Implementation Of Problem Based Learning Model In Improving Learning Outcomes In Ipas Grade IV Elementary School

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Abstract.

The aim of this research is to find out how to apply the Problem Based Learning learning model in improving student learning outcomes in elementary school science learning. The research method used is a classroom action research method that uses the development model by Kemmis and Mc. Taggart. The subjects of this research were 32 class IV students at SDN 174/X Trimulya. Data was collected using observation techniques, questionnaires and written tests. Data analysis uses quantitative descriptive analysis. The results of the research prove that the application of the Problem Based Learning model can improve the learning outcomes of class IV students in the science and science subject on Cultural Diversity in Indonesia. The average observation results of student learning outcomes in cycle I was 87.52%, in cycle II it increased to 90.00%, the results of the questionnaire. Student learning outcomes obtained an average of 60.55% in cycle I and in cycle II it increased to 89.31%.

Keywords: *Problem Based Learning; Student learning outcomes and Science.*

I. INTRODUCTION

Learning is a change in the skills, actions or behavior of students that is permanent as an experience or training that has been carried out by students (Ward, et al 2023). This change in skills only lasts quickly and will be able to reappear in the original behavior which shows that the teaching and learning process has not been successful, even though the teaching process may have occurred (Mulyadi, 2022). Where success in the teaching and learning process requires learning outcomes, namely in the form of teacher and student participation who work together to achieve the planned learning objectives (Kiska, Haryanto, & Indryani, 2024). In addition, according to Rahmi, Nurasiah & Kamza (2021) who said that in learning activities there needs to be a method that will help teachers in the learning process and will affect student learning outcomes. Based on this, it can be said that student learning outcomes can be said to be efforts made by students which aim to develop their own abilities during the teaching and learning process, from learning carried out to achieve learning objectives.According to Duerden & Rowan (2023), student learning outcomes are a fundamental element that is very important for achieving success in the learning process. This is reinforced by the opinion of Syaparuddin, Meldianus & Elihami (2020) who stated that student learning outcomes are a driving effort within themselves to have a great desire to participate in learning activities in order to achieve the expected learning goals. The learning outcomes themselves can make students better in all aspects in participating in learning activities (Sabil, et al. 2021; Zeng & Ruannakarn, 2023).

The benchmark for student learning outcomes has several aspects, namely: (1) Students actively participate in carrying out problems in learning, (2) Student involvement in solving problems, (3) Student courage to ask questions about unknown problems with peers or teachers, (4) Trying to obtain various information in order to solve the problems faced, (5) Conducting discussions with group members, (6) Being able to measure personal skills and the results obtained, (7) Educating students to be able to solve problems, (8) Getting the opportunity to use or apply what is obtained to overcome the tasks given 9) Achieving the predetermined KKM threshold value (Rahayu, 2021; Puspita et al 2023). Based on this, it can be said that educators must be able to apply learning conditions that foster student learning outcomes so that creativity in the learning process.Based on the results of initial research conducted on the problems at SDN 174/X Trimulya, namely in group discussions, students are not fully active and the implementation of the learning

model used is not in line with the character of the students. Related to this problem, in the learning process, it is important to improve the learning model that is suitable for increasing student learning outcomes. Choosing the right strategy for each concept can achieve learning objectives well (Arifin, 2018; Kloeg, 2023).

This is reinforced by the opinion of Pratama & Khaq (2022) who said that the learning model that can increase student learning outcomes is the PBL learning model. PBL is a cooperative learning model that is implemented by forming small discussion teams in a variety of ways. Then, in the teaching and learning procedure, all students participate and get responsibility in the form of worksheets which are the key to discussions in their respective groups (Trisniawati et al., 2016; Ernawati, et al 2023). According to Asmara, (2020) PBL learning is cooperative learning that will divide students into teams of 4 to 6 people in one diverse group and collaborate with each other to have good involvement and be responsible for the success of solving the tasks they have to different teams. Based on this, it can be said that learning using the Problem Based Learning model has the aim of improving teamwork and understanding learning materials more deeply which is impossible to obtain if students learn all the materials individually.This is reinforced by several studies that prove an increase in learning outcomes using Problem Based Learning. Among them by Zakiah, Prasetyo & Astutiningtyas (2019) where the results of the study of learning activities when cycle I students were classified as quite active, but when cycles II and IV experienced an increase in the active category. Furthermore, research conducted by Febriany (2019) the results of cycle I showed that students achieved completion with a percentage of 72.00% and when cycle II increased to 88.00%.

