THE EFFECT OF COMIC MEDIA ON MATHEMATICS LEARNING OUTCOMES FOR CLASS VI STUDENTS ON THE CONCEPT OF FACTORS AND NUMBER MULTIPLES AT SDN TELUK SANTONG

Ahyar Ardiansyah[1]
[1]State Elementary School Teluk Santong, Indonesia

ABSTRACT

This study aims to determine whether the use of comics in Mathematics learning for grade VI elementary school on factors and multiples of numbers helps students learn and understand difficult concepts. This research was also conducted to see whether learning by using comics does not make students feel difficult in learning Mathematics because the material will be changed in the form of conversation. The type of research used in this study is a quasi-experimental research. The treatment that will be given to the control class is in the form of comic media. While the experimental class does not use comics media, but the treatment for the experimental class is learning as usual in class. This research was conducted at SDN Teluk Santong. The number of subjects in this study were 39 students from class VI A and VI B SDN Teluk Santong. Based on the results of research, data analysis, and learning, it can be said that the learning outcomes achieved before the treatment was given to the two sample groups (Pre-Test) were lower than the treatment (Post-test) so that it could be said that there was an influence in the application of comic media. on the results of learning mathematics in the material of factors and multiples of class VI SDN Teluk Santong for the 2021/2022 academic year.

Corresponding Author:

Ahyar Ardiansyah,
State Elementary School Teluk Santong, Indonesia
Email: fadliyenk12@gmail.com

1. INTRODUCTION

Mathematics is an orderly knowledge, mathematics also has characters and theories deductively based on characteristics that can be interpreted or cannot be interpreted (Murtafiah, Sa'dijah, Chandra, Susiswo, & As'ari, 2018; Napitupulu, Suryadi, & Kusumah, 2016). In mathematics, language terms are used that can be clearly defined, carefully and clearly. Based on the decision of the Minister of National Education Number 2 of 2011 concerning the regulation of national exam standards, it is stated that mathematics is one of the compulsory subjects and is also used as a benchmark for passing the national exam. But not all students like learning mathematics. This is because students assume that mathematics is a difficult subject to understand (Desoete, 2019).

Mathematics education in Indonesia is still a concern when viewed from the low learning outcomes achieved by students. The problem seen in the world of mathematics education in Indonesia is the low student

achievement (Berry, Bol, & McKinney, 2009). Based on this opinion, of course, learning media is needed that can help students to achieve maximum learning outcomes.

Learning media are media that carry messages or information aimed at learning or containing Heinich's learning purposes in Sian et al (2016). The existence of learning media can help teachers in the teaching and learning process, not least in learning mathematics. There are lots of learning media that can be used, one of which is comic media. Comics are a collection of images arranged in a sequence that are arranged in a frame and reveal the characters that are packaged in the story to increase the reader's imagination (Simon, 2020). Comics are also defined as a form of cartoon that contains characters to act out a story in a certain order. In general, comics are associated with an image designed to provide entertainment to the reader (Bardini, Pierce, Vincent, & King, 2014).

Nowadays some educators see comics as a tool that can be used as student literacy because educators have been using comics in the classroom for more than 60 years (Ernest, 2013; Kaur, 2014). Educators are also starting to realize the power of comics media by incorporating comics into their teaching practice (Winarso & Haqq, 2019). Florayu et al. (2017) argue that comics have a certain appeal to school-age children, because in general students feel comfortable in combining information in the form of visuals and texts that exist in comics.

Comic media can be used as one of the learning media in education if the comic media is designed according to the needs of students and adapted to the material to be delivered (Ulfaeni, 2018), for example in learning Mathematics. Comic media in Mathematics learning is a tool in the form of a story using a series of immovable images and visualized in boxes and conversation balloons containing certain symbols to convey messages containing problems in Mathematics (Rahmah, Irianto, & Supriatna, 2020). Presentation of Mathematics lessons in the form of comics, can help students launch reading, and can reduce students' boredom towards Mathematics.

