

APPLICATION OF THE PROBLEM BASED LEARNING MODEL TO IMPROVE MATHEMATICS LEARNING OUTCOMES FOR 4TH GRADE STUDENTS OF SDN NO. 48 INPRES GALUNG UTARA BANGGAE DISTRICT MAJENE REGENCY

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ABSTRACT

The problem behind this research is the low learning outcomes of students in learning Mathematics for class IV SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency. This study aims to describe the application of the Problem Based Learning model to improve mathematics learning outcomes for fourth grade students of SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency. The approach used is a qualitative approach and the type of classroom action research (CAR) which consists of 2 cycles, each cycle consisting of 2 meetings with the stages of activities in the form of planning, implementing, observing, and reflecting. The focus of this research is the application of the Problem Based Learning model and student learning outcomes. The research subjects are teachers and fourth grade students at SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency. In the even semester of the 2022/2023 academic year, there are 18 students. Collecting data using the format of observation, tests and documentation. The data analysis used is qualitative. The results showed that there was an increase in learning both in teacher and student activities and student learning outcomes. The results of this study are teacher teaching activities and student learning activities have increased, in the first cycle the second meeting is in the sufficient category while in the second cycle the second meeting is in the good category. Student learning outcomes in cycle I meeting II are in the high category but student learning outcomes in Mathematics learning have not been completed classically, while in cycle II meeting II the category is very high, student learning outcomes have increased and have been completed classically. The conclusion of this study is that the application of the Problem Based Learning model in learning Mathematics can improve the learning outcomes of fourth grade students at SDN No. 48 Inpres Galung Utara, Banggae district Majene Regency.

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INTRODUCTION

Learning outcomes are the main standard to determine student learning success, both in changing behavior and learning abilities. Learning outcomes can also be viewed as changes in student behavior due to learning. These changes are sought to occur in order to achieve educational goals. Learning outcomes are measured by the ability of students to master a topic based on experience or lessons after carrying out the learning process periodically in class. Learning outcomes reflect the results of the learning process that shows the extent to which students, teachers, learning processes and educational institutions have achieved the educational goals set as one of the benchmarks for learning success. (Kpolovie, Joe, & Okoto, 2014).

The above is explained in the Regulation of the Minister of Education of the Republic of Indonesia No. 23 of 2016 article 4 paragraph (1) concerning the Standards for Assessment of Learning Outcomes which states that: "Assessment of learning outcomes by educators aims to monitor and evaluate processes, learning abilities, and continuous improvement of student learning outcomes". In the learning process, of course, students are expected to achieve good learning outcomes. But in reality student learning outcomes are not always as good as expected. Many factors can be the cause of low student learning outcomes, both internally and externally. Internal factors related to the physical condition of students, psychology as

individuals and gender. While external factors include the influence of the environment both from the family, community and school environment.

Based on the explanation above, it appears that there are external factors that can affect student learning outcomes, one of which is a factor that comes from the school environment. Factors from the school environment can be in the form of the way teachers teach, teaching methods, use of learning models, learning situations or conditions and so on. One of the things that teachers often do in teaching is using learning methods and models that do not vary so that class conditions seem boring, do not attract students' attention in listening to the learning material explained by the teacher and students are passive in the learning process. This can affect the learning outcomes obtained by students. In explaining the learning material, the teacher needs to present an interesting learning model so that it can make students active, make learning take place in pleasant conditions and achieve the desired learning goals. In choosing the learning model that will be used to teach, the teacher must match the topic or material that will be the center of learning with the model that will be used when teaching the material. One example is in Mathematics. The process of learning mathematics is not just a transfer of knowledge from the teacher to students, but a process that is sought by the teacher so that students are active in various ways to construct or build their own knowledge. Which means that in the learning process there is interaction or discussion between teachers and students and students and students. However, in reality, the implementation of mathematics learning at the elementary school level has not implemented a variety of learning models that involve student activity, resulting in low student motivation in learning. So far, the process of learning mathematics in elementary schools has not fully implemented active and creative learning in involving students. This happens because learning is still teacher centered so that teachers are more active than students. Activities in the learning process should be more student centered (student centered) and the teacher's role is only as a facilitator (Susanto, A, 2013).

