

THE EFFECT OF THE POWER OF TWO LEARNING STRATEGY ON STUDENTS' PERFORMANCE IN BIOLOGY LEARNING

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ABSTRACT

This study aims to determine the effect of learning strategy the power of two on the activity of students in Biology learning. This research design uses posttest-only control design with quasi experimental method. The population in this study is the entire class in X class in one high school at Palembang consisting of 5 classes, with 141 students. Sampling is using purposive technique. The sample of this study is X IPA 3 class with 36 students as experimental class and X IPA 2 class with 36 students as control class. In the learning process, the experimental class is taught by using the power of two learning strategy and control class using conventional method (lecture). Data collection is from observation sheet and questionnaire of student learning activity which have been tested its validity by using Aiken's V formula. The result of this study shows that the average of student learning activity in the experimental class in 2 meetings is 83,05% of the students who have been active in very active category. In control class, the percentage of active students 55,46% is active category. Result of data analysis that is using t-test with significant level 0,05 obtained $t_{\text{arithmetic}} = 9,693$ while $t_{\text{table}} = 1,994$ seen that $t_{\text{arithmetic}} > t_{\text{table}}$. Therefore, H_a is accepted and H_0 is rejected thus it can be concluded that the power of two's learning strategy can have an effect on student's learning activeness. Increasing the liveliness of learners can optimize the motivation, cooperation, responsibility, reading interest, and learner activity in the learning process.

Keywords: *learning strategy, learning, the power of two, student activity*

INTRODUCTION

The national education is an education rooted in Indonesian culture based on Pancasila and the 1945 Constitution and regulated in UUD Number 20 of 2003. According to UUD No. 20 of 2003 education is a conscious and planned effort to create an atmosphere of learning and the learning process so that participants are actively investigated to develop their potential to have spiritual spiritual power, self-control, personality, intelligence, good character and skills needed by him, society, nation and state (Depdiknas, 2003). Activity learners can be said to only listen to the teacher explanation and record things that are considered important, whereas the activities of learners not only listening and taking notes but more focused on the activities or participation of learners in the learning process such as express opinions, ask, draw, solve problems, can analyze and make decisions and others. That is why activity is a very important principle or principle in the interaction of teaching and learning (Sardiman, 2001).

Activity of learners should be proven in teaching and learning activities, it is impossible to happen learning, without any activities undertaken by teachers and learners. Student activity is considered important, because based on observations in one of the high schools in Palembang City, indicates that the learning process is still one way and less to provide opportunities for learners to participate actively. In addition, the facts on the ground also indicate that the presence of students who are dominated in the classroom and other learners only become the audience. Therefore, according to Zaini (2007), active learning is intended to keep the attention of learners to stay focused on the learning process.

RESEARCH METHOD

This research is a quasi experiment design research. This research method is quantitative research method. The research design used is Non-equivalent Control Group Design. The procedure in this study between preparatory stages in this research is making pre experimental instrument, the document covers teacher interview sheet, teacher and student questionnaire sheet, observation sheet of student learning process, and observation sheet of student learning activity. The pre experimental instrument was created with the aim of obtaining information about the problems in the learning process activities and learning activities that exist in the X class in one of the high schools at Palembang.

Then the next activity is to set the subject of research, making research instrument that is, student questionnaire as posttest, students' worksheet as part of observation and learning device. At this stage of the implementation of learning activities in the experimental class and control class with the same learning materials, namely the material of biodiversity. The implementation stage involves presenting the experimental presentation with the learning process using the power of two strategy in the experimental class, while in the control class the learning process is done by using the lecture method. Then the observation was done at each learning meeting and questionnaire after the end of the learning process of biodiversity material, and conducted the final test. The implementation of this research is done 2 times meeting. At this final stage carried out data processing and discussion of data from research results and conclusions from the results of research that has been implemented.

RESULT AND DISCUSION

Student learning activity in experiment class is higher than control class. Figure 1 shows that the highest percentage achievement is in the indicator of emotional activities for the experimental class (76%) and mental activities for the control class (63,88%). The average result of overall student activity stated that the activity in the class using the power of two learning strategy is higher.

