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IMPLEMENTATION OF PROBLEM-BASED LEARNING (PBL) MODEL WITH THE ASSISTANCE OF MEDIA POSTERS TO IMPROVE LEARNING OUTCOMES IN CLASS XI IPA OF SMA NEGERI 1 PABERIWAI

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Abstract

The purpose of this research is to describe the learning outcomes of students after applying the Problem Based Learning (PBL) learning model with the help of poster media to improve learning outcomes. This research is a class action research PTK, the Kurt Lewin model, with a quantitative descriptive approach. The research consisted of pre-cycle activities, cycle I and cycle II. The research subjects were students of class XI IPA SMA Negeri 1 Paberiwai TA 2022/2023, totaling 23 people. Pre-cycle, students who complete 30%, cycle I 43% and cycle II 83%. In the affective domain stage I, the predicate was very high, 5 students, the predicate was 12 students, the predicate was low, 6 students, and it increased in cycle II to reach the predicate high, 21 students and the predicate being 2 students. It can be concluded that the application of the Problem Based Learning (PBL) learning model assisted by poster media can improve student learning outcomes at SMA Negeri 1 Paberiwai.

Keywords: Learning Model, PBL, Learning Outcomes, Poster.

Abstrak

Tujuan penelitian ini untuk mendeskripsikan hasil belajar peserta didik setelah menerapkan model pembelajaran *Problem Based Learning* (PBL) berbantuan media poster untuk meningkatkan hasil belajar. Penelitian ini merupakan penelitian tindakan kelas PTK, model kurt lewin, dengan pendekatan deskriptif kuantitatif. Penelitian terdiri dari kegiatan prasiklus, siklus I dan siklus II. Subjek penelitian adalah peserta didik kelas XI IPA SMA Negeri 1 Paberiwai TA 2022/2023, berjumlah 23 peserta didik. Prasiklus, peserta didik yang tuntas 30%, siklus I 43% dan siklus II 83%. Pada ranah afektif tahap siklus I predikat sangat tinggi 5 peserta didik, predikat sedang 12 peserta didik, predikat rendah 6 peserta didik dan mengalami peningkatan pada siklus II mencapai predikat tinggi 21 peserta didik dan predikat sedang 2 peserta didik. Dapat disimpulkan bahwa penerapan model pembelajaran *Problem Based Learning* (PBL) berbantuan media poster dapat meningkatkan hasil belajar peserta didik di SMA Negeri 1 Paberiwai.

Kata Kunci: Model Pembelajaran, PBL, Hasil Belajar, Poster.



INTRODUCTION

Education determines the quality of life because it guarantees the development and even the survival of a nation. To improve the quality of national education there needs to be an update because the progress of a nation will be achieved with the existence of a support, namely good education arrangement. Therefore an education must be adaptive to changing times (Rachmadtullah & Wardani, 2016:23). Creative educators must be able to create and manage the learning process so that learning outcomes are maximized. The success of teaching and learning is influenced by the teacher's expertise in managing the learning process (Trianto, 2007:89).

Teaching and learning will run if the teacher uses a learning model or media that adjusts the material to be discussed so that students can understand the learning objectives. To create creative learning, the teacher must digest the character of the students, the learning zone, and the compatibility of the model or media with the subject matter. Problem Based Learning (PBL) is a learning model that uses the discovery of a problem that will be given to students to solve individually or in groups (Nofziarni et al., 2019: 2020).

Based on the results of interviews with Class XI Biology (YBL) teachers at SMA Negeri 1 Paberiwai on 13/10/2022. The teacher said that the students were less enthusiastic and less interested in learning biology in the classroom, many students did not understand the material well, were not active in asking questions or answering questions because they only listened to the teacher's lectures, sometimes they did not pay attention to the lectures because they were only busy telling stories with friends around during learning. These conditions will affect learning outcomes, as found in the odd semester midterm assessment (PTS) for the 2022/2023 Academic Year in class XI IPA which has not been maximized. Judging from the KKM standards, there are still many students who are below standard, the KKM standards of students at SMA Negeri 1 Paberiwai 70. Out of 23 students, 60% are incomplete and 40% are complete, so students who have not completed must take remedial to complete. The results of interviews obtained from students in class XI IPA admitted that teachers rarely apply interesting media, students are sometimes bored and do not understand the purpose of learning and also so far the teacher has explained the material after that it is continued by taking notes and discussing the questions in the book. Learning activities at SMA Negeri 1 Paberiwai have not been maximized.

