Implementation Of Problem Based Learning In Junior High Schools 1 Makassar

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Abstract

The purpose of this study is to find out how the Problem Based Learning learning model affects the learning results of students at State Junior High School 1 Makassar's Natural Sciences Department. This is classroom action study that tries to improve learning outcomes in the Chemical Industrial Process topic using the Problem Based Learning Model. This study included 40 Class IX students from State Junior High School 1 Makassar. The method employed is conversation based on a scientific approach - TPACK. Data gathering occurs at the end of each cycle of learning, utilizing observation and evaluation approaches. The findings of this study reveal that the average value of learning outcomes in the Natural Sciences topic has greatly increased.

Keywords: Learning outcomes, Problem Based Learning, Natural Sciences

Introduction

The present learning method prioritizes student-centered and process-oriented activities. Learning input in learning activities can take many forms, including learning methodologies, instructional materials, learning objectives, subjects, study objects, and the learning medium used. Meanwhile, the output of learning activities can take the form of learning outcomes gained after completing the learning process. Learning can result in changes in knowledge, skills, attitudes, or behavior.

According to observations collected at State Junior High School 1 Makassar, pupils' levels of exercise remain relatively low, which has an impact on learning outcomes. This indicates that there is an issue with the learning process. According to a review of students' learning outcomes in natural science disciplines for the 2023/2024 academic year, their completion rate is less than 50%.

It is possible to solve scientific learning difficulties using a scientific approach. The scientific approach is one of the learning methods used to apply the Merdeka curriculum. This curriculum promotes competency learning, which improves real learning and evaluation processes in order to acquire competency in knowledge, skills, and attitudes. The learning process is strengthened using a scientific method that encourages students to be more competent of seeing, asking questions, experimenting/collecting data, associating/reasoning, and communicating effectively.

The use of a new learning model than the traditional paradigm is predicted to improve student learning outcomes. Based on the study of the challenges presented above, academics believe that natural science disciplines require learning innovation. Using a scientific method, the PBL concept is expected to improve student learning results.

Methods

This study's subjects were class IX pupils of State Junior High School 1 Makassar. The goal of this study is to improve student learning outcomes in natural science. This study was conducted at State Junior High School 1 Makassar with students from their different houses during the odd semester, from September to December 2023.

Data collection approaches employed in this study include teacher activity observation sheets, evaluation of learning outcomes, and student response surveys.

After the data is collected, it will be analyzed to produce findings. This section is the most important part, which consists of: analysis of teacher activity data, carried out during the learning process and analyzed with percentages; analysis of student learning outcomes, carried out aims to determine whether

learning outcomes have improved or not when implementing the problem-based learning model; and analysis of student response data, which aims to determine student responses to the Problem-Based Learning model on cane sugar, alcohol Analysis of student response data gathered from questionnaires sent to students following the completion of teaching and learning activities.

Results and Discussion

Results

This Class Action Research was carried out in three cycles, with each cycle separated into four major steps: planning, action, observation, and reflection. Meanwhile, the research subjects were 34 students from class IX 1 of SMP Negeri 1 Makassar, with the goal of gathering data on their degree of comprehension of the topic. This information was gathered through three cycles of student testing results.

Each cycle's data consists of cognitive, psychomotor, and affective evaluation data, as well as instructor performance and student reaction questionnaires to learning. This research will bring about the following improvements: 1) cognitive: Minimum Learning Completeness is 80% of students, and students are pronounced complete if they have a minimum score of 75. 2) Psychomotor: Minimum Learning Completeness is 80%, and the minimum predicate is good. 3) Affective: Minimum Learning Completeness is 80%, and the minimum predicate is good.

Observations of cycle I teacher activities using the Problem-Based Learning model yielded good results (83.3%). The average observer score was 100 points, with a maximum score of 120 points for all elements.

After the problem-based learning paradigm is applied, an evaluation is performed to determine the student learning results in cycle I. The evaluation results for cycle I are as follows :

Table 1. Cognitive Scores of Cycle I Students

Completeness	The number of students	Percentage
Complete	22 students	58,00 %
Not finished	18 students	42,00 %

According to the table above, students who did not complete had lower cognitive scores in cycle I than students who did, despite the fact that the number of students who did not complete was still relatively high (42.00%).

