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Application of the Pbl Learning Model Assisted by Video Media to Improve Student Learning Outcomes at Sman 1 Haharu

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A B S T R A C T

The problem found based on the results of interviews with science teachers at SMAN 1 Haharu, is that the learning model used so far is discovery learning. This learning model is less efficient to apply and the learning process does not use learning media such as power point and other video media. The aim of this research is to describe the increase in learning outcomes after implementing the problem based learning model assisted by video media to improve the learning outcomes of class XI students at SMAN 1 Haharu. This type of research is a type of classroom action research with a descriptive quantitative approach. Research is carried out in classes using cycles. The research stages are: planning, implementation, observation and reflection. The subjects of this research were students of class XI Science at SMAN 1 Haharu. The data collection techniques and instruments used were tests and affective assessment sheets. The data analysis technique is calculating the average score, calculating student learning completeness in cognitive assessment and calculating student learning completeness in affective assessment. The research results can be seen from the comparison of the average values for each cycle in the pre-cycle 65.96, cycle I 73.46, and cycle II 78.1. These results can be said to have increased. It can be concluded that the application of the problem based learning model assisted by video media can improve the learning outcomes of class XI Science students at SMAN 1 Haharu.

1. Introduction

Education is an activity carried out consciously and responsibly which changes behavior and learns things that are not yet known intellectually, in terms of forming students' skills and character so that they become independent individuals (Wijaya et al., 2020). Education is a way for students to develop their potential so

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that they have religious spiritual strength, personality, intelligence, noble morals, and skills needed by themselves, the nation's community and the state (Farida et al., 2018). Education aims to develop complex and deep potential and character for individuals and society (Pristiwanti et al., 2022). Therefore, it can be concluded that education is a very important need for students.

The learning model is one of the factors that influences the teaching and learning process. There are several learning models, namely discovery learning models, contextual teaching and learning models, cooperative learning models, problem-based learning models and inquiry learning models. Learning models can determine the level of learning effectiveness, learning activities and student learning outcomes. The more appropriate the choice of learning model, the more effective learning will be in achieving learning goals (Salam, 2017). Based on the opinion above, it can be concluded that a learning model is a strategy used by teachers in the learning process which can help students develop ideas and skills in the learning process. One effective learning model that can be applied in the learning process is problem based learning.

The problem based learning model is a learning model that places problems as the focus of learning activities, where in the problem based learning learning model, students will be given a complex problem related to a real context, then students work independently or in groups to solve the problem by search for the necessary information and apply the concepts and skills that have been learned (Taufiq, 2019; Sari et al., 2023). Based on the opinion above, it can be concluded that problem based learning is also a learning model that encourages students to think critically, work together in groups and solve problems that exist in real situations.

The problem-based learning model has advantages, including training students' problem-solving abilities in real situations and building their own knowledge through learning activities (Rerung et al., 2017). Video media is a medium used in the learning process which has many benefits and advantages, including, video can describe a process quickly and accurately. Videos can also encourage and increase students' motivation to learn (Arsyad, 2016; Agusti et al., 2023).

Based on the results of interviews with biology teachers at SMA Negeri 1 Haharu on Monday, April 17 2023, it was found that the learning model previously used was the discovery learning model, but in reality, in implementing this model, teachers predominantly used lectures so that students only listened and students tended to Be quiet when the teacher gives you the opportunity to ask questions. In the learning process in the classroom, the teacher divides them into groups for discussion, but the students do not show seriousness in doing group assignments, only a few people do it, but the others are busy with their own activities. This causes student learning outcomes in the Final Semester Assessment (PAS) for the 2023/2024 academic year to be less than optimal, the data obtained for student learning outcomes are below the Minimum Completeness Criteria (KKM) with the standard in biology lessons for class X MIA2 being 75. Learning outcomes in the Final Assessment Semester (PAS) in the biology subject for class Based on the results of interviews with science teachers at SMA Negeri 1 Haharu, the

learning model that is still used today is discovery learning. So it can be formulated that the aim of this research is to describe the increase in learning outcomes after implementing the problem based learning model assisted by video media to improve student learning outcomes.

