THE EFFECT OF THREE DIMENSIONAL MEDIA TO INCREASE STUDENT LEARNING RESULT IN CUBE AND BEAM MATERIALS IN CLASS V SD STATE 21 MENDO WEST

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Abstract:The problem in this research study is the low of the result of class V student at SD Negeri 21 Mendo West and the absence of media used in the lesson of Mathematics. The purpose of this study is to Determine the influence of Three Dimensional Media to improve student learning outcomes on the material of cubes and blocks in Class V Elementary School 21 West Mendo. This research uses quantitative research with "pre-experimental" method (The one group pretest-posttest design). The sampling technique used in this study saturated sampling. The sample of this study is the entire class V amounted to 34 students. Data collection techniques used in the form of a written test that consists of five essays namely pretest and posttest. The prerequisite test used is the Liliefors test to test the normality of the data. Based on test results Obtained Liliefors that the the data is normally distributed. Based on hypothesis testing analysis of data from the result of t-test pairwise the data related with tcount> TTable (11.95> 2:03), hence can be interpreted that Ha accepted and H0 is rejected. So from the results of the research shows there are positive effects of three-dimensional media to improve student learning outcomes on materials cube and beam Class V Elementary School 21 West Mendo.

Keywords: Learning Outcomes, Three Dimensional Media

Abstrak: Permasalahan dalam penelitian ini adalah rendahnya hasil belajar siswa kelas V di SD Negeri 21 Mendo Barat dan tidak adanya media yang digunakan dalam pelajaran Matematika. Tujuan penelitian ini adalah untuk mengetahui pengaruh Media Tiga Dimensi untuk meningkatkan hasil belajar siswa pada materi kubus dan balok di Kelas V SD Negeri 21 Mendo Barat. Penelitian ini menggunakan penelitian kuantitatif dengan metode "pre Experimental" (*The One Group Pretest-Posttest Design*). Teknik pengambilan sampel pada penelitian ini menggunakan sampling jenuh. Sampel penelitian ini seluruh kelas V berjumlah 34 siswa. Teknik pengumpulan data yang digunakan berupa tes tertulis yang terdiri 5 essay yaitu *pretest* dan *posttest*. Uji prasyarat yang digunakan adalah uji *Liliefors* untuk menguji normalitas data. Berdasarkan hasil uji *Liliefors* diperoleh bahwa data berdistribusi normal. Berdasarkan analisis data uji hipotesis dari hasil perhitungan uji *t-test related* data berpasangan dengan $\mathbf{t_{hitung} > t_{tabel}}$ **(11,95 > 2,03)**, maka dapat diartikan bahwa H_a diterima dan H_0 ditolak. Jadi dari hasil penelitian menunjukkan terdapat pengaruh positif media tiga dimensi untuk meningkatkan hasil belajar siswa pada materi kubus dan balok kelas V SD Negeri 21 Mendo Barat.

Kata Kunci: Hasil Belajar, Media Tiga Dimensi

INTRODUCTION

Education is seen as a means of preparing the individual in the future, with tutoring at school and in the surrounding environment so as to broaden their horizons and knowledge. Education becomes a container for supporting a person or learners learn better for the future.

Hasbullah (2006: 4) says education is a conscious and deliberate effort to create an atmosphere of learning and the learning process so that learners are actively developing the potential for him to have the spiritual power of religion, self-control, personality, intelligence, noble

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character, and skills needed him, society, nation and state.

Teachers are required to be more creative in understanding any changes that occur in the environment, and should be able to determine a wide range of strategies, methods and media that can involve students actively in the learning process so that learning activities more effective and efficient.

Requirements to achieve the learning objectives largely depends on teachers and students. Teachers must be able and creatively to make learning design, organizing learning activities, and evaluate learning outcomes. While the student as an educated person has a role as people who have a learning process, achieving learning outcomes and use of learning outcomes for the benefit.

From these explanations it is clear that being a teacher is not easy to make learning fun and conducive. In the learning process does not always go smoothly, but sometimes run into obstacles or difficulties both experienced teachers in teaching as well as the difficulties experienced by students in learning.

Each subject has a level varying difficulty. In teaching learning materials would be very different both in terms of delivery methods, use examples that relate to teaching and learning. The subjects of mathematics is known to be very difficult for students to learn, for the teachers need to prepare everything well in order to achieve the learning objectives.

According Reys et al, in the book Learning Basic Mathematics for Children learning disabilities (2014: 28) says that mathematics is the study of patterns and relationships, ways of thinking with strategic organization, analysis and synthesis, the arts, languages, and tools to solve the problems of the abstract and practical.

