THE EFFECT OF THE DISCOVERY LEARNING MODEL ON SCIENCE LEARNING OUTCOMES IN CLASS IV STYLE AND MOTION MATERIAL YPI NUR FADHILAH

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Abstract
This research was conducted on the existence of student problems in the teaching and learning process and also the lack of use of learning models used by educators resulting in low student learning outcomes. This research was conducted to find out how the influence of the Discovery Learning learning model on science learning outcomes in the material of Style and Movement for class IV YPI Nur Fadhilah. The learning model used in this study is the Discovery Learning learning model where the Discovery Learning learning model is a learning model that involves students to be directly active in exploring their own knowledge through observation that has been done. In this study, researchers collected data using multiple choice tests. The data analysis techniques that the researchers used in this study were validity tests, reliability tests, normality tests, homogeneity tests, and u-tests or can be called the Mann Whitney test. As for the results of the average value of students using the discovery learning learning model, namely 75.68 % while students using conventional learning models the average value is 65%. From the results of the U-test testing that researchers have done to find out whether there is an effect of using the Discovery learning model Learning before and after using the learning model. Based on the test, it is known that the Asymp.Sig (2-tailed) value is 0.001 <0.05, so it can be concluded that the hypothesis is accepted (Ha is accepted and H0 is rejected). This means that after using the Discovery Learning learning model, it affects science learning outcomes on style and motion material for class IV YPI Nur Fadhilah.
Keywords: Discovery Learning, Learning Model, Learning Outcomes

1. INTRODUCTION

According to Law No. 20 of 2003. Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation and state. The learning process is an activity that involves educators and students to achieve a learning goal that they want to achieve.

In the learning process, educators, students and the curriculum are needed to be interconnected and interrelated with each other. In learning activities, of course, it is very expected that the maximum results obtained by students will be obtained, so that educators are required to be able to adapt education to the development of the times and educators must also be able to create learning methods that can improve student learning outcomes.

Natural Science (IPA) is a science that studies nature related to living things in it such as humans, animals and plants. According to (Pramana & Suarjana, 2019) IPA It is a human effort to understand the universe through proper observation of the object and using the right procedure, and explained by authentic reasoning so as to produce the right needs. (Juniati & Widiana, 2017) Reveal the importance of process mastery IPA In elementary school, students are easier to understand abstract concepts through concrete objects, directly do it themselves and in the teaching and learning process, concept development is inseparable from the development of attitudes and values.

Learning outcomes are the most important thing as a benchmark for a student's success in the learning process. Improving learning outcomes is the most important goal in the world of education. The factors that can affect learning outcomes are internal and external factors. Where internal factors are

factors that come from the students themselves, and external factors are factors that come from outside the students such as teacher models in teaching, inadequate classrooms, and their peers.

Based on the results of observations and interviews conducted by researchers in grade IV of SDS YPI Nur Fadhilah Medan Marelan on January 14, 2023, the researcher found that in the learning process IPA Educators still use conventional learning models, so the learning process is still mastered by educators. Which results in the learning process becoming less effective and looks boring due to the lack of learning models used by educators. This results in students not understanding the material delivered by educators, in addition to that during the learning process students tend to be passive. The lack of student involvement in the learning activity process greatly affects the learning outcomes of students.

As a result of low student learning outcomes, it can be seen that there are still many students who get a score below the KKM where the KKM score that has been set is 80, only 37.83% of students get a score above the KKM while those who get a score below the KKM 62.16%.

As for the researcher's solution to improve student learning outcomes, teachers can use the Discovery Learning learning model. The Discovery Learning learning model is a learning model that involves students directly to explore their own knowledge. (Cintia, dkk. 2018) revealed that Discovery Learning is a learning model that directs students to discover concepts through various information or data obtained through observation or experiments.

Based on the above background, the researcher is interested in conducting a research with the research title "The Influence of the Discovery Learning Learning Model on Learning Outcomes IPA On Classroom Style and Motion Materials IV YPI Nur Fadhilah".

