Journal of Research in Islamic Education
Volume 7, Number 1, June 2025
DOI: 10.25217/jrie.v5i1.5790
https://journal.iaimnumetrolampung.ac.id/index.php/jrie

Implementation of Problem Based Learning (PBL) Type Model in Science Subject to Improve Learning Outcomes of V Grade Students SD NU Metro

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Article Information:
Received : 2025-04-19
Revised : 2025-05-11
Accepted : 2025-05-11

Keywords: *Problem based learning, Science Subject, learning outcomes*

Abstract

This study aims to determine how teachers apply the problem based learning model to improve the learning outcomes of fifth grade students and how to improve the learning outcomes of fifth grade students of SD NU Metro. In this study, the problem based learning model. This study uses qualitative with an inductive thinking process to understand reality. Data collected through observation, interviews with the principal, teachers and students and documentation. The results of this study indicate that this problem based learning model is very effective in improving student learning outcomes, student involvement in learning, student understanding in solving problems, developing student skills to think critically. In addition, the problem based learning model also creates active and enjoyable learning. Thus, this problem-based learning model can continue to be developed for learning that can improve student learning outcomes at SD NU.

INTRODUCTION

Education as a process that not only provides knowledge but also intellectual abilities in reading, writing, and arithmetic, but also as a process of developing students' abilities optimally in intellectual, social, and personal aspects and can build the character of students who are honest and open. (Fauzia et al., 2018). In Law No. 20 of 2003 concerning the National Education System, specifically Article 1 paragraph (1) and (2), it is emphasized that 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 morals and the skills needed by themselves, society, the nation and the state (Tambun et al., 2020).

A learning model is a set of steps that teachers use to design learning activities and guide learning in the classroom (Mawardi, 2018). A learning model is a plan or pattern used as a guideline in planning classroom learning or tutorial learning (Fitroh, 2023). This learning model is very important in implementing learning. There are many learning models that teachers can use for learning activities, one of which is the problem-based learning model. The learning model refers to a conceptual picture or representation of how learning

E-ISSN: 2685-3337

should take place. It includes a general framework or basic structure of learning. And the learning model helps identify the basic principles or components of effective learning (Taufik, 2023). The learning model also refers to the learning approach that will be used, including teaching objectives, stages in learning activities, learning environment and classroom management (Djalal, 2017). The problem based learning model is a learning model with a student learning approach to authentic problems so that students can construct their own knowledge, develop higher skills and inquiry, make students independent and increase their self-confidence (Novianti et al., 2020). To improve problem based learning, teachers can apply PBL steps. Barret in Lidinillah in the journal Enok Noni Masrinah and Ipin Aripin et al., (2019) explains the syntax sequence or PBL learning steps are: Students are given problems by the teacher, Students conduct discussions or small groups, Students conduct independent studies related to the problems that must be solved, Students return to their original PBL group to exchange information with other students, Students present the solutions they find, Students are assisted by the teacher to conduct evaluations related to all learning activities (Masrinah et al., 2019).

This study focuses on how teachers apply the problem based learning model to improve the learning outcomes of fifth grade students and how to improve the learning outcomes of fifth grade students at SD NU Metro. This problem based learning model was chosen because it can connect the subject matter with the context of everyday life and can provide students with a lot of experience in interpreting problems and developing various ideas in solving problems (Zakiah & Sinaryo., 2019). Problem based learning can also reduce boredom during learning which often occurs due to a monotonous learning atmosphere.

This research is relevant to several previous studies such as "the application of problem based learning models to improve elementary school mathematics learning outcomes. by Fauzia et al., (2018) the results of this study are that learning with the problem based learning (PBL) model can improve students' mathematics learning outcomes. The increase in learning outcomes from the lowest 5% to the highest 40%, after the application of the problem based learning model there was an increase to 79,808 (Fauzia et al., 2018).