Mathematics consists of four broad insight namely algebra, arithmetic, geometry, and analysis. According to the journal paper SupatmonoError Remediation Students About Build Space Cube and Beams with Method Using Peer Tutor Class VIII SMP Pangudi Luhur Salatiga (2013: 1) says that difficulties students in learning mathematics because students do not build their own knowledge of mathematical concepts without knowing the meaning contained in the concept so that by the time students complete math problems students often make mistakes and do not find a solution.

Geometry at primary school level class V is about waking up space cubes and blocks. Sunarsi in the journal essayError Remediation Students About Build Space Cube and Beams with Method Using Peer Tutor Class VIII SMP Pangudi Luhur Salatiga (2013: 1) stated that the emphasis in the understanding of the concept of today's students in mathematics is often difficult. Examples of errors in capturing the language or concepts, apply formulas and errors in the calculation of the student in solving mathematical problems. The ability of students in solving mathematical problems can be said is still very low.

According Suydam (Clements & Battista, 1992: 421) in the journal Increased Level Thinking Students In Learning Geometry Approach Realistic Mathematics Education explained the purpose of learning geometry especially beams and cubes are developing the ability to think logically, developing intuitive abilities spatial about the real world, instilling knowledge needed for advanced mathematics, and taught how to read and interpret the mathematical argument. In addition, the material cubes and blocks an important matter that must be learned and understood by learners. By understanding the material cubes and blocks learners are expected to use the concept in everyday life as well as the students can move on to the next subject matter.

One effort to do the math teacher in the learning process is how to design the media in conveying the material so

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that the material can be accepted easily and students can remember the material longer. Moreover, in determining the learning media teacher must know in advance the various aspects of learning are taught, be it cognitive, affective and psychomotor.

From observations and interviews with teachers who also teaches fifth grade in elementary school Mathematics 21 West Mendo obtained information that the teacher explains the material delivered or simply use any image on the board and still stuck with textbooks and worksheets. Teachers simply use markers to draw learning tools such as cubes and blocks on the board without providing a concrete or tangible media that can be seen or exhibited by the students directly. It makes the students feel it difficult to understand the things pertaining to wake up space in particular beams and cubes. Students are difficult to examine an image and process calculations in cubes and blocks of matter is still wrong. Therefore, in learning the material required media is real and can be seen the child for all directions. Minimum completeness criteria (KKM) mathematics in primary schools 21 The West Mendo is 65. The results in the field showed a lot of class V students the value of learning outcomes is still under KKM. The data obtained from the results of daily tests of students show that mastery learning students are very minimal and only 17.7% (6 students with average grades of 71.6) who achieve mastery, while 82.3% (28 students with an average value of 44.2) has not reached the KKM.

Based on the above problems, the authors conducted a study entitled "Effect of Three Dimensional Media To Improve Student Results In Cube Material and Beam in Class V SD Negeri 21 Mendo West."

Identify the problem in this research is the study results obtained by the students in the fifth grade mathematics is still under KKM and use of media is not appropriate for the class V in Math cubes and blocks of matter.

The problem of this research is "How Influence of Media Three Dimensional To Improve Student Results In Cube Material and Beam in Class V Elementary School 21 West Mendo?"

This study aims to determine the effect of Use Media Three Dimensional To Improve Student Results In Cube Material and Beam in Class V Elementary School 21 West Mendo.

Benefits practices obtained through this study for students to improve learning outcomes in Mathematics in particular students dimateri beams and cubes. For Teachers this research can serve as a reference material for evaluation and teachers, especially in improving the quality of teaching in schools. For this study schools can be used as an evaluation, especially in improving the quality of school services in learning in schools using three-dimensional instructional media.

METHOD

This research was quantitative research. Sukmadinata (2016: 95) mentions quantitative research using the phenomenon. Quantitative research using formal instruments, standards and are measuring. The method used in this study is the experimental method "Pre-Experimental" (The One-group pretest-posttest design).

Sugiyono (2016: 74) describes the experimental research methods "Pre-Experimental" (The One-group pretest-posttest design) is a research method that reveal the relationship between two or more variables to find the influence of a variable to another variable. Thus, the results of treatment can be determined more accurately because it can be compared with the situation before being treated. This study design can see in the following table:

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Table 1.
One-group pretest-posttest design

re-Test	*reatment*	*Post-test*
O_1	X	O_2

Information:
X : Treatment (using three-dimensional media)
O_1 : Test early pretest (ability math students at the beginning)
O_2 :Test end posttest (ability math students at the end)

The research was conducted in 21 Mendo West Elementary School in Jalan Nenas Km. 6 Kace, Kace village, district. Mendo West District. Bangka. This research was conducted at the fifth grade students of the second semester of the academic year 2017/2018. This study was conducted during 4 meetings with the allocation of time 2x35 minutes in a single session.