2. RESEARCH METHODS

The research design used by the researcher in this study is a type of experimental research. According to (Sugiyono 2013:107) experimental research is a research used to analyze the effect of treatment on others under controlled conditions.

In experimental research, there are several forms of experimental types, namely 1) Pre-Experimental Design, 2) True Experimental Design, 3) Factorial Design, and 4) Quasi Experimental. The type of research used in this study is True Experimental Design with a type of posttest-only control design where in this design there are two groups that are each randomly or randomly selected. The first group was given treatment and the other group was not given treatment. The group that was given treatment was called the experimental group and the group that was not treated was called the control group.

1. Populasi

According to (Djali, 2021:40) states that the population is the entire unit of research or analysis whose characteristics will be investigated or studied. In this study, the population is all students of grade IV of YPI Nur Fadhilah for the 2022/2023 school year consisting of 4 classes with a total of 137 students.

2. Sampel

The sample according to (Sugiyono, 2018: 118) is part of the number and characteristics owned by the population. The sample in this study is 67 students. Which consists of two classes, namely class IV-A with a total of 37 students as an experimental class consisting of 15 female students and 22 male students and IV-D with a total of 30 students as a control class consisting of 11 female students and 19 male students at SD YPI Nur Fadhilah.

3. Research Instruments

The data collection technique is carried out in this study, namely by technique, namely:

a. Tes

Tests are methods that can be used or procedures that need to be taken in the context of measurement and assessment in the field of education.

The test used in this study is a multiple-choice question which will later be processed to determine the level of student success in the learning process by applying the Discovery Learning learning model in science subjects in grade IV YPI Nur Fadhilah.

4. Analysis Techniques

The data analysis technique is one of the research processes that is carried out after all the data needed to solve the problem being studied has been obtained completely.

a. Inferential statistical analysis techniques consist of validity test,

reliability test, normality test, homogeneity test, Mann Whitney test.

b. The validity test (janna & herianto, 2021) is a test that functions to see whether a measuring tool is valid or invalid. The tools referred to here are questions.

c. Reliability test (Darma 2021: 17) is a reliability test to find out whether the data produced is reliable or robust.

d. Normality test (Lucky, 2019: 3) The normality test is carried out to find out whether the data obtained comes from a normally distributed population or not.

e. Homogeneity test (Setyawan, et al, 2021: 87) The homogeneity test is carried out to provide confidence that a group of data researched in the analysis process comes from a population that is not much different in diversity.

f. The Mann Whitney test is a non-parametric test and is used when the data is not normally distributed. Hypothesis tests are used to prove the hypothesis of the research conducted whether there is an effect.

3. RESULTS AND DISCUSSION

According to (Rahmat, et al. 2021) the Discovery Learning learning model presents a method to develop a way of learning students actively by determining for themselves, investigating themselves, then the results obtained will be faithful, and durable in memory and not easily forgotten by students.

According to (Andriani, R., & Wakhudin, 2020) The Discovery Learning learning model is learning that involves students in the process of mental activities through exchanging opinions, discussing, judging themselves and trying on their own, so that children can learn independently.

Based on the above understanding, it can be concluded that the discovery learning model is a learning model that involves students to be active directly in exploring their own knowledge through observations that have been made.

1. Validity Test

Based on the results of data processing that has been carried out using SPSS 23, from the 20 questions tested, 10 valid questions were obtained and 10 questions were declared invalid. The classification can be seen in the following table:

No Soal	t Table	t Hitung	Nilai Sig	Kesimpulan
Soal 1	0,325	0,245	0,144	Tidak Valid
Soal 2	0,325	0,232	0,167	Tidak Valid
Soal 3	0,325	0,281	0,098	Tidak Valid
Soal 4	0,325	0,419	0,010	Valid
Soal 5	0,325	0,473	0,003	Valid
Soal 6	0,325	0,539	0,001	Valid
Soal 7	0,325	0,445	0,006	Valid
Soal 8	0,325	0,486	0,002	Valid
Soal 9	0,325	0,199	0,238	Tidak Valid
Soal 10	0,325	0,115	0,297	Tidak Valid
Soal 11	0,325	0,008	0,963	Tidak Valid
Soal 12	0,325	0,434	0,007	Valid
Soal 13	0,325	0,178	0,293	Tidak Valid
Soal 14	0,325	0,210	0,212	Tidak Valid
Soal 15	0,325	0,126	0,459	Tidak Valid
Soal 16	0,325	0,365	0,026	Valid
Soal 17	0,325	0,573	0,000	Valid
Soal 18	0,325	0,539	0,001	Valid
Soal 19	0,325	0,434	0,007	Valid
Soal 20	0,325	0,251	0,130	Tidak Valid

1. Uji reliabilitas

Reliability Statistics

Cronbach's Alpha	N of Items
.661	21

Based on the data processing results that the researcher has obtained using SPSS, the Cronbanch Alpha test value is obtained which is 0.661 and according to the decision-making criteria that the Cronbanch Alpha value of 0.60 is included in the high criteria, the instrument used by the researcher in this study can be said to be feasible and reliable.

2. Uji normalitas

Tests of Normality

Kelas	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	ig.
Hasil Belajar kelas eksperimen dan kelas control	.284	37	.000	.818	37	.000
	.277	30	.000	.866	30	.001

a. Lilliefors Significance Correction

Based on the results of the normality test conducted by the researcher using SPSS, it can be seen that the learning outcomes of students in the experimental class are sig 0.000 where the sig value is 0.000 < 0.05 and in the control class sig 0.000 < 0.05. It can be said that student learning outcome data using the Discovery Learning learning model can be said to be abnormally distributed and classes that do not use the Discovery Learning learning model are normally distributed.

3. Uji wilcoxon

Test Statistics[a]

	Kelas – Hasil Belajar
Z	-7.134[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test
b. Based on positive ranks.

Berdasarkan pengujian yang telah dilakukan oleh peneliti dengan menggukana SPSS dapat diketahui bahwa nilai Asymp.Sig bernilai 0.000 dimana nilai sig 0.000 < 0.05, maka dapat disimpulkan bahwa " Hipotesis diterima". Artinya ada perbedaan hasil belajar IPA untuk pretest dan post-test. Sehingga dapat disimpulkan bahwa "ada pengaruh model pembelajaran *discovery learning* terhadap hasil belajar IPA pada materi gaya dan gerak pada siswa kela IV YPI Nur Fadhilah".

4. Uji man whitney

Test Statistics^a

	HasilBelajar
Mann-Whitney U	305.500
Wilcoxon W	770.500
Z	-3.217
Asymp. Sig. (2-tailed)	.001

a. Grouping Variable: Kelas

Based on table 4.6 above, it is known that the Asymp.Sig value is 0.001 < 0.05, then it can be concluded that the hypothesis is accepted (Ha accepted and H0 rejected). This means that using the Discovery Learning learning model can affect the learning outcomes of science in the style and movement material of YPI Nur Fadhilah grade IV students.

5. Uji Homogenitas

Test of Homogeneity of Variances

HasilBelajar

Levene Statistic	df1	df2	Sig.
.838	1	65	.363

Based on the results of the homogeneity test that the researcher has conducted using SPSS 23 shows that the significant value is 0.363, then it can be said that it is 0.363 > 0.05 so that the learning outcomes of students can be said to be homogeneous because the significant value of 0.363 is greater than 0.05.

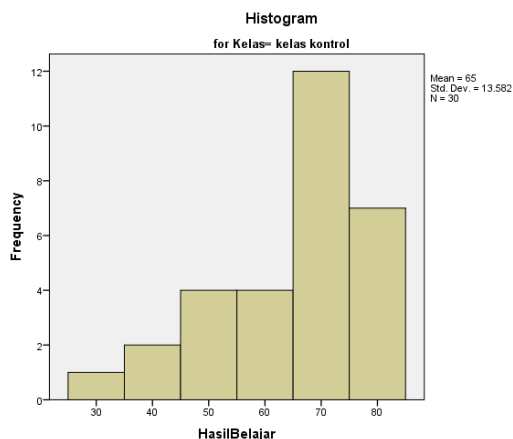1. Science learning outcomes in class IV-D controlled with conventional learning models