Based on the problems above, one learning model will be applied that can improve learning outcomes and students' critical thinking skills, namely PBL learning. Problem Based Learning (PBL) is a learning model that uses a background of real world problems to enable students to learn critical thinking and problem solving skills. To acquire basic knowledge and ideas from subject matter (Suparman & Husen, 2015: 367). The Problem Based Learning (PBL) model is a learning model that uses real world problems that are not structured (ill-structured), and is open as a context for students to develop problem-solving skills and critical thinking while building new knowledge. The Problem Based Learning (PBL) learning model is also an innovation in learning because in PBL students' thinking abilities are really optimized through systematic group or team work processes, so that students can empower, hone, test, and develop their thinking skills in a sustainable manner (Hosnan, 2014). Problem Based Learning (PBL) steps (Rusman, 2012) are as follows:

- 1 The teacher explains the purpose of education, explains the necessary preparation, encourages students to participate in problem solving activities.
- 2 The teacher divides students into groups, helps students define and organize learning tasks related to problems.
- 3 The teacher encourages students to collect the information needed, carry out experiments and investigations to get explanations and problem solving
- 4 The teacher assists students in planning and preparing reports, documentation, or models, and helps them share assignments with their peers.
- 5 The teacher helps students to reflect or evaluate the process and results of the investigation they are doing.

The advantages of the Problem Based Learning (PBL) Learning Model (Kurniasih & Berlin, 2015) are as follows:

- 1) Can improve the ability to solve problems of students by themselves.
- 2) Increase the motivation of students in learning.
- 3) Helping students learn to transfer knowledge to new situations.
- 4) Can encourage students to have the initiative to study independently.
- 5) Encouraging the creativity of students in disclosing the investigation of problems that they have done.



- 6) This model enables students to simultaneously integrate abilities and skills and apply them in relevant contexts.

Learning media is very important learning in assisting teachers in explaining learning material. There are many types of learning media, one of which is a type of visual-based media, visual media is media that uses the sense of sight as an intermediary or conveys media content messages. Media is divided into two, namely two-dimensional visual media, and three-dimensional two-dimensional visual media, media that only has dimensions of length and width or media that can only be seen in a flat plane (Sanjaya, 2019). An example of two-dimensional visual media is poster media. This poster media is widely used in learning because it is simple and easy to make.

Poster media is one of the media consisting of very simple symbols or symbols, posters are also a visual combination of strong designs, to capture students' attention, poster media in classroom learning functions to attract students' attention and interest in learning, as well as methods for students to be interested and more active in the ongoing learning process (Jongu et al., 2023: 2929). Media posters are also ideas that are embodied in the form of illustrations of simplified image objects and made in large sizes (Wulandari & Surjono, 2013: 178).

Learning outcomes are abilities possessed by students after receiving their learning experience. After a learning process ends, students obtain a learning outcome. The main goal to be achieved in learning activities is learning outcomes. Learning outcomes are used to determine the extent to which students can understand and understand the material. Learning outcomes are the abilities possessed by students after receiving their learning experience (Setiyadi, 2019: 20).

Some of the following relevant studies conclude that previous research conducted by (Sari, 2018) entitled "Implementation of a problem-based learning model to increase student participation and active discussion in biology learning class VII SMP N 2 Surakarta in his research said that the use of the model problem-based learning is able to increase the activity of students. Participation and discussion in learning biology and student learning outcomes can increase in cycle II with a percentage of 81.95%. Research conducted by (Hara et al., 2023) entitled "Application of Problem Based Learning (PBL) Learning Models to Improve Biology Learning Outcomes at Matawai La Pawu State High School can increase in cycle II 90%. The research conducted (Eti & Bano, 2022) entitled "The Application of the Problem Based Learning (PBL) Learning Model to Improve Student Learning Outcomes at SMP Negeri 4 Umu Ratu Nggay.

