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**IMPROVING MATHEMATICS LEARNING OUTCOMES
USING DEMONSTRATION AND PRACTICE METHOD
FOR STUDENTS AT ELEMENTARY SCHOOL**

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Abstract

This research was a classroom action research that aimed to make improvements in the learning process. This research was conducted at SDN 02 Kuala Mandor B in I grade students about determining the place value using the demonstration and practice methods. The research subjects consisted of 20 students. The formulation of the problem in this study was, "Can the demonstration and practice methods improve mathematics learning outcomes, determine the scores of tens and unit places in first-grade students at SDN 02 Kuala Mandor in semester 2 of the academic year 2017/2018?". This research was conducted in 2 cycles consisting of planning, implementation, observation, and reflection. By using evaluations to see improved learning outcomes and using observation sheets of student and teacher activities in learning. From the results of the study show an increase in student learning outcomes in the first cycle. The class average was 42 then in the second cycle increased to 86.

Keywords: *Demonstration Methods, Learning Outcomes, Mathematics, Practice Methods*

Introduction

Law of the Republic of Indonesia Number 20 of 2003 about the National Education System. The National Education System is intended to ensure equitable educational opportunities, improve the quality and relevance of education, and the efficiency of education management to deal with the demands of changing local, national, and global lives to improve the quality of education. Indonesian Government Regulation Number 19 in 2005 about National Education Standards stipulates eight national education standards that must be a reference as well as criteria in determining the success of national education. The eight national education standards in question include content standards, process standards, graduate competency standards, teacher and education staff standards, facilities and infrastructure standards, management standards, financing standards, and education assessment standards.

One of the standards related to direct assessment of the success of education is the standard of educators and education staff, especially teachers. Teachers, as a professional staff, have the task of realizing national education goals. Professional teachers were able to teach and also able to carry out learning to students. For this reason, the teacher needs to make a plan before carrying out learning in his class.

Learning is a system or process of learning students. Learning is always planned, implemented, and evaluated systematically so that students can achieve their goals effectively and efficiently. Learning is a system because in learning consists of several components

organized, among others: learning objectives, learning materials, learning methods, learning media, class organizing, learning evaluation, and follow-up learning.

Based on the results of daily tests on competencies determine the scores of tens and units on numbers it is known that the number of students in I grade is 20 students, only ten students who have completed (50%) and students who have not yet completed ten students (50%). Even though in this competency, the percentage of mastery learning that must be achieved was 75%, so it can be said that learning has not been successful. As for some of the problems faced by researchers include: students speak on their own when the teacher explains, students do not dare ask questions when experiencing difficulties, students cannot answer when asked questions, many students cheat when given an assignment, students' learning interest is low / students lack enthusiasm in receiving lessons, the average evaluation results are below the Minimum Completeness Criteria (KKM). After analyzing the mathematics learning competence, determining the scores of tens and units in numbers, I grade of SDN 02 Kuala Mandor B, Kubu Raya Regency. It is known that several factors including the teacher cause the problems above are too fast in explaining, the teacher does not use teaching aids, the teacher does not provide practice, the teacher does not motivate students, the teacher does not activate students in learning, the teacher tends to use lecture, so learning becomes monotonous and boring.

From the analysis of the problem above, solutions need to be given including the teacher should be more patient in explaining the material which adapted to the students' level of thinking ability, the teacher should use concrete teaching aids, the teacher should give members more practice to students, the teacher must often motivate students are thus more enthusiastic in learning, in learning they should use more varied methods, not just lecture methods, so students are not bored.

Based on the background stated above, the formulation of the problem of this research is, "Does the method of demonstration and practice can improve mathematics learning outcomes in I grade students at SDN 02 Kuala Mandor B in the 2nd semester of the academic year 2017/2018? "

Research Method

The implementation of the improvement of mathematics learning was carried out at SDN 02 Kuala Mandor B, Kubu Raya Regency. Learning by demonstration and practice methods is done in I grade in 2nd semester. This activity was carried out in two cycles, where each cycle was carried out at 07.00 until 08.10 WIB on the material, "determining the place value and units of numbers.