Based on the results of the descriptive analysis of percentages, the results of student science learning using the conventional learning model can be seen in table 4.9 as follows:

Science learning outcomes in class IV-D are controlled using a conventional learning model

Interval	Frekuensi	Presentase	Kategori
≤ 47	3	10	Sangat Rendah
48 – 56	4	13,3	Rendah
57 – 65	4	13,3	Sedang
66 -74	12	40	Tinggi
75 – 83	7	23,3	Sangat Tinggi
Jumlah	30	100	
Rata-rata	65		
Nilai Tertinggi	80		
Nilai terendah	30		

Graph of learning outcomes of class IV-D using conventional learning mdel

Science learning outcomes of students in class IV-A Experiment using the Discovery Learning learning model

Based on the results of the descriptive analysis of the percentage, the results of student science learning using the Discovery Learning learning model can be seen as follows:

Science learning outcomes of class IV-A experiment using the Discovery Learning learning model

Interval	Frekuensi	Presentase	Kategori
≤ 56	3	8,1	Sangat Rendah
57 – 65	8	21,6	Rendah
66 – 74	1	2,7	Sedang
75 – 83	12	32,4	Tinggi
84 – 92	13	35,1	Sangat Tinggi
Jumlah	37	100	
Rata-rata	75, 68		
Nilai tertinggi	90		
Nilai terendah	30		

Graph of class IV-A learning outcomes using the discovery learning model.
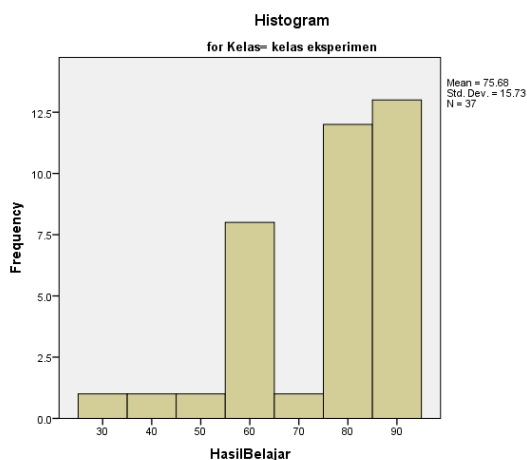
The analysis carried out by the researcher was using the U-test with the help of SPSS 23 to find out whether there was an effect of the use of the discovery learning learning model on learning outcomes. The results of the analysis that

the researcher has obtained show that with the discovery learning model, the significance value is 0.001 < 0.05, then Ha is accepted or there is an influence of the discovery learning model on student learning outcomes. Based on the results of the data analysis that the researcher has carried out, the average score in the experimental class using the discovery learning learning model is 75.68%. While the average score in the Control class using the conventional learning model is 65%, it can be concluded that using the discovery learning model has more influence on science learning outcomes than using the conventional learning model.

4. CONCLUSION

Based on the results of the research and discussion, it can be concluded that the application of the Discovery Learning learning model has an effect on science learning outcomes in the style and motion material of class IV YPI Nur Fadhilah.

The science learning outcomes using the discovery learning learning model based on the data test using SPSS 23, the average score of students in class IV-A was 75.68% while the average score of students in class IV-D using the conventional learning model was 65% so that it can be concluded that there is an increase in learning outcomes in the experimental class by using the discovery learning model.

The results of the analysis that the researcher has obtained using the U-test or can be called the Mann Whitney test show that by using the discovery learning learning model on the science learning outcomes in th**e** gaya dan gerak kelas IV YPI Nur Fadhilah maka nilai signifikasi Asymp.Sig (2-tailed) yang didapat yaitu sebesar 0.001 < 0.05, maka (H_a diterima dan H_0 ditolak) atau dapat dikatakan terdapat pengaruh model pembelajaran discovery learning terhadap hasil belajar siswa.

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