Based on the description above, the research is interested in conducting research to find out how to apply the Problem Based Learning learning model in improving the learning outcomes of students in grade IV at SDN 174 / X Trimulya in learning Social Sciences on the subject of Cultural Diversity in Indonesia.

II. METHODS

The research used is Classroom Action Research (CAR). This is reinforced by Gainau (2016) who said that CAR is research carried out through an action or treatment carried out in the classroom by educators or researchers. The main purpose of CAR is to improve and foster the professionalism of educators in handling problems in the teaching and learning process (Nurdin, 2016; Suwono et al 2023). This research was conducted in a participatory manner, namely researchers assisted by colleagues (observers). The implementation of this research was carried out in II cycles, and applied the spiral model from Kemmis & Mc Taggart which consists of planning, implementation, observation, and reflection.This research was conducted at SDN 174/X Trimulya, class IV, in the mathematics subject of Cultural Diversity in Indonesia. This research was conducted for 2 weeks by conducting 2 cycles, each cycle 2 meetings. The subjects in this study were students of class IV, SDN 174/X Trimulya.

The number of students in the class was 32 students. The research was conducted in class IV because the average learning outcomes of students were not optimal compared to other classes. The object of the research was the problem of weak student activity, so the implementation of the Problem Based Learning learning model was carried out to improve student learning outcomes.Data collection uses several techniques, namely: Observation carried out by providing observation sheets of student learning outcomes and questionnaires, carried out by distributing questionnaire sheets based on three parameters of student learning outcomes.Data analysis during research using quantitative descriptive techniques, is a quantitative research where the description of the data uses numbers or statistics. Here is a formula for analyzing student learning outcomes data.

The following is the calculation scale for the observation results and the student learning outcome questionnaire:

Evaluation	Criteria
81-100%	Very Active
61-80%	Active
46-60%	Not active
≤45%	Very Inactive

Then the results of the observation of student learning outcomes are analyzed using the following formula:

$$Presentase = \frac{Jumlah\ skor\ peserta\ didik}{Jumlah\ skor\ maksimal} x100\%$$

The implementation of the Problem Based Learning learning model is said to be successful if it succeeds in increasing student learning outcomes per cycle. Student learning outcomes can be said to have increased which can be seen from the results of observations where students actively participate in the learning process and can also be seen from the achievement of observation results analysis (Wu & Yu, 2024).

III. RESULTS AND DISCUSSION

Based on the research that has been carried out starting from cycle I and cycle II, the learning outcomes of students have obtained a specific increase. The results of this classroom action research concluded that the implementation of the Problem Based Learning strategy succeeded in increasing the level of student learning outcomes.It can be seen through the learning outcomes of students in the learning process carried out in cycles I and II. Cycle I is implemented in 2 meetings. The time for each meeting is 2 x 35 minutes. In each cycle, research is conducted using observations of students' learning outcomes when teaching by implementing the Problem Based Learning learning strategy in science learning.

In the implementation of each cycle, it is carried out according to the stages of the spiral model according to Kemmis & Mc Taggart, namely planning, implementation, observation, and reflection. During the planning stage, several things are prepared, including compiling learning scenarios, compiling LKPD (Student Worksheets), making evaluation tools, namely observation sheets, questionnaire sheets, and multiple choice questions. The Implementation Stage takes place in several learning activities, namely preliminary activities, core activities, and closing activities, and at this stage the observation stage of learning outcomes is also carried out. The results of the implementation of observations and student learning outcome questionnaires can be seen in Table 2.

Table 2. Results of Observations of Student Learning Outcomes in Cycle I and Cycle II

Cycle I			Cycle II		
Meeting	**Percentage (%)**	**Information**	**Meeting**	**Percentage (%)**	**Information**
Meeting 1	77.55	Active	Meeting 1	81.25	Very Active
Meeting 2	97.5	Very Active	Meeting 2	98.75	Very Active
Average	**87.52**	**Very Active**	**Average**	**90.00**	**Very Active**

In Table 2, it can be seen that the observation of student learning outcomes during cycle I obtained an average of 87.52% which based on the calculation scale is included in the category of very active students. And this has exceeded the success criteria set by the researcher, which is 75%. Then the observation of student learning outcomes in cycle II increased by 90.00% from 87.52% which increased by 2.48% and entered the very active category.Then, to see the learning outcomes of students against three indicators, namely: 1) can measure self-proficiency and the results obtained, 2) Train yourself to be able to solve problems, 3) Get the opportunity to use or apply what is obtained to overcome the tasks given. The results of the student questionnaire against the three indicators of student learning outcomes are in Table 3 below.