2. Methodology

This research was carried out at SMAN 1 Haharu, East Sumba Regency in August 2023. In this research the researcher used class XI Science 2 at SMAN 1 Haharu, totaling 34 students as the research sample. The variables used in this research are Variable Procedures or stages carried out by researchers. The procedure in this research consists of four parts as follows: In the first stage, namely implementation, at this stage there is a process of making teaching materials, lesson plans, LKPD, question grids and preparing learning media. Then, in the second activity, a pretest was carried out to determine the condition of the class before treatment and the application of the PBL learning model assisted by video media. In the pre-cycle, the PBL learning model and video media were not applied. Next, observe each activity to determine student learning outcomes and the last activity is reflection. After obtaining data from the results of research implementation, data processing and analysis is carried out and conclusions are drawn from the research results.

Data Collection Techniques and Instruments

The data analysis technique used in this research is descriptive quantitative analysis. Quantitative data is obtained from student learning results carried out in research. Analysis was carried out by calculating the average learning and mastery of students.

Determining the value of student learning outcomes is carried out as follows:

1. **Calculate the average value**
   X : Average value
   ∑x : Total score
   N : Number of students

$$X = \frac{\sum x}{N}$$

2. **Calculating student learning completeness cognitive assessment student learning.** Completenes is obtained from learning result data using desciptive analysis with the following percentage calculations:
   P : Percentage
   ∑N: number of students who have completed studying
   ∑x : all students

$$P = \frac{\sum N}{\sum x} \times 100$$

3. Calculating student learning completeness, affective assessment, which is as follows:

X : Average value
∑x : The total score achieved by students
N : Number of students

$$X = \frac{\sum N}{\sum x} \times 100$$

3. Results and Discussion

This research was carried out at SMA Negeri 1 Haharu which is located at Jln. Waimgapu-Rambangaru, Kuta Village, Kanatang District, East Sumba Regency, East Nusa Tenggara Province. This research began with observations on April 17 2023, including an initial test carried out on August 21 2023. Based on the results of research conducted in pre-cycle, cycle I and cycle II, the results of the descriptive analysis can be seen in figure 1, cognitive domain diagram, figure 2, activities. Learning group discussions in the classroom as well as picture 3 diagrams of the affective domain as follows (Figure 1).

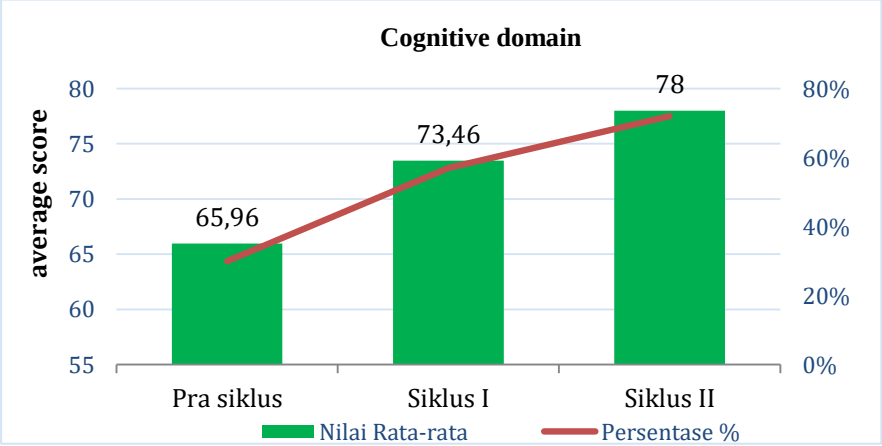

Figure 1. Diagram of Average Scores and Percentages for Cognitive Domains

Based on the graph above, the comparison of student learning outcomes shows that the cognitive score in the pre-cycle with the average score of the pretest results reaching 65.96 with a percentage of 30%, while in the first cycle there was an increase, namely the posttest with an average score reaching 73.46 with a percentage of 57. % and cycle II experienced posttest completeness with an average score reaching 78 with a percentage of 72%. The group discussion process can be seen in Figure 2. Next, the groups are divided into heterogeneous groups, then students sit according to the groups that have been determined. The researcher prepared an LKPD for each group to receive one LKPD sheet to work on, discuss and complete with their group friends. An overview of the activities carried out can be seen in Figure 2.

Figure 2. Group Discussion

Learning group discussions in the classroom as well as Figure 3.

