

The Differences Between The Effect of Realistic Mathematics Learning Approach to Conventional Learning with The Students Mathematics Learning Outcomes in Junior High School of 38 Medan Grade VII

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Abstract- The purposes of this research were to know the effect of realistic mathematics learning approach and the conventional approach to the student learning outcomes on fractional materials. This research type was true experimental design (pretest-posttest control group design). The object of this research was taken from the whole population in Junior High School of 38 Medan grade VII as many as six classes. Sample taking was done by simple sampling technique consisting of two classes, namely experiment and control class. The instrument used in this research was description test method consisting of five questions. This research used t-test data analysis (one side test, right side). The research found that $t_{score} > t_{table}$ it means H_0 was rejected and H_1 was accepted such that the effect of realistic mathematics learning approach effect was better than the conventional approach to the students' learning outcomes in Junior High School of 38 Medan grade VII on fractional materials. The implication of this research was by the realistic mathematics approach, the students were easily to understand more about the material and improve the results of learning mathematics on fractional materials.

Keywords - *Realistic mathematics learning approach, conventional learning, experimental method and learning outcomes*

I. INTRODUCTION

Subjects are math is a subject that is considered difficult for students of Junior High School in 38 Medan. Mulyono Abdurrahman (2003) argues that:

"Of the various subjects taught in school, math is a field of study that is considered the most difficult by the students, both of which are not learning disabilities and more so for students learning disabilities".

The ability of student competence can be seen by the results of study subjects, especially mathematics subject matter fractions. Learning outcomes in mathematics subject matter fractions observation research results to one of the teachers at Junior High School in 38 Medan is very low. From the data obtained that the number of students who reached the fourth grade level mastery in learning is 54 people or 38.1% while the number of students who do not achieve the level of mastery learning is 88 people or 61.9%. The low value is due to the acquisition of learning outcomes of students, especially in mathematics subject matter fraction is low then the achievement of study results not optimal. The learning result is one of the internal factors that are important in the students themselves optimally enhanced.

But in fact the role of mathematics to enhance these capabilities are still low. Along with the quality of education in Indonesia is still low. As expressed by Zainurie (2007)

"A lot of people say" the quality of education in Indonesia ", especially in mathematics is still low. Data supporting this opinion are: UNESCO data show math ranked Indonesia were in row 34 of the 38 countries. So far, Indonesia has not been able to escape from the bottom row occupants "

In addition to a conventional system that is still learning, the use of props in Junior High School 38 Medan field in mathematics that is still lacking, this is due to the understanding that the use of props that cost is quite expensive. When in fact in mathematics that we can take advantage of the environment to be used as props as well as realistic mathematics learning.

According to Johar (2001), when children learn mathematics apart from their daily experience then the child will quickly forget and can not apply mathematics. This

means that the learning of mathematics in the classroom emphasis on the linkages between mathematical concepts with everyday childhood experiences. To solve these problems used approach to learning math oriented pematematisasian everyday experience and apply mathematics in everyday life is a realistic mathematical approaches (PMR). Realistic Mathematics Education (RME) was developed in the Netherlands in the 1970s by the Freudenthal Institute and is now widespread in many countries, including Indonesia.

II. METHODS

This study was conducted in Junior High School of 38 Medan. The population in this study were all class VII as 6 classes. With an average number of students 36 people. Samples taken in this study were two classes of experimental classes and control classes were chosen randomly.

Design or design of this study is true experimental design (pretest-posttest control group) (Sugiyono, 2012). In the design of this research, there are two groups each selected randomly, and then given a pretest to determine the initial state is there a difference between the experimental class and control class. Results pretest was good when the value of the experimental group did not differ significantly. The effect of treatment is $(O_2-O_1) - (O_4-O_3)$ (Sugiyono, 2012).

Procedure in this study a preparatory phase and the implementation phase. The instrument used in this study a test item description 5 (pretest and posttest) which already valid before by three experts in student learning outcomes and through interviews informally by students.

III. RESULTS AND DISCUSSION

The data in this study were drawn from two classes of class VII³ and class VII⁴ Junior High School of 38 Medan with the number of students in VII³ (experimental class) and VII⁴ (control group) respectively is 36 people. In this study the data taken is student learning outcomes. The test results are the students' learning achievement test after learning (post-test) and prior learning (pre-test). Range of values pre-test and post-test is 0-100.

Both classes were given a pre-test (O_1 and O_3) with the same problem after being given a pre-test the two classes were given the same learning materials by different methods. After the learning process is complete both classes were given post-tests (O_2 and O_4). The results of pre-test and post-test is checked as the data of student learning outcomes. Data collected in the form of data-pretest posttest difference of (O_2-O_1) for the experimental class and (O_4-O_3) for the control classes derived from the test results that the pretest and post-test, amounting to 5 items form essay test.

A. Data difference in the final test-the initial test experimental class (O_2-O_1)

Having held the initial test and final test of the obtained difference as the table below:

Tabel 1. Data difference in the final test-the initial test experimental class (O_2-O_1)

interval beda	frekuensi
1-6	10
7-12	2
13-18	11
19-24	3
25-30	5
31-36	5
Mean	16,889
SD	10,969

The highest difference of a given test is 35, the lowest difference is 1, while the mean is 16.889.

B. Data difference in initial tests the final test-control class (O_4-O_3)

Having held the initial test and final test of the obtained difference as the table below:

Tabel 2. Data difference in initial tests the final test-control class (O_4-O_3)

interval beda	frekuensi
(-6)-0	8
1-7	10
8-14	4
15-21	9
22-28	4
29-35	1
Mean	9,972
SD	10,57

The highest difference of a given test is 33, the lowest difference is -5, while the mean is 9.972.

C. Hypothesis Test

Results data calculation difference achievement test showed that = 2.721 whereas in the distribution t for and df = 70 obtained = 1.668, apparently to test the results of study showed that or located outside the area of acceptance of H_0 , it means that H_0 is rejected with the words other H_1 accepted that the effect of realistic mathematics learning approach is better than the conventional approach to the learning outcomes of students in Junior High School of 38 Medan grade VII in the material fractions.

IV. CONCLUSION

Based on the results of research and data processing, it can be concluded that: The effect of realistic mathematics learning approach is better than the conventional approach to the learning outcomes of students in Junior High School of 38 Medan grade VII in the material fractions.

REFERENCES

- [1]. Rahman, M.2003. *Education for Children learning disabilities*. Jakarta: Rineka Copyright
- [2]. Johar. 2001. *Teaching and Learning Strategies*. Bandung: PT. Maulana
- [3]. Sugiyono. 2012. *Methods of Education*.Bandung: Alfabeta
- [4]. Sugiyono. 2012. *Statistics for Research*.Bandung: Alfabeta
- [5]. Zainurie. (2007). *Realistic learning*. (Online) Available: <http://www.duniaguru.com>.



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