The Effectiveness of Scrapbook on Learning Outcomes of 10th Grade Students Public Senior High School 6 Pontianak on Protista Subject

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Abstrak

Protista are one of the the subject is quite broad and there are many Latin terms and objects, most of which are micro organisms or living things that cannot be found and observed directly in everyday life, students are not enough to only have the ability to memorize but also need a complete understanding of the material such as can classify and classify protista through morphological observations. So that students need a media that is interesting to them and easy to understand. The purpose of this research to see the effectiveness of using scrapbook media on student learning outcomes in class X protista material at SMA Negeri 6 Pontianak. The form of the research is Quasi Experimental Design with the research design of Non equivalent Control Group Design. The sample of this research is class X MIA 2 (control class) and X MIA 3 (experimental class). Intact Group sampling technique. The instrument used is a multiple choice test with 20 questions. The average score of the experimental class students' learning outcomes was 15.40 while the control class's average score was 14.39. Based on the results of the Mann-Whitney U test, Z count . is obtained < Z table with a value of -2.74 < -1.96 so that it can be concluded that H0 is rejected and Ha is accepted, where there are differences in the learning outcomes of students who are taught using scrapbook media and students who are taught using image media. Based on the results of the Effect Size learning using scrapbook media, it got a value of 0.73 with the medium category meaning that the effectiveness of learning using scrapbook media on protista material was classified as moderate in improving the learning outcomes of class X students of SMA Negeri 6 Pontianak by 26.73%.

Keywords: Scrapbook; Learning Outcomes; Protista; Effectiveness

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INTRODUCTION

Learning is a communication process that occurs between teachers and students to create external conditions and support the student learning process. Creating external conditions in a learning support the learning process in students so that it does not hinder the learning itself.

Learning is an effort made by a person to obtain changes in personality, habits, behavior, skills, and attitudes that are relatively permanent resulting from planned experiences or interactions with their environment. The teaching and learning process is a process of delivering communication in which the teacher is the messenger and the students are the recipients of the message (Amalia & Setyawati, 2020, p.144).

Biology is a natural science that has a major influence in the field of science and technology. Natural Sciences cannot be separated from concepts, principles, and processes that occur in the surrounding environment related to how to find out (Inquiry) and find (Discovery). In biology we can find various concepts of living things that can be easily learned, but there are also various concepts that are very difficult to understand because of the many characteristics of each of these concepts. This can be seen from the results of interviews with biology teachers at SMA Negeri 6 Pontianak.

Based on the results of the interview with a biology teacher at SMA Negeri 6 Pontianak on February 22, 2019, information was obtained that in class X biology learning there is material that is difficult for students to achieve during odd semesters, namely Protista material. According to the teacher, students have difficulty learning the material Protista.

Based on the results of the average grade X biology test in odd semesters, the lowest average test score is protista material, where the average daily test score of students on that material is 65 lower than other materials. According to Rumana (2014, p.54) "One of the biological materials that contains a lot of concepts is the protista material that is taught in class X semester I". Based on the results of interviews with students of SMA Negeri 6 Pontianak, this material is considered difficult for students because the scope of the material is quite broad and there are many Latin terms and the objects studied are mostly micro-organisms or living things that cannot be found and observed directly in everyday life. day. students also memorize more material according to what is in the textbook without connecting the material with everyday life. In fact, it is not enough for students to only have the ability to memorize but also need a complete understanding of the material such as being able to classify and classify protista through morphological observations. Learning in the classroom currently only prioritizes products, so the learning process tends to be teacher-centered.

One solution to the problem with this protista material is that students need a media that is attractive to them and easy to understand. Learning media can increase the effectiveness of communication and interaction between teachers and students, learning media are also considered effective for improving student learning outcomes (Syahriyanti, 2017, p.1).

Learning outcomes are changes in behavior that lead to the better in accordance with the learning outcomes obtained (Khoirudin & Novitasari, 2019, p.157). Assessment on the results is carried out so that students can get their identity to master their own abilities (Rini, 2020, p.109).

