THE EFFECTIVENESS OF QUIZ TOWARD STUDENTS MATHEMATICS LEARNING OUTCOMES ON SEVEN GRADE

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ABSTRACT

The process of learning mathematics in schools that are still lacking in training students' abilities in solving mathematical problems. Practice questions given are still not enough to train students' ability to solve math problems. Research on giving quizzes aims to improve student learning outcomes. This research is included in experimental research, which intends to determine the differences in students' motivation and mathematics learning outcomes who use quiz learning methods with scientific learning methods. This research was conducted at Junior High School (SMP) Muhammadiyah 2 Minggir, Sleman Regency, with research subjects being grade VII students of Even Semester SMP Muhammadiyah 2 Minggir Academic Year 2017/2018. The research instrument in the form of tests of mathematics learning outcomes in multiple-choice questions. Data analysis using analysis prerequisite test consisting of normality test and homogeneity test. Test hypotheses using an average test. Based on the average test on the test results of mathematics learning, the average value of the experimental class's mathematics learning outcomes was 76.190467. The average value of the mathematics learning outcomes of the control class was 66.84818. This shows differences in the mathematics learning outcomes of the seventh-grade students of SMP Muhammadiyah 2 Minggir Sleman in the even semester of 2017/2018 school year using quiz learning methods with students' mathematics learning outcomes using conventional learning methods. The difference in the average value of learning outcomes of the experimental class and control class is 9,342287, with the average value of the experimental class is higher than the control class. This shows the quiz learning method is more effective in mathematics learning outcomes for students of class VII SMP Muhammadiyah 2 Minggir Kabupaten Sleman even semester 2017/2018 school year.

Keywords: Effectiveness, Quiz, mathematics learning Outcomes

INTRODUCTION

Education according to RI Law No. 20 of 2003 concerning National Education System article 1 is a conscious and planned effort to create an atmosphere of learning and learning process so that students actively develop their potential to have religious, spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by them, society, nation, and country. The learning process is guided by a teacher for formal education and mothers or the community in informal education. Mathematics is a science that is not far from the reality of human life and can be used in all fields. That is because mathematics is a means of thinking to develop ways of thinking logically, systematically, and critically. However, the reality is that students who consider mathematics subjects are challenging. Mathematics is seen as pre-existing material and must be transferred to students' minds, not steps or processes.

During observations at SMP Muhammadiyah 2 Minggir, Sleman students were interviewed about the difficulty of learning mathematics because mathematics uses too many formulas and is difficult to understand. Students feel less skilled in solving problems. The teacher gives practice exercises and daily tests at the end of the topic; they feel they lack to practice problem-solving skills. The teacher explained that learning mathematics by giving a quiz at the end of the meeting to evaluate learning is rarely done. According to Suherman, Erman et al. (2003: 55), School mathematics is mathematics taught in schools, namely mathematics taught in Primary Education (SD and SLTP) and Secondary Education (SLTA and SMK).

Learning in a broad sense is a process of behavior change that can be expressed in the form of assignments, uses, and assessments or regarding attitudes and values of knowledge and necessary skills contained in various aspects of life (Hamzah B Uno, 2012: 21. According to Winatraputra, Udin S et al. (2008: 1.4), learning is defined as gaining knowledge by reading and using experience to guide future behavior. Teaching objectives describe the knowledge, skills, and attitudes students must have due to teaching expressed in terms of behavior observed and measured.

According to Winkel (quoted from Purwanto 2011: 45), learning outcomes are changes that cause humans to change their attitudes and behavior. A scientific approach is a learning process that is designed so that students actively construct concepts, laws, and principles of observing (to identify or find problems), formulate problems, propose or formulate hypotheses, collect data with various techniques, analyze data, draw conclusions and communicate conclusions and communicate concepts, laws or principles that are discovered (Hosnan, 2014: 34). According to the Big Indonesian Dictionary, the quiz is a short oral or written test. A quiz is intended to determine the right conditions for starting a lesson, checking students' understanding of homework or assignments discussed a few days ago.

METHODS

This type of research is experimental research. The design used in this study was pre-experimental designs. The type of pre-experimental design used in this study is the pretest-posttest design. The two classes were given treatment according to the research variable. The two classes' treatment is learning by giving quizzes and scientific learning to determine how much influence on student learning outcomes. In this study, the post-test was conducted equally between the two experimental classes to measure learning outcomes obtained after the treatment was given. The design of this study is illustrated as follows in Table 1.