Based on the results of observations during the KKN which lasted approximately three months and the results of interviews by the fourth grade teacher at SDN No. 48 Inpres Galung Utara, researchers see the low learning outcomes of students in Mathematics. It can be seen that there are still many students who score below the minimum learning standard (KBM) which is 75. Of the total number of students, namely 18 students, only 7 students achieve a score above the KBM which is 80. While the other 11 students score below the KBM with an average The average score obtained is 65. This is a percentage of the number of students who score above the KBM, which only reaches 39%, while the percentage of students who score below the KBM reaches 61%. This proves that in the learning process the learning objectives have not been achieved as expected.

In general, the process of learning mathematics in the classroom is predominantly teacher-centered. The teacher has not provided direct experience and has not exposed students to something concrete as the basis for understanding the abstract, the teacher teaches the material according to the sequences in the book, which results in students not being accustomed to thinking critically, insensitive to the problems encountered in everyday life. -days, and could not solve the problem. When the learning process takes place, student learning activities are less active, it can be seen from students not having the courage to express their opinions, when the teacher asks the students just keep quiet, because students are used to listening to what the teacher says in front of the class and then taking notes on the learning material in the book. This proves that proper learning has not been created. In explaining mathematics subject matter, the teacher should create an interesting learning model. So that it can make students active, can achieve learning goals effectively and learning can take place in pleasant conditions. One of the learning models that teachers can use in learning Mathematics is Problem Based Learning (PBL).

Tan's opinion states that the PBL model is a learning innovation model, because it can optimize students' thinking skills through the process of student collaboration in groups or systematic collaboration, thus enabling students to continue to empower, hone, test and develop their thinking skills (Rusman, 2010). Meanwhile, according to Andini that PBL is a model that is implemented with a focus on its implementation to expose students to experience in learning which includes activities to organize, investigate and solve real problems in life (Setyo, Fathurrahman & Anwar, 2020).

Based on the expert opinion above, it can be concluded that in the PBL model students are faced with various problems to be solved by students. These problems originate from real problems in the student environment which aim to develop students' ability to think critically and have the skills to solve a problem.

The relevant research related to the use of the PBL model is the research conducted by Yenni Fitra Surya with the title "Implementation of Problem Based Learning Models to Improve Mathematics Learning Outcomes for Fourth Grade Students at SDN 016 Langgini, Kampar Regency". In this study obtained an

increase in student learning outcomes. This is evidence of the successful implementation of the research that has been carried out in class IV at SDN 016 Langgini, Kampar Regency.

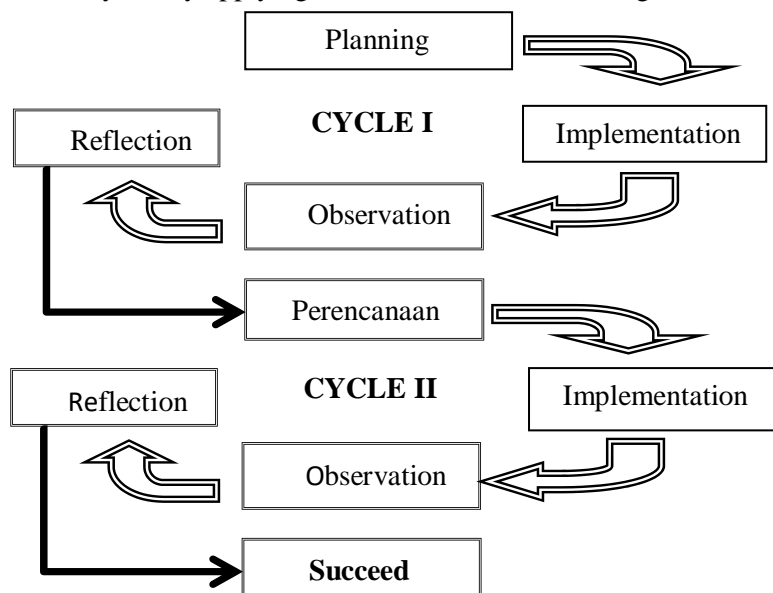
Agus Kistian with the title "Application of the PBL Learning Model in Improving the Learning Outcomes of Class IV Students at SD Negeri Ujong Tanjong, West Aceh Regency". From the results of research conducted by researchers at SD Negeri Ujong Tanjong, it is concluded that the application of the PBL learning model can improve student learning outcomes in mathematics learning in grade IV SD Negeri Ujong Tanjong.