Table 3. Results of the Student Learning Outcomes Questionnaire in Cycle I and Cycle II

Cycle I			Cycle II		
Meeting	**Percentage (%)**	**Information**	**Meeting**	**Percentage (%)**	**Information**
Meeting 1	52.96	Not active	Meeting 1	83.98	Very Active
Meeting 2	68.15	Active	Meeting 2	94.65	Very Active
Average	**60.55**	**Not active**	**Average**	**89.31**	**Very Active**

In Table 3, it can be seen that the results of the questionnaire on student learning outcomes for the three categories of student learning outcomes in cycle I obtained an average of 60.55% which is included in the inactive category. And if seen from the expected KKM indicator, which is 75%, then this percentage has not met the desired KKM. This is because students have not been able to carry out the Problem Based Learning learning process properly. When the learning process is there are students who do bad activities, for

example chatting in class, and disturbing other friends. Then when in cycle II the results of the questionnaire on student learning outcomes increased to 89.31% which is included in the very active category, meaning the increase from the two cycles reached 28.76%. This is in accordance with research conducted by Yusuf (2018) that the PBL learning model for students in class XII IIS can foster student learning outcomes, namely when cycle 1 student learning outcomes get a percentage of 72.00% and in cycle II it increases by 88.00%.The increase in student learning outcomes in cycle II was due to reflection on the problems found during implementation in cycle I. The results of reflection in cycle I found a number of problems, including that there were still several students whose learning outcomes were still below the KKM, so there needed to be reflection and evaluation of the learning process.

Based on the problems in the reflection stage, improvements are needed in the implementation of actions in Cycle II so that the achievement of indicators is maximized. Reflection is carried out by looking at the problems that need to be changed in learning in cycle II (Saheriestyan et al., 2021). The changes to be implemented in cycle II are: 1) Researchers will continuously convey information about Problem Based Learning, as a result students understand more about PBL learning, 2) Researchers will convey enthusiasm so that students are enthusiastic in conducting discussions, and researchers will reprimand students who are still talking during the discussion process, and give awards to students who play an active role during the discussion process, 3) Students who take a long time to work on questions or who waste time will be advised and told that time in implementing learning is very limited, 4) Researchers try to tell students to be more courageous in expressing their opinions, and not be afraid of being wrong, because this learning activity can be a place for them to be more confident in presenting the results of discussions or expressing their opinions in front of many people.In line with the increase in student learning outcomes, it can affect their learning success (Kahar et al., 2020). This can be observed through the results of observations regarding student activity in the learning process which can be seen from table 4 which was carried out at the beginning and end of the following learning activities.

Table 4. Learning outcomes of students in Cycle I and Cycle II

Criteria	**Cycle I**	**Cycle II**
Completed (≥80)	82.15	100
Incomplete (≤80)	17.85	-
Mark	100	100
Average	83.21	95

If seen in Table 4 in the first cycle, students who achieved the KKM score were 82.00%, while students who did not pass the Minimum Completion Criteria were 17.85%, students in the first cycle were 83.21. These results show that students' learning completion has reached more than 75%, but not all students have achieved learning completion. And in the second cycle, students' learning outcomes achieved maximum completion, namely 100% with an average of 95. This shows that cycle II activities are running as expected, and students can master the concept of the material well. This is in line with research by Asmara, (2020) when cycle I the average student score was 79.58 with a completion rate of 66%. In cycle II the average score increased by 87.08 with a completion rate of 87%. And this proves that the results of cycle II obtained a fairly good increase.The findings of this study provide an overview or knowledge for readers, especially teachers, regarding the importance of implementing appropriate learning strategies to increase the level of student learning outcomes. Especially the Problem Based Learning learning strategy, which from the research that has been carried out can improve student learning outcomes.

IV. CONCLUSION

From the results of Classroom Action Research (CAR) implemented in 2 cycles where each cycle is carried out at most 2 meetings, it can be concluded that student learning outcomes can be improved through the application of the Problem Based Learning model in grade IV in the subject of Social Sciences. This can be observed in the average results of student learning outcomes in cycle I which is 87.52% in cycle II it increases to 90.00%, the same thing is also obtained from the results of the questionnaire Student learning outcomes that obtained an average of cycle I 60.55% then in cycle II increased to 89.31%. Based on the

results of reflection conducted on students in cycle I, the average was 83.21 and in cycle II, student learning activity obtained a very high average value of 95. So it can be said that the application of the Problem Based Learning model can improve student learning outcomes in Social Sciences learning Cultural Diversity in Indonesia.

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