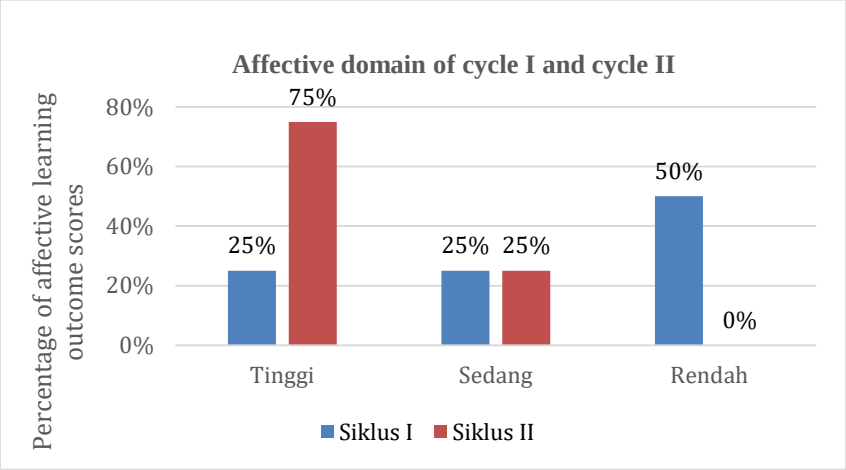

Figure 3. Comparison of Affective Domain Learning Results

Based on the comparison graph above, it can be seen that the student learning outcomes in the affective domain in the first cycle of students are in the high 25% category. In cycle II, the learning outcomes in the affective domain of students were included in the high category of 75%, the learning outcomes in the affective domain of students were in accordance with the research success indicators.

Pre Cycle

In the pre-cycle learning activities in the classroom, the Problem Based Learning learning model assisted by video media has not been used, but it can be seen that students are very passive in the classroom learning process. At the planning stage, researchers prepare learning tools such as a Learning Implementation Plan (RPP), prepare questions (pre-test) and prepare material related to the human digestive system. At the implementation stage, the researcher opened with greetings, prayer and checking attendance. When the researcher explained the material in class,

there were several students who looked confused and did not take the initiative to ask questions. When the teacher asked, there were only a few people who actively answered the researcher's questions. Then the researcher gave pre-tast questions. Therefore, the model used did not support students getting bored easily and this affected students' understanding and learning outcomes. This is in accordance with research conducted by Vina (2019) with the research title "Application of the Problem Based Learning Model in Improving Student Learning Outcomes in Science Subjects on the Concept of Physical Environmental Change and Its Influence on Land". Reveals that the guided Problem Based Learning learning model directs students to discover knowledge through scientific work processes. So scientific work habits are expected to foster habits of thinking and acting to develop students' mastery of knowledge, skills and attitudes. At the pre-cycle stage there were 10 people who got a complete score according to the school's existing criteria, namely a KKM score of 74 and 23 students who got a score below the KKM, with a complete student learning outcome of 30%.

First cycle

In cycle 1 learning activities were carried out at one meeting, namely August 22 2023, with four stages such as planning, implementation, observation and reflection. At the planning stage, the researcher prepared learning tools such as the Learning Implementation Plan (RPP), and Student Worksheets (LKPD) as learning instruments and as data collection instruments. The researcher prepared questions (post test and affective assessment rubric) related to the material of the human digestive system to measure and find out how much students understand the material they have studied. Then at the implementation stage the researcher continued the material from the previous pre-cycle activities. In the initial activity, the researcher opened with greetings, praying, checking attendance. Researchers ask questions related to previously studied material to stimulate students' memories

In the core activity at this stage the researcher explains the material after that the researcher divides the students into heterogeneous groups, each group consists of 6-5 students. Next, the researcher showed a learning video, after which the researcher distributed the crossword puzzle worksheet and the researcher explained the steps for how to do it. Students are asked to work together in groups by giving students the opportunity to look for other references, namely using biology textbooks or via the internet. During discussion activities, students are prohibited from entering and exiting the classroom. The researcher organized the discussion and provided an explanation if students experienced difficulties in working on the LKPD.

After the discussion, the researcher asked 2 representatives from each group to present the results of the group discussion. The processing time lasted 30 minutes, then the researcher presented conclusions from the results of the discussion and collected the results of the discussion from each group. In the next activity, the researcher asked the students to return to their original seats. Then the researcher asked the students to sit neatly and close the biology textbook and only writing

tools were available on the table. Next, the researcher distributed post-test questions that would be done by each student individually. The post-test questions are 15 multiple choice questions. Students look calm while working on post-test questions. After the time for working on post-test questions was over, the researcher asked students to collect the question sheets. While waiting for students who had not finished working on the post test questions, the researcher delivered the material that would be studied at the next meeting. After the researcher closed the teaching and learning activities.

