

Picture and Picture Learning Based on Recitation Module for Student Retention

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Abstract: This study aims to determine the increase in student learning retention in the human skeletal system material through the application of the *Picture and Picture* (PAP) learning model based on the recitation module. This study uses an experimental method using a pretest posttest control group design. The population in this study were all 6th semester students. There were 132 students. The sample in this study consisted of 60 students who were randomly selected. The instrument in this study used a recitation-based module and a test device in the form of cognitive questions. The data analysis technique for student learning retention uses the formula recognition methods. The results showed that the retention of the experimental class with the percentage of the first retest 80.20%, the second retest 92.50% and the third retest 101.24% had a very good category compared to the control class, the percentage of the first retest was 83.49%, the second retest was 72.24% and the third retest was 79.50% with a good category. Thus, the application of the PAP learning model based on the recitation module can increase student learning retention on the material of the human skeletal system.

Keywords: *Picture and Picture*; Modul berbasis Resitasi; Retensi

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Introduction

Human Physiology Anatomy (anfisman) is one of the sixth semester courses with a total of four credits which examines the structure and function of human organs. The subject that requires students to memorize is the Human Physiology Anatomy course, one of the materials that is difficult for students to remember and understand is the material on the human skeletal system, especially material on bones. This is in accordance with the results of interviews with anfisman subject lecturers who stated that the graduation rate for these materials tends to be difficult. In the laboratory itself, during interviews with laboratory assistants, when given a test to remember various kinds of bones, it was found that many students tended to be confused so that it greatly affected student retention.

Based on the results of interviews with several course lecturers and laboratory assistants, this proves

that student retention tends to decrease every year in the Anfisman courses. The whole material taught in the Anfisman course shows that the material on the human skeletal system is the most difficult material for students to remember. Strong retention is needed so that students remember the material, so that it will be easy to transfer to students.

Student retention has an important effect on storing various information obtained so that the information can be reused at a certain time. Most students store the source of information provided on this material of the human skeletal system as short-term memory, so that memory can simply be lost. In fact, the information obtained should be stored in long-term memory so that the information they receive from the skeletal system material can be remembered for a long time. This is in accordance with the opinion of Siregar (2020) which states that good retention is one of the needs of every student to learn optimally. This is

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because student learning outcomes in schools are measured based on student mastery of the subject matter, which process cannot be separated from remembering activities.

The obstacle faced by students is usually their disinterest in the available learning resources. As a result, learning resources sometimes tend to emphasize the mathematical aspects without stimulating students to learn actively so that students are reluctant to do independent study. Learning resources so far have not been able to facilitate students in stimulating student retention. Even a visible phenomenon, the impression of learning is still limited to the development of knowledge (cognitive) and is informative. Therefore, a good understanding of the material from the right learning resources is needed to increase student retention.

One of the efforts that can be done to increase student retention is to provide good and appropriate learning facilities. One of the tools that can be used is a module. According to Anonymous (2019), the modules are arranged with the aim that students can learn independently without or with teacher guidance. It's just that in practice sometimes the modules developed are no different from textbooks at school, so it is still difficult for students to develop knowledge with existing modules. According to Siregar (2020) basically student learning outcomes are desired learning outcomes, and student retention has become one of the main goals of education.

The problem of decreasing learning retention cannot be ignored and solutions need to be found in order to achieve good learning success for students. One of the efforts to overcome the problems in the learning process is to make innovations. Innovation that can be done is to use learning strategies based on scientific models that are able to build students' knowledge. One of the appropriate learning strategy efforts is the application of the Picture and Picture (PAP) model which is a cooperative learning model that has learning steps that are in accordance with the material of the human skeletal system.

This PAP learning model provides an opportunity for students to test their memory skills, especially about bones through the display of pictures. The modules provided are not enough without being included with the main tasks related to the material presented. Therefore, a good module must be included with questions both in the form of objective and subjective questions. The application of the LAP model based on the recitation module is expected to provide additional knowledge to support learning in an effort to increase learning retention.

