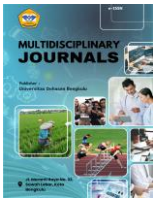

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# Problem Based Learning (PBL) Learning Model At Sman 1 Mukomuko

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**Abstract.** This study aims to examine the implementation of the Problem Based Learning (PBL) model in improving student learning outcomes in Economics subjects at class X.E9 of SMAN 1 Mukomuko. The research employed a Classroom Action Research (CAR) method conducted in three cycles, each consisting of planning, action, observation, and reflection stages. The research subjects were 32 students, consisting of 11 males and 21 females. Data were collected through observation of student learning activities and learning outcome tests (pre-test and post-test). The results showed that the application of the PBL model effectively enhanced students' learning activity and outcomes. Student activity increased from 79% (cycle I) to 90% (cycle II), and reached 100% (cycle III). The average learning outcomes improved from 77.97 (cycle I) to 82.97 (cycle II), and further to 90.16 ( cycle III). It can be concluded that the Problem Based Learning model is effective in enhancing students' learning outcomes at SMAN 1 Mukomuko .

**Keywords:** *Problem Based Learning, Learning Outcomes, Student Activity, Classroom Action Research.*

## INTRODUCTION

The learning process is very important to improve the quality of education. Various new concepts and insights emerge in learning along with technological advances. According to Asep Jihad (in Br, Pelista, en Karo Sekali. 2022.) "Learning is a process consisting of a combination of two aspects, namely learning is directed at what students should do, teaching is oriented towards what teachers should do as teachers". These two aspects will collaborate in an integrated manner into an activity when there is interaction between teachers and students , as well as between students and students while learning is taking place.

Learning is a process of interaction between students and teachers and learning resources in a learning environment. Learning is assistance provided by teachers so that the process of acquiring knowledge and science, mastery of skills and habits, and the formation of attitudes and self-confidence in students can occur. In other words, learning is a process to help students learn well. This learning process applies anywhere and anytime. Learning is a system or process of teaching students that is planned or designed, implemented, and evaluated systematically so that students can achieve learning goals effectively and efficiently.

Learning outcomes are not only aspects of human potential, but changes in behavior as a whole. This means that the learning outcomes achieved by students must cover all cognitive, emotional and psychomotor aspects of students. Applying the right learning method is one solution to achieve satisfactory student learning outcomes. The cognitive learning process has been used in education for the past 30 years, not only in the cognitive domain. The system applied to this learning encourages students to actively learn both individually and in groups. This learning model is widely adopted and can improve student learning outcomes.

In its application, learning has several models, including problem-based learning models (PBL), problem-based learning models ( *PBL), and problem-based learning* models (PBL).

*Discovery* Learning *, and project -based* learning models . Problem- *based learning* models is a student-centered learning model by confronting students with various problems faced in real life and students try to solve these problems. In this model, the lesson focuses on a problem that must be solved by students, so that students have the responsibility to analyze and solve the problem with their own abilities, while the role of the educator is only as a facilitator and provides guidance to students. Wena, 2013 (in Meilasari et al. 2020)

Based on the results of observations that have been conducted at SMAN 1 MUKOMUKO in class X, several facts were found that: 1) The learning process implemented is still not effective, Teachers are still more actively involved in the learning process in class, learning activities begin with the delivery of the theory to be studied, students are asked to record the material given by the teacher through dictation and notes on the board. After that, students are asked to complete several examples of questions given by the teacher to measure students' mastery of the material being studied. 2) The activeness of students in the learning process is still lacking, when the question and answer process carried out by the teacher and students takes place, students tend to be passive in asking questions to the teacher, students do not dare to ask questions related to the material being studied and do not dare to express their opinions in front of the class. 3) in the learning process, the facilities and infrastructure available at the school have not been fully utilized, one of which is the use of media for teaching.