Sugiyono (2016: 117) population is generalization region consisting of the object / subject to have certain qualities and characteristics defined by the researchers to learn and then drawn conclusions. The population is around the fifth grade students at SDN 21 Mendo West.

Martono (2010: 118) said samples are part of the population that has a search-specific characteristics or circumstances to be investigated. The sampling technique used in this study is saturated sampling is sampling technique when all members of the population used as a sample. So, in this study a sample to be used in research using fifth grade students at SDN 21 West Mendo totaling 34 people.

Data collection techniques used in this study were interviews, tests, and documentation.

The interview is a technique of data collection conducted by the interviewer by asking a question to the interviewed .. The test is a systematic procedure in which the individual being tested is described with a stimulus response that they can demonstrate to the numbers (Sukardi, 2008: 118). The tests used in this study is a written test given to the form of the pretest and posttest. In this study, using photographic documentation and activity reports as the value of learners, a list of names of students, and the teaching and learning activities of students, which aims to strengthen students' achievement test in mathematics.

Data analysis technique consists of normality test, gain and hypothesis testing. Test for normality using Lilliefors test. While the hypothesis test using sample t test Related.

Testing hypotheses used t-test. T-test used is the t-test of data related pairs. This test is used to determine differences in the conditions before and after treatment. Here is the formula t-test Test of data related pairs:

$$t = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2} - 2.r\left(\frac{s_1}{\sqrt{n_1}}\right)\left(\frac{s_2}{\sqrt{n_2}}\right)}}$$

Information:
$\overline{X}_1$ = Average pretest
$\overline{X}_2$ = Average posttest
S_1^2 = variance pretest
S_2^2 = posttest variance
n_1 = number of samples
n_2 = number of samples
S_1 = pretest standard deviation
S_2 = standard deviation posttest

Criteria:
a. t> t table so Ha is received
b. t <t table then Ho is rejected.

RESULTS AND DISCUSSION

In this study, measures of analysis is the prerequisite test analysis and hypothesis testing. Test requirements analysis in this study is the normality test to determine whether the obtained data were normally distributed or not, either the data or the data pretest posttest. Hipotestis test in this study is Related samples t test to determine the effect of three-dimensional media to

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improve student learning outcomes in cubes and blocks of matter in SDN 21 Mendo West.

Pretest data normality test results using Lilliefors test by comparing the value with the value $L_{hitung}L_{tabel}$ on a sample of 34 students. Through a significance level of 0.05 was obtained 0.151. The results obtained by manual calculation 0.131, or 0.131 to <0.151, it can be concluded that the data are normally distributed. Pretest normality test results can be seen in the following table:L_{tabel} $L_{hitung}L_h < L_t$

Table 2.
Normality Test Calculation Results Pretest

Lhitung	Ltabel	La	Information
0.131	0.151	Be accepted	Normal

In the table above it can be seen that H_a accepted, meaning that normal distribution of data.

Posttest data normality test results using Lilliefors test by comparing the value with the value $L_{hitung}L_{tabel}$ on a sample of 34 students. Through a significance level of 0.05 was obtained 0.151. Results obtained 0,137 manual calculations, so or 0.137 <0.151. It can be concluded that the data are normally distributed. Posttest normality test results can be seen in the table below:L_{tabel} $L_{hitung}L_h < L_t$

Table 3.
Normality Test Calculation Results posttest

Lhitung	Ltabel	La	Information
0,137	0.151	Be accepted	Normal

In the table above it can be seen that H_a accepted, meaning that normal distribution of data.

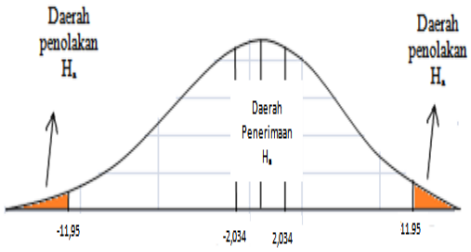
Test hypothesis is related samples t test were included in the parametric test. Based on the results of the normality test, pretest and posttest values fifth grade students of SD Negeri 21 West Mendo normal distribution. Pretest value of 34 students reported students have not been able to demonstrate their understanding and mastery of the material cubes and blocks. While the posttest score of 34 students showed students were able to demonstrate their understanding and mastery of the material cubes and blocks.