The use of scrapbook media in learning can help effectiveness in learning. Scrapbook media or commonly called scrapbooks are media that send messages to students in studying protista material both in groups and individually (Burnley, 2004, p.248). The definition of scrapbook is the art of sticking photos or images on paper media, then decorating them into creative works (Aisyah, 2017, p.2).

Scrapbook can be made by hand / handmade so that it is possible to adjust to the desired theme. This media is a type of concrete media that is packaged in the form of an interesting book, with an attractive presentation that can increase student learning activities (Setyo, 2018, p.125). Scrapbook media is used to assist each child in overcoming difficulties, both classically and individually adjusted to the needs of each student and designed to influence student interaction patterns (Ariyani, 2014, p.3).

The advantages of scrapbook media in this protista material are that there are pictures of grouping protista from each class, there is an explanation of their characteristics that make students easy to understand. Scrapbooks have several advantages, namely that they can be used as interesting learning media for students so that students concentrate more on learning (Veronica, Ratna & S, 2018, p.260). Another advantage of scrapbooks is that it reflects the uniqueness of the author's thoughts, lives, and activities. The

concrete and more elastic nature shows the subject matter being discussed. Scrapbooks can overcome the limitations of space and time. using special equipment (Nurdiana & Murjainah, 2017, p.278).

The reason for choosing scrapbook media is because this media is interesting in the learning process and this media is packaged like a book, made as interesting and creative as possible so that students can be more active in carrying out learning. Scrapbook media also has a positive impact on learning in improving student learning outcomes.

METHOD

The method used in this research is an experiment with a quasi-experimental design and a non-equivalent control group design. The research design of non-equivalent control group design is described as follows:

Table 1 Research design Non-equivalent control group design

Class	*Pre-test*	Treatment	*Post-test*
E	O1	XE	O2
K	O3	XK	O4

Information:
E = Experiment Class
K = Control Class
XE = Learning using scrapbook media
XK = Learning by using media picture
O2 and O4 = Post-test experimental class and class control (Sugiyono, 2015, p.116)
O1 and O3 = Pre-test Experiment class and Class Control

The population used in this study were students of class X SMA Negeri 6 Pontianak which consisted of 4 classes, namely class X MIA1 with 35 students, X MIA2 with 33 students, X MIA3 with 35 students, X MIA4 with 33 students. Fourth This class was given a pretest first for sampling in order to determine the students' initial abilities. Based on the results of the pretest, the average score and standard deviation were calculated. Then two classes are taken that have the same or not much different mean scores and standard deviations. Next, determine which class is used as the experimental class and the control class. The classes that are sampled are class X MIA2 and X MIA3.

The experimental class and control class were chosen randomly between X MIA 2 and X MIA 3 classes, so that the experimental class was chosen, namely X MIA 3 and control X MIA 2. The experimental class was treated using scrapbook media, while the control class was given treatment using image media.

There are 3 variables in this study, namely the dependent variable in the form of student learning outcomes on protista material. the independent variable is the use of scrapbook media. and control variables, namely protista material, teaching teacher and time. The instrument used is a test. The type of test used in this research is a written test in the form of multiple choice with 20 questions, RPP (Learning Implementation Plan), and Student Worksheet.

Data Analysis Techniques in this study are pretest and posttest tests which were tested using normality test to determine whether the sample was normally distributed or not, homogeneity test to determine whether the two variants were the same or not, Mann-Whitney U test to determine whether there was a difference between the experimental class and the control class. , and the calculation of Effect Size to determine the effectiveness of using scrapbook media on student learning outcomes in class X protista material at SMA Negeri 6 Pontianak.with the formula:

$$ES = \frac{\bar{Y}e - \bar{Y}k}{Sc}$$

Information:
ES = effect size
$\bar{Y}$e = the average of the experimental class
$\bar{Y}$k = control class average
Sc = standard deviation of control class

The criteria for the magnitude of the effect size can be defined as follows:
ES 0.2 classified as below
0.2 <ICE≤ 0.8 → classified as medium
ICE > 0.8 → classified high

(Sutrisno, 2011 p.1)

RESULTS AND DISCUSSION

This study aims to see the effectiveness of the use of scrapbook media on student learning outcomes in class X protista material at SMA Negeri 6 Pontianak. This research was started from November 18, 2019 to December 2, 2019 in the odd semester of 2019/2020 with two classes used, namely class X MIA 2 as the control

class and class X MIA 3 as the experimental class. Student learning outcomes in the experimental class and control class can be seen from the results of the pretest and posttest, an increase in student learning outcomes in the control class and experimental class on Protista material. The average score in the experimental class increased from 11.60 to 15.40 and the average score for the control class increased from 11.18 to 14.39. (Table 2).