The results of observations that have been carried out on students show that students have not yet actively participated in the learning process. As a result, student activity is still considered lacking in the learning process. From these factors, student learning outcomes are classified as low and there is a lack of student interest in learning. Low learning outcomes and lack of student interest in learning indicate that the level of student mastery and understanding in solving problems is still low. Based on the description, the identified problems found are: (1) The learning process applied is still not effective, (2) The learning used still often uses teacher-centered learning by the teacher providing material monotonously from the beginning to the end of learning, (3) The media used in the learning process has not been utilized, (4) Learning is less interesting, boring so that student activity is still classified as lacking in the learning process, (5) Student learning outcomes are classified as low .

## LITERATURE REVIEW

### Problem Based Learning

*Problem Based Learning (PBL)* is a learning approach that focuses on problem solving as the core of the learning process. PBL places students at the center of the learning process, by giving them the opportunity to engage in situations that require them to identify problems, analyze information, and find solutions. This approach is designed to improve students' critical thinking skills, creativity, and collaboration abilities.

### Learning outcomes

Learning is an activity carried out by a person intentionally with a conscious state and with the desire to obtain a new concept, understanding and knowledge so that it enables a person to experience relative behavioral changes in thinking, feeling and acting.

Results are something that is obtained or achieved after going through a process, activity, or effort. Results can be physical products, such as goods produced from a production, or non-physical results, such as knowledge, experience, or changes that occur after doing something.

According to Rusman (2013), learning outcomes are a number of experiences obtained by students which include cognitive, affective and psychomotor domains. Learning is not only

mastering the theoretical concepts of a subject, but also mastering habits, perceptions, pleasures, interests and talents, social adjustment, various skills, ideals, desires and hopes. Hamalik in Rusman (2013) stated that learning outcomes can be seen from changes in perception and behavior, including improvements in behavior.

**Learning outcomes**

Nasution (2006) explains that learning outcomes are the result of an interaction of teaching and learning activities usually indicated by test scores given by the teacher. This is in line with Briggs in Tarug (2013) who states that learning outcomes are all skills and results achieved through the teaching and learning process in schools which are expressed in numbers or values based on learning outcome tests.

**METHODS**

This research uses the Classroom Action Research (CAR) method which is implemented in three cycles. Each cycle consists of planning, implementation, observation, and reflection stages. The research subjects were 32 students consisting of 11 males and 21 females. Data collection techniques are carried out through observation of learning activities and learning outcome tests (pre-test and post-test).