Obtaining learning outcomes from 17 students in cycle I, the number of students who completed 9 people with a percentage of 52.9%. Whereas 8 students who did not complete with a percentage of 47.1% in cycle II obtained learning outcomes from 17 students. This research has something in common, that is, they both improve student learning outcomes. The novelty of this research is to use the Problem Based Learning (PBL) learning model using poster media that is adapted to the characteristics of students. When researchers apply this learning model students are expected to be able to present and explain the material obtained. The difference is that previous research only applied the Problem Based Learning (PBL) learning model. Meanwhile, researchers are now using additional media posters in the Problem Based Learning (PBL) learning model to improve student learning outcomes at SMA Negeri 1 Paberiwai.

Based on the description above, a temporary hypothesis can be drawn that the application of the Problem Based Learning (PBL) learning model using poster media can improve student learning outcomes at SMA Negeri 1 Paberiwai.

RESEARCH METHODS

This type of research is classroom action research (CAR) with a descriptive quantitative approach. The research design used here is using the Kurt Lewin Model by using the stages of planning, action, observation, and reflection. In this study, it consisted of 2 variables, namely the independent variable, namely the Problem Based Learning (PBL) learning model, and the dependent variable, namely the learning outcomes of students in class XI IPA, SMA Negeri I Paberiwai.

Pre-cycle

Before conducting research using the Problem Based Learning (PBL) learning model, the researcher first conducted a pre-cycle to see student learning outcomes before implementing the action and as a comparison between cycles I and II. Pre-cycle activities carried out by researchers are:

- a) Prepare teaching materials, namely lesson plans.
- b) Make test questions at the end of learning that will be used to see student learning outcomes before using the model. learning.
- c) Carrying out the teaching and learning process in class.
- d) Observing the learning process of students.

Cycle I

Learning Using the Problem Based Learning (PBL) Learning Model.

e) Planning Stage

Before implementing PTK, the researcher will first prepare the concept by making plans in written form, compiling learning scenarios/RPP with the Problem Based Learning (PBL) learning model then preparing the tools and equipment needed in learning, by making student worksheets with evaluation questions. answers by making student observation sheets and also making posters.

f) Implementation Stage

Action is the treatment carried out by researchers in accordance with the plans that have been prepared. In this step, the researcher went directly to the research location to obtain data by utilizing the instruments that had been prepared, namely carrying out the scenarios that had been planned using the Problem Based Learning (PBL) learning model.

a) Observation Stage

Observation activities, namely observing the process of implementing actions to determine the effectiveness of actions or collecting information on various weaknesses (shortcomings) of the actions that have been carried out. At the observation stage, the researcher observes the learning process by utilizing the student's observation sheet to see the activeness of the students using the PBL model

g) Reflection Stage

After the learning activities are completed, at this stage the results obtained at the observation stage will be carried out, then an evaluation of cycle I will be carried out by analyzing the results of observations to improve the implementation of actions to be used in the next cycle.

2 Cycle II

The learning process carried out in cycle II is the same as the process in cycle I. In cycle II, the researcher will make improvements to the deficiencies in cycle I. This process will also be carried out by the results of tests carried out by students. If in this cycle there are still many

students who have not completed and have not experienced an increase, the researcher will continue the next cycle until the expected learning outcomes increase.

3 Cycle II

The learning process carried out in cycle II is the same as the process in cycle I. In cycle II, the researcher will make improvements to the deficiencies in cycle I. This process will also be carried out by the results of tests carried out by students. If in this cycle there are still many students who have not completed and have not experienced an increase, the researcher will continue the next cycle until the expected learning outcomes increase.

The formula used to calculate the average student is as follows:

$$\text{Average rating} = \frac{\text{Total Value}}{\text{Number of Students}}$$

The cognitive formula for calculating the average value.