Several previous studies on learning retention by Liana (2018) were conducted on several subjects such as

biology through the assignment method, which was very effective in improving learning outcomes and learning retention of students. Furthermore, research by (Taglieri et al. 2017; Chan et al. 2018) succeeded in conducting research on retention by comparing *Team Based Learning* (TBL) with *Lecture Based Learning* (LBL) which showed that in the results of this study the learning retention of research subjects changed significantly by using LBL.

Test-Potentiates New Learning (TNPL) or experiments better known as new learning strategies to improve respondent's memory showed a significant change in respondent's memory by providing new learning that had just been obtained from the implementation of TNPL. However, most previous studies did not measure the retention ability of students by integrating learning models based on recitation modules. Therefore, the study of the LAP learning model based on the recitation module needs to be studied further. This study aims to determine the increase in student retention using the PAP model based on the recitation module.

Method

The research method used is the experimental method, the Pretest-Posttest Control Group design (Creswell & Creswell 2018).

Table 1. Desain Penelitian Pretest Posttest Control Group Design

Sample	Group	Pre-test	Treat-ment	Post-test	Retest		
					1	2	3
Random	(A) Experi-ment	01	X1	02	03	04	05
Random	(B) Control	06	X2	07	08	09	010

Information:

X₁ = Learning with -based PAP Model recitation modul

X₂ = Learning with PAP Model

0₁ = Pretest score for experimental class

0₂ = Experimental class posttest score

0₃ = Score retest-1 experimental class

0₄ = Score retest-2 experimental class

0₅ = Score retest-3 experimental class

0₆ = Control class pretest score

0₇ = Control class posttest score

0₈ = Score retest-1 control class

0₉ = Score retest-2 control class

0₁₀ = Score retest-3 control class

This research was conducted in the even semester of the 2019/2020 academic year at the Biology Education Study Program, FTK UIN Ar-Raniry Darussalam, Syiah Kuala District, Banda Aceh City. The population in this study were all sixth semester students. The population consists of students with a

total of 132 students. The sample in this study was taken as many as 60 students. Determination of the sample is done randomly by looking at the initial abilities of students who do not differ on average divided into two classes, namely 30 students in the experimental class and 30 students in the control class.

The parameter measured for data collection in this study is student retention. Student retention data were obtained from posttest, retest-1, retest-2 and retest-3 data. Retest-1 was conducted one week after learning ended, retest-2 was conducted one week after retest-1, and retest-3 was conducted one week after retest-2. The data analysis technique to determine learning retention is calculated using the recognition method formula, which is to compare the posttest value with the first retest value, then the posttest value with the second retest value and posttest with the third retest value.

Result and Discussion

Comparison of Posttest, Retest-1, Retest-2, and Retest-3 scores

The results of the measurement of student retention are obtained posttest scores, first retest, second retest, and third retest control class and experimental class are presented in Figure 1. below.

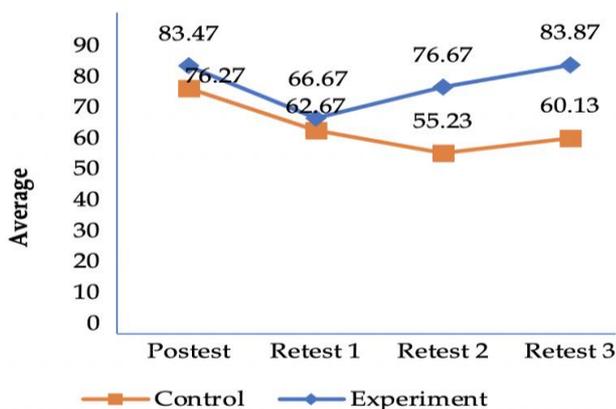


Figure 1. Average Post Test, First Retest, Second Retest, and Third Retest Scores for Experimental Class and Control Class

