# THE IMPACT OF DIORAMA MEDIA ON THE FIFTH GRADE STUDENTS’ COGNITIVE LEARNING OUTCOMES OF NATURE’S APPEARANCE AS A SOCIAL SCIENCE SUBJECT IN SDN 2 JANTURAN PENGASIH

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***Abstract***

*The aim of this research was to find out the impacts of diorama media on the cognitive learning outcomes of the fifth-grade social science students in SDN 2 Janturan Pengasih. This research was a quasi-experimental research with nonequivalent control group design type. The experimental group was directed using diorama media, while the control group was using picture media. The data retrieval methods used in this research were observation, quiz, and documentation. The data was analyzed using descriptive statistic method with mean test of posttest between the experimental and control group and with N-Gain test. The analyzed data showed that the mean test of the experimental group was 85, 36 which was categorized as very good level while the mean test of the control group was 78, 25 which was categorized as good level. The result of this research was supported by the result of N-Gain test from experimental group which was bigger than control group that was 0, 7>0, 3.*

*Keywords: diorama’s media, social science outcomes*

# INTRODUCTION

According to article 3 section 20 of 2003 in the constitution of the Republic of Indonesia concerning the National Education System, it is stated that the national education are meant to develop the capabilities, shape the character as well as the civilization of a nation with dignity in the context of intellectual life of the nation, aims to develop the potentials of the students become human beings who believe and devote to the God Almighty, have a good character, physically and mentally healthy, knowledgeable, capable, creative, independent, and be democratic and responsible citizens.

Based on the government ordinances of the Republic of Indonesia in article 77i section 32 of 2013 concerning the amandments to the government ordinances about the standard of national education, it is mentioned that there are cumpulsory subjects in the curriculum of the primary school that must be truly comprehended by the students. One of those cumpulsory subjects which must be mastered by the students is Social Science subject. Social Science has to be taught continuously and must be understood by the students. It covers human and its enviromental issues which can not be comprehended only by

memorization, but an understanding, observation, and application. Sure, in this matter they also need cognitive abilities to comprehend the subject so they could apply their knowledge in their daily life.

Based on article 20 of 2003 of the constitution, learning is a process of interaction among the students with the teacher. The lack of information sources could obstruct to the learning goals. Therefore, strategies are required to achieved the goals, one of which is utilize the instructional media as the supportive tools in deliverying materials.

According to the interview and the observation on thematic learning particularly the Social Science subject which was done on October 2nd-10th 2018 in fifth grade of SDN 2 Janturan in Pengasih, the Social Science subject have an issue, it was the teacher that hadn’t use the instructional media appropriately. In the learning process of Social Science in the fifth grade of SDN 2 Janturan, the teachers admitted that they hadn’t use the supportive tools maximally. Actually the school have provided the instructional media, but only some of them, for instance Indonesian map, the rest are common media like student books.

The students did not understand well the materials delivered by the teacher. It can be seen by the result of the cognitive learning outcomes of the students on Social Science subject that is lower than the result of the other subjects like Bahasa Indonesia subject and Natural Science subject.

Based on those issues, without intending to rule out the other ones, the researcher restricted the issues on the lack of the use of the instructional media on Social Science subject. The researcher is interested in raising this issue because the use of appropriate instructional media is one of the important aspects to improve students’ cognitive learning outcomes as stated by Arsyad (2006: 26) that learning media could make the process of delivering materials more clear so the students could improve the learning process as well as the outcomes of the learning.

There are various instructional media that can be used for delivering the materials of Social Science subject so that the cognitive learning outcomes of the students could be improved. One of which media mentioned is media diorama. According to Daryanto (2010: 29) media diorama is included one of media that

doesn’t need any projections and could be presented visually in three dimensional form as the imitation of the real version. Diorama media could be used in learning to represent the real objects which are difficult to be presented in the class.