At this observation stage, the researcher made observations of students' learning activities during cycle I learning activities. The observation aims to determine and assess students' attitudes during the learning process and also while working on the crossword puzzle worksheet. At the reflection stage, the results of the reflection from cycle I showed that several deficiencies encountered by researchers in the pre-cycle, there had been several improvements and improvements in cycle I, although learning outcomes had not improved and had to be continued in cycle II. From the results carried out in cycle I, researchers need to make further improvements so that student learning outcomes are maximized, namely by providing encouragement to students who are not making maximum effort to understand the material being taught, providing an interesting learning process so that students do not feel bored. Provide reflection and ask students if there is anything they don't understand from the explanation given.

Based on the results of the first cycle of research regarding the application of the Problem Based Learning learning model assisted by video media, student success was in the medium category, 19 students completed with a percentage of 57% with an average of 73.46. This research experienced an increase from pre-cycle but not yet significant so continue in cycle II. Through the Problem Based Learning model, students are able to train themselves in identifying, analyzing, solving problems by thinking logically and then drawing conclusions. These activities ultimately have an impact on improving student learning outcomes.

During the learning process, the application of the Problem Based Learning learning model with the help of video media is able to present the abstract atmosphere and learning experiences of students into concrete ones, as expressed by (Ambarwati et al., 2021) the completeness of learning is also influenced by the active involvement of students in The learning process, by experiencing, seeing and observing objects directly and realistically requires students to be directly involved.

Showing videos can lead students to study and imagine more deeply to understand new problems and concepts (Afiani, 2021). Students' thinking abilities in learning are better trained and stimulate higher level thinking abilities. According to (Ernawati, 2020; Bella et al., 2023) video-based learning media can arouse students' enthusiasm for learning. The learning process becomes more active because all students are asked to prepare themselves before the lesson begins as literacy material that is easy to understand.

Cycle II

In cycle II learning activities were carried out at one meeting, namely August 28 2023, with four stages such as planning, implementation, observation and reflection. In planning, researchers have prepared learning tools. In this core activity, the researcher asks students to sit in groups, here the researcher creates new groups that are chosen at random. Next, the researcher displays the learning video. After showing the video, students are asked to find any problems found in the learning video by answering the questions contained in the LKPD that will be distributed. After distributing the LKPD, the researcher guided the group to work on the LKPD and discuss.

After that, the researcher gave an explanation to the students who asked questions. This discussion activity lasted for 30 minutes. After discussion, the researcher randomly selected groups that would present their discussion from each group representing 2 students who would come forward to present the results of their discussion. After all groups finished presenting the results of their group work and giving presentations, the researcher distributed post test questions consisting of 15 questions. In the development of cycle II activities there was a very good improvement. Where in cycle II students no longer depend on the teacher so that students are used to working on worksheets and solving problems on their own, this means students have shown ease in understanding the material and are more active in group discussions.

So that 24 people reached the KKM with 72% completion. Meanwhile, there are 8 students who have not reached the KKM with a percentage reaching 24%. Subsequent research carried out observations of students' affective domains. In the affective activities of cycle I in the good category with a high percentage of 25%, in the medium category 25% and in the low category with a percentage of 50%, there was an increase in cycle II which was very satisfying with a percentage of 75% in the high category, 25% in the medium category and the low category with a percentage of 0 %. It is proven that the evaluation results using the problem based learning model assisted by video media can improve student learning outcomes. In this way, researchers found a suitable and appropriate learning model to help students be more active in the learning process by implementing the Problem Based Learning learning model assisted by video media.

Problem Based Learning is assisted by video media which makes students more active and more independent (Al-Hafidh, 2019). The increase occurred because in implementing the Problem Based Learning learning model, students were better trained in solving various problems according to their abilities through authentic investigation. The Problem Based Learning model seeks to enable students to solve problems by thinking at a higher level. In solving problems, students are expected to have an understanding of what they are learning. Learning experiences involving direct involvement of students will make them more active in learning. Students' activeness greatly influences learning outcomes because it can make them understand more about the material being studied (Fauzan, et al.,

2017). The increase in learning outcomes in this research was also influenced by the learning media used in learning, namely video media.

4. Conclusion

Based on the results of research that has been carried out by applying the problem based learning model with the help of video on material on the digestive system in humans in class Student learning outcomes in the cognitive domain in the application of the problem based learning model with the help of video media have increased, as evidenced by the average test scores in cycle I and cycle II. The application of the problem based learning model in cycle I was not optimal, but in cycle II there was an increase in student learning outcomes. After implementing the problem based learning model with the help of video media, student learning outcomes in the affective domain of students increased with the average score of students in cycle I still in the poor category and in cycle II obtained in the very good category.

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