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The Influence of Children Learning in Science Learning Models to Improve Student Learning Outcomes

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ABSTRAK

Rendahnya hasil belajar siswa, mendorong perlunya menciptakan pembelajaran yang dapat mengatasi permasalahan tersebut. Salah satu caranya, yaitu dengan menggunakan model pembelajaran CLIS. Model CLIS bertujuan untuk mendorong siswa untuk mengembangkan ide atau gagasan masalah pembelajaran tertentu dan untuk merekonstruksi ide atau gagasan tersebut berdasarkan hasil pengamatan dan percobaan. Jenis eksperimen yang digunakan dalam penelitian ini yaitu Quasi Experimental Design (Eksperimen Semu). Hasil pembelajaran dikumpulkan menggunakan instrumen tes pilihan ganda, kemudian dilakukan uji percontohan. serta analisis data hipotesis statistik. Hasil penelitian ini, menggunakan model pembelajan Children Learning in Science lebih tinggi dari pada menggunakan model pembelajaran konvensional. Terdapat pengaruh model pembelajaran Children Learning In Science terhadap hasil belajar siswa pada materi Ekosistem di kelas X SMA Kartika 1-4 Pematang Siantar Tahun Pelajaran 2023/2024.

Keyword: Model CLIS; Hasil Belajar; Model Pembelajaran

ABSTRACT

Low student learning outcomes encourage the need to create learning that can overcome these problems. One way is to use the CLIS learning model. The CLIS model aims to encourage students to develop ideas or ideas of a particular learning problem and to reconstruct those ideas or ideas based on the results of observations and experiments. The type of experiment used in this study is Quasi Experimental Design. Learning outcomes were collected using multiple choice test instruments, then pilot tests were carried out. as well as statistical hypothesis data analysis. The results of this study, using the Children Learning in Science learning model are higher than using conventional learning models. There is an influence of the Children Learning In Sciencelearning model on student learning outcomes in the Ecosystem material in grade X of SMA Kartika 1-4 Pematang Siantar for the 2023/2024 academic year.

Keyword: CLIS Model; Learning Outcomes; Learning Model

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1. INTRODUCTION

Science is a thinking process, or the ability to discover and obtain information about science. One of the mandatory subjects at school is science, which can require students to have the ability to increase their understanding of the outside world and the surrounding environment. It is hoped that science in schools can help students understand scientific concepts so that they can build their own knowledge and not just rely on teachers to provide their knowledge.

To improve the ability to think, work and think scientifically and communicate it as an important aspect of life skills, science learning must be carried out using scientific inquiry. As a result, science learning in schools emphasizes providing direct learning experiences through the use and development of scientific process skills and attitudes. For most students, biology is a difficult subject, this is the main problem faced by

biology teachers. Therefore, teachers must master the material to be taught and how to teach it so that the learning process can run.

The development of students' process skills can be trained through learning activities that use the process skills approach. The process skills approach is a learning process that is designed in such a way that students can discover facts, build concepts and theories with the students' own intellectual skills and scientific attitudes. Students are given the opportunity to be directly involved in scientific activities like those carried out by scientists, but the process skills approach does not intend to make every student become a scientist.

Knowledge about the concepts and principles of science that students learn with certain basic abilities is called science process skills. Science process skills include measuring, observing, classifying, communicating, quantifying, recognizing and using spatial and temporal relationships, drawing conclusions, developing operational definitions, determining hypotheses and controlling variables, interpreting data, and experimenting.

The experimental method gives teachers the opportunity to increase students' physical engagement and their intellectual skills. They also have the opportunity to practice science process skills so they can achieve optimal learning outcomes it is likely that the experience is embedded directly in his memory. Experiments provide students with the opportunity to experience or do it themselves, follow a process, observe something, analyze, prove and draw their own conclusions about the situation.

Based on the results of observations, science teachers at SMA Kartika 1-4 Pematang Siantar continue to apply the lecture method in learning. Because students do not have direct experience in learning science, the lecture method cannot help students learn actively and creatively. This causes students' scientific thinking skills to be less trained, even though these skills are useful for finding new ideas and developing knowledge that can be applied in everyday life.

To improve students' scientific thinking skills, an alternative that can be used is the Children Learning In Science (CLIS) learning model. The CLIS model is a learning model that aims to encourage students to develop ideas or notions about certain learning problems and to reconstruct these ideas or ideas based on the results of observations and experiments. This learning model can give students the opportunity to interact with the environment around them in a more active way. This can enhance students' learning experience. In addition, experimental activities will gives students the opportunity to learn science through direct observation of scientific phenomena and processes. This activity will also teach them how to think scientifically, develop and develop a scientific attitude, and use scientific methods to discover and solve new problems.

2. RESEARCH METHOD

This research uses quantitative research methods based on the philosophy of positivism, used to research certain populations or samples, data collection using research instruments, quantitative/statistical data analysis, with the aim of testing the hypothesis. The type of research used is experimental research. This type of research is Quasi Experimental Design. The population in this research was 7 classes with a total of 331 students. From a total of 7 existing classes, 2 classes were taken as samples totaling 96 people. The sampling technique used was Cluster Random Sampling, sampling members from the population was carried out randomly without paying attention to the strata in the population.

