The influence of computer-based Multimedia materials on learning outcomes of class VII students on the set material in SMP N 6 Bengkulu Selatan

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Abstract. This research is a quantitative study aimed at knowing the multimedia teaching materials based on SMP 06 Kota Bengkulu in the results of mathematics learning. Sampling in this study used random sampling techniques with a research sample of 20 class VII. The collection of data used in this research is poll and test. Data in the study was further analyzed using Test T, based on the results of the analysis came to the conclusion that computer-based multimedia teaching materials have a positive influence on the results of the mathematics of students in SMP N 06 Bengkulu South.

1. Introduction

The rapid advancement in technology has affected the entire field of human life, including the field of education. Education is an activity that insure interaction among students with educators and various educational resources [1]. Besides that vocational education as part of the national education system is special education to facilitate students to use the world of work, and develop professional attitudes in certain professional fields [2].

A teacher should be able to choose and utilize learning media so that the math learning activities can take place effectively. Learning mathematics at all levels of education including at junior high school level needs to get serious attention, also looking for new breakthroughs so that mathematics learning can increase its effectiveness. Learning mathematics is more emphasized on mathematics exploration and investigation [3].

Mathematics also contributes positively to creating a smart and dignified society through critical attitudes and logical thinking [4]. Mathematics is one of the disciplines studied in educational institutions, given to students from the elementary level up to the higher levels. This indicates that mathematics as a subject that has an important role, both the mathematical mindset in shaping students into quality and its usefulness in daily life, and by using mathematical concepts and principles, can help students to study things logically, creatively, and systematic [5]. This study relies solely on teacher descriptions and exercises of students. Learning is less demanding for learners to be active in learning, they are likely to receive and be passive. The available teaching materials are still dominated by text and images only. Learning is still not very interesting.

One of the alternative media that can help students to do a lot of exploration in a limited time is to use the help of computers in a variety of relevant software. Such teaching materials are called
multimedia-based mathematics materials. But in fact there are still many mathematical educators who do not use multimedia-based teaching materials. This is due to lack of multimedia learning facilities at school.

Computers to present and combine text, voice, images, animations, audio, and video with assistive devices and connections. According to Slamet Riyadi [6] Teachers as learning designers can choose a computer as a learning medium known as computer-based learning. Where Computer-based learning (multimedia) has some advantages among them are realistic, motivating, effective, interactive, consistent, controlled, personal, and learning to be more interesting. This computer-based multimedia excellence makes learning more meaningful, as multimedia is able to present a learning model that can achieve learning objectives.

Based on the explanation above the problem in multimedia-based teaching materials research is "how multimedia-based materials can improve students' understanding in mathematics learning".

2. Research methods
The method used in this research is quantitative research. According to Meleong [7] defines that a quantitative method as a research procedure that generates descriptive data of written or spoken words from people and behaviors that can be observed.

Population is an area of generalization consisting of: objects/subjects that have certain qualities and characteristics established by researchers to be studied and then withdrawn in conclusion [8]. The population in this study is all students of SMP N 06 South Bengkulu. This research sample is a student of VIIa Junior High School N 06 South Bengkulu who amounted to 20 people, consisting of 12 women and 8 men.

The instrument in this study was to use test questions and polls to the VII class to get the data used to test the hypothesized truth to be implemented.

Table 1. Research design.

| Experimentation Class | O₁ | X |
|-----------------------|----|----|
| Control Class         | O₂ | -  |

Description:
O₁ = Multimedia
X = Learning Results
O₂ = Normal School Learning
T, with the statistics filed.

HO: μ₁ = μ₂
H₁: μ₁ ≠ μ₂
With μ₁ = average mathematical communication test of the experimental class, the average μ₂ of the communication grade test class.

3. Results
The study was conducted 3 times a meeting and 6 hours of study with 4-hour details of implementing multimedia-based materials in a computer lab, then another 2 hours for posttest. After the learning process is given to know multimedia teaching materials whether learners like it or not assisted by learners.

Test Data obtained from postest to learn students' learning outcomes. The form of the test used is a double choice with a 10-grain problem, which is tested validity and each same score is 10. Thus the minimum value is 0 and the maximum value is 100.
Furthermore, first we have to know the basis of decision making in Test T as follows.