Table 2. Skills Scores of Cycle I Students

Predicate	The number of students	Percentage
Very good	4 students	10,00 %
Good	28 students	70,00 %
Enough	8 students	20,00 %

Based on the skill score table from cycle I, it was discovered that 28 students had good skills and 4 students had excellent abilities. Thus, just 8 pupils (20.00%) still have adequate skills.

Table 3. Affective Scores of Cycle I Students

Predicate	The number of students	Percentage
Very good	16 students	40,00 %
Good	20 students	50,00 %
Enough	4 students	10,00 %

Table 3 illustrates that pupils who are interested in the teacher's lessons outperform those who are not. The data shows that just 12 pupils (20%) had a valid title.

Table 4. Results of Achievements for Each Aspect of Cycle I

Rated aspect	Achievement Target %	Cycle I Achievements	Description
Cognitive	80	58,00	Not achieved
Skills	80	70,00	Achieved
Affective	80	90,00	Achieved

According to the table above, while the average number of students who have received strong marks in skills and affective skills and finished the cognitive aspect is higher, they have not met the 80% target for the cognitive and skills parts.

Discussion

Based on the previously reported data, the learning activities in cycle I

Regarding the major content, cane sugar, it was discovered that the adoption of the Problem Based Learning learning paradigm was quite successful, as only a tiny proportion of students earned incomplete cognitive scores. Each cycle, learning is carried out using the PBL learning model, which attempts to educate students how to solve real-world problems. According to Karuru (2020), in learning using the PBL model, students will be faced with problems related to real life, both in important social and personal life that are meaningful for students, so that at the initial stage, students are given problems regarding how to determine the sugar content in sugar cane., the second stage familiarizes students with finding information independently either through books or the internet by browsing their respective This is of course consistent with constructivist theory, which claims that learning is a process of knowledge construction (Karuru, 2021). This technique is intended to teach pupils critical thinking skills. Students must complete this process by actively thinking, formulating concepts, actively carrying out activities, and communicating what they have learnt (Karuru, 2019).

To express what students have learned, the next stage is to collaborate with students through heterogeneous group activities comprising of 7-9 persons, for a total of 6 groups of students, after which students are given LKPD containing the issues to be reviewed. The following level involves guiding students through investigations to tackle the problems outlined in the LKPD. Some pupils struggle when conducting investigations independently or in groups. Some pupils are still confused when completing the levels outlined in the LKPD. Students must work well with their group members in order to finish the LKPD thoroughly and on time and answer the challenges assigned. Aside from that, some students are still making decisions since they are unsure and concerned that the data would not match the predicted concept. Following that, students create problem-solving reports based on the findings of group talks, and each group presents the problem-solving results that were discussed in their groups. Some students continue to be inactive when making presentations, resulting in only a small number of active pupils in one group.

In this cycle, kids' test results remain below the Learning Completeness mark. This is because pupils did not adjust to the PBL paradigm in the learning process as described previously. As a result, it is vital to think on a variety of issues, including giving more meaningful motivation, group division and group division prior to beginning, appreciating group cohesiveness, and identifying the greatest learners. Aside from that, teachers' ability to carry out the stages of the learning model remain suboptimal because this learning is done online. The facilities and infrastructure that support online learning have a significant impact. When learning synchronously with Google Meet, things do not run smoothly. For example, pupils who join do not arrive on time, so when the teacher talks, it appears that they are still admitting latecomers. Aside from that, not all class IX students can participate in synchronous learning via Google Meet, so their grasp of the content on cane sugar, alcohol, and MSG is still limited.

Conclusion

Students will be more focused if the problem-based learning paradigm is implemented since they are interested in challenges that arise in everyday activities. As a result, students attempt to solve it using references or personal experience in order to make learning more understandable and absorbable. Aside from that, working in groups allows students to share knowledge with one another, which helps with problem solving.

This study found that implementing a problem-based learning model improved the learning outcomes of chemical industrial processes for class IX students at State Junior High School 1 Makassar.

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