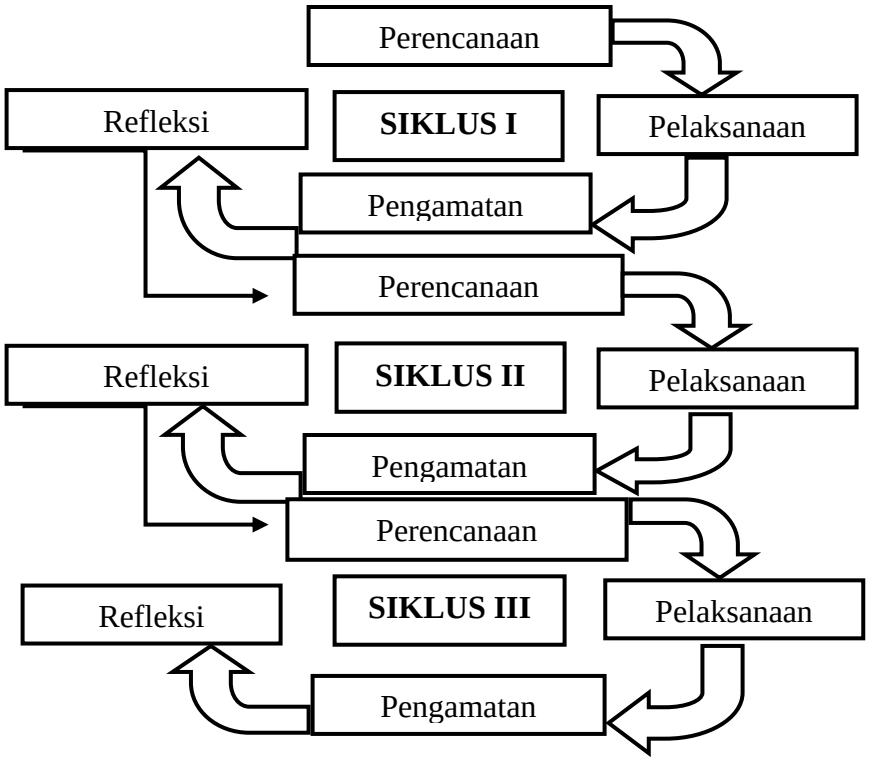


**Figure 1. Classroom Action Research Flowchart**

Three stages of the process that will be carried out for each cycle, carried out according to the desired changes and achievements based on the success indicators. The flow in this classroom action research is explained as follows:

**Cycle I Research Procedures**

a. Planning
   At this stage, the activities carried out are: (1) creating a Learning Implementation Plan, (2) preparing Student Worksheets (LKPD) for cycle I, (3) preparing *pre-tests* and *post-tests* for cycle I, (4) creating answer keys for *pre-tests* and *post-tests* for cycle I, (5) creating observation sheets for student activities.
b. Implementation ( *Action* )
   The implementation stage of cycle I actions is carried out for 2 teaching hours or 2x45 minutes and refers to the cycle I learning implementation plan through the application of the *Problem Based Learning model* .
c. Observation
   The class observation process carried out at this stage aims to observe the learning process taking place in the class by referring to the student activity observation sheet.
d. Reflection
   At this stage, reflection is carried out based on the results of observations of all learning activities. Reflection is carried out to review the activities that have been carried out in the learning process through the application of the *Problem Based Learning model* , then the results of this reflection are used for learning in cycle II.

**Cycle II Research Procedure**

a. Planning
   At this stage, the activities carried out are: (1) creating a Learning Implementation Plan, (2) preparing Student Worksheets (LKPD) for cycle II, (3) preparing *pre-tests* and *post-tests* for cycle II, (4) creating answer keys for *pre-tests* and *post-tests* for cycle II, (5) creating observation sheets for student activities.
b. Implementation ( *Action* )
   the cycle action is carried out for 2 teaching hours or 2x45 minutes and refers to the cycle II learning implementation plan through the application of the *Problem Based Learning model*
c. Observation
   The class observation process carried out at this stage aims to observe the learning process taking place in the class by referring to the student activity observation sheet.
d. Reflection
   At this stage, reflection is carried out based on the results of observations of all learning activities. Reflection is carried out to review the activities that have been carried out in the learning process through the application of the *Problem Based Learning model* , then the results of this reflection are used for learning in cycle III.

**Cycle III Research Procedures**

a. Planning
   At this stage, the activities carried out are: (1) creating a Learning Implementation Plan, (2) preparing Student Worksheets (LKPD) for cycle III, (3) preparing *pre-tests* and *post-tests* for cycle III, (4) creating answer keys for *pre-tests* and *post-tests* for cycle III, (5) creating observation sheets for student activities.
b. Implementation ( *Action* )
   The implementation stage of cycle III action is carried out for 2 teaching hours or 2x45 minutes and refers to the cycle III learning implementation plan through the application of the problem-based learning model *(PBL )* .
c. Observation
   The class observation process carried out at this stage aims to observe the learning process taking place in the class by referring to the student activity observation sheet.

d. Reflection
At this stage, reflection is carried out based on the results of observations of all learning activities. Reflection is carried out to review the activities that have been carried out in the learning process through the application of *the Problem Based Learning model* .

## RESULTS

The results of the study show that the application of the PBL learning model can improve student activity and learning outcomes. Student activity increased from 79% (cycle I) to 90% (cycle II), and reached 100% (cycle III). The average learning outcomes also increased from 77.97 ( cycle I) to 82.97 (cycle II), and 90.16 (cycle III). It can be concluded that the Problem Based Learning learning model is effective in improving student learning outcomes at SMAN 1 Mukomuko .

## DISCUSSION

In the learning carried out in class X.E9 SMAN 1 Mukomuko by implementing a problem-based learning model , the teacher acts as a facilitator, motivator, mediator, and inspirator for students so that students carry out the learning process independently with guidance from the teacher running well.