- If the value of sig (2-tailed) > 0.05 then H0 received and Ha rejected, which means there is no average difference of student learning outcomes between the control class and the experimental class.
- If the value of SIG. (2-tailed) < 0.05 then H0 is rejected and Ha is acceptable, which means there is an average difference of student learning outcomes of the control class and experiment class.

| Table 2. Group statistics. |
|-----------------------------|
| Class                  | N   | Mean | Std. Deviation | Std. Error Mean |
| learning outcomes  |
| Control class            | 20  | 53.00 | 13.4164       | 3.0000          |
| Experimentation Class    | 20  | 69.50 | 18.2021       | 4.0701          |

Based on the table group statistics above the known amount of data study results for the control class is 20 people, while for the experimental class is 20 students with the same number. The average value of the learning result or the mean for the control class is 53.00, while the experiment class is 69.500. Thus statistically there is an average difference in student learning outcomes between the control class and the experimental class. Next to prove whether the difference is significant (real) or not then we need to analyze the table independent samples test below.

| Table 3. Independent samples test. |
|----------------------------------|
| Levene's Test for Equality of Variances | t-test for Equality of Means |
| F     | Sig. | t   | Df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |
| learning outcomes |
| Equal variances assumed | 3.199 | .082 | 3.263 | 38 | .002 | -16.5000 | 5.0563 | -26.7359 | -6.2641 |
| Equal variances not assumed | 3.263 | .3494 | 3.263 | 34.94 | .002 | -16.5000 | 5.0563 | -26.7654 | -6.2346 |

Based on the table above the known value of SIG. Levene's Test for equality of variance is 0.082 > 0.05 it can mean that the data between the control class and the experiment class is homogeneous or equal. So the analysis of the table above is fixed in the value contained in the table Equal variances assumed. Based on independent samples test table in Equal variances assumed known value of SIG. (2-tailed) amounting to 0.002 < 0.05 then as the basis of decision in test independent sample T test can be concluded that H0 rejected and Ha accepted. It can thus be concluded that there is a significant (real) difference between the average student learning outcomes of the control class with the experiment class.

Then from the table above the known value "mean difference" is the amount of-16.500. This value shows the difference between the average student's learning outcomes in the control class with the
average outcome of the experimental class learning or 53,000 – 69,500 = -16,500 and the difference between those differences is 26.7359 to 6.2641 (95% confidence interval of the Difference Lower upper). From the table above the count value of negative value as follows is -3.263 is not an error. However, T count this negative value caused the average value of the learning outcome in the control class to be lower than the average value of the learning outcome in the experiment class. Then the value of T count here can mean positive that is 3.263.

4. Discussion
Multimedia-based materials affect learning outcomes, if the teaching materials are not interesting, the learners will not learn the most because there is no appeal for him. Learners are lazy to study and learners do not have the satisfaction of the lesson. Rather the teaching materials that attract students, are easier to understand and communicate, because the interesting teaching materials can improve the learning outcomes of learners. It can therefore be concluded that interesting multimedia-based teaching materials will influence satisfactory learning outcomes.

Teaching materials are a set of learning tools, containing learning materials. When they see that something interesting then they will pay attention well. This then brings the seriousness of learners to the learning process. In accordance with this theory, the hypothesis states that multimedia-based teaching materials are influential and significant towards student learning outcomes.

Based on the results the analysis of the table states that multimedia-based teaching materials have a significant positive influence on mathematics learning outcomes. The results of this study showed that the teaching material as a free variable affects the outcome of mathematical learning with the value of the T-Count is 3.263.

Based on table 2 hypotheses. stated that the hypothesis rejects the zero hypothesis which means the learner's teaching variable has a sig. = 0.083 greater than α = 0.05. Which means students teaching materials to math lessons have a significant positive influence on the outcome of mathematical learning. In other words the better the multimedia-based teaching material to the math lesson increasingly affects the outcome of mathematics learning.

5. Conclusion and suggestion
Based on the results of research and discussion can be concluded that there is a Multimedia-based teaching material influence of learners learning outcomes Class VIIa SMP N 06 Bengkulu Selatan. Based on research conducted, researchers provide the following advice: The use of multimedia-based teaching materials in learning requires students to play an active role and be directly involved in the use of media in the learning process. Teachers should take advantage of computer facilities in the learning process as a medium and a learning resource that adds unlimited student knowledge to a single learning resource. The school, in order to improve the laboratory facilities in the learning process and facilitate teachers to develop learning media in improving learning and learning outcomes of learners. Other researchers, developing multimedia-based materials and more detailed use of power points in delivering material can be more interesting.

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