



Improving Learning Outcomes Using the Problem Based Learning Model in Grade IV Elementary School Science Learning

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Abstract. This study aims to improve the learning outcomes of science learning students by applying the Problem Based Learning (PBL) learning model for class IV SD. The research method used was Collaborative Classroom Action Research (PTKK) which was carried out in 2 cycles, in cycle 1 the lowest score was 60 and the highest score was 85. Then in cycle 2 the lowest score was 70 and the highest score was 95. The percentage of complete learning outcomes in cycle 1 was 63% and in cycle 2 there was an increase of 88%. As for the results of the research conducted, it can be concluded that learning with the Problem Based Learning model in learning is able to improve student learning outcomes with the assistance of audio-visual learning media, because with the model and media assistance students become more interested in participating in learning, the Problem based learning model also makes students able to think critically in class IV SDN 1 Cigadung.

Keywords: Learning Outcomes, Problem Based Learning

INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual religious strength, self-control, personality, intelligence, noble character, and skills needed by themselves and society. According to Law No. 20 of 2003, education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual, religious, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation, and state (Sulastri et al., 2014). The word science is taken from Latin, namely '*scientia*' etymologically or in language the word science has the meaning of 'knowledge', in this case knowledge obtained through learning and proof or knowledge that surrounds a general truth of natural laws that occur, obtained and proved through the scientific method. According to Indonesian large

dictionary, science is knowledge about a field that is arranged systematically according to certain methods that can be used to explain certain symptoms.

One part of education is Natural and Social Sciences (IPAS) education is expected to be of good quality both the process and the results. Natural and Social Sciences (IPAS) is a group of sciences that studies humans and their environment. The content of Natural and Social Sciences (IPAS) has a very broad scope of discussion material, including examining events, natural conditions, facts, concepts and generalizations related to social and environmental issues. Natural and Social Sciences (IPAS) is a science that studies living and inanimate things in the universe and their interactions, and studies human life as individuals as well as social beings who interact with their environment.

The success of learners is the main goal of education but in reality, not all learners get maximum results. Where student learning outcomes are still low, the process tends to be still dominated by teachers, students are less active because in general students only receive learning material from teachers without being given direct involvement (Setianingsih, 2020). The elementary school age, especially in grade IV, is late childhood or in phase B. Children have the characteristics of love to play, have great curiosity, are easily influenced by the environment, and like to form peer groups. So that learning in elementary schools is sought to create a conducive and pleasant atmosphere. Teachers must pay attention to several learning principles in order to create a conducive and pleasant atmosphere in the learning process such as the principles of motivation, background, concentration, integration, problem solving, finding, learning while working, learning while playing, individual differences and social relationships.

Finding that in the aspect of implementing science learning at SDN 1 Cigadung with less varied classroom learning methods, teachers tend to always use lecture and question and answer methods. In addition, the implementation of learning in the classroom is not supported by adequate facilities, thus affecting the creativity and activity of teachers in learning. Learning quality can be interpreted as the intensity of systemic and synergistic linkages of teachers, students, curriculum and learning materials, media, facilities, and learning systems in producing optimal learning processes and outcomes in accordance with curricular demands, learning quality indicators are teacher educator's behavior, student teacher's behavior and learning impact, learning climate, Quality learning materials, quality learning media, and learning systems. In these indicators, there are things that indicate good quality learning. If these indicators have not yet appeared, it can be assumed that the quality

of learning is still low and needs to be improved through better learning practices than before (Cahyo et al., 2018).

Based on the results of observations made at SDN 1 Cigadung, based on the presentation, it appears that (1) the low learning outcomes of grade IV students have not reached the Minimum Completeness Criteria (KKM) 70, (2) learning still dominates in teachers / teacher centers (has not provided space for active students, (3) teachers have not associated the material with problems in real life, (4) teachers have not used learning media, (5) teachers have not packaged material that is unique to students in an interesting form of learning, (5) students have not been able to carry out active discussions and solve HOTS-based problems, (7) students have not been able to package their reports properly and correctly.

Therefore, the use of learning models, methods, and media is very important to solve these learning problems, then alternative actions to improve the quality of learning, which can encourage the involvement of students thinking critically in learning and increase teacher creativity, as well as improving climate, media, and learning materials. Researchers use and choose the Problem Based Learning model and teachers can utilize various learning media in optimizing science learning. One example is by using audio-visual media in analyzing various human needs and buying and selling activities. Students also get more value because at the same time they can find out the various human needs and buying and selling activities that are being learned through the impressions viewed. By using audio-visual media, it is hoped that science learning, especially in various human needs and buying and selling activities, can be more interesting. Students can improve their activities and learning outcomes, and teachers can improve their performance in learning. to improve the quality of learning and learning outcomes at SDN 1 Cigadung.

