

The Application of Realistic Mathematic Education (RME) Increasing Students' Mathematics Learning Outcomes in Class VI Social Materials SDN 101878 Kanan I Tanjung Morawa

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Abstract: This research started from the fact that many fifth grade students of SD 101878 Kanan I, Tanjung Morawa, had difficulty understanding fractions, especially in learning to recognize fractions. This is because the teacher does not provide fractional learning realistically in accordance with the student's concrete situation. One solution to overcome this problem is to use the RME approach. RME is one approach to learning mathematics that is oriented to everyday experiences. This research is a classroom action research conducted in two cycles. classroom action research that forms a cycle, namely: (1) planning, (2) implementation, (3) observation, and (4) reflection. Collecting data in this study using observation, documentation and test techniques.

Keywords: Learning Outcomes, RME Approach, Fractions

I. INTRODUCTION

If education succeeds in bringing Indonesian people towards development, there will be a good regeneration of the nation. So far, mathematics is still a subject that is considered difficult by students. Many students accept just casual teaching of mathematics in schools, without any curiosity as to why and for what mathematics is taught. Many students think that mathematics is just counting and playing with formulas and numbers (Arrahim, Yudi Budianti, 2021).

This assumption causes the classroom learning process does not provide opportunities for students to build their own understanding so that students become passive learners and do not participate in the learning process. Students cannot understand the importance of learning algorithms and only memorize formulas without understanding the mechanics even though they know that they must understand the concepts and their uses first before memorizing them. Most of the students are also bored and bored with mathematics lessons.

Based on field observations, the students at SDN 101878 Kanan I, that is, most of the Class V students are passive in participating in mathematics learning. Only a few children were enthusiastic and active in learning mathematics. The absence of student activity in learning mathematics affects mathematics learning outcomes. The class average score in Mathematics is the lowest rank compared to other subjects. This is evidenced by the grade V report card for the first semester of the 2021/2022 academic year, the average grade for mathematics is 58 and the average grade for other subjects is above it.

Meanwhile, the learning activities carried out by the teacher still lacked attention to students' thinking skills and interest in learning. The teacher has not fully tried to arouse students' motivation to learn mathematics (Iswiranti, 2017). The learning models and methods used are less varied. The RME (Realistic Mathematical Education) learning model has never been used in this class. Likewise, the methods used in learning are still less varied where teachers often use the lecture method with drills. The learning models and methods used still tend to make students passive in the teaching and learning process because they are not interested in participating in learning activities. Therefore, the researcher intends to use the RME (Realistic Mathematical Education) learning mode to be able to grow student motivation, student concentration, and student activity in learning activities in his research.

The problem that can be formulated by researchers is how to apply the RME model in improving mathematics learning about fractions for fifth grade elementary school students? This research is expected to be able to obtain a new theory about improving mathematics learning outcomes about fractions for fifth grade elementary school students by applying the RME Model and as a basis for further research. Practically it is expected to provide benefits: 1) For students, Grade V students get the right conditions for learning mathematics, so that students can concentrate well and be active in learning mathematics, 2) For teachers, teachers get the right solution to overcome student boredom and also attitudes

passive students in learning activities, especially learning mathematics about fractions in class V, 3) For schools, (Alawiah & Ristiana, 2021).

Based on the Regulation of the Minister of National Education of the Republic of Indonesia Number 41 (2007), it states that the learning process in each primary and secondary education unit must be interactive, inspiring, fun, challenging, and motivating students to participate actively and provide sufficient space for innovation, creativity, and independence in accordance with the talents, interests and physical and psychological development of students. To comply with these regulations, teachers are required to be creative in creating learning in the classroom. One of the learning approaches that will lead to student interactivity is Realistic Indonesian Mathematics Education (PMRI). PMRI emphasizes the skills of "doing math" skills, discussing, debating, collaborating with classmates, so that they can find their own and finally use it to solve mathematical problems both individually and in groups (Zulkardi in Astuti, 2018). PMRI is one of the learning approaches that will direct students to understand mathematical concepts by helping them with concepts, it is hoped that student learning will be meaningful (Ilma in Ananda.R, 2018).

In the RME (Realistic Mathematical Education) model, realistic problems are used as a source for learning, not as a conclusion or closing of the learning process. (Astuti, Wahudi, & Ngatman, 2016). The learning process does not start from the formal level but uses context to build mathematical concepts. The context used at the beginning of learning is useful to support exploration activities for students. Besides being useful for supporting exploration activities, the use of context at the beginning of learning can also increase students' interest and motivation in learning (Nursalam, et al. 2020).

The learning steps of the RME (Realistic Mathematical Education) model are: (1) posing real-world problems according to the experience and level of students' knowledge, (2) directing problems into mathematical concepts, (3) students creating symbolic models informally and linking it to the formal language of mathematics to translate real-world problems into mathematical problems, (4) solving mathematical problems, (5) returning solutions from mathematical problems into real situations (Hidayat, et al. 2019).

II. METHOD

This research uses Classroom Action Research (CAR). According to Wardhani & Wihardit (2010: 14) stated that Classroom Action Research (CAR) is research in the social field that uses self-reflection as the main method, carried out by people involved in it and aims to make improvements in various aspects. The subjects in this study were fifth grade students of SDN 101878 Kanan I, Tanjung Morawa sub-district for the academic year 2021/2022, totaling 15 students. The purpose of this research is to improve the learning process so that learning outcomes increase learning outcomes. This research uses 2 cycles. According to Sugiyono (2017) there are 4 important stages in carrying out classroom action research that form a cycle, namely: (1) planning, (2) implementation, (3) observation, and (4) reflection. The data of this research were obtained from lesson plans, student worksheets, evaluation tests, and field notes. In this study, the researchers used tools and materials to support the activities going well, namely knives, rulers, pizza pictures, printed birthday cakes, and also used some donuts.