### Three Cycle Student Learning Activities

Student learning activities are all student learning activities in the learning process through problem-based learning models. The increase in student learning activities in three cycles can be seen in Figure 4.1.

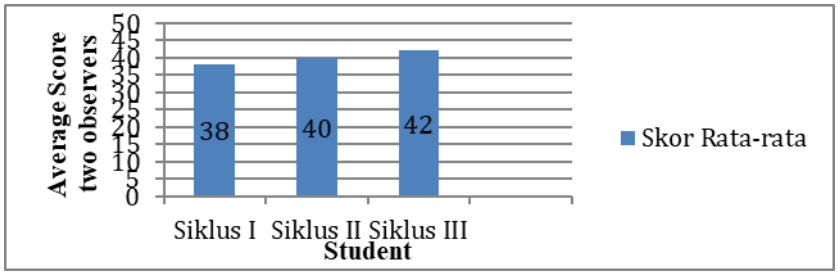


**Figure 2 Average Score of Student Learning Activities**

Based on Figure 4.1, it is known that student learning activities increased from cycle I to cycle III where overall it was in the active category. The average score of two observers of student learning activities in cycle I was 38 in the active category and increased in cycle II with an average score of two observers obtained of 40 in the active category. then increased again in the last cycle, namely cycle III with an average score of two observers of 42 in the active category and student learning activities were also perfect. Meanwhile, the distribution of student learning activity data as a whole can be seen in table 1.

**Table 1 Distribution Data of Student Learning Activities in Cycles I, II, and III**

| Cycle | Category | Number of students | Percentage % |
|---|---|---|---|
| I | Active | 25 | 79 |
| | Quite Active | 7 | 21 |
| | Less Active | 0 | 0 |
| | Amount | 32 | 100 |
| | Active | 29 | 90 |

| | | | |
|---|---|---|---|
| II | Quite Active | 3 | 10 |
| | Less Active | 0 | 0 |
| | Amount | 32 | 100 |
| III | Active | 32 | 100 |
| | Quite Active | 0 | 0 |
| | Less Active | 0 | 0 |
| | Amount | 32 | 100 |

Based on table 4.12, it can be seen that in cycle I there were 25 students with a percentage of 79% in the active category and 7 students with a percentage of 21% in the fairly active category, although overall in the active category, in cycle I there were still aspects that were lacking so that learning was not optimal. This is because not all students follow the teacher's instructions. In cycle II, there has been an increase of only 3 students with a percentage of 10% who are in the fairly active category, although there has been an increase from the previous cycle, there are still shortcomings because there are still students who do not take the learning seriously. In cycle III, all students are included in the active category. This shows an increase in student learning activities.

The increase in students' learning activities in following the learning process through the problem-based learning model *(PBL)* is due to the conducive classroom conditions. The increase in students' learning activities cannot be separated from the role of teachers in guiding, directing and motivating students in learning. Every deficiency in each cycle is corrected and re-planned so that the class as a learning environment becomes conducive and learning activities become better. The deficiencies in students' learning activities in following this learning are analyzed and improvements are made in each cycle. Reflection of students' learning activities is contained in the description of the research results.

In cycle I, student learning activities are included in the active category. Although in the active category, there are still shortcomings, namely at the stage of guiding individual and group investigations, namely in the aspect of each group formulating problems and hypotheses according to LKPD, there are still group members who do not discuss enough to express opinions in hypotheses and there are some students who have not been actively involved in carrying out experiments. At the stage of developing and presenting results, only a few students asked questions to the group that presented the results and there were still some students who had not listened to the group's presentation.

In cycle II, the score of students' learning activities increased from cycle I, which was 14.5 in the active category. This increase was caused by several things, including that students had begun to get used to the learning implemented by the teacher. Although there was an increase, there were still several stages that were not optimal, such as the stage of guiding individual and group investigations, which had increased from the previous cycle. It's just that in this cycle, at the stage of developing and presenting results, there were still shortcomings, namely that there were still several students who did not pay attention to the presentations of other groups.