Figure 1 shows the average posttest, first retest, second retest and third retest scores from the experimental class and the control class. The average posttest scores of the experimental and control classes showed that the experimental and control classes had significant differences. The two classes have different student posttests. The average score of the first retest of the experimental class continued to increase until the second and third retests. The average score of the first retest of the control class decreased in the second retest, but increased in the third retest. The increase in the score of the second retest to the third retest in the

control class has a large difference, namely 4.9 compared to the experimental class which has a difference between the second retest to the third retest, which is 7.2. Thus, the increase in the third retest score in the control class remains lower when compared to the third retest score in the experimental class.

The rise and fall of the retest score is influenced by two factors, namely cognitive factors and memory factors. The experimental class continues to increase because all the information obtained in learning by applying the PAP learning model based on the recitation module is able to improve memory so that all information obtained can be stored in long-term memory. The recitation module itself can be a good tool to improve memory because it contains independent questions that are very efficient to support students to be more trained in learning. In contrast to the control class, which has an up and down retest score. This shows that the control class has low memory because it is not given a recitation module in its learning. Obtained So that learning retention was not consistent.

The above facts can occur in accordance with the cognitive theory according to Piaget which states that children do not have an idea about the principle to classify. The ability to conserve is an important aspect of a child's cognitive development. A child's cognitive development is strongly influenced by the problems they face based on what they have learned from the previous combination. It is a systematic approach that will eventually solve the problem and it is not unintentionally done, but clearly thought out (Marinda, 2020).

Retention Percentage

Data on the percentage of student retention for the first retest, second retest and third retest in the control class and experimental class can be seen in figure 2 below.

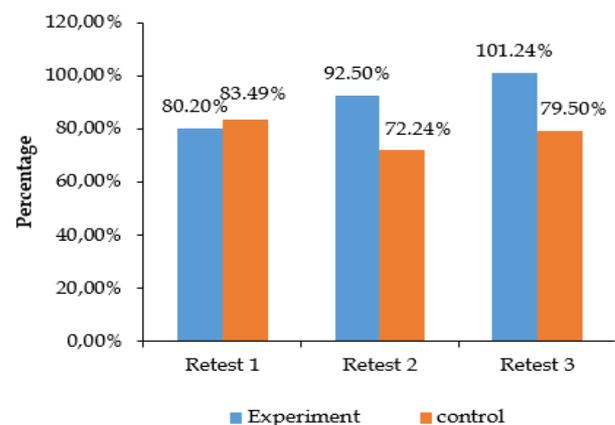


Figure 2. Percentage of Average Scores for First Retest, Second Retest, and Third Retest Experiment Class and Control Class

Figure 2 shows the average percentage of student learning retention in the experimental class and the control class. It can be seen that the average percentage retest in the experimental class increased from the first retest to the second retest and continued to rise until the third retest, while the average percentage retest in the control class decreased from the first retest to the second retest and rose to the third retest. With the data obtained, it can be seen that the increase in the average retention percentage of the experimental class is better than the control class because the use of the PAP model based on the recitation module in the experimental class is able to increase student retention in the human skeletal system material where in the control class only the PAP model is applied.

The PAP model based on the recitation module has the advantage of increasing student learning retention because the module contains various pictures

and questions so that it can attract students' attention and increase student learning motivation which leads to increased learning retention. This is in accordance with the opinion of Sari et al., (2018) which states that pictures basically help encourage students and can arouse their interest in the lesson. Help them in language skills, artistic activities, and creative statements in storytelling, dramatization, reading, writing, painting, drawing, and help them interpret and remember the contents of reading material from textbooks.

Retention Criteria

The criteria for the experimental class in the first retest, second retest and third retest in the control class and experimental class can be seen in Figure 3. below.

