Improvement Of Activity And Learning Mathematics Results Through Realistic Mathematics Education (RME) In Student Grade V 14 Ganting Dodok Sulit Air

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Abstract—**Research to increase activity and learning outcomes approach mathematics with Realistic Mathematics Educations (RME) in the fifth grade students of SDN 14 Ganting Dodok Sulit Air. This research is a research type of Class Actions Research. The subjects of the study were the students of grade V SD N 14 Ganting Dodok as many as 13 students. The study was conducted in 2 cycles, with each cycle consisting of planning, implementation of action, observation, and reflection. Data collection techniques are by observation, interview, documentation, field notes, and tests. Data analysis used is qualitative and quantitative analysis. The results showed an increase in student activity from cycle I to cycle II and showed an increase in student learning outcomes from cycle I to cycle II**

Keywords—activities, learning outcomes, mathematics, RME

I. INTRODUCTION

Mathematics is one field of study that supports the development of science and technology. The development of science and technology impacts on all life. In addition to rapid development, changes also occur quickly. Therefore, the ability to acquire, manage and utilize the science and technology is proportional. Mathematics is the science of patterns and rules, the science of something that has a pattern of order and a logical sequence. Finding and expressing this order or sequence and then giving meaning is the meaning of the composition of mathematics [1].

Mathematics learning has several goals, one of them is has an attitude to appreciate the usefulness of mathematics in life, which are haves a curiosity, attention, and interest in learning mathematics, as well as a tenacious attitude and confidence in

problem solving [2] . Based on the objectives of mathematics learning above, it can be seen that the learning of mathematics aims to develop all the abilities and activities of students in obtaining optimal learning outcomes, without the activity of learning from students then a lesson will not work. The principle of learning is to do something to change behavior [3]. There is no learning if there is no activity, which is why activity is a principle or a very important principle in the interaction of teaching and learning.

In the practice of mathematics learning in the classroom, teachers are often confronted with the fact that most students solve their mathematical problems only focus on what the teacher exemplifies in front of the class, without them being able to construct the knowledge they have to solve the problem. Taking into consideration about the conditions above there needs to be a supportive change in the learning process in the classroom so it is expected to improve the quality and quality of learning. One of them is the change of learning approach which is more interesting and fun for the students so that the activity and the result of student's mathematics learning increase.

One alternative that can be done by the teacher in order to further increase activity and result of student's mathematics learning in class is by using approach of Realistic Mathematics Education (RME) which is known as approach which have succeeded in Nederland. The Realistic Mathematics Educations (RME) is a student-oriented learning approach, that mathematics is a human and mathematical activity should be linked significantly to the context of daily life of real-life-oriented learning students, students are guided by problems-constextual problems [4]. Thus

realistic mathematics contains activities that emphasize the student's activity to seek, discover and build on the necessary knowledge to solve the problem of contextual problems.

The Realistic Mathematics Educations (RME) is one of the student-oriented approaches of mathematics learning, that mathematics is a human activity and that mathematics must be linked significantly to the context of everyday life of students to real-world oriented learning experiences Real) [5]. In this realistic approach it is affirmed that mathematics of love is as a *human activity*. In learning, students are not just passive recipients of the mathematics material that has been provided. But students need to be given the opportunity to *reinvent* (find) math through their own practice.

Based on the above opinion it is clear that Realistic Mathematics Education is an approach that begins on the reality or real context around the students to initiate learning activities and eventually used to solve problems in daily life

Characteristics Realistic mathematics Educations (RME) [6], namely:

a. The use Contextual Issues *(Use of Context)*

The learning process begins with student involvement in contextual problem solving.

b. Usage Model *(Use of Models, Bridging by Vertical Instruments)*

Mathematical concepts or ideas are reconstructed by students through vertical instrument models, which move from informal to formal procedures, and are also used as a bridge between one levels of understanding to another.

c. Contributions students *(Students Contribution)*

Students actively construct their own mathematical materials based on the facility with the learning environment provided by the teacher, actively solving the problem in their own way.

d. Interactive activities *(Interactivity)*

Learning activities are interactive, allowing interaction between students and students, students with teachers, and students with learning tools.

e. Interrelated topics (*Intertwining* **)**

Mathematical structures and concepts are interrelated and integrated with each other. This interconnectivity and inter-integration of mathematical structures and concepts should be explored to support a more meaningful learning process .

II. RESEARCH METHODS

The type of research conducted is Classroom Action Research . Classroom Action Research is one part of action research with a specific class-

related aims to improve the quality of teaching practice . [7] "Classroom action research is conducted through a dynamic process consisting of four essential" moments "of Planning, action, observing, and reflecting. The subjects of the study were the students of grade V SDN 14 Gangs Dodok Sulit Air second semester of academic year 2017/2018, amounting to 13 persons. The data collection obtained in this research are (1) teacher and Student observation sheet; (2) Student Activity Sheet; (3) Test student learning outcomes. Data analysis technique used in this research is qualitative and quantitative. Success Indicators Research if there has been an increase in activity and learning outcomes of mathematics students using Realistic mathematics education. Success Indicators Research if there has been an increase in activity and learning outcomes of mathematics students using Realistic mathematics education. The learning process is said to succeed when the activity of students and teachers reaches at least 85% and Learning outcomes are said to be successful 85% of students score above KKM in the learning of Mathematics is 75.