Based on the description above, the researchers are interested in conducting a study entitled "The Application of Problem Based Learning Models to Improve Mathematics Learning Outcomes for Fourth Grade Students of SDN No. 48 Inpres of North Galung, Banggae District, Majene Regency".

METHOD

This study uses a qualitative approach. It is called qualitative because in this study, researchers used observation sheets to see a description of all teacher and student activities during the learning process. Because it will be presented about increasing students' mathematics learning outcomes by using the Problem Based Learning learning model.

The type of research that will be used in this research is classroom action research or commonly abbreviated as CAR which consists of several stages of implementation including: planning, research implementation, observation and reflection repeatedly called a cycle. This classroom action research is carried out in one or more cycles by applying the Problem Based Learning model.



Picture 1 Research design according to (Arikunto, dkk. 2006:16)

This research was conducted at SDN No. 48 Inpres Galung Utara, Banggae Subdistrict, Majene Regency on Mathematics learning and the time of the research implementation is in April of the even semester of the 2021/2022 academic year. The subjects of this study were teachers and fourth grade students of SD Negeri No. 48 Inpres Galung Utara with 18 students (Eighteen). Students consisting of 9 (Ten) male students and 9 (Nine) female students. The focus of this research is the application of the Problem Based Learning model and the learning outcomes of fourth grade students at SDN No. 48 Inpres Galung Utara, Banggae sub-district, Majene Regency. Data collection techniques used in this study were in the form of observation, tests and documentation.

The research instruments in this researcher are (1) student worksheets (LKPD), (2) final evaluation tests, (3) teacher observation sheets, and (4) student observation sheets.

To measure the indicators of the success of teachers and students in applying the Problem Based Learning model, it will be categorized with a scale of 3 which refers to the Arikunto standard (Sunardin, 2018, p.120), namely:

Tabel 1 Taraf Keberhasilan Proses Dalam Menerapkan Model *Problem Based Learning*

Score	Category
68% - 100%	Good
34% - 67%	Enough
0% - 33%	Less

The data generated in this study were analyzed using quantitative and qualitative analysis techniques. The formula used in quantitative data is as follows:

a. Student final grade = $\frac{\text{total score acquisition}}{\text{maximum score}} \times 100$

b. Average amount = $\frac{\text{total value}}{\text{total number of student}} \times 100$

c. Completeness value = $\frac{\text{Number of students who reach KBM}}{\text{total number of student}} \times 100$

d. Incompleteness value = $\frac{\text{The number of students who did not reach KBM}}{\text{total number of student}} \times 100$

To determine the completeness of the incompleteness of learning outcomes are as follows:

Table 2 Indicators of Completeness and Incompleteness of Student Learning Outcomes

Score	Category
75 – 100	Complete
0 – 74	Incomplete

Source: Completeness and Incompleteness of Grade IV Mathematics Learning Outcomes at SDN No. 48 Inpres Galung Utara.