In the 2013 curriculum, natural’s appearance material can be found in the ninth theme, first subtheme, and fourth learning. The teachers have difficulties in teaching the natural’s appearance material because the students could not encountered all the natural’s appearance taught directly. This is due to the uncertain location of the students that made them can not see the objects like volcanos, beaches, lakes, rivers, and so on. The teacher only used the student books as the supportive tools to deliver the materials of natural’s appearance subject. It caused a lot of students do not understand the materials.

# RESEARCH METHOD

**Type Of The Reesearch**

The type of research used in this research is a quasi experiment. The design used in this research is nonequivalent control group design.

# Location And Time Of The Research

This research was conducted at SDN 2 Janturan located in Gungan, Tawangsari, Pengasih, Kulon Progo and SDN 1 Janturan located in Jombokan, Tawangsari, Pengasih, Kulon Progo. The time of this research is in the even semester of January-February, 2018/2019 school year.

# Population and Research Samples

In this research, the researcher took all the students in fifth grade of SDN 2 Janturan that are amounted to 23 students (as an experimental class) and all the students in fifth grade of SDN 1 Janturan that are amounted to 19 students (as a control class).

# Data Retrieval Technique

The data retrieval technique used in this research were observation, quiz, and documentation. The instruments used are observation sheet of the learning implementation and test questions in the form of multiple choices.

# The Validity and Reliability of The Instruments

The checking process of the instrument validity.quiz learning outcomes was done with expert judgement.

The validity of this test instrument was tested using the opinions of experts (expert judgement). The instrument validity test in this study was conducted by Dr. Anwar Senen, M. Pd. who is an expert in social science subject. The assessment by expert judgment is intended to assess the worthiness and suitability of the items with the lattices that have been made by giving suggestions for the sentence improvements.

# Data Analysis Technique

1. **Descriptive Statistic**

The statistical method used in this study is descriptive statistics. According to Sugiyono (2009: 147) descriptive statistic is statistic used to analyze data by describing the data that has been collected as it is without intending to make conclusions that apply to the public.

This research was conducted in population (without taking any samples) that is why descriptive statistic is used to analyse the data. Population research doesn’t need a significant test because it is not intended to make generalizations (Ridwan, 2006:3). Therefore, the analysis data technique used is just comparing the means.

After both data from pretest experimental group and from control group are collected,

the next step is to tabulate the Social Science learning outcomes from experimental group and the control group into a table. Categorized the value that has been collected into assessment criteria. The purpose of providing assessment criteria is to compare the measurements of social science subject learning outcomes with relevant references. The following table is an example of an assessment criteria.

Table 1. Learning Outcomes Assessment Criteria

|  |  |
| --- | --- |
| **Number** | **Category** |
| 8,1 – 10,0 | Very Good |
| 6,6 – 8,0 | Good |
| 5,6 – 6,5 | Satisfactory |
| 4,1 – 5,5 | Less than Satisfactory |
| 0–4,0 | Fail |

Suharsimi Arikunto (2006: 245)

After categorizing the value into the suitable assessment vriteria, the next step is to testing out the hyphotesis with mean test and normality test Gain (N-Gain) from experimental and control group.

# Hyphotesis Test

* 1. Mean Test

The thing calculated is the mean learning outcomes of social science on natural’s appearance material from the experimental and control groups. According to Tulus Winarsunu (2010: 29) mean is a number obtained by dividing the value of X with the value of the respondants (N). Look at the formula below.

(Tulus Winarsunu, 2010: 31)

If the mean calculation results show that experimental group posttest ( ) is bigger than the control group ( ), there are impacts of independent variable with respect to the dependent variable. However, if the experimental group mean ( ) is equal to or smaller than the control group ( ), then there is no influence of the independent variable on the dependent variable.

* 1. Normality Test Gain (N-Gain)

N-gain test is conducted to test the effectiveness of the treatment given. The data used to determine the increase in student cognitive learning outcomes are the results of the pretest and posttest in the experimental group and the control group. The data is analyzed to see the test score then calculate the mean score. After knowing the mean, the Normalyzed Gain (N-gain) is calculated between the pretest and posttest. N-gain calculation uses the Hake formula (Meltzer, 2002: 12).