The data collected in this research is student Biology learning outcomes data. The method for collecting data on learning outcomes uses the test method, namely a multiple choice test with a total of 20 questions. In carrying out the test, it is carried out by distributing a number test to measure student learning outcomes in class X SMA. This research is used to measure students' cognitive abilities or knowledge only. Each multiple choice question is accompanied by four answer choices, namely a, b, c, and d. Each question is given a score of 1 if the student answers correctly (the answer is matched with the answer key), while each incorrect question item is given a score of 0. In this research, the learning outcomes test is made based on a grid. A grid of learning outcomes instruments created based on Bloom's taxonomy levels. Then each correct question item is added up and the total score is used as a variable score for student learning outcomes. Testing of learning outcomes instruments uses validity tests and reliability tests.

The data that has been collected is analyzed using descriptive statistics. Descriptive statistics are carried out to determine the high or low quality of student learning outcomes, whether taught using the CLIS method or using conventional methods. The descriptives used are mean (M), median (ME), mode (Mo), standard deviation and variance. The calculation uses the help of the SPSS 21.0 for Windows program. Then the prerequisite tests are carried out, namely the normality test, homogeneity test and linearity test, then the t test is carried out to find out which group is superior.

3. RESULTS AND DISCUSSION

From the research that has been carried out, data was obtained on student learning scores taught using the Children Learning In Science model with the average pre-test score for the Experimental class (X1) being

46.46. Median 45.00, Mode 35 and Standard Deviation 10.51. The lowest score is 30 and the highest score is 65 with a total of 2230. Meanwhile, the average pre-test score for the control class (X2) is 56.35. Median 60.00, mode 60 and Standard Deviation 9.87. The lowest score is 35 and the highest score is 70 with a total of 2705. And the average post-test score from the experimental class (X1) is 87.50. Median 87.50, Mode 85 and Standard Deviation 5.45. The lowest score is 75 and the highest score is 95. Meanwhile, the average post-test score for the control class (X2) is 81.88. Median 80.00, mode 85 and Standard Deviation 4.90. The lowest score is 75 and the highest score is 95.

Table 1. Descriptive statistics of research variables

Descriptive Statistics								
	N	Range	Minimum	Maximum	Sum	Mean		Standardeviasi
pre-test eksperimen	48	35	30	65	2230	46,46	1,518	10,516
post-test eksperimen	48	20	75	95	4200	87,50	0,788	5,458
pre-test kontrol	48	35	35	70	2705	56,35	1,426	9,879
post-test kontrol	48	20	75	95	3930	81,88	0,708	4,906
ValidN (listwise)	48							

Based on the results of hypothesis testing using the t test as shown in the table below, tcount (140,987) > ttable (1.677) at the significant level α = 0.05 and the value of df is 95, so ho is rejected and ha is accepted, meaning there is an influence on learning outcomes. students use the Children learning In science model on Ecosystem material in class X SMA Kartika 1-4 Pematang Siantar for the 2023/2024.

Table 2. t test of student result data

One-Sample Test						
Test Value = 0						
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of theDifference	
					Lower	Upper
Hasil	140,987	95	,000	84,688	83,50	85,88
Kelas	29,240	95	,000	1,500	1,40	1,60
S						

From the results of this analysis, the total pretest score for the experimental class was 2230 with an average score of 46.46, while the total pretest score for the control class was 2705 with an average score of 56.35. In accordance with the KKM (75) in the Biology subject at SMA Kartika 1-4 Pematang Siantar, not a single student from the two classes was able to reach the KKM on the pretest questions (0%). The total posttest score in the experimental class was 4200 with an average score of 87.50. Of the 48 students in the experimental class, all students achieved a KKM score (75) (100%). The total posttest score for the control class was 3930 with an average score of 81.88. Of the 48 students in the control class, all students achieved the KKM (75) (100%).

When compared with the average pretest score for the experimental class, which was 46.46 and the control class, which was 56.35, it was found that the pretest score for the control class was greater than that of the experimental class with a difference in score of 9.89. The average posttest score for the experimental class was 87.50 and the control class was 81.88.

The experiment was given treatment with the Children learning In Science model with a difference in score of 5.62 in the Ecosystem material in class X SMA Kartika 1-4 Pematang Siantar for the 2023/2024 academic year.

Based on the results of hypothesis testing, there is an influence of the Children Learning In Science learning model on student learning outcomes in Ecosystem material in class X SMA Kartika 1-4 Pematang Siantar for the 2023/2024 academic year. Hypothesis testing results using the t test at the significance level α = 0.05 obtained tcount (140,987) > ttable (1.677) and the value of df is 95, so Ho is rejected and Ha is accepted, meaning that there is a significant direct influence of variable X on variable Y using the Children Learning In science model in Ecosystem material in class.

4. CONCLUSION

The total pretest score for the experimental class was 2230 with an average score of 46.46 and the posttest score for the experimental class was 4200 with an average score of 87.50. These results show an

increase of 41.04. The total pretest score for the control class was 2705 with an average score of 56.35 and the posttest score for the control class was 3930 with an average score of 81.88. These results show an increase of 25.53. From the results of hypothesis testing using the t test, it is obtained that tcount (140,987) > ttable (1.677), and the value of df is 95 at the significant level α = 0.05, so Ho is rejected and Ha is accepted, meaning that there is an influence of the Children Learning In Science learning model on learning outcomes. students on Ecosystem material at SMA Kartika 1-4 Pematang Siantar Academic Year 2023/2024.

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