Data on student learning outcomes can be analyzed qualitatively to obtain conclusions using table 3 as follows:

Table 3 Criteria for student learning success rates in %

No.	Level of success %	Category
1.	>80	Very good
2.	60-79%	Good
3.	40-59%	Enough
4.	20-39%	Less
5.	<20%	Very low

Source: criteria for student learning success rate in % (Junita, 2013)

RESULTS AND DISCUSSION

RESULTS

1. Description of Initial Activities Before Action

On April 9, 2022, the researcher first made a visit to the school that would be used as a research site. The visit intends to meet the principal and fourth grade teachers to discuss the research plan, at the meeting the school principal allows to conduct research and invites direct consultation with fifth grade teachers in setting a research plan schedule and subject matter to be taught. It was agreed that the implementation of the research would begin on Tuesday, April 12, 2022, which was adjusted to the schedule determined by the homeroom teacher of class IV SDN No. 48 Inpres of North Galung, Banggae District, Majene Regency.

The initial condition before the action research was carried out showed that the Mathematics grades of the fourth grade students of SDN No. 48 Inpres Galung Utara, Banggae Subdistrict, Majene Regency is still relatively low and there are still many students who score below the KBM in Mathematics learning.

2. Cycle Action I

The implementation of this research action was carried out in accordance with the plan that had been agreed upon by the teachers and researchers, namely 2 meetings in the first cycle, namely on 12 and 14 April 2022 in accordance with the initial planning agreed upon by the researcher and the fourth grade teacher at SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency.

Table 4 Observation Results of Cycle I Teacher Teaching Activities With the Application of Problem Based Learning Models in Learning

Cycle II	Total score acquisition	Max score	Percentage	Category
Meeting I	6	15	40%	Enough
Meeting II	9	15	60%	Enough

Based on table 1 above, it can be concluded that the data from the observations in the first cycle of the first meeting obtained an overall score of 6 with a maximum score of 15 with a percentage of 40% which was categorized as sufficient . Meanwhile, at the second meeting, the overall score was 9, a maximum score of 15 with a percentage of 50% and also still stated to be in the sufficient category .

Table 5 Observation results of student learning activities in cycle I with the application of the Problem Based Learning model in learning

Cycle I	Total score acquisition	Max score	Percentage	Category
Meeting I	8	15	53,33%	Enough
Meeting II	9	15	60%	Enough

Based on table 2 above, it can be concluded that the results of observing student activities in the first cycle of the first meeting overall obtained a score of 8, a maximum score of 15 with a percentage of 53.33% which was categorized as sufficient . While the second meeting as a whole obtained a score of 9, a maximum score of 15 with a percentage of 60% which is also still categorized as sufficient.

Table 6 Descriptive Data Frequency and Percentage of Students' Mathematics Learning Evaluation Test Scores in Cycle I Meeting I

Score	Category	Frequency	Percentage
91-100	Very good	1	5,55%
75-90	Good	6	33,33%
60-74	Enough	7	38,88%
50-59	Less	2	11,11%
0-50	Very low	2	11,11%
Total		18	100%

Table 7 Descriptive Data Frequency and Percentage of Student Mathematics Learning Evaluation Test Scores Cycle I Meeting II

Score	Category	Frequency	Percentage
91-100	Very good	3	16,66%
75-90	Good	9	50%%
60-74	Enough	6	33,33%
50-59	Less	0	0%
<50	Very low	0	0%
Total		18	100%

Table 8 Descriptive Data of Frequency and Percentage of Completeness of Students' Mathematics Learning Outcomes Cycle I Meeting I

Score	Category	Frequency	Percentage
75-100	Complete	7	55,55%
0-74	incomplete	11	44,44
Total		18	100%

Table 9 Descriptive Data Frequency and Percentage of Completeness of Students' Mathematics Learning Outcomes Cycle I Meeting II

Score	Category	Frequency	Percentage
75-100	Complete	12	66,66%
0-74	Incomplete	6	33,33%
Total		18	100%

Based on the data in the table above, at the first meeting it was stated that of the 18 students, 7 students with a percentage of 38.88% were included in the complete category and 11 students with a percentage of 61.11% included in the incomplete category. at the second meeting of 18 students, 12 students with a percentage of 66.66% were included in the complete category, and 6 students with a percentage of 33.33% were in the incomplete category. These results indicate that the first cycle of meetings I and II, the completeness of learning outcomes in Mathematics has not been achieved. It can be seen from the number of students who get challenging learning outcomes of less than 80% where the success indicator indicates that if 80% of the total number of students achieve the KBM value of 75 in mathematics subjects through the application of Problem Based Learning learning is considered classically incomplete. Thus the learning objectives have not been achieved so that learning can be continued in the next cycle.