To calculate learning completeness using descriptive analysis with the following percentage calculations:

Cognitive formula for calculating the value of completeness of students.

$$\text{Completeness} = \frac{\text{Number of Students Completeness}}{\text{Number of Students}} \times 100\%$$

Tabel 1. Achievement of the Affective Realm.

Answer	Score
Tall	3
Currently	2
Low	1

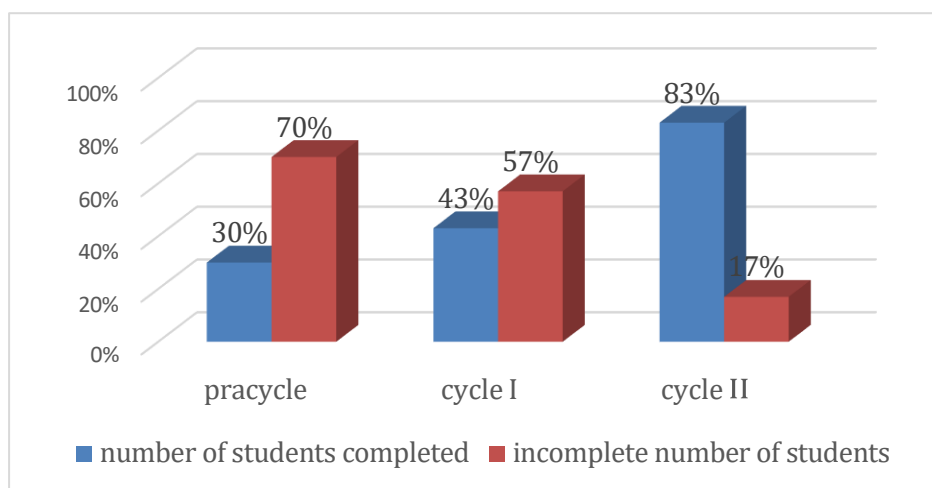
RESULTS AND DISCUSSION

The following is a table of students' recapitulation results in each cycle.

Table 2. Student learning outcomes for the cognitive domain

No	Activity Step	Pracyclus	Cycle I	Cycle II
1	Flat	57,17	65,65	78,82
2	Number of Students Completes	7	10	19
3	Incomplete Number of Students	16	13	4
4	Completeness Presentation	30%	43%	83%

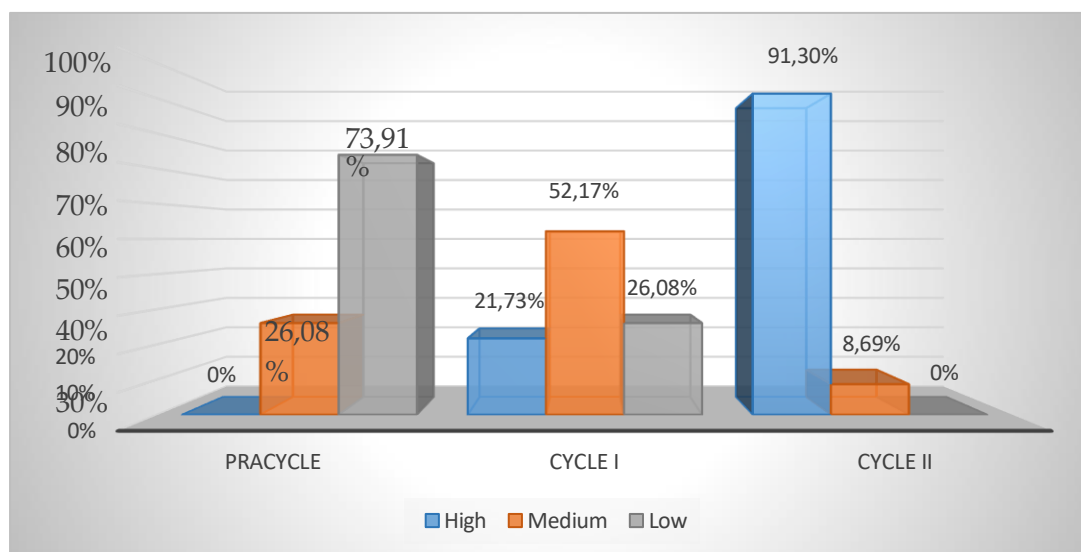
The percentage diagram of student learning outcomes in each cycle is as follows:



Gambar 1. Diagram of the percentage of student learning outcomes.