N-gain test formula:

*g =*

Calculation results are interpreted using the normalized gain according to Meltzer's classification (2002: 13) as following.

Table 2. N-gain Score Criteria

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Based on the result of the pretest above, can be made a bar diagram as following:

|  |  |
| --- | --- |
| Limitation | Category |
| 0,7<g<1 | High |
| 0,3≤g≤0,7 | Mean |
| 0<g<0,3 | Low |

If the calculated N-Gain results of the experimental group are greater than the calculated N-Gain results of the control

90

70 61.45 65.79

Erag E

Experiment al group

group, then it can be interpreted that the experimental group has a higher change than the control group. This shows that there is an impact of the use of media dioramas on student cognitive learning outcomes in social science subject about natural’s appearance.

# RESEARCH RESULT

The study begins by doing a pretest for the control and experiment group. This is done to determine the initial conditions of the second class of the class. The following summarizes are the results of the pretest in the experimental class and the control class.

Table 3. Comparison of Pretest mean of experimental and control group

|  |  |
| --- | --- |
| Group | Mean |
| Experimental | 61,45 |
| Control | 65,79 |

50 Control

Group

Me

30

10

Picture 1. Diagram comparison of Experimental and control group pretest

After doing the pre-test, the next step is giving a treatment to the experimental class. The treatment given to the experimental class was learning to use diorama media. As for the control class, learning is done using the image media contained in the student book.

The last procedure is to do a posttest. Posttest aims to determine changes in student learning outcomes after being given the treatment. The posttest results showed an increase in student learning outcomes in the experimental class. The following is the comparison of post-test results among the two classes.

Table 4. Mean Comparison of Experimental and Control Posttest

|  |  |
| --- | --- |
| Group | Mean |
| Experimental | 85,36 |
| Control | 78,25 |

Based on the posttest outcomes above, could be served a bar diagram as following:

10

Experimental group

control group

70

50

30

78.25

85.36

90

Picture 2. Comparison Diagram of Experimental and Control Posttest

**Me an**

Based on the diagram above it can be seen the mean value of learning outcomes between pretest and posttest in both groups. In the experimental group the mean difference was 23.91, while in the control class was

12.46. The increase of the mean in the experimental group was higher than in the control group.

The results of observations using observation sheet of learning implementations, 95% of the experimental group learning activities was done in accordance with the lesson plan. While the control group, learning activities

amounted to 75% based on the lesson plans that have been prepared.

Besides the data above, to support the result of the research the researcher also conducted a hyphotesis test using mean test and N-gain test with the result as following:

1. Mean Test

Posttest results of the mean comparisons among the experimental and control group obtained the data as following:

Table 5. Mean test outcomes

|  |  |  |
| --- | --- | --- |
| **Group** | **Mean** | **Information** |
| Experimental | 85,36 | Experimental> Control |
| Control | 78,25 |

Based on the table above, it can be seen that the mean posttest result of the experimental group is greater than the mean posttest result of the control group. In addition, differences were also seen in the mean posttest score category. Where the mean posttest score of the experimental group amounted to 85.36 is in the excellent learning outcomes category, while the average posttest score of the control group by 78.25 is in the good category.

1. Normality Gain (N-Gain) Test

Hypothesis test calculations with gain normality (N-Gain), which is calculating the difference and the mean posttest and pretest. The following table presents the results of the N-Gain test calculation.

Table 6. N-Gain calculations result of experimental and control group

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variabel | Rata-rata*Pretest* | Rata-rata*Posttest* | SkorIdeal | *N-**Gain* |
| Eksprim | 61,45 | 85,36 | 100 | 0,7 |
| N |  |  |  |  |
| Control | 65, 79 | 78,25 | 100 | 0,3 |

Based on the N-Gain calculation table above, it can be seen that the N-Gain of the experimental group is 0.7 and the control group is 0.3. The criteria for obtaining an N- Gain score, an increase in the social cognitive learning outcomes of the experimental group was at a high level, while the control group was at a moderate level. Based on the results of the N- Gain test, the results obtained in the experimental and control groups were 0.7> 0.3.