Research on the application of problem based learning (PBL) learning model to improve critical thinking skills and student learning outcomes in thematic learning in grade 3 of SDN Cipocok Jaya 2 by Vela et al., (2023) data in the study from the results of

observations, documentation studies, and tests, the increase in students' creative thinking skills can be shown in pre-cycle I with a percentage of 86.84% and increased again in cycle II with a percentage of 89.47%. While student learning outcomes in the pre-cycle with a presentation of 55.26% (Vela et al., 2023).

And the research analysis of the application of the problem learning model assisted by quizizz in the learning of science in grade V of elementary school by Sarif Nirvana, based on the results of the study conducted at SDN Perudungan Lor 02, the results obtained that the teacher has implemented all stages or steps of the problem-based learning model, namely orienting students to problems, organizing students to learn, guiding individual and group investigations, developing and presenting work results, and analyzing and evaluating the problem-solving process assisted by Quizizz media has been running well (Nirwana, 2024). The purpose of this study is how teachers apply the problem based learning type (PBL) V model and how to improve the learning outcomes of fifth grade students at SD NU Metro.

Based on the pre-survey conducted by interviewing Mrs. Norma Fitriyani S.Pd, the homeroom teacher of grade V of SD NU Metro, that the teacher has implemented the problem based learning model because challenges and factors, including below standard scores, influence the failure of students in completing the KKM during the exam. The data collected shows the average student score of 69.5 from the KKM set at 75, based on the pre-survey and conversation with the homeroom teacher of grade V, of the total number of students, 9 students are considered complete and 15 students are considered incomplete. 9 students are considered complete because their learning has met the criteria or standards of success set by the teacher, the completeness of the learning shows that students have understood the material or are able to apply the knowledge that has been learned, while 15 students are said to be incomplete or have not completed because students have not understood the material explained, lack of student attention when the teacher explains and students have not met the standard value set how teachers implement the PBL type based learning model to improve the learning outcomes of grade V students of SD NU Metro and how to improve the learning outcomes of grade V students of SD NU Metro (Wawancara, 2024).

METHOD

This research method is qualitative using inductive thinking process to understand reality. In this research, the researcher participates in the circumstances and environment surrounding the event being studied. It is assumed that the researcher will never deviate from the facts or events in the context of the research (Nina et al., 2022). Data collection techniques include observation, interviews, pretest-posttest and documentation to obtain more valid and in-depth information (Sugiyono, 2019). Observation is used to directly see the application of problem based learning in learning, while interviews are conducted to seek information through Q&A with the principal, class teachers and students. And documentation to add information data obtained from other data collection techniques.

This study implements the Problem Based Learning Model to improve student learning outcomes through qualitative research. At the planning stage, the teacher creates a teaching module according to the material to be taught, and prepares research instruments such as observation sheets, interview guidelines, and evaluation tests. This preparation aims to ensure that the problem based learning model can be applied effectively during learning. The implementation stage is carried out by providing existing problems, then students are invited to complete and solve the problem, gather students, the teacher helps students in organizing learning tasks related to the problem, then students are divided into small groups to work together in solving problems, giving single and collective questions, and students present the results that have been completed, then the teacher helps students reflect on the learning process that has been carried out.

The sampling method in this study used purposive sampling. Purposive sampling was used to determine the research subjects, namely the principal, grade V teachers and grade V students. and who were considered to have relevant information related to the implementation of problem based learning, the researcher used class V B as a sample. The data collected included information about teaching strategies, classroom interactions, and student learning outcomes as measured through assignments given, and direct observation. To ensure the validity of the data, the study applied the source triangulation technique by checking the data that had been obtained through several sources in the field such as teachers and students, in order to obtain a more objective picture related to the implementation of problem based learning in improving students' science learning outcomes. With a systematic method and appropriate data triangulation, this study is expected to provide valid and useful findings for the development of learning strategies in

elementary schools. Then the data analysis technique consists of interviews, field notes and decumentation.