Based on the results of observations on teacher teaching activities and student learning activities by applying the Problem Based Learning model in learning the Mathematics subject of class IV SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency, as well as analysis of student learning outcomes test data from meetings 1 and II, the findings that occurred during the learning process can be recorded to be used as reflections in cycle I, namely as follows:

- 1) Teacher activities using the Problem Based Learning model still have shortcomings that are not implemented and are forgotten. As for the efforts or reflections made at the next meeting, the teacher is expected to carry out the steps of the Problem Based Learning model that could not be implemented at the previous meeting such as the teacher presenting questions or problems according to the material being taught, the teacher encouraging students to ask questions related to the subject matter given, the teacher directs students to look for answers carefully, the teacher gives opportunities for other groups to provide their responses and the teacher asks students to mention the obstacles faced during the learning process. Based on the above efforts, it is hoped that at the next meeting there can be an increase in teacher activity in applying the Problem Based Learning model in learning Mathematics.
- 2) Student activities in the teaching and learning process using the Problem Based Learning model in cycle I also still have shortcomings. As for improvement or reflection efforts at the next meeting, students are expected to be familiar with and understand the application of the PBL model so that students are actively involved in learning, actively finding and solving problems, active in group work, and active in providing responses in group discussions. Based on the above efforts, it is hoped that at the next meeting there can be an increase in student learning activities by applying the Problem Based Learning model.
- 3) Student learning outcomes in the first cycle indicate that the research has not reached the predetermined results. Data analysis of student learning outcomes in the evaluation test cycle I can be seen in appendix 28, which shows that there are 6 students who get a score of 60 on the evaluation test. This happened because students still did not understand working on story questions about the KPK and FPB so that students got low scores below the KBM. The improvement or reflection efforts that will be carried out by the teacher at the next meeting are that the teacher is expected to be able to make story questions that are easier for students to understand so that students have no difficulty in answering evaluation questions so that the value of student learning outcomes can be classically completed 80% at the next meeting.

Based on the description above, it can be concluded that the results of the research conducted in the first cycle have not been said to be complete. Therefore, the researcher continued the research to the second cycle stage.

3. Cycle II Action

The implementation of the second cycle was carried out on 19 and 21 April 2022. The activities in the second cycle were the same as the activities in the first cycle which included planning, implementation, observation, and reflection.

Table 10 Observation Results of Cycle II Teacher Teaching Activities With the Application of Problem Based Learning Models in Learning

Cycle I	Total score acquisition	Max score	Percentage	Category
Meeting I	13	15	86,66%	Good
Meeting II	13	15	86,66%	Good

Based on table 7 above, it can be concluded that the observation data in the second cycle of the first meeting obtained an overall score of 13, a maximum score of 15 with a percentage of 86.66% which was categorized as good . Meanwhile, at the second meeting, the overall score was 13, a maximum score of 15 with a percentage of 86.66% and was also stated to be in the good category .

Table 11 Observation results of student learning activities in cycle II with the application of the Problem Based Learning model in learning

Cycle II	Total score acquisition	Max score	Percentage	Category
Meeting I	12	15	80%	Good
Meeting II	13	15	86,66%	Good

Based on table 8 above, it can be concluded that the results of observing student activities in the second cycle of the first meeting overall obtained a score of 12, a maximum score of 15 with a percentage of 80% which was categorized as good. While the second meeting as a whole obtained a score of 13, a maximum score of 15 with a percentage of 86.66% which is also still categorized as good.