The scores from the pretest results were analyzed first using the normality test (Chi-square test). Based on the pretest and posttest analysis using the normality test of the experimental class, the results obtained count (3.69) < χ^2table (7.815), it can be concluded that the data is normally distributed. while for the pretest analysis using the normality test for the control class, the results of χ^2count (8.2) > χ^2table (7.815) concluded that the data were not normally distributed. Posttest analysis using the normality test of the experimental class obtained the results of χ^2count (10.30) > χ^2table (7.815) it can be concluded that the data is not normally distributed, while for the posttest analysis using the normality test of the control class, the results are χ^2count (11.13) > χ^2table (7.815) concluded that the data are not normally distributed. (Table 3).

The posttest data obtained from the normality test results are not normally distributed, then proceed with the Mann-Whiteney U test so that the results of Zcount < -Ztable are -2.74 < -1.96 (Appendix B-8) causing H0 to be rejected and Ha to be accepted, which means there are differences in the posttest results of the experimental class and the control class, so it can be concluded that the experimental class and control class have different learning outcomes. (Table 4).

Table 2. *Average Score Pretest and Posttest in Experimental and Control Class*

Score	**Experiment Class**		**Control Class**	
	$\bar{x}$	SD	$\bar{x}$	SD
Pretest	11.60	2.43	11.18	2.27
Posttest	15,40	1.48	14.39	1.39

Table 3. Normality Test Results of the experimental and control class posttest data

Class	Results	Information
Experiment	χ^2count (10.30) > χ^2table (7.815)	Data is not normally distributed
Control	χ^2count (11.13) > χ^2table (7.815)	Data is not normally distributed

Table 4. Results of the Mann-Whitney U-Test posttest data for experimental and control classes

Zcount	-Ztable	Results	Information
-2.74	-1.96	Zcount < -Ztable	There are differences in the posttest results of the experimental class and the control class,

Calculation of student learning outcomes obtained from the posttest scores to determine the level of student ability after carrying out learning on protista material. This is in accordance with the opinion of Sudjana (2016, p.22) "learning outcomes are the abilities that students have after they receive their learning experiences". The learning outcomes obtained by students on protista material were seen after being given treatment in the form of posttest experimental class and control class. The calculation of the average pretest and posttest scores shows that there are differences in learning outcomes between the experimental class and the control class.

The results of high student learning mastery in the experimental class are due to the influence of the treatment using scrapbook media during the learning process. Scrapbook media helps students to better understand the material presented by the teacher. In the learning process, students are first divided into several heterogeneous selected groups to be given scrapbook media when they will receive material from the teacher so that at the time of evaluation students understand what material has been delivered. This causes students in the experimental class who are taught using scrapbook media to be more active and enthusiastic when carrying out the learning process so that it has an impact on student learning outcomes. Meanwhile, in the control class, students were taught to use only picture media so that the completeness of their learning outcomes was lower than the experimental class. According to Syahriyanti (2017, p.10-11) the use of scrapbook media in learning has good cognitive learning outcomes, this shows that there are learning outcomes that show an increase in students' ability to answer questions after the learning process using scrapbook media.

The results of the posttest value analysis using the U-Mann Whitney test are known that Zcount < - Ztable ie -2.74 < -1.96 then H0 is rejected and Ha is accepted, this indicates that there are differences in the results of the posttest experimental class and control class. The difference in learning outcomes in the experimental class and control class was due to the treatment using scrapbook media only in the experimental class so that the experimental class got a higher posttest average score. This agrees with the research results of Sari & Mintohari (2018, p.701) that "there is a significant effect of using scrapbook media on student learning outcomes, and can improve student learning outcomes for the better".