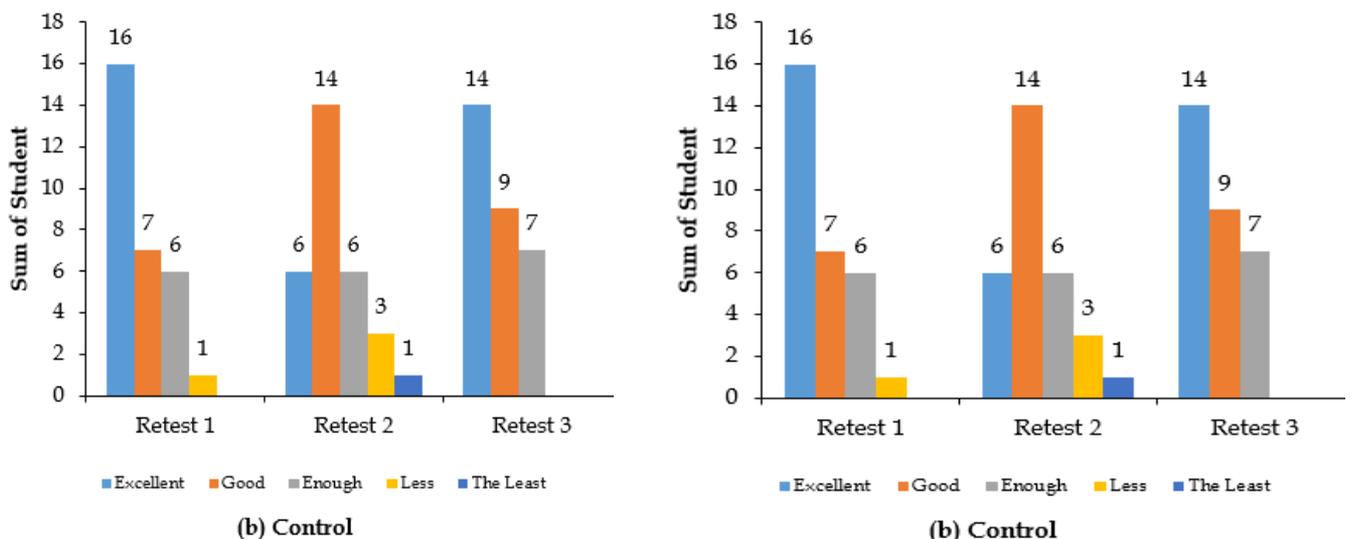


Figure 3. Retention Criteria in the First Retest, Second Retest, and Third Retest in (a) Experimental Class and (b) Control Class

Figure 3. shows the criteria for student learning retention in the experimental class and the control class. The experimental class includes three criteria, namely very good, good, and sufficient. Student learning retention in the control class includes five criteria, namely very good, good, and sufficient, less, and very poor. The criteria obtained from the data for the experimental class continued to improve in line with being given three retests. This indicates that the experimental class which is given treatment using the PAP learning model based on the recitation module is better than the control class. In contrast to the control class, the retention criteria tended to fluctuate from the first retest to the third retest.

The retention criteria above show the important role of a recitation module in learning. As according to

Anonymous (2019), learning with modules allows a student who has a high speed in learning to complete one or more basic competencies faster than other students. A module will be meaningful if it makes it easier for students to use it. Gowasa (2019) also explains that student learning retention is strongly influenced by the use of effective and efficient learning tools. Especially in this study, the PAP learning model is based on the recitation module which is also able to train students to be able to remember learning material through tools in the form of questions contained in the module.

The high ability of students in learning will provide good information processing power for students. This is because his thinking ability continues to develop so that he is able to analyze a problem faced

in the learning process. Several studies on the application of cooperative learning models have been conducted (Hasanah et al., 2017; Nurisya et al., 2017; Bahri et al., 2019; and Wahyuni et al., 2019) the results of the study reveal a significant increase in student learning retention and show a very high retention rate. good.

Conclusion

Based on the results of research and data analysis, it can be concluded that there is an increase in student learning retention in the human skeletal system material by applying the Picture and Picture learning model based on the recitation module.

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