Table 12 Descriptive Data Frequency and Percentage of Final Evaluation Test Scores for Students' Mathematics Learning Cycle II Meeting I

Score	Category	Frequency	Percentage
91-100	Very good	7	38,88%
75-90	Good	8	44,44%
60-74	Enough	3	16,66%
50-59	Less	0	0%
<50	Very low	0	0%
Total		18	100%

Table 13 Descriptive Data Frequency and Percentage of Final Evaluation Test Scores for Students' Mathematics Learning Cycle II Meeting II

Score	Category	Frequency	Percentage
91-100	Very good	11	61,11%
75-90	good	5	27,77%%
60-74	Enough	2	11,11%
50-59	Less	0	0%
<50	Very low	0	0%
Total		18	100%

Table 14 Descriptive Data Frequency and Percentage of Completeness of Students' Mathematics Learning Outcomes Cycle II Meeting I

Score	Category	Frequency	Percentage
75-100	Complete	15	83,33%
0-74	Incomplete	3	16,66%
Total		18	100%

Table 15 Descriptive Data Frequency and Percentage of Completeness of Students' Mathematics Learning Outcomes Cycle II Meeting II

Score	Category	Frequency	Percentage
75-100	Complete	16	88,88%
0-74	Incomplete	2	11,11%
Total		18	100%

Based on the data in the table above at the first meeting that of the 18 students, 15 students with a percentage of 83.33% were categorized as complete and 3 students with a percentage of 16.66% were included in the incomplete category. While at the second meeting of 18 students, 16 students with a percentage of 88.88% were categorized as complete and 2 students with a percentage of 11.11% were included in the incomplete category. These results indicate that the second cycle of meetings I and II, complete learning outcomes in Mathematics have been achieved. It can be seen from the number of students who got complete learning outcomes as many as 15 students at the first meeting with a percentage of 83.33% and 16 students at the second meeting with a percentage of 88.88%. These results indicate that the mastery of learning in cycle II has been achieved classically because the number of students who have completed more than 80% of students have obtained a value according to the KBM, namely 75 in Mathematics through the application of the Problem Based Learning model which is considered classically complete.

Based on the data in the table above at the first meeting that of the 18 students, 15 students with a percentage of 83.33% were categorized as complete and 3 students with a percentage of 16.66% were included in the incomplete category. While at the second meeting of 18 students, 16 students with a percentage of 88.88% were categorized as complete and 2 students with a percentage of 11.11% were included in the incomplete category. These results indicate that the second cycle of meetings I and II, complete learning outcomes in Mathematics have been achieved. It can be seen from the number of students who got complete learning outcomes as many as 15 students at the first meeting with a percentage of 83.33% and 16 students at the second meeting with a percentage of 88.88%. These results indicate that the mastery of learning in cycle II has been achieved classically because the number of students who have completed more than 80% of students have obtained a value according to the KBM, namely 75 in Mathematics through the application of the Problem Based Learning model which is considered classically complete.

Based on the results of observations on teacher teaching activities and student learning activities by applying the Problem Based Learning model in learning the Mathematics subject of class IV SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency, as well as analysis of student learning outcomes test data from meetings 1 and II, the findings that occurred during the learning process can be recorded to be used as reflections in cycle I, namely as follows:

1. When viewed from the learning process that has been carried out by the teacher where in cycle II the teacher has seen mastering the Problem Based Learning model so that it has increased and is in the good category (B). The teacher has also been able to condition the class well during learning. Teachers have also been able to direct and guide students in implementing each step of the Problem Based Learning model.
2. Student activity in the learning process using the Problem Discovery Learning model in cycle II has increased and is in the good category, because students are used to and have understood the application of the Problem Based Learning model so that students are actively involved in learning, active in finding and solving problems, active in working together in groups, active in presenting the results of group work, active in providing responses in group discussions.
3. Student learning outcomes in cycle II indicate that the research that has been carried out has achieved the previously expected success. Data analysis of student learning outcomes in cycle II can be seen in appendix 29, which shows the value of student learning outcomes has been completed classically, reaching 88.88%. This has exceeded the indicator of research success that has been previously set, namely the percentage of classical learning completeness is 80%. The results obtained in the second cycle of the second meeting were 16 students with a percentage of 88.88% who achieved scores above the KBM and categorized as complete. Meanwhile, there are 2 students with a percentage of 11.11% who still get scores below the KBM. This is because the two students still pay less attention to the subject matter and pay less attention to the explanations given by the teacher so that students cannot understand the material they are studying and result in low learning outcomes. The improvement or reflection efforts that will be carried out by the teacher are by providing remedial. Through remedial activities, students are helped to understand the subject matter and improve their learning ways and attitudes for the better, besides that the teacher also improves their teaching

methods. Based on the improvement efforts or reflections above, it is expected that the two students can achieve the KBM scores.