Based on the mean test and the N-Gain test which have explained above, can be concluded that the students who used diorama media have higher learning outcomes compared to the other students who

used picture media. Thus, the hyphotesis proposed in this study has been proved.

# DISCUSSION

Based on the results of the data calculation, it is known that the experimental group's social science subject learning outcomes are higher than the control group's learning outcomes. At the beginning of this study, a pretest was conducted for both the experimental group and the control group. This was done to determine the initial conditions of the two groups. Pretest results for the experimental group are 61.45 while the control group is 65.79. Both pretest results are in the inadequate category. This shows that the ability of students when the initial conditions are almost equal or balanced.

Furthermore, the treatment is given to the experimental group. The treatment given to the experimental group was using diorama media. As for the control group, learning is still done as usual, which only uses media from student books. After that, the experimental and control groups were given a post-test. The posttest aims to determine the student's final ability after being given the treatment.

The posttest results showed that the experimental group got the mean amounted to

85.36 in the very good category, while the control group obtained the mean 78.25 in the good category. From these results indicate that both groups improved their learning outcomes, where the experimental group increased in value by 23.91, while the control group increased by 12.46.

Furthermore, concerning the hypothesis test the researcher used the N- Gain test. The results of the N-Gain test on the mean show the differences among the experimental and control groups by 0.7> 0.3 it means that the experimental group has a higher change in outcomes than the control group.

It happened because of the different treatments that are given for the experimental and control group. On the side of experimental group, the students used diorama media as the instructional media about natural’s appearance and give the students an imitation of the real object to be observed. Diorama media is a combined media of the model with the perspective picture in a whole appearance form and illustrate the real environment. Sanjaya (2010:201) explained that learning using imitation object has huge benefits particularly to avoid the occurrence of

verbalism. From the statement above a conclusion can be drawn that the use of diorama media on the experimental group could give the students precious experience and the comprehension of the students concerning natural’s appearance and give positive impacts for students’ learning outcomes.

Purwanto (20013:107) also explained that the use of diorama media is included one of the factors that determine the learning outcomes, moreover the material learnt is natural’s appearance which needs a media that is capable to help the students to get the objective data. Besides corresponding with the material, the use of this media also suits with the theory of Jean Piaget who stated that children in primary school entered the stage of concrete operational where the students need the concrete objects to enrich their experience.

The use of diorama media particularly diorama media have been implemented on experimental group. That media is used for helping the students in conducting observation. The learning outcomes of the experimental and control group also known different as the experimental group has higher value compared to its competitor.

It happened because the experimental group used the diorama media consisted of a three- dimensional form imitation of the real natural appearance, on the other hands the control group only used the school book as their instructional media so that the observation of the experimental group is more real than the control group.

The different treatments served to the experimental and control group caused the difference in behavior in the class. The students of experimental group are seen more excited. The students once fiddling with the diorama provided by the teacher in front of the class. The answer on the students’ worksheet of each project groups that has been done by discussion with observing the diorama media turned out differently. It doesn’t happen to the control group. The observation of the students is limited only by the pictures in their students’ book. The students answer of the question in their student’s worksheet is based on the same source so technically they have the same answer.

# CONCLUSIONS AND SUGGESTIONS

**Conclusion**

Based on the explanation of the research and discussion, can be concluded that there are differences cognitive learning outcomes among the students using diorama

media and those who used picture media on Social Science subject. Those differences are shown by the mean of the posttest outcomes of experimental class that is higher than the control class. It is supported with the N-Gain that showed the value of experimental class was 0,7 while the control class was only 0,3.

# Suggestion

Based on the result of the study, discussion, and also the conclusion, the researcher proposes some advices to the teachers. Teachers are better to use diorama media so the students will be more enthusiastic in learning and the learning outcomes could be improved.

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