Competencies that will be improved were in Mathematics. Specifically, on the chapter, Determining the place value and units. The target students who will be given improvement were I grade students at SDN 02 Kuala Mandor B in Kubu Raya Regency.

This study consisted of 2 cycles in which each cycle consisted of activities: (1) Planning which included: preparing learning scenarios through lesson plans, making media and teaching aids, making student worksheets and evaluation instruments, composing formative tests; (2) Implementation, including preparing lesson plans, preparing media and teaching aids, holding student attendance, using the stages of learning in lesson plans using teaching aids, in learning students work on formative tests; (3) observations focused on student learning outcomes, student activities, teacher performance in the learning process; (4) reflection activities were carried out by analyzing the results of students' formative tests in the pre-cycle. The analysis was conducted to determine the success of learning conducted in the pre-cycle, the results of the analysis were used to plan learning improvements that were cycle I and so on so that the learning process can improve student learning outcomes.

In this study, learning outcomes were obtained by taking the classical average as for student and teacher activities through observation sheets using the 1-4 scale. Scale 1 shows poor category, 2 shows fair category, 3 shows good category, and 4 shows very good category.

Result and Discussion

The study was conducted at SDN 02 Kuala Mandor B, Kubu Raya Regency, the learning outcomes of each cycle were shown in the table below:

Table 1 Student Learning Outcomes Data in Cycle I

Score	The Number of Students	Score	Percentage
100			
90			
80			
70	1	70	5%
60	2	120	10%
50	5	250	15%
40	6	240	40%
30	4	120	20%
20	2	40	10%
10			
Total	20	840	100%
Average		42	

Based on table 1 above, it can be seen that the results of the first cycle formative test shows the ability of students to solve questions where the average value has not yet reached the KKM. The table shows the data of students who got a score of ≥ 61 were three children. Completion of learning had only reached 15%, namely participants who had reached KKM only three people, while 18 students or 85% were still below KKM. Thus the learning activities in the first cycle needed to be increased again.

Table 2 Student Learning Outcomes Data in Cycle I

Score	The Number of Students	The Number of Scores	Percentage
100	9	900	45%
90	5	450	25%
80	5	400	25%
70	1	70	5%
60			
50			
40			
30			
20			
10			
Total	20	1820	100%

From the table above, it shows an increase in learning outcomes where the student has reached the specified KKM. The graphs of learning outcomes for the cycle I and cycle II are as follows:

Fig. 1 Learning Outcomes in Cycle I and Cycle II

While the activities of students in learning will appear in the table below. In the improvement study, the activity was calculated using a scale of 1-4 with category 1 was poor, 2 was fair, 3 was good, and 4 was very good. And these activities are as follows:

Table 3 Student Activity Data in Learning

No	Indicators	Achievement		
		First Meeting	Second Meeting	Third Meeting
1.	The activity of asking the teacher when learning takes place	1	2	3
2	Courage of students in working on problems	1	2	4
3	Courage of students in expressing opinions	1	1	4
4	Students diligence in completing assignments	3	2	3
5	Students work hard to solve problems	2	2	3
Total		8	9	17
Average		2.5	4.5	85
Percentage		40%	45%	85%

Based on Table 3 above, it can be seen that from the 5 indicators, the average student activity in learning in the pre-cycle is 40%. Even though the average percentage of completeness that must be achieved by students on all indicators was approximately 54%. So in the first cycle, student activities have not yet reached the specified minimum target, so it needs improvement in the next cycle.

In the first cycle, the observations were made again and showed that in the first cycle, the activity of students asking questions to students in the category was fair. Then in the activity of courage, students work on the questions that were in the fair category. For the activity of expressing students' opinions were in the poor category. For perseverance and hard work in solving problems were categorized as good. The percentage of student learning activities in this cycle was 45%. It shows that student activities are still lacking, so improvements are made in cycle II so that student activities increase.

In the second cycle, we can see in the table above shows that an increase in learning activities in students student activities ask students are still in a good category. Then in the

activity of courage, students work on the questions that are in a very good category. For the activity of expressing students' opinions are in the very good category. For perseverance and hard work in solving problems are categorized as good. The percentage of student learning activities in this cycle is 85%.