Based on the table and diagram above, it is known at the pre-cycle stage that the average value of 57.17 with a completeness of 30% (7 students) is still very far from being an indicator of learning success. Furthermore, the learning outcomes in cycle 1 showed that the average value was 65.65 with completeness of 43% (10 students) of these results showed an increase but still did not meet the indicators of learning success, so the next cycle was carried out, namely cycle II. In cycle II it is known that the average value is 78.82 with completeness of 83% (19 students) these results show a

The diagram of the percentage of learning outcomes of students in the Affective domain is as follows:



Gambar 2. The percentage of student learning outcomes affective domain

Based on the diagram, it is known that at the pre-cycle stage for the affective domain only the moderate predicate is with a percentage of 26.08% (6 students), while the low predicate is 73.91% (17 students). This indicates that the attitude of students towards ongoing learning is still very low which will have an impact on low student learning outcomes. Furthermore, in cycle I, it was known that the high predicate was 21.73% (5 students), the moderate predicate was 52.17% (12 students), while the low predicate was 26.08% (6 students). In cycle I, students have shown an increased positive attitude but have not met the indicators of learning success because only some students are enthusiastic in the learning process. Furthermore, in cycle II, the high predicate reached 91.30% (21 students), and the medium predicate was 8.69% (2 students). This shows that almost all students have shown high enthusiasm for learning so that these results have reached indicators of learning success.

Tabel 3. Increasing the results of the discussion of each cognitive domain group.

No	Group Name	Cycle I	Cycle II
1	Group 1	85	95
2	Group 2	60	92
3	Group 3	75	95
4	Group 4	80	98



Based on the table, group discussions for each cycle have increased so that indicators of learning success can be achieved.

Reflection

Based on the results of data analysis in cycle II, applying the Problem Based (PBL) learning model has been going well. Student learning outcomes have experienced an increase in the learning completeness criteria. The number of students who achieved the KKM in cycle II was 19 students and those who did not meet the KKM were 4 students, with a learning completeness percentage of 83%. The class discussion went quite smoothly. Students pay attention to the learning process when delivering material. The learning outcomes of students in cycle II were due to the fact that students were able to work on the questions well, making the best use of their time when working on the post test questions.

Based on the reflection results of cycle II, it shows that some of the deficiencies encountered by researchers in cycle I have been improved in cycle II after the application of the Problem Based Learning (PBL) model, the application of the Problem Based Learning (PBL) model to improve student learning outcomes in class XI IPA is considered successful and stopped in cycle II. After the learning process is used by educators. Problem Based Learning (PBL) can experience an increase in student learning outcomes shown in cycle I and cycle II. Student learning outcomes by applying the Problem Based Learning (PBL) learning model have increased. This situation can be seen based on the test results by giving a test in the form of multiple choice questions of 15 questions, where the average value of the initial test (pre test) is less than the final test (post test). This increase is caused by the Problem Based Learning (PBL) learning model which makes students more active and independent.

Pre-cycle activities, before applying the Problem Based Learning (PBL) learning model assisted by poster media, it was seen that the learning success of students was still low. This can be seen in the average score of 57.17 with completeness only reaching 30% where only 7 students have achieved the KKM while 16 students have not yet reached the KKM. In addition, at the pre-cycle stage, it was seen that some students were not so ready to take part in learning, such as students still having fun chatting with their desk mates, joking while learning took place, students often went in and out of



class during learning and students were less focused so that student learning outcomes were still relatively low. In cycle I, the researcher found several obstacles such as: (1) students were still busy themselves; (2) students still often go in and out of class; (3) the researcher has not fully mastered the class, causing a commotion in the class; (4) during group discussions only some students took part in group discussions; and (5) students often joke and are not serious in working on the test questions given.

