimedia projector. The test is given to students at the end of each cycle.

2. Observation sheet

The observation sheet serves to determine the activities of students and teachers during the implementation of learning by using a multimedia projector. The observation sheet is filled in by the observer in each learning process that takes place. This observation sheet consists of student observation sheets and teacher observation sheets.

F. Data Analysis Techniques

The data that has been collected is then analyzed using quantitative descriptive statistical analysis techniques.

G. Success Criteria

The criteria for the success of students in accordance with the KKM for science subjects' class IX is 70. This means that each student has been able to understand at least 70% of the learning material. This research is said to be successful if 75% of the students, namely 23 people, are declared complete.

IV. RESULTS AND DISCUSSION

4.1. Result

1. Cycle I

a. Action Planning

At this stage the researcher prepares learning tools which include lesson plans, pre-test, and final learning test. The researcher also prepared in advance the teacher and student activity observation sheet which would be filled out by the observer teacher. In addition, the researchers also prepared the media that would be used in the research, namely laptops, LCD projectors, package books and ensured that the school's Wi-Fi was active.

b. Action Execution

The learning process in the first cycle was carried out in class IX B with a total of 30 students. In this case the researcher acts as a transmitter of learning material. During the implementation of the researcher's actions were observed by a teacher who acted as an observer. Learning activities refer to the Learning Implementation Plan that has been prepared previously.

c. Observation

Observation of the implementation of the action is carried out during the learning process. At the end of the learning process, students are given a learning outcome test sheet. From the test information obtained the average value obtained by students is 67.86 with the percentage of students' completeness is 53%. The results of observing the activities of students are paying attention to the teacher's explanation 50%, listening to multimedia projector shows 57%, noting important material 33%, doing group work 67%, and irrelevant behavior 40%.

d. Reflection

At this stage, it examines the things that are considered good in learning and things that need to be improved in the next lesson. The following are the results of the learning reflection:

1) In the learning process the teacher has carried out learning by using a multimedia projector as the main medium for delivering learning materials.
2) The average student learning outcomes are 67.86 or still below the completeness (KKM) of 70.
3) The percentage of completeness is 53% which is still far from the success criteria, which is 75%. It is necessary to continue to cycle II.
4) The activeness of students in learning is still low, while the activeness of teachers can be categorized as good.
5) It is necessary to improve learning to improve student learning outcomes and the activeness of students and teachers in learning.

2. Cycle II

a. Action Planning

In the implementation of the first cycle there are still some shortcomings that need to be corrected, so it requires a re-planning in the second cycle. After passing through the reflection stage, the researcher then again prepared learning tools which included lesson plans and final learning tests. The researcher also re-prepared the teacher and student activity observation sheet which would be filled out by the observer teacher. In addition, researchers also prepared media such as in cycle I, namely laptops, LCD projectors, package books and ensured that the school's Wi-Fi was active.

b. Action Execution

The second cycle learning process was carried out in class IX B with a total of 30 students. In this case the researcher acts as a transmitter of learning material. During the implementation of the researcher's actions were observed by a teacher who acted as an observer. Learning activities refer to the Learning Implementation Plan that has been prepared in advance after the revision of improvements from cycle I. So that mistakes or deficiencies in cycle I do not repeat in cycle II.

c. Observation

As in the first cycle, the observation of the implementation of the action was carried out during the learning process. At the end of the cycle II learning process, students were given a test. From the test of student learning outcomes in cycle II, it can be seen that the average score obtained by students is 82.40 with a percentage of students' completeness that is 93%. The results of observing student activities are paying attention to the teacher's explanation 93%, listening to multimedia projector shows 100%, noting important material 90%, doing group work 93%, and irrelevant behavior decreases to 6%.

d. Reflection

At this stage, it examines the things that are considered good in learning and things that need to be improved in the next lesson. The following are the results of the learning reflection:

1) In the learning process the teacher has carried out learning by using a multimedia projector as the main medium for delivering learning materials.
2) The average student learning outcomes are 81.40 or above the completeness (KKM) which is 70.
3) The percentage of completeness is 93% already above the success criteria of 75%. Therefore, it is no longer necessary to continue to cycle III.
4) The activity of students and teachers can be categorized as very good.

4.2. Discussion

One important factor in learning is student learning outcomes. Learning outcomes are a measuring tool to determine the success of the learning process. Learning outcomes can also measure the ability of students. To improve student learning outcomes, it can be done through improvement of learning, both in methods and learning media. The use of the right media can certainly improve student learning outcomes. To be able to improve student learning outcomes during the learning process, learning is carried out using a multimedia projector.

The use of multimedia projectors in learning turns out to be able to attract the attention of students. This is because the display of percentages in the form of images, videos, and animations looks more real and not boring. Moreover, multimedia has never been used as a learning medium, making students gain new experiences. So that the attention of students remains focused on the learning material. Student learning outcomes cannot be improved without improvements in learning. Improvements in learning are carried out in a cycle consisting of four stages, namely planning, implementing actions, observing, and reflecting.

The activity of students in learning using a multimedia projector from cycle I to cycle II has increased significantly. This can be seen in the increased value in the component of student activities. This means that students who do things that are not relevant in learning are reduced from cycle I to cycle II. So, it can be concluded that learning by using a multimedia projector can increase student activity in the learning process. Teacher activity in learning on most indicators can be said to be very good. These indicators are conveying learning objectives, conveying learning objectives, using media that motivate learning, guiding students in groups, and giving tests. The categories are good for giving motivation and apperception, organizing students into study groups, using various methods, giving students the opportunity to give opinions, and guiding students to draw conclusions.

V. CONCLUSIONS AND SUGGESTIONS

5.1. Conclusion

Based on the results of data analysis and discussion in Chapter IV, it can be concluded as follows:

1. Student learning outcomes in the first cycle is different from the second cycle. Cycle II learning outcomes are higher than cycle I. This shows that there is an increase in student learning outcomes in learning after using a multimedia projector. In every aspect the acquisition of cycle II is higher than cycle II. The average value of learning outcomes in the first cycle is 67.86, increasing to 82.40 in the second cycle. The highest value in the first cycle is 77.50 and the lowest value is 51.75. While in the second cycle it increased or became 93.75 and 68.75. The increase in these values was also offset by an increase in the number of students who completed from cycle I to cycle II, from 16 to 28 students. The percentage increase is from 53% to 9%.
2. The activity of students in learning using a multimedia projector from cycle I to cycle II has increased significantly. So, it can be concluded that learning by using a multimedia projector can increase the activity of students in the learning process.
3. Teacher activity in learning on most of the indicators can be said to be very good.

5.2. Suggestion

1. It is expected that teachers apply learning by using a multimedia projector as an effort to improve student learning outcomes.
2. It is hoped that researchers in the field of education will do more research on the use of multimedia projectors in learning in order to improve student learning outcomes.

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