Scrapbook learning media are learning media such as scrapbooks that contain a collection of pictures and notes that are arranged as attractively as possible for students to read and make it easier for students to understand the material conveyed in scrapbook learning media. During the learning process, students are also given the opportunity to paste and arrange their own pictures along with the information provided so that students become more active and easier to remember the material that has been delivered. This is in accordance with Hamalik's opinion in Arsyad (2014, p.19) that "the use of media in learning can foster student learning enthusiasm, as well as stimulate learning activities". The scrapbook used in this study can be seen in Figures 1 and 2

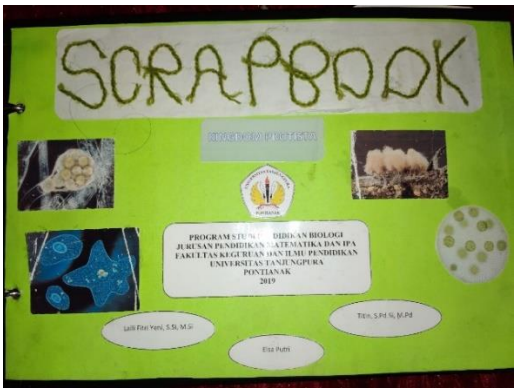

Figure 1. Scrapbook Media Cover

Figure 2. Scrapbook Media Contents

The learning process was carried out in 3 meetings. In the first meeting, students were given material about the characteristics of protista in general, grouping of protista, and mushroom-like protista. In the second meeting, students were presented with material about plant protista, and in the third meeting, students studied material for animal-like protista and the role of protista in everyday life.

Scrapbook media is given to students after the teacher distributes students into study groups, then the teacher conveys the apperception and learning objectives. Provision of learning media in the phase of delivering goals and motivation to attract students' attention to learning. When the teacher presents protista material, the teacher uses the help of scrapbook media. After the teacher finished presenting the material, the teacher asked the students to work on the Student Worksheet. Students work on 2 types of Student Worksheet, namely the Student Worksheet that is

in the scrapbook media and the written Student Worksheet which is distributed by the teacher in groups. In the results of research by Muhadzir and Plung (2013, p.34) stated "learning media with scrapbooks can improve relationships and satisfaction with learning outcomes". Learning is continued by evaluating. The teacher provides reinforcement from the results of group presentations and distributes evaluation questions to each student. After evaluating the teacher gave an award to the group that had presented the results of the discussion in the form of applause. The use of scrapbook media in the experimental class learning process can be seen in Figure 3.

Figure 3. The learning process of the experimental class using scrapbook media

In the control class, the learning process is the same as in the experimental class, only the division of student study groups after the teacher presents the material and the learning media used is different, namely the image media. The use of image media during control class learning can be seen in Figure 4.

Figure 4. The learning process for the control class using image media

The difference in treatment in the experimental class and control class has an impact on student mastery results in the posttest results between different experimental and control classes, the results of student learning mastery in the experimental class are higher when compared to students' learning mastery results in the control class. The highest percentage of posttest completeness is 65.71% in the experimental class there are 23 students who complete from 35 students and the lowest percentage of posttest completeness is 39.39% in the control class there are 13 students who complete from 33 students.

Hthe result of the calculation on the effect size obtained is 0.73 in the medium category. The acquisition value of the effect size when converted into a normal curve table from the OZ table, the area obtained is 0.2673. This shows that the Effectiveness of Using Scrapbook Media on Student Learning Outcomes in Class X Protista Materials at SMA Negeri 6 Pontianak contributed 26.73%.

CONCLUSION

Based on the results of the study, it can be concluded that the effectiveness of using scrapbook media can improve student learning outcomes on protista material, with the average posttest results in the experimental class taught using scrapbook media which is 15.40 while the control class taught using image media is 14.39 . The results of calculations on the Mann-Whitney U test at a significant level of 5%, Zcount < -Ztable ie -2.74 < -1.96 indicate a difference in the average learning outcomes of class X students who are taught using pictures and scrapbook media. There is the effectiveness of Scrapbook media on student learning outcomes on protista material in class X SMA Negeri 6 Pontianak based on the value of Effect Size (ES) which is included in the medium category (ES = 0.73) with a contribution of 26,73%

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