The results of calculation related samples t test for paired samples can be seen in the following table:

Table 4.
Samples T Test Calculation Results Related

t	ttabel	Conclusion
11.957	2.034	ha accepted

In the table above it can be seen that the data obtained by ttabel 2.034 11.957 t. Due to the positive results obtained t and compared with positive ttabel, then the conclusion can use the curve hypothesis test two parties is as follows:



Picture 1.
The reception area and the results curves rejection of the hypothesis

Thus, Ha Ho accepted and rejected. Therefore, it can be concluded that the use of three-dimensional media influence to improve student learning outcomes in the material cubes and blocks in Class V Elementary School 21 West Mendo.

In this study, there are two variables are independent variables and the dependent variable. The independent variable in this study is three-dimensional media and the dependent variable is the result of learning. The

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purpose of this study was to determine whether there is the effect of three-dimensional media to improve student learning outcomes in cubes and blocks of matter in SDN 21 Mendo West ..

Three-dimensional media is media that the presentation can be viewed from any angle or direction of view. Media is a very good three-dimensional learning mathematics applied in material particular geometrical cubes and blocks in elementary school, especially in high-grade students. This is because students can find themselves and can embed themselves in the material concept of cubes and blocks. Thus, students can search and find their own solutions to the problems in question.

The steps conducted by researchers using three media diemnsi on mathematics learning cubes and blocks material that researchers show how the shape of cubes and blocks using three-dimensional media. Then the teacher began to explain the parts of the cube and the beam as well as nets and formula of the beam dann cube. Once finished explaining researchers began to teach how to find or calculate the surface area and volume of cubes and blocks. After the researchers formed a group and share each group's problems to be solved or worked by the group and do it or present it to the class. It can train students to work in teams and to make students actively in learning.

The researchers perceived barriers when applying the three-dimensional media in mathematics teaching material cubes and blocks are difficult to make students into the lesson. That is, when the teacher explains there are students who are chatting and because of this a math lesson many students do not like because it just calculations. But by applying the three-dimensional media this can be overcome by sipeneliti.

Based on calculations performed using the normality test pretest students Liliefors on the value obtained by Ltabel Lhitung 0.131 0.151 or 0.131 <0.151 then the normal distribution of data. Meanwhile, the value obtained Lhitung posttest students Ltabel 0.151 or 0.137 to 0.137 <0.152 then the normal distribution of data. Once the data is normally distributed pretest and posttest, subsequent hypothesis test using t test sample related. Based on the criteria in the curve hypothesis test (related samples t test) for the data pairs that if t is in the reception area then H0 rejected Ha, Ha is received and if t is in the region of rejection Ha Ha, H0 is accepted and rejected. From the research results obtained t 11.957 which is at the reception area Ha. Because the results are positive then tcount positive compared with that used curves ttabel two parties. Thus, it can be concluded that there are significant three-dimensional media to improve student learning outcomes in cubes and blocks of matter in SDN 21 Mendo West.

CONCLUSIONS

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Based on the results of the discussion of the research that has been done, it can be concluded that the three-dimensional media influence significantly to improve student learning outcomes in the material cubes and blocks in Class V SD Negeri 21 Mendo West with an average value of 49.55 pretest values. The after treatment the average value rose to 75.14 posttest students. Likewise, the results of t-test Based on calculations, the thitung 11.957 and on ttabel (df) = 34-1 = 33 and a significant level of 5%, then ttabel 2.034. Thus, t is greater than t table (11.957> 2.034). Can be seen in Ha revenue curve is greater than the acceptance of H0.

It can be concluded that there is significant influence media use three dimensions to the study of students beams and cubes of material in class V Elementary School 21 West Mendo. Thus, the three-dimensional learning to use the media more effectively for learning mathematics cubes and blocks of matter in terms of acquisition of

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learning outcomes learners become more understanding and explanation of teachers can improve student learning outcomes.

Suggestion

Some suggestions or recommendations that can be put forward, namely 1. For students, so that students can expand their knowledge and understanding of the cubes and blocks. 2. For the teacher, agar teachers can meenambah knowledge of learners using three-dimensional media as well as provide space for learners to learn to find their own. 3. For schools, ssa inputs to improve the quality of teaching in the school's success and became one of the innovations to improve the knowledge of mathematics material cubes and blocks. 4. For researchers, Outcome of this study can be used as a reference for researchers who want to investigate in more depth about the effect of three-dimensional media to improve student learning outcomes in cubes and blocks of matter.

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