To overcome these obstacles, the researcher took several actions to improve the learning conditions in cycle I, such as: (1) the researcher directed students to be more focused and attracted the attention of students so they were not busy themselves; (2) the researcher gave a warning to students who often went in and out of class; (3) the researcher strictly supervises the class so that students are active in group discussions and can take the test questions seriously so that they have an impact on better learning outcomes.

Based on reflection, the researcher found that the use of the Problem Based Learning (PBL) learning model assisted by poster media had a positive effect on improving student learning outcomes. Researchers also made observations of students' affective domains during the learning process taking place in the classroom. In the pre-cycle stage it reached 26.08% in the medium category, then in the first cycle it reached 21.73 in the high category, while in the second cycle it reached 91.30% in the high category. The affective domain has increased in each cycle so that based on the results of the evaluation that the use of the Problem Based Learning (PBL) learning model assisted by media posters can have a positive influence on the affective domain which has a positive influence on the affective (Hildani & Safitri, 2021; Latif et al., 2020; Safitri, 2017).

Based on these results, the application of the Problem Based Learning (PBL) learning model assisted by poster media can improve student learning outcomes by increasing learning outcomes for each cycle seen in cycles I and II. The increase occurred because in the application of the Problem Based Learning (PBL) learning model assisted by poster media, students were better trained in solving various problems according to their abilities through authentic investigations. The Problem Based Learning (PBL) learning model assisted by poster media seeks to enable students to solve problems, students are expected to have an understanding of what is being learned. The learning experience through the direct involvement of students will greatly influence learning



outcomes because it makes them understand more about the material being studied (Nardin et al., 2016: 117). The same as research conducted by (Eti & Bano, 2022) The learning results of students in the pre-cycle stage show an overall average score of 55.4, then 5 students who completed the test with a percentage of 29.4% and students who 12 people did not complete with a percentage of 70.6%. From these scores, students who achieve the KKM are still very low. Next, cycle 1 is carried out in four stages, namely: planning, implementation, observation and reflection. From the results of cycle 1 stages, researchers obtained results from student activities and learning. For student activities, researchers carried out direct observations to assess the affective aspects of students. Meanwhile, to find out students' learning outcomes, researchers gave a final test or posttest at the end of learning. to describe the list of students' affective assessments in cycle 1. Students' activities are based on the results of observations during the classroom learning process. It can be seen that the number of students with a good predicate was 9 people and 8 students with a fair predicate. Student learning outcomes in the cognitive domain are shown in the average student score of 58.4. There were 9 students who completed with a percentage of 52.9% and 8 students who did not complete with a percentage of 47.1%. From the results of students' completed learning, there has been quite good improvement. However, the completion rate is still low below the KKM value. Identifying the results of cycle 1, it is necessary to carry out a further stage of cycle 2 with the aim of obtaining maximum student learning outcomes. Based on the data obtained in the cycle 2 learning process, researchers saw that there was a very good increase in student learning outcomes in the Integrated Science subject on the human digestive system material using the Problem Based Learning (PBL) learning model. In accordance with the identification results, the cycle in the research only reached cycle 2 stage because it had reached the indicator of success and completeness of student learning, namely 88.2%.

CONCLUSION

Based on the research that has been done with the title Application of the Problem Based Learning Learning Model, it can be concluded as follows. The learning outcomes of students before applying the problem based learning learning model are still relatively low, this is evidenced by the completeness score obtained by students in class XI IPA in pre-cycle which is 30%. The increase in the average learning rate of students in the cognitive domain has reached an indicator of research



success. As for the increase in student learning outcomes in the cognitive domain, it can be seen from the table of post-test cycle I and post-test cycle II, the percentage of classical completeness was 69% in cycle I and increased to 83% in cycle II. While the learning outcomes of students in the affective domain in the high category increased from 21.73% to 91.30%.

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