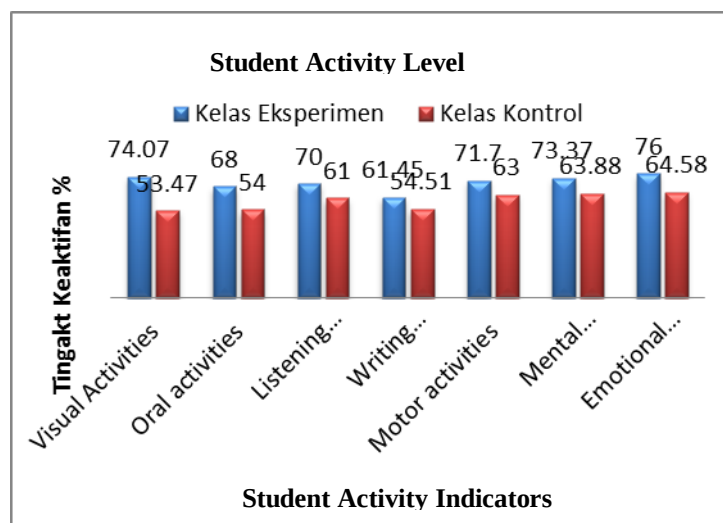


Figure 1. Percentage of Student Activity on Multiple Indicators

Based on t test result, t_{table} value for $df = 35$ equal to 1,994 and significance value $0,000 < 0,05$ according to base decision making in t-test indenpendent sample, it can be concluded that H_0 is rejected and H_a accepted. The decisions obtained are accepted by H_a , which means that students in the experimental class and control class on Biodiversity materials are significantly different or have different learning activities.

Based on the result of questionnaire value of students' scientific attitude tested by hypothesis test or t test indicate that there is influence of contextual learning by utilizing environment around school to student's scientific attitude, average value of experimental class questionnaire 70,65% with high category and control class 59,33% with medium category. This is supported also by the value of student observation sheet which shows that the average value of 83,05% experimental class observation sheet (in very active category) is higher than the control class 55,46% (active category).

The average difference in learning activity yields a higher value for the experiment class significantly. This shows a positive influence on learning using the power of two model. The use of learning models of the power of two emphasizes the achievement of active student learning activities. In the experimental class taught

using the power of two learning model is more interesting and different from the usual learning, thus providing a new atmosphere and way of learning to the students. The results of this study indicate that the learning by using the power of two models of students more interested and focused in learning activities than by using conventional models (lectures). In addition, the learning material can be delivered in a relatively short time compared to the lecture method. This results in more efficient and effective learning time.

Based on data analysis, normality and homogeneity test have been tested with the result that both classes are normal and homogeneous distribution, then hypothesis testing using Independent sample t-test. Based on hypothesis testing, it has been done states that there is influence of learning strategy of the power of two on student learning activities. Independent sample test is done by comparing the students' learning activities in each class, the average difference of students' learning activity between the experimental class and the control class shows that learning using the power of two strategies is better than the lecture method. The average value of student learning activities that is 54.77 higher than the average grade of learning activities control class students 47.61. Based on the calculation using Independent sample t-test, the value of student learning activities of both classes obtained that $t_{\text{arithmetic}} > t_{\text{table}}$ is $9.693 > 1.994$. These results indicate the influence of learning strategy The Power of two on student learning activities. The results of this study are consistent with the opinion of Zain (2015), which states that the power of two able to increase student learning activities.

CONCLUSION

Based on the results of research can be concluded that there is influence of learning strategy of the power of two on the activity of biology student learning on biodiversity material in X class. The average score of questionnaire value is 70.65 with high category and control class ie students doing learning process with lecture method and discussion with mean score of questionnaire value 59,33 medium category. It can be seen also on the observation data of student learning activity, the average learning activity of the students in the experimental class is 83,05% that is with very active category and control class that is 55,46%, meaning with active category.

ACKNOWLEDGMENT

The author would like to thank all those who have provided financial and moral support for this research.

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