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Analysis of the effectiveness of efforts to improve learning outcomes through problem solving methods in elementary students

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Abstract

The purpose of this research is to improve the ability to solve problems in the result of addition through Mathematics material in class II students in the odd semester of the 2022/2023 academic year. This research method is in class action research. This research includes 2 cycles where each cycle includes 4 stages namely planning, action, observation, and reflection. The research subjects were 18 students. The results of this study indicate that there is an increase in the ability to draw conclusions in class II students. This is evidenced by the average results at each meeting in one cycle increased, namely in cycle one from 13% to 44.44% with an average student score of 68. And cycle II from 40% increased to 83.33% with an average score of 79. This study concluded that learning mathematics using problem solving methods can improve learning outcomes in class II.

Keywords: mathematics, learning outcomes, problem solving methods.

1 INTRODUCTION

According Dahar, Ratna Wilis (2015) Mathematics is a tool to develop ways of thinking. Because of this, mathematics is really needed both for everyday life and in facing advances in science and technology, so mathematics needs to be provided to every student from elementary school and even from kindergarten, but mathematics is essentially a science whose way of reasoning is formal and deductive. abstracts must be given to children from elementary school whose way of thinking is still in the concrete operational stage

According Kline (2018) Mathematics comes from the Latin word mathematica which was originally taken from the Greek word mathematics which means study. This word has its origin in mathematics, which means knowledge or science. The word mathematics is also related to other words which are almost the same, namely mathema which means learning or (thinking).

Learning outcomes are changes in behavior from those who can't to those who can, from those who don't know to those who know. For example, students are able to imitate several sentences, collect vocabulary, memorize songs, calculate and do math problems and change the value of respect.

According to Utomo Dananjaya, the problem solving method is a theoretical basis that makes problems the main issue in learning. In line with that, there is also an explanation of the Problem Solving Method, namely efforts to improve results through a scientific process to assess, analyze and understand success. (Utommo Dananjaya, 2005:67)

The Problem Solving method is a method that teaches problem solving by emphasizing solving a problem logically. (W. Gulo, 2002: 15)

Based on the results of initial observations, out of 18 students only 5 students had the ability to solve problems. This is based on the teacher's process of using teaching methods and the low ability of students in Mathematics learning content in solving problems.

Based on these problems, it is necessary to choose the right learning method. Basically the problem solving method is the easiest way to make students' mathematics learning outcomes easier to express ideas and observations.

Therefore, by using this problem solving method it is expected that students will be able to work on correcting errors and difficulties experienced by students and this method can activate both sides of the brain, namely the right and left brain. Learning Mathematics Addition Materials Through Problem Solving Methods (Classroom Action Research for Grade II Students, Odd Semester, Academic Year 2021/2022 Sds Kartika Viii-1 Pagi)

2 RESEARCH METHODS

Writers or researchers try to choose and use the method that is most suitable for this research. The selected method is the CAR method which is descriptive qualitative which is part of classroom action research. The descriptive method is used to try to solve or answer the problems being faced in the current situation. This is done by taking the steps of collecting, classifying and analyzing data, creating an objective description of a situation, in a descriptive situation.

3 RESULTS AND DISCUSSION

Observation of student activities is carried out by observing activities. In the learning process in cycle I at the first meeting, students looked enthusiastic in following the Mathematics learning material in Problem Solving. In this learning activity, students showed their activeness in the learning process, some children had started to ask questions about Problem Solving material, but there were still some students who were passive and unfocused in the learning process and were busy chatting with their classmates. This results in a lack of concentration of students and is not effective in the learning process.

This can be seen from cycle I with the number of students who completed 5 (26.31%) with an average score of . The learning outcomes of students in cycle I have increased from the initial scores of the collaborating teachers, but some students have not achieved the specified success. Based on the learning results of students in cycle I, there were 14 students who had not yet reached the KKM, so the researchers continued in cycle II.

Table 1. Student grades in cycle 1

NO	Student's name	Mark	Q	BT
1	Meisya	80	√	
2	Cattleya Belivania Map	60		√
3	Adiel Love	50		√
4	Cassandra	75	√	
5	Zahra Salsabila	60		√
6	Aaleyan	50		√
7	Farghani	65		√
8	M. Aqeel TA	65		√
9	Evelyn Diandra Vandani	60		√
10	Love	85	√	

11	Al. Ghozali	95	√		
12	Al. Fatih	80	√		
13	Alvians	85	√		
14	Audrey	50		√	
15	Benzema	65		√	
16	Omar	60		√	
17	Cantika	75	v		
18	Bima	75	√		
Amount	1,235				
Percentage	44.44%				
Average	68.61				
Completeness	8				

From the data results, it can be seen that student learning outcomes in Mathematics material are still low, only 44% of students achieved the KKM score so it is necessary to improve lessons in cycle II.

When students work on questions in cycle 2, they focus on working on the questions given by the teacher. students have the courage to answer questions asked by the author without being appointed first by the teacher, students dare to express opinions so that teaching and learning goes well and the class atmosphere becomes more lively.

Table 2. Cycle 2 student scores

NO	Student's name	Mark	Q	BT
1	Meisya	80	√	
2	Cattleya Belivania Map	90	√	
3	Adiel Love	95	√	
4	Cassandra	75	√	
5	Zahra Salsabila	78	√	
6	Aaleyan	85	√	
7	Farghani	85	√	
8	M. Aqeel TA	65		√
9	Evelyn Diandra Vandani	60		√
10	Love	85	√	
11	Al. Ghozali	95	√	
12	Al. Fatih	80	√	
13	Alvians	85	√	
14	Audrey	50		√
15	Benzema	85	√	
16	Omar	80	√	

17	Cantika	75	v
18	Bima	75	√
Amount	1,423		
Percentage	83.33%		
Average	79.05		
Completeness	15		

cycle I to cycle II experienced an increase in student learning outcomes and thinking. The implementation of cycle II looks better when the teaching and learning process is ongoing. it can be seen that in the pre-cycle the average value of students was 56.06, in the first cycle there was an increase to 69.09. From cycle I to cycle II there was an increase from 69.09 to 80.45. Apart from the increase in class average scores, the number of students who achieved KKM ≥75 also experienced an increase. From the pre-action, 5 students or 26.31% reached KKM, in cycle I 8 students reached KKM or 42.10%, and in cycle II experienced a high increase, namely 11 students achieved KKM or 57.89 %. Therefore, the achievement of the success criteria in the pre-action had not been achieved because the students who achieved the KKM were only 26.31% of the total number of students, in cycle I there was an increase in achieving the KKM by 42.10% but had not yet reached the success criteria. In cycle II, the KKM increased to 85%. From these data, this research has achieved the success criteria. 85% of the total number of students who achieve KKM.

4 CONCLUSION

The results before the problem solving method was applied, students' calculating ability was still below the KKM. They are weak at calculating word problems and lack confidence in themselves and worry about making mistakes in their calculations. This method makes students active and enthusiastic in implementing learning to make the teaching and learning process come alive.

In the pre-action of students in class II only 72.22% were in the low category and only 27.78% of students who passed the test results, who did not complete as many as 13 students or around 72.22%. with an average student score of 18 students.

In cycle 1 the completeness of students has increased where 18 students or 8 have completed and those who have not completed are 10 or 44, 44% with an average score average .68.61 on the cycleII there was an increase where the number of students experienced completeness as many as 15 students or .83.33% and those who did not complete were 3 students with an average value of 79.05

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