FINDINGS AND DISCUSSION

Problem based learning not only focuses on developing knowledge, but also on the ability to solve problems, process information, and improve collaboration and participation skills. So problem based learning (PBL) focuses on using real-world problems as a reference for acquiring and assimilating new knowledge. By presenting relevant and practical challenges, PBL prepares students to face situations they may encounter in the real world after graduation. This approach emphasizes the needs and readiness of students to solve problems, develop critical thinking skills, and the ability to adapt in the context of life and work. This method mimics strategies used in real life and the professional world, thus helping to prepare students to face challenges outside of education.

The concept of using problems as a means of acquiring and assimilating new knowledge is the foundation of the problem-based learning paradigm. By presenting various real-world problems to students, a learning strategy that focuses on the needs of students is problem-based learning (PBL). Children who use this learning paradigm are faced with various real-world problems from outside, which they may face when they graduate (Saleh., 2018).

The results of the study show the development of the learning process of grade V teachers at different times and how the development of students after implementing learning with a problem-based learning model. The researcher observed in class how teachers apply the use of problem-based learning models in science learning. The researcher also interviewed grade V teachers and students to obtain information. The researcher conducted an interview with Mrs. Norma Fitriyanti S.Pd, the homeroom teacher of grade V, she said that this problem-based learning model had been implemented and was very effective for students, making students dare to adapt and work in groups with other friends, the teacher also said that the way to divide the group was mixed and randomized, smart and not too smart so that the smart ones could teach their friends who did not understand. The application of problem-based learning in learning activities in the subject of science for grade V students of SD NU Metro has been going well. The teacher uses syntax according to the syntax of problem-based learning, namely 1) orienting students to problems 2) organizing students to learn 3) guiding individual and group

investigations, 4) developing and presenting work results 5) analyzing and evaluating the problem-solving process Learning outcomes also show an increase in learning outcomes.

There are several aspects of evaluation by teachers when implementing problem based learning (PBL) 1) student involvement 2) group work 3) communication skills 4) learning independence. Learning outcomes also include 3 aspects, namely cognitive, affective and psychomotor. To measure students' cognitive, the teacher gives a pretest and posttest, the affective aspect the teacher invites students to discuss so that students exchange opinions, respect each other and the psychomotor aspect the teacher prepares a questionnaire. . He also often uses lecture methods, discussions and questions and answers and assignments in science learning.

Problem based learning model learning as stated by Mrs. Norma during the interview is a learning approach that begins with the presentation of real-life problems to students. This study discusses how to apply the problem based learning model in science subjects to improve student learning outcomes. So the researcher concludes that the problem based learning model is an educational model that facilitates teachers in fostering students who have critical thinking skills and are actively involved in discussions with their peers to explore new insights. In this teaching, students are equipped with problem-solving skills and encourage students to have responsibilities that are usually given to adults.

Researchers also found that there were several obstacles in the implementation of problem based learning in grade V of the subject of science at SD NU Metro. In its implementation in grade V of SD NU Metro, this problem based learning model also experienced several obstacles, namely not all students understood what was conveyed by their teachers. Some confusion when the teacher conveyed orientation to the problem because each student has different abilities in understanding problems - the role of the teacher is needed in helping students to orientate the problem. In organizing students to learn, it seems that there are still students who ask their friends about solving problems that their teachers raise, students ask too often which will also interfere with their friends in organizing the problems they they encounter each.

CONCLUSION

Based on the results of the study, it can be concluded that the application of the problem based learning model has been applied by teachers in science learning in class V of SD NU Metro. This problem based learning model is very effective to use and has given a

very positive response to students. Student learning outcomes have improved a lot from before and students are more courageous to adapt and students can think critically. The teacher's way of measuring student cognitive is by giving pretests and posttests, affective aspects by inviting students to discuss, and psychomotor with questionnaires Measurements carried out in the cognitive domain show an increase in student learning outcomes. In this case, the application of problem based learning can always be developed to improve the quality of learning at the high class level at SD NU Metro.

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