Table 1. Pretest posttest design

Group	Pretest	Treatment	Posttest
A	O_1	Scientific with quiz	O_2
B	O_3	scientific	O_4

This research was conducted at SMP Muhammadiyah 2 Minggir in Sleman Regency in April-May. The research subject was seventh-grade students of the 2nd Semester SMP Muhammadiyah 2 Minggir Academic Year 2017/2018. This study's population were all VII grade students of the even semester of SMP Muhammadiyah 2 Minggir Sleman Regency Academic Year 2017/2018. This study did not use a sample. This study uses all students in SMP Muhammadiyah 2 Minggir, Sleman Regency. The subjects used in the study were VII grade students of SMP Muhammadiyah 2 Minggir consisting of 2 classes, namely VIIA and VII B.

In this study, two variables are consisting of 1 independent variable (X) and one dependent variable (Y), namely: Quizzes (X), and Mathematics Learning Outcomes (Y). The data collection techniques used in this study were test techniques. Mathematics learning outcomes test is used to determine student mathematics learning outcomes. This test consists of 20 questions in the form of multiple-choice, consisting of four choices. The correct answer is given a score of 1, and the wrong answer is given a score of 0.

RESULTS AND DISCUSSION

This study's initial ability score came from the pretest of grade VII students of SMP Muhammadiyah 2 Minggir Sleman in the even semester of the academic year 2017/2018. The average initial ability scores of class VII A as the experimental class and class VII B as the control class were 45.556 and 41.85, respectively. The summary of the normality test results for the initial capability is as follows in Table 2.

Table 2. Summary of the Normality Test

Learning	χ^2_{count}	χ^2_{table}	Significant Level	df	Info.
Experimentation Class	3,6023	5.9915	0,05	2	normal
Control class	4.27513	5.9915	0,05	2	normal

A homogeneity test is performed to determine the variance or diversity of data can be declared homogeneous or not. On the data of the two experimental classes' initial ability scores, homogeneity tests were performed using the Bartlett test.

Based on the homogeneity test calculations, the two experimental classes' initial ability value is obtained $\chi^2_{count} = 2{,}300675 < \chi^2_{table} = 3{,}8415$ with a significant level of 0.05 and df = 1, so that it can be concluded the initial ability of both homogeneous classes.

The mathematics learning outcomes test is conducted to determine the final results of student grades after treatment (treatment) in the experimental and control classes. From the results of the study, obtained test scores of mathematics learning outcomes can be seen in the following table:

Table 3. Statistical Descriptions of Mathematics Learning Outcomes Test Results

Data	Experimentation Class	Control class
Many Respondents	30	28
Amount of Values	2285,714	1871,749
Average	76,19047	66,84818
Minimum Value	35,714	35,714
Maximum Value	100	100
Variance	335,4445	352,28377
Standard Deviation	18,31515	18,76922

The study results obtained test scores of mathematics learning outcomes as in the following Table 4.

Table 4. Summary of Test Results for Mathematics Learning Outcomes

Learning	Total students	Highest Score	Lowest Score	Average	Standard Deviation
Experimentation Class	30	35,714	35,714	76,19047	18,31515
Control class	28	100	100	66,84818	18,76922

From the table 4 above, the average value of mathematics learning outcomes in the experimental class is 76.190467, with the highest score of 100 and the lowest value of 35.714. Simultaneously, the average value of the control class's mathematics learning outcomes is 66.84818, with the highest value of 100 and the lowest value of 35.71. This shows that there are differences in mathematics learning outcomes of students who use learning methods to give quizzes to students who use scientific learning in class VII students of SMP Muhammadiyah 2 Minggir Sleman Regency Academic Year 2017/2018. The difference in the average test scores of the experimental class and the control class is 9.3342287, with the average value of the experimental class being higher than the control class. This shows that there are differences in mathematics learning outcomes of students who use learning methods to give quizzes to students who use scientific learning in class VII students of SMP Muhammadiyah 2 Minggir Sleman Regency Academic Year 2017/2018. The difference in the average test scores of the experimental class and the control class is 9.3342287, with the average value of the experimental class being higher than the control class.

Through quiz learning, students have more reference problems to improve their ability to solve mathematical problems. Also, students earlier in learning can improve students' ability to learn and understand a particular subject. Discussion of quiz questions that have been given triggers students to be more active in asking questions, increasing student curiosity. Based on observations, the learning

process went smoothly, and students were seen to be serious. At the end of the meeting, students could work on quiz questions and get satisfactory grades.

The description above shows that learning using quiz learning methods positively influences learning outcomes in mathematics. This is indicated by an increase in mathematics learning outcomes of students who use the quiz learning method is better than the results of learning mathematics students who use scientific learning on the subject of Statistics VII class SMP Muhammadiyah 2 Minggir Sleman even semester of the academic year 2017/2018.

CONCLUSION

Based on the data analysis and discussion described above, it can be concluded that:

1. There is a difference in the mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Minggir, Sleman Regency in the even semester of the academic year 2017/2018 using the quiz learning method and the mathematics learning outcomes of students using scientific learning methods.
2. The quiz learning method is more effective than the scientific learning method in terms of mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Minggir Sleman Regency even semester of 2017/2018.

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