Table 4 Teacher Performance Activity Data

No	Indicators	Achievement		
		First Meeting	Second Meeting	Third Meeting
1.	PRELIMINARY ACTIVITY			
	a. Carrying out class routine assignments	2	3	3
	b. Opening lessons	1	2	3
2.	CORE ACTIVITY			
	a. Explanation of material	2	2	3
	b. Application of the Method	0	1	3
	c. Use of the media	3	1	4
	d. Guiding students	1	1	3
	e. Class management	3	3	3
	f. Trigger and maintain student activities	1	1	4
	g. Questioning ability	2	3	4
3.	CLOSING ACTIVITY			
	a. Evaluate	2	3	4
	b. Closing lesson	3	3	4
	Total	20	23	38
	Average	45	52	86

Based on Table 4 above, in cycle I, the average score of teacher performance activities has not shown a good record, which only reached 45. While the minimum criteria for success that must be achieved are 71, it means that teacher performance activities have not been successful. There needs to be an increase in most indicators.

Then an improvement was made in the second cycle and showed an increase in the average teaching activity of teachers, from 45 to 52. However, this increase still showed that the activities carried out by the teacher were still not optimal because they had not reached the set completeness target of 71. Then based on reflection from observations of these activities, redesigned activities whose direction can increase teacher activity so that it will impact on improving learning outcomes. It is illustrated in the table above, where the second cycle shows an increase in teacher teaching activities to 86. The increase in the second cycle shows that the activities carried out by the teacher have reached the completeness target of 71.

In the first cycle, the teacher began to give the concept of determining the place value to students. At this meeting, the teacher used demonstration and practice methods. Learning

activities began by motivating students to understand the material being studied. Some of the students behind were busy talking with their friends outside the subject matter.

At this meeting, the teacher gave practice questions that aimed to train students so that they have better understanding about the concepts, and the practice was directly carried out by students in the class. After finishing, the teacher explained the problem-solving techniques correctly. Then the teacher gave practice exercises one more time. From the results of this exercise, it can be seen that some students can apply problem-solving techniques well. These students were students who have more ability than their peers. These students will later be used as group leaders. The head of this group was expected to be able to help their friends who feel difficulties so that in the future, students who have more abilities can be used as peer tutors.

To improve students' ability to solve problems determine the value at which the teacher gives exercises. In the exercise, the teacher used a learning model where students were invited to work together in their groups. In its application, students were divided into five heterogeneous groups. Inside there was a student who could solve problems determining the value of the place well. After the group was formed, the teacher gave direction about the rules in the discussion activities that will be carried out. Then each group was given a question card as a group assignment.

In this discussion activity, all students seemed to read the questions seriously. After 10 minutes, some students looked back, some looked bored, just leaning on the table. They look challenging to solve the problem however they were reluctant to ask friends who have finished. Students who have finished the task just play around and sometimes bother their friends. The teacher went around the class, but none of the students asked or expresses the problem. Seeing this, the teacher gave motivation to students to immediately exchange the question cards to the other members' friends. It was only after that the students seriously worked on their assignments. In addition, the teacher also motivated so that students who had difficulty asking their friends who have finished and those who finished first helped their friends who had difficulties.

Group activities at this meeting lasted very long, exceeding a predetermined time limit. After all, groups completed their respective tasks. The teacher offered each group to read the results of their work. However, none of the groups sent representatives. They were still afraid and ashamed. There was one group that seen going forward however it was still hesitant and not brave. Furthermore, the teacher motivated so that each group immediately conveyed the results of their work. Three groups came forward, namely groups 3, 4, and 8.

At the group work presentation, none of the students protested even though the answers given were wrong. Next, the teacher invited students to summarize the results of the discussion of the questions. The teacher perfected and aligned students answers. All students paid attention, and many of them, while writing was copying answers into their notebooks. After that, the teacher asked students to collect all the questions and answers written on paper. The teacher ended the learning by giving homework. During the learning process, the learning observation took place using observation sheets for teachers and students.

In Cycle II, the preliminary activities were carried out in accordance with the prepared learning scenario. Students' skills in solving problems are not good enough, for that the teacher explains some things that are not mastered by students. After delivering the material and learning objectives, the teacher motivated students to always be diligent in practicing work on the problems, and the most important thing was to solve the questions that must follow the order specified.