Wibisono (2019) use comics as a learning medium. In the journal he wrote, learning Mathematics by using comic media provides evidence that it is effective to increase students' motivation and achievement towards the material being studied. In addition, Pattanapichet & Wichadee (2015) also use comics as a learning medium. In the journal he wrote, comics media had a positive influence on students' learning motivation and reading skills. The similarity between the two journals is that they both use comics as a medium to increase students' motivation, but do not see the use of comics in helping students understand the learning material. Based on the description that has been presented, then further research is carried out which aims to determine the use of comics in learning Mathematics for grade VI Elementary School on the material of factors and multiples of numbers whether it helps students in learning and understanding difficult concepts. This research was also conducted to see whether learning by using comics does not make students more difficult in learning Mathematics because the material will be converted into conversational form.

2.   RESEARCH METHOD

This research method uses quantitative methods. Quantitative research can be defined as research based on the philosophy of positivism, used to examine certain populations or samples, sampling techniques are generally carried out randomly, data collection using research instruments, data analysis is quantitative or statistical, with the aim of testing hypotheses that have been established. determined (Cresswell, 2012). The type of research used in this study is a quasi-experimental research (Quasi Experiment). According to Sugiyono (2010), quasi-experimental is a study that is close to a real experiment. This study aims to directly examine the effect of one variable on other variables and to test the hypothesis of a causal relationship.

The treatment that will be given to the control class is in the form of comic media. While the experimental class does not use comic media, but the treatment for the experimental class is learning as usual in class. This research was conducted at SDN Teluk Santong. The number of subjects in this study were 39 students from class VI A and VI B SDN Teluk Santong.

Data collection techniques in this study were using interviews, observation, written tests, and documentation. This interview is used as an initial stage before the researcher goes directly to the field where the researcher conducts a research. This observation is used as a reinforcement of some of the data that has been collected by the researcher. The written test is used to determine which students will enter the experimental class without treatment or enter the control class with treatment. This documentation is used to obtain data on the list of student names and for research photos.

The instrument used in this study was a written test. The test was conducted to determine the students'

ability in solving math problems on the material of factors and multiples of numbers. The written test in this study was divided into two stages. The first stage uses pre-test questions and the second stage uses Post-test questions. The pre-test was conducted to determine the students' initial abilities and used as a benchmark for improving student learning outcomes. While the final test (post-test) is used to determine the acquisition of learning outcomes and whether there is a significant change after being given treatment (the use of comic media in learning mathematics on factor and number multiples material).

3.   RESULT AND DISCUSSION

Data from research results at the Teluk Santong State Elementary School in the odd semester of the 2021/2022 academic year. The sample in this research is the sixth grade students of SDN Teluk Santong, in grade VI will be divided into two groups. The first group is class VI A as the control class and the second group is class VI B as the experimental class. The experimental class applies comics media in learning mathematics in the classroom, while the control class carries out classroom learning as usual. The data that will be obtained in this study are in the form of pretest and posttest data on the application of comics media in learning mathematics on the material of factors and multiples of class VI SDN Teluk Santong. After the two classes worked on the pretest and posttest questions, the researcher conducted a data analysis using the SPSS 22 application, a data from the experimental class or control class would be obtained having a Sig value ¿ 0.05 in the columnograph-Smirnov column, this indicates that the initial data of this study normally distributed. After that, it was continued by conducting a homogeneity test, this homogeneity test using the SPSS 22 application to obtain data Sig = 0.071¿ 0.05 for pretest data and Sig = 0.331¿ 0.05 for posttest data. This homogeneity tester shows that this data has an equal or homogeneous variance.