In cycle III, it is known that the score obtained is 15 in the active category, because in this cycle as a whole there is an increase, especially in the stage of developing and presenting the results of student work, they have played an active role during this stage as well as other learning stages. According to the results of the study by Widodo and Widayani (2013), it states that the use of methods, teaching and learning approaches and learning orientations causes student learning activities to produce levels of learning activities that move from low learning activities to high learning activities. The increased learning activities of students are also inseparable from the better interaction between fellow students in each group and also the

interaction between teachers and students. The increase in student learning activities is in accordance with previous research. Based on the description above, learning through the application of problem-based learning models *(PBL)* with a scientific approach can improve student learning activities.

**Student Learning Outcomes in Three Cycles**

The learning outcomes of knowledge are test scores ( *pre-test* and *post-test* ) in each cycle. The comparison of students' learning outcomes in cycle I, cycle II and cycle III can be seen in Figure 3 below:

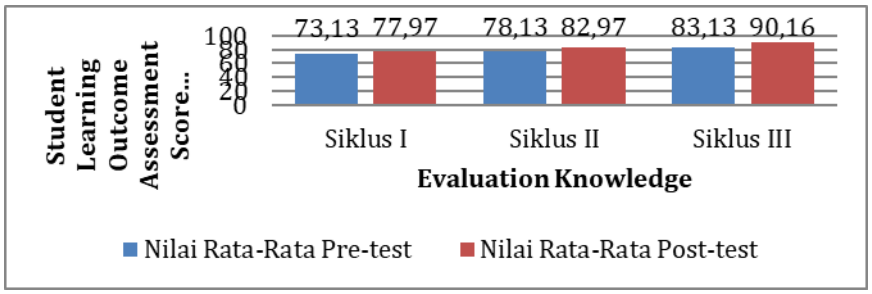


**Figure 3 Graph of Average Value of Student Learning Outcomes**

Based on Figure 4.2, it is known that there is an increase in student learning outcomes in each cycle. In cycle I, the average *pre-test score* for students was 73.13 and the average *post-test score* for students was 77.97, so student learning outcomes were still low.

In cycle II, the average *pre-test score* of students was 78.13 and the average *post-test score* was 82.97. In cycle III, the average *pre-test score* was 83.13 and the average *post-test score* was 90.16. From these scores, it is clear that cycle III experienced an increase from cycles I and II.

The improvement of students' learning outcomes in each cycle explains how students' mastery of the material being taught. In this case, the role of the teacher as a motivator, facilitator and learning designer greatly helps students in learning. This is in line with the cognitive learning theory which states that learning can be said to be a teacher's effort to provide stimulus, guidance, direction, and encouragement to students so that the learning process occurs (Abidin, 2014).

Based on the description above, we can see that the application of problem-based learning models *(PBL)* can improve student learning outcomes.

**CONCLUSION**

1. The application of the problem-based learning model *(PBL )* on the market material and the formation of market prices is carried out in 3 cycles and can be implemented using adequate facilities, such as the availability of a projector in the classroom.
2. The learning outcomes of students for cycle I, the average *pre-test score* was 73.13 after the learning process was carried out, the average *post-test score* was 77.97. In cycle II, the average *pre-test score* was 78.13 after the learning process was carried out, the average *post-test score* was 82.97 . and in cycle III, the average *pre-test score* was 83.13 after the learning process was carried out, the average *post-test score* was 90.16.
3. The application of problem-based learning models on market materials and the formation of market prices can improve student learning outcomes, namely with an average value of cycle I of 77.97 . Cycle II with an average value of 82.97 . And in cycle III with an average value of 90.16 .

## SUGGESTIONS

1. For schools, it can be a reference for learning methods in interesting learning media.
2. For teachers, it is hoped that it can help teachers in fostering student creativity and be able to motivate students in learning.
3. For students, it is expected that students can be more active in the learning process, both inside and outside the classroom. Students are also advised to increase their motivation to learn and utilize other learning resources , such as the internet or reference books, so that understanding of the material is more optimal.

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