III. RESULTS AND DISCUSSION

Teachers observation results conducted on learning activities using Realistic Approach to Mathematics education that researchers do in Cycle I can be seen in Table 1 that is:

TABLE I. STUDENT ACTIVITY OBSERVATION RESULTS CYCLE I

Cycle 1	Average Percentage (%)
Meeting 1	55
Meeting 2	68
Meeting 3	73
Meeting 4	77
Average	**70**

TABLE II . PERCENTAGE COMPLETION OF STUDENT LEARNING RESULTS CYCLE 1

Cycle 1	Average Class	Percent Due (%)
Meeting 1	68.6	15
Meeting 2	72.8	46
Meeting 3	78.0	62
Meeting 4	79.0	69
Average	**74.6**	**48**

From Table I and II both data have increased every meeting. Although at every meeting in Cycle 1 has increased, but still not achieved the target of success because the percentage of mastery of students on average is still 48%, while the success criteria is 80%. Broadly obtained the picture as in following Graph I:
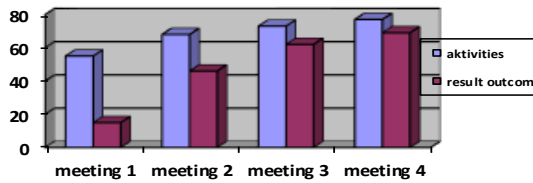
Graph 1. Student Activities and Learning Outcomes In Cycle I

From chart 1 we can see that the activity and the result of learning has increased from 1 to 4 meetings. However, after reflection in action planning has been found that there are some shortcomings that need to be improved such as: Teachers less attention to students-students who are on the side, so some students are busy writing when teachers show props. Teachers do not guide students in working on the Student Worksheet given so many students who do not understand in completing the given LKS, and many students are passive in the group. Teachers are less able to guide students to construct the knowledge that students have so many, so that many students do not find their own answers to the questions given by using the props they use. When the students presenting the results of his group work the teacher is less motivating other students to respond to their friend's work. When students do the exercises given by the teachers, the teachers should pay attention to do guidance on things that have not understood in the given exercise so that all students are able to solve the given problem.

Based on the results of reflection on the first cycle then the learning has not been said to run optimally, so researchers need to re-arrange action plan improvement in the next cycle that is cycle II. The action that needs to be done as an improvement effort in cycle II such as, Teachers should be able to motivate and attract students' attention with the props used, so that all students observe the props used. Teachers should guide all students in working on the provided LKS so that all students can understand and complete the given LKS. Teachers motivate students to construct the knowledge that students have so that students using their props can find their own answers to the problem. When the students presenting the results of group work the teacher must motivate other students to respond to the work of his friend in front. After the researchers continue on the second cycle, then obtained activity data and student learning outcomes in the following table :

TABLE III. RESULTS OF STUDENT ACTIVITY OBSERVATIONS CYCLE II

Cycle II	Percentage (%)
Meeting 1	79
Meeting 2	80
Meeting 3	97
Average	**85**

TABLE IV. RESULT OF PERCENTAGE OF STUDENTS' CYCLE STUDY COMPLETION II

Cycle II	Average Class	Percent Due (%)
Meeting 1	83.2	77
Meeting 2	85.0	85
Meeting 3	88.0	92
Average	**85.4**	**85**

Based on Tables III and IV Student activity on this cycle II, overall can be said to be successful because almost all students perform activities in accordance with predetermined indicators. In general, all components of student activity indicators are in good and excellent category. In this second cycle, the teacher has also done all that has been planned and has realized the optimal results. Student learning outcomes in Mathematics learning using Realistic Mathematics Education Approach in Cycle II has improved. Teachers are able to motivate and guide students to construct the knowledge that students have so they can solve problems . This can be seen from the results of student scores. The average value obtained by students with the percentage of students' learning mastery 85%. Assessment of Mathematics learning result by using Realistic Mathematics Education Approach obtained during the implementation of cycle II is in accordance with the target completeness of 85%.
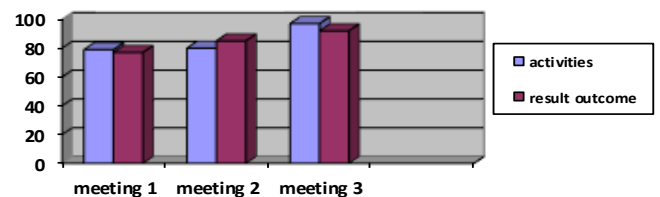
Graph 2. Student Activities and Learning Outcomes In Cycle II

Mathematics learning using Realistic Mathematics Education approach in grade V can increase visual activity, oral activity, mental activity, and Drawing activity. Also student learning outcomes from cognitive, affective, and psychomotor aspects.

IV. CONCLUSION

Through the Realistic Mathematics Education Approach can increase the learning activity of VII grade students of SDN 14 Ganting Dodok Sulit Air. This is seen in the average percentage of student activity classically from cycle I to cycle II. Through the Realistic Mathematics Education Approach can improve the learning outcomes of Mathematics students of grade V SDN 14 Gangs Dodok Sulit Air. This is seen in the percentage of mastery of student learning outcomes both cognitive, affective, and psychomotor aspects from cycle 1 to cycle II.

SUGGESTION

In learning mathematics teachers should give flexibility to students to construct their own knowledge through a variety of approaches one approach to realistic mathematics education. Teachers should be familiar with the student's daily environment because the PMR in the use of media and visual aids is more emphasis on real objects that are commonly seen in the daily life of students. Teachers are required to be more creative in making the discussion questions by associate it and make it closer to the daily activities of students. For the principal with the increased activity and learning outcomes students can certainly take policy to develop learning using realistic learning on other lessons. For researchers who conduct similar research, the results of this research can be used to add insight on improving the activity and learning outcomes of students through RME in learning in school and can be used as material considerations or references and studies to improve success in the education process.

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