The average similarity of the initial data was tested using the independent t test. According to the calculations carried out using the SPSS 22 application, the data value of $Sig. > 0.05$ will be obtained in the Leven's Test for Equality of Variances column, then the Sig value of $0.000 < 0.05$ is obtained. Then the average value of the experimental class and control class has a difference or a very significant effect. The data that will be obtained at the end of this study is the post test value. This post test was carried out after the researcher gave a treatment to the experimental class, this treatment was carried out for 3 meetings. The results obtained in the experimental class after being given treatment in the form of an average value of 88.59 with 22 students and the control class of 73.68 with 22 students. After the data obtained from the post test scores after being given treatment and not being given treatment for 3 meetings then the normality of the data will be tested and the homogeneity of the data will be tested. The data were analyzed using the SPSS 22 application.

The value of $Sig < 0.05$ in the Levene' test for equality of variance column means that the data has the same variance. The results used are equal to the assumed variance value with a value of df = 42 obtained a sig. value of 0.331 on the post-test data results, it can be concluded that Ho is rejected and Ha is accepted.

As a first step, the researcher used pretest questions for the experimental class and the control class. This pretest question is used to determine students who enter the experimental class and control class, besides that the question can also measure the understanding of the two classes in understanding the material that has been delivered by the class teacher before the researcher enters the class. After the pretest questions were done by the students, the researcher corrected the answers of the two classes, after that the researchers conducted an analysis and calculated the pretest score data using the SPSS 22 application. The results of the calculation of the average value of the pretest state that the average value of the experimental class is greater than the average value of the control class in the form $(85.54 > 68.22)$ the experimental class gets an average value of no less while the average value of the control class declared less. There is a big difference between the control class and the experimental class.

Furthermore, giving treatment to the experimental class. The treatment given to the experimental class was in the form of comic media, while the treatment given to the control class was in the form of ordinary learning. After being given treatment or learning, then the experimental class and control class worked on the post-test questions. Post-test questions are used to determine the final knowledge and abilities of students after being given treatment and learning. The results of the experimental class post-test average value of 88.59 while the control class post-test average value of 73.68. The results of the calculation of the average post-test value stated that the average post-test value of the experimental class was greater than the average value of the control class of $88.59 > 73.68$. It can be concluded that the experimental class has a very good value predicate while the control class has a good predicate. The results of the average value of the experimental class and control

class are not the same. This can indicate that the experimental class and the control class have a very significant difference. The post-test value data for the experimental and control classes were also tested for normality, homogeneity test, and hypothesis testing.

The normality test in the experimental class and control class obtained the Asymp Sig. value. Kalmograv-Smirnov in the comic media posttest on mathematics learning outcomes in the factor and number multiples material is $0.071 > 0.05$. Based on these data that the data is normally distributed because Asymp Sig. Kolmogorov-Smirnov is greater than the predetermined alpha of 0.05. The homogeneity test obtained the Sig. value on Levene Statistic on the comic media post-test on the mathematics learning outcomes on the factor and multiples material obtained at $0.071 > 0.05$. From the results of these data, it can be concluded that the post-test experimental class and control class have the same variance.

This is also supported by using hypothesis testing, testing this hypothesis using the independent sample t test test formula. The sig. value in this t test is 0.071, this means $0.071 > 0.05$. From this statement, it can be concluded that there is a significant influence of comics media on mathematics learning outcomes in the material of factors and multiples of numbers compared to conventional (ordinary) learning in class VI SDN Teluk Santong.

Based on the results of the study that comic media has a positive side for learning mathematics. Learning mathematics using comics media provides evidence effectively to increase students' motivation and achievement of the material being studied. This is also evidenced in the results of a study Apriyanti (2012), entitled "The Effect of the Use of Mathematical Comics Media on Learning Outcomes for Class V SDN 24 Southeast Pontianak. The results of his research conclude that the use of mathematical comics media has a great influence on the high student learning outcomes in the material of factors and multiples of numbers.

4. CONCLUSION

Based on the results of research, data analysis, and discussion, it can be concluded that the learning outcomes achieved before being given treatment to the two sample groups (Pre-Test) were lower than after being given treatment (Post-test) so that it can be concluded that there is an influence in the application of learning media. comics on mathematics learning outcomes in the material of factors and multiples of class VI SDN Teluk Santong Academic Year 2021/2022.

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