DISCUSSION

This research was carried out using Classroom Action Research (CAR) procedures using two cycles. The research was carried out in the even semester of 2022 with the research subject of class IV SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency. Before carrying out the research, the researcher first visited the school to meet the principal to ask for permission to research. After that, the researcher consulted the fourth grade teacher, the researcher asked the problem based on the data that student learning outcomes were still relatively low. It was found that the Minimum Completeness Criteria (KBM) for Mathematics is 75. Mathematics learning outcomes of 18 students there are some students who do not reach the KBM. In addition, researchers set a schedule according to the learning schedule in class IV SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency.

The learning in cycle I had two meetings with the focus of the material at the first meeting being the least common multiple (KPK) and the second meeting being the greatest common factor (FPB), while in the second cycle the first meeting discussed rounding the results of length measurements to the nearest unit and meeting II the discussion of the rounding of the results of weight measurements to the nearest unit which is carried out according to the syntax of the Problem Based Learning model. The first stage is the orientation of students to the problem, students pay close attention to the questions given by the teacher. In the second stage, namely organizing students to learn, at this stage students are formed into several groups to solve the problems contained in the LKPD together with their group friends. The third stage is guiding individual and group investigations, at this stage students are given the opportunity to ask questions about things that have not been understood. The fourth stage is developing and presenting the work, at this stage students are asked to present the results of their group discussions in front of the class. The fifth stage is analyzing and evaluating the problem solving process, at this stage students are given the opportunity to provide responses to the presenter group according to their understanding. In the first cycle there are still many shortcomings in the learning process using the Problem Based Learning model.

The results of teacher teaching observations in the first cycle of the first meeting obtained an overall score of 6, a maximum score of 15 with a percentage of 40% which was stated in the sufficient category. While at the second meeting, the overall score was 9 with a percentage of 60% and it was still categorized as sufficient.

The results of observing student learning activities in the first cycle of the first meeting obtained an overall score of 7, a maximum score of 15 with a percentage of 46.66% which was stated in the sufficient category. While at the second meeting, the overall score was 9 with a maximum score of 15 with a percentage of 60% and it was still categorized as sufficient.

The results of the students' final tests in the first cycle of the first meeting. The results of the descriptive analysis of the frequency and percentage of the scores for student learning outcomes in Mathematics after applying the Problem Based Learning model in learning showed that in the first cycle of the first meeting, only 1 student got a score of 91- 100 very good categories with a percentage of 5.55%, students who got a score of 75-90 with a good category were 6 people with a percentage of 33.33%, students who got a score of 60-74 which were categorized as adequate amounted to 7 students with a percentage of 38.88%, while students who scored 50-59 were categorized as poor, there were 2 students with a percentage of 11.11%, while students who scored <50 were categorized as very poor, there were also 2 students with a percentage of 11.11%. While the results of the frequency and percentage description data show that of 18 students, 7 students with a percentage of 38.88% are included in the complete category and 11 students with a percentage of 61.11% are included in the incomplete category. While in the first cycle of the second meeting there were 3 students who scored 91-100 in the very good category with a percentage of 16.66%, students who scored 75-90 in the good category were 9 students with a percentage of 50%, students who scored 60-74 categories enough, there are 6 students with a percentage of 33.33%, students who score 50-59 in the poor category are 0 students with a percentage of 0%, while students who score <50 in the very poor category also number 0 students with a percentage of 0%. The results of the frequency and percentage description data show that from 18 students, 12 students with a percentage of 66.66% are included in the complete category and 6 students with a percentage of 33.33% are included in the incomplete category. These results indicate that the first cycle, the completeness of student learning outcomes in Mathematics has not been achieved. Where it can be seen from the number of students whose learning outcomes are less than

80% complete, because the indicators of success indicate that if 80% of the total number of students achieve the KBM score of 75 in Mathematics subjects through the application of the Problem Based Learning model, it is considered classically complete. Thus the learning objectives have not been achieved so that learning can be continued in the next cycle.