Problem-based learning is a learning model oriented to the theoretical framework of constructivism. In the PBL model, the focus of learning is on the chosen problem so that learners not only learn concepts related to the problem but also scientific methods to solve the problem. Therefore, students must not only understand concepts that are relevant to the problem that is the center of attention but also gain learning experiences related to the skills of applying scientific methods in problem solving and fostering critical thinking patterns and audio-visual learning media are chosen as alternatives because they have several advantages including being attractive to students, In addition to being able to listen and see various

human needs and buying and selling activities, students are also easier to learn various human needs and buying and selling activities.

LITERATURE

Learning is a determinant of success in achieving educational goals. The implementation of the learning process can be done with three types of educational environments, namely two formal, non-formal, and informal education. Every formal learning activity carried out at school will produce changes in students who are grouped into domain areas (cognitive, affective and psychomotor) (Sukamto, 2021). Problem Based Learning is one of the learning models that can help students to improve the skills needed in the current era of globalization. Problem Based Learning is a learning model that exposes students to real world problems to start learning and is one of the innovative learning models that can provide active learning conditions to students. Problem Based Learning is the development of curriculum and learning process. In the curriculum, problems are designed that require students to gain important knowledge, make them proficient in solving problems, and have their own learning strategies and the ability to participate in teams (Hotimah, 2020).

Natural and Social Sciences (IPAS) is a science that studies living and inanimate things in the universe and their interactions, and examines human life as individuals as well as social beings who interact with their environment. Science education has a role in realizing the Pancasila Student Profile as an ideal picture of the profile of Indonesian students. IPAS helps students grow their curiosity about the phenomena that occur around them (Ministry of Education and Culture, 2022).

METHOD

Collaborative Classroom Action Research (PTKK) is a form of reflective study, conducted by action actors to improve rational learning outcomes from actions in carrying out tasks and deepen understanding of conditions in collaborative learning practices (Dewi et al., 2022). Classroom action research is an examination of activities that are deliberately raised, and occur in a classroom, research is carried out by designing, implementing and reflecting on collaborative and participatory actions that aim to improve the learning process in the classroom through an action in a cycle (Triandi et al., 2020).

The research conducted was Collaborative Classroom Action Research (PTKK) which consisted of two cycles. Each cycle consists of one meeting. The implementation of this

research refers to the research model expressed by Kemmis and Taggart. Each action loop or cycle includes planning, action execution, observation, and reflection. This classroom action research was carried out in one of the elementary schools in Kunigan West Java Province under the name SD Negeri 1 Cigadung, with a total of 32 students. This location determination is expected to provide convenience, especially regarding the introduction of the environment related to students as research objects and personal concerns that help this research activity be carried out.

The implementation of research is carried out in class IV as the object of research, class IV teachers or civil service teachers as observers and researchers as teachers. Learning activities use the PBL learning model from the beginning to the end of learning with the help of audio-visual media. Data collection techniques use test techniques. Test techniques are used in evaluation activities as a result of the activeness and improvement of student learning outcomes in the learning process.

DISCUSSION

The results of the study can be seen from the percentage table of student learning outcomes in the evaluation of cycle stage 1 using the Problem Based Learning model with the help of audio-visual learning media. Based on the table of the percentage of completeness of learning outcomes in cycle 1, there were 32 students who worked on evaluation questions. There were 20 students who met the KKM and 12 students or 37% with an average grade score of 73.28. When compared with the initial conditions when observing before learning using the Problem Based Learning model assisted by audio-visual learning media, students who obtained scores less or below KKM 70 were 17 students or 54% of the total students, while students who achieved KKM were 15 students or 46% of the total students. The highest score obtained was 85 and the lowest score was 60 with a grade average of 67.03.

Table 1 Completeness of Learning Outcomes Cycle I

Learning Completeness	Score	Number of Students	
		Frequency	Percentage
Completeness	>70	20	63%
Not Completeness	<70	12	37%
Sum		32	100%
Top Rated		85	
Lowest Value		60	
Average		73.28	

It can be seen from table 2 the percentage of student learning outcomes in the evaluation of cycle stage 2 using the Problem Based Learning model with the help of audio-

visual learning media. Based on the table of the percentage of completeness of learning outcomes in cycle 2, there were 32 students who worked on evaluation questions. Students who scored to meet the KKM were 28 students or 88% and students who did not meet the KKM were 4 students or 12% with a grade average of 81.71. When compared with cycle 1 of learning using the Problem Based Learning model with the help of audio-visual learning media, students who obtained scores less than KKM 70 were 12 students or 37% of the total students, while students who reached KKM were 20 students or 63% of the total students. The highest score obtained was 85 and the lowest grade was 60 with a grade average of 73.28.