III. RESULTS AND DISCUSSION

1. Data Description

The teacher opens class activities by explaining some examples of problems about fractions related to students' daily activities. For example:

- Mr. anto has 3 children, one day Mr. anto bought 1 box of pizza. Then Mr. Anton told his son to divide the pizza into 3 equal parts. How much does each child get?
- Hesty bought a watermelon to share with six of her friends. How do they cut the watermelon so that each gets an equal share?
- Aji bought a birthday cake. He wanted to share the cake with his eleven soccer teammates. Then aji cut the birthday cake with the same part. How much does each person get each of his sponges?



Figure 1. The teacher explains examples of problems in everyday life

From some of the examples above, the teacher asks the students, are any of you able to write down the fractional form of the examples above? (Picture 1) After that, the teacher invites students to look for other examples that have the same meaning as the previous examples. Next, the teacher divides the number of students into 3 groups consisting of three to four students in each group. The teacher calmly explains what the students should do in groups. First, each group was given a student worksheet (Picture 2), pictures of Pizza, Watermelon and Birthday Cake.

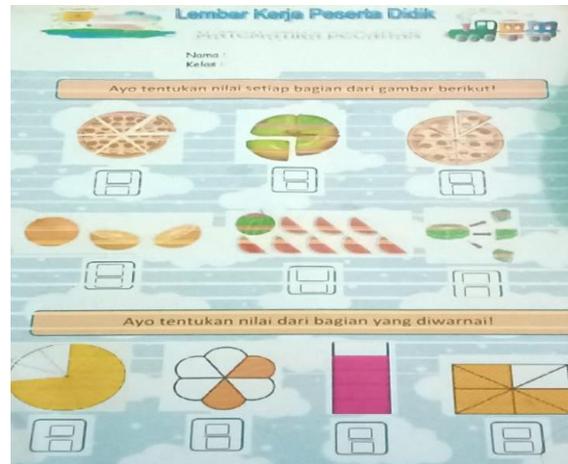


Figure 2. Student Worksheet



Figure 3. Student Activities in Distributing a Donut.

A picture of a donut was given to students as a tool for students to understand a fraction and to assist students in answering group worksheets. While students work with their group mates, the teacher supervises and provides appropriate directions around the group for those in need.



Figure 4. The teacher explains to students who do not understand the problem.



Figure 5. Students help each other explain to their friends.

After 30 minutes have passed, the teacher asks students to collect their work and discuss what they have done together. Each group gives their answers, and when there are differences in answers, the teacher does not immediately give the correct answer but provokes a class atmosphere so that discussion occurs. So that the classroom atmosphere is meaningful with interaction/discussion between students, not only teacher-student interactions. At the end of the lesson, the teacher together with the students find conclusions about what they have learned at this meeting, namely concluding that they have learned to recognize fractions of concrete objects.

2. Data analysis

When the researcher gives an evaluation test to each student. These questions are given to measure students' understanding of fractional material. The evaluation question consists of 10 questions. There are 2 types of questions in the test. (1) students determine the fraction in the picture. (2) students match the pictures of fractions by drawing a line on the correct number of fractions.

Based on the implementation of the learning that has been done, it can be analyzed and give the following results:

Table 1. Evaluation test assessment table

NO	STUDENT'S NAME	SCORE
1.	AH	90
2.	AF	90
3.	MS	95
4.	SR	98
5.	MR	90
6.	AL	95
7.	NF	98
8.	MY	98
9.	GO	98
10.	LN	98
11.	SA	95
12.	NP	88
13.	TS	90
14.	MF	90
15.	RA	88

From the data above, it can be seen that student learning outcomes taught using Realistic Mathematical Education (RME) can improve student learning outcomes. These results are in line with research conducted by Susanti (2014) whose research results show an increase in learning carried out by teachers and students in each cycle in using the RME approach.

IV. CONCLUSION

The learning steps of the RME (Realistic Mathematical Education) model are: (1) posing real-world problems according to the experience and level of students' knowledge, (2) directing problems into mathematical concepts, (3) students creating symbolic models informally and relate it to the formal language of mathematics to translate real world problems into mathematical problems, (4) solve mathematical problems, (5) return solutions from mathematical problems into real situations.

The obstacles experienced by researchers in using the RME Model are: a) Teachers do not allocate time in learning, b) Teachers do not provide instructions, motivate students to ask questions, c) teachers lack mastery of the class, d) teachers do not provide instructions for doing evaluations, e) The teacher does not explain the material, f) the teacher does not explore students' knowledge, g) the teacher does not motivate students to interact, h) the teacher is less than perfect in providing real-world problems, i) the teacher is not clear enough to include real examples into mathematical calculations, j) there are still students who are very passive in learning. The solution actions taken are: a) the teacher divides the learning time, b) the teacher provides instructions and motivation so that students ask questions, c) the teacher practices to understand and look for ideas so that learning is maximized,

Based on the application of the RME model to fractional material in class V, the following suggestions can be submitted: 1) For teachers, to always add insight into the Education Unit Level Curriculum so that the implementation of learning in class feels fun by using the RME Model as an effort to improve the learning process that affects the results student learning, 2) For Researchers, Teaching with the RME Model can run effectively if it is supported by the skills of researchers and active students in learning, 3) For students, students must be actively involved with all their potential during learning with the RME Model so that the learning process and learning outcomes have increased, 4) For schools, schools should apply innovative learning models, one of which is teaching with

RME model in learning Mathematics about Fractional Counting Operations.

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