The results of observations of teacher teaching activities in the second cycle of the first meeting obtained an overall score of 13, a maximum score of 15 with a percentage of 86.66 which was stated in the good category. While at the second meeting, an overall score of 13 was also obtained, a maximum score of 15 with a percentage of 86.66% which was also stated in the good category.

The results of the observation of student learning activities in the second cycle of the first meeting obtained an overall score of 12, a maximum score of 15 with a percentage of 80% which was categorized as good. Meanwhile, at the second meeting, an overall score of 13 was obtained, a maximum score of 15 with a percentage of 86.66% which was also stated in the good category.

The results of the student evaluation tests in the second cycle of the first meeting. The results of the descriptive analysis of the scores of student learning outcomes in Mathematics after the Problem Based Learning model was applied showed that in the second cycle of the first meeting there were 7 students who scored 91-100 with a percentage of 38, 88% were categorized as very good, students who scored 75-90 in good category were 8 students with a percentage of 44.44%, students who scored 60-74 in sufficient category were 3 students with a percentage of 16.66%, students who scored 50-59 with a poor category totaling 0 students with a percentage of 0%, while students who scored <50 with a very poor category also numbered 0 students with a percentage of 0%. While at the second meeting, students who scored 91-100 in the very good category were 11 students with a percentage of 61.11%, students who scored 75-90 in the good category were 5 students with a percentage of 27.77%, students who scored 60-74 enough categories amounted to 2 people with a percentage of 11.11%, students who scored 50-59 in the less category were 0 students with a percentage of 0%, while students who scored <50 in the very poor category also amounted to 0 students with a percentage of 0%. The results of the frequency and percentage description data at the second cycle of the first meeting showed that from 18 students, 15 students with a percentage of 83.33% included in the complete category and 3 students with a percentage of 16.66% included in the incomplete category. While at the second meeting there were 16 students with a percentage of 88.88% included in the complete category and 2 students with a percentage of 11.11% included in the incomplete category. These results indicate that the mastery of learning cycle II at meetings I and II has been achieved classically because the number of students who have completed more than 80% of students have obtained a value according to the KBM, namely 75 in Mathematics through the application of the Problem Based Learning model which is considered classically complete.

Based on the results of observations of teacher teaching activities, student learning activities, as well as increasing student learning outcomes from cycle 1 to cycle 2 in the description above, it can be concluded that the application of the Problem Based Learning model to improve mathematics learning outcomes in grade IV students at SDN No. 48 Inpres Galung Utara is stated to be able to improve student learning outcomes so that there is no need to conduct research in the next cycle.

CONCLUSION

Based on the results of the research that has been done, it can be concluded that the application of the Problem Based Learning model in Mathematics can improve the learning outcomes of fourth grade students at SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency. This is evidenced by the results of teacher and student activities as well as student learning outcomes in learning Mathematics by applying the Problem Based Learning model there is an increase. The description of improvement can be seen from each cycle. In the first cycle, the meetings I and II were in the sufficient category while in the second cycle the meetings I and II were in the good category. Student learning outcomes in cycle I meeting II with a percentage of 66.66% are in the high category but the completeness of student learning outcomes in Mathematics subjects has not been completed classically 80%, while in cycle II meeting II with a percentage of 88.88% student learning outcomes increase is in the very high category so that the completeness of student learning outcomes in Mathematics subjects has been classically completed 80%, and the application of the Problem Based Learning model in learning Mathematics can improve student learning outcomes in grade IV SDN No. 48 Inpres Galung Utara, Banggae District, Majene Regency.

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