Table 2 Completeness of Learning Outcomes Cycle 2

Learning Completeness	Score	Number of Students	
		Frequency	Percentage
Completeness	>70	28	88%
Not Completeness	<70	4	12%
Sum		32	100%
Top Rated		95	
Lowest Value		70	
Average		81.71	

From the learning outcomes of students before the implementation of action on science learning is still low, learning that tends to be teacher-centered and passive makes students less understanding in following learning, of which there are 17 students who have not reached KKM and 15 students who meet KKM. When viewed from the learning outcomes of cycle 1 and cycle 2 have experienced an increase in student learning outcomes in science learning, it can be seen from table 1 the percentage of learning completeness in cycle 1 there are 32 students who do evaluation questions. There were 20 students who met the KKM and 12 students or 37% with an average grade score of 73.28. While in cycle 2 based on table 2 the percentage of completeness of learning outcomes there were 32 students who did the evaluation questions. Students who scored to meet the KKM were 28 students or 88% and students who did not meet the KKM were 4 students or 12% with a grade average of 81.71. So, it is undeniable that the use of the Problem Based Learning model is able to improve the learning process and learning outcomes of students, thus making students become more active in the classroom than before which seemed passive only depending on the teacher. For more details, see the diagram of improving learning outcomes below:

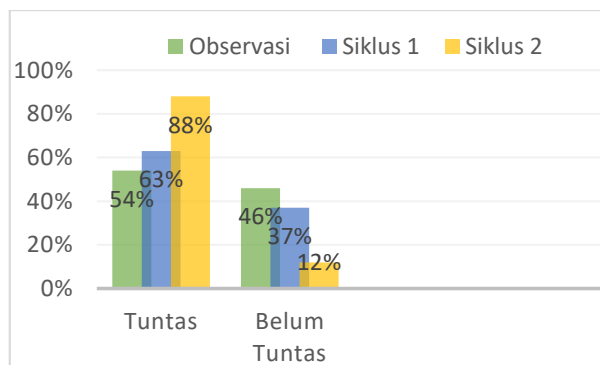


Figure 1. Percentage Diagram of Completion of Learning Outcomes of Cycle 1 and Cycle 2

This classroom action research was carried out in one of the elementary schools in Kunigan West Java Province under the name SD Negeri 1 Cigadung, with a total of 32 students. Based on the results of observations of learning operations that have been carried out in class IV, problems were found in learning, problems that occur in learning activities, namely (1) Learning still dominates in teachers / teacher centers (has not provided space for active students, (2) Teachers have not associated the material with problems in real life, (3) Teachers have not used learning media, (4) Teachers have not packaged unique material for students in an interesting form of learning, (5) Students have not been able to carry out active discussions and solve HOTS-based problems, (6) Students have not been able to package their reporting properly and correctly. This affects the understanding of the way students think about the material delivered and the learning outcomes of students who are not good or low. Based on observational data, it can be seen from the evaluation test scores in science learning which shows that there are still many students who get low scores or below the predetermined KKM of 70. Of the 32 students who obtained scores less than KKM 70, there were 17 students or 54% of the total students, while students who achieved KKM were 15 students or 46% of the total students. The highest score obtained was 85 and the lowest score was 60 with a grade average of 67.03.

So, the results of these observations need learning that can develop the ability to discuss, communicate, think critically, and accept differences in groups. Then research is carried out in learning by applying the Problem Based learning model with the help of audio-visual learning media with the aim of improving the learning outcomes of science learning students. The Problem Based learning model is a learning model that emphasizes activities in students and interacts to solve problems in groups. The teacher in this case only acts as a facilitator who organizes and supervises the course of the learning activity process. The advantages of the Problem Based learning model are that it is a technique that is good enough

to understand the content of the lesson, can challenge the ability of students and provide satisfaction to find new knowledge for students, helps students to transfer their knowledge to understand problems in real life, develops the ability of students to think critically and develop their ability to adjust to new knowledge, provide opportunities for students to apply the knowledge they have in the real world (Juliana et al., 2022).

The weakness of the Problem Based learning model is that students will feel lazy to try if they do not have interest or do not have confidence that the problem being learned can be solved, the success of learning with the learning model based learning requires enough time for preparation, and without understanding the students why they have to try to solve the problem being studied, students will not learn what they want to learn (Pratiwi et al., 2020).

CONCLUSION

After conducting Classroom Action Research (PTK) for students in grade IV elementary school, learning Natural and Social Sciences (IPAS) using the Problem Based Learning model assisted by audio-visual learning media. In the results of cycle 1 evaluation learning experienced an increase from observational observations, in observational observations before learning activities using the Problem Based Learning model assisted by audio-visual learning media, students who obtained scores less than KKM 70 as many as 17 students or 54% of the total students, while students who achieved KKM as many as 15 students or 46% of the total students.

The highest score obtained was 85 and the lowest score was 60 with a grade average of 67.03. After the 1st cycle research has improved but has not been optimal, the learning outcomes in cycle 1 there were 32 students who worked on evaluation questions. There were 20 students who met the KKM and 12 students or 37% with an average grade score of 73.28. because it has not reached the target expected by researchers, namely the learning outcomes of science learning with KKM 70. So, in cycle 2 and experiencing a good improvement, there were 32 students who did the evaluation questions. Students who scored to meet the KKM were 28 students or 88% and students who did not meet the KKM were 4 students or 12% with a grade average of 81.71. Suggestion Based on the conclusions of the results of the research above, it is recommended that the Problem Based Learning model can be used by teachers to increase student activeness in learning so that it can affect the completeness of increased learning outcomes for students.

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