Then in this second cycle, group learning activities were carried out again. All students were in their respective groups as the group division at the previous meeting. Before the discussion activity begins, the teacher motivated students so that each group worked well together, helping each other. For those who do not understand the problem, immediately ask

their group friends and who finish first immediately help their friends who were struggling. Then the teacher gave assignments to each group.

All students seemed enthusiastic about the assignment they received. There is already a group conducting discussions with its members. Discussion activities began to work well, but there were still two groups that did not work. When the teacher goes around, three groups dare to ask questions. They have difficulty understanding the questions. The teacher guides groups who find it challenging to complete assignments.

Discussion activities went well after all groups completed their assignments. The teacher asked each group to present the results of their work and offered all groups to come forward. Four groups dared to raise their hands. They advanced without being forced. At the time of the presentation, there were no students from other groups who denied or gave opinions. Several group answers were correct. Next, the teacher invited students to summarize the results of the discussion of the questions. The teacher perfected and aligned the answers of students who were still wrong. All students paid attention, and many of them, while writing was copying answers into their notebooks. The teacher asked students to collect all the questions and answers written on paper.

Students returned to their seats. Then the teacher gave the questions as an evaluation. All students looked earnestly working on the problems although there were some difficulties. After completing work, the results of student work were collected.

The teacher and the observer did the reflection. Based on the analysis of the results of the final evaluation obtained by cycle I, on average, it had not yet reached completion. It was evident from the percentage of mastery learning had not managed to meet the target. The evaluation results obtained in the first cycle only reached mastery learning by 42%, while the KKM was 70%. Based on the results of student work in the evaluation of the first cycle, it can be seen various errors made by students, including: (1) Students had not been able to interpret the problem language in the form of mathematical language; (2) Students were not able to make mathematic sentences; (3) Students did not follow techniques or sequences in problem-solving; (4) Based on the results of observations, it appeared that student activities in learning were still low. Some indicators have not been achieved in accordance with the expected criteria; (5) Students still felt awkward and ashamed to ask or answer questions; (6) Some group members were unpopular with their group mates; (7) Some smart students were less concerned about friends of members who were not able to.

From the results of reflection in the first cycle, it was known that the teacher's activities were getting better from the beginning to the end of the cycle, but there were still shortcomings, including: (1) Teachers were lacking in guiding groups that have difficulties; (2) The teacher did not pay attention to harmonization within the group, because there were some group members who were less liked by his friends, but the teacher did not exchange it with other groups; (3) Teachers often told stories outside the material so that a lot of time was wasted; (4) The use of teaching aids was not optimal.

In the reflection activity, several things need to be improved in the first cycle, namely: (1) Understanding of the meaning of language in the problem, namely the teacher needs to provide information about the meaning of the language that is commonly used in story problems; (2) The ability to write mathematical sentences, can be improved through guidance from teachers and smart friends in one group; (3) Mastery of techniques for completing fractional operations. It was overcome by providing remedial guidance on the concept of fractional operations; (4) Application of techniques or steps in solving story problems, for this reason, there needs to be an emphasis on students always to use the correct steps in solving story problems; (5) Student learning activities such as questions, opinions, and collaboration with groups. Overcome by motivating students to be more confident, as well as increase awareness of friends who are unable or less intelligent; (6) Teachers' attention to difficulties

faced by groups needs to be increased; (7) Teachers must focus more on learning material; (8) Teachers need to improve the use of teaching aids in learning.

Based on the description above, then the action hypothesis has been reached, namely through a demonstration and practice model, the ability of I grade students of SDN 02 Kuala Mandor B in solving problems determining the place value can be improved. Starting from the results obtained in the second cycle of action means that the ability of students to solve material problems determines the place value has increased. This research does not need to be continued in the next cycle. Indicators of success in this study have been achieved, namely, at least 70% of students have achieved grades.

Conclusions and Suggestions

The learning process that uses the demonstration method and exercises on the material place value shows an increase in learning outcomes in the first cycle. The average value of 42 increased in the second cycle to 91. In the learning process, it is recommended for teachers to use the demonstration method and practice in instilling the concept of determining place values, and this research can be developed and updated again to get results and ways to vary in the learning process.

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