

The Influence of The Discovery Learning Model on Student Learning Outcomes on Subtema 1 Animals and Plants in My Home Environment Class IV Students at State Primary School 091254 Batu Onom

Reginantas Ginting^{1*}, Minar Trisnawati Lumabantobing²,
Partohap SR Sihombing³

Universitas HKBP Nommensen Pematang Siantar, Indonesia

Corresponding author: Reginantas Ginting; reginanatarasginting@mail.com

A R Q I C L E I N F O

ABSTRACT

Keywords: Discovery Learning Model, Learning Outcomes, SDN 091254 Batu Onom

Received : 6, August

Revised : 12, September

Accepted: 20, October

©2023 Ginting, Lumabantobing, Sihombing: This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



This research aims to determine the influence of the *discovery learning model learning* on student learning outcomes in subtheme 1 animals and plants in the Rumahkundi environment for class IV SD Negeri 091254 Batu Onom. This type of research is quantitative research that uses experimental methods. The experimental research used in this research is *pre-experimental* in the form of *One Group Pretest - Posttest Design*. The samples for this research were 30 class IV students. The instruments used are pretest and posttest tests which have been carried out validation and reliability tests. The research results at the 0.05 level show that there is an influence of the discovery learning model on student learning outcomes in subtheme 1 animals and plants in my home environment in class IV of SD Negeri 091254 Batu Onom. It can be seen that the results of *the pretest and posttest comparison* have a sig value of 0.000, which means it is smaller than the value of 0.05, and t has a value of 24.650. This means that there is an influence of the Discovery Learning Learning Model on learning outcomes. Changes in student learning outcomes taught using the discovery learning model make students think more actively, understand the material presented, increase students' curiosity in searching for and finding information on their own, compared to students taught without using the discovery learning *model learning*.

INTRODUCTION

The success of learning objectives is influenced by many factors, including the role of the teacher in implementing learning, because teachers can directly encourage, influence and improve students' intelligence and skills. Therefore, as a teacher, it is not just about teaching students, but about acquiring different skills in an integrative manner to convey messages to students. To improve learning, it is not enough to just use one skill, but it must be combined with other skills.

By choosing the right learning model, students can participate more actively in the learning process. Learning outcomes can be determined through assessment activities which aim to obtain evidence that shows students' high ability to achieve learning goals. Learning outcomes are the abilities that students have after receiving learning experience, a process carried out to find out what is not known and understand what was not previously understood. These abilities include cognitive, affective and psychomotor abilities.

Students who have not yet reached the KKM are class IV, namely, 10 students (60.00%) in themes 1 and 2. Based on the results of the class IV mid semester test scores at Sd Negeri 091254 Batu Onom, the cause of the low percentage of students is due to several problems that arise in The learning process includes the application of learning models that are not yet varied, the learning process tends to be centered on educators so that students are still passive in learning. Students here only function as objects or recipients of treatment. An educator should be able to choose a learning model that is appropriate to the learning and class conditions, so that students are interested in participating in the learning process. An educator can choose creative and varied learning models to apply in the learning process so that learning does not seem monotonous.

The aim of the *discovery learning model* is so that students can understand the material as well as possible and learn more meaningfully, so that student learning outcomes improve. Therefore, teachers must address problems that encourage students to engage in discovery activities. Through discovery activities, students learn to discover their own learning concepts, so that these concepts remain in students' long-term memory and students always remember the material.

THEORETICAL FRAMEWORK

A Conceptual Framework is a line of thinking regarding a relationship between other concepts to be able to provide an overview and direct assumptions related to the variables to be studied. Student learning outcomes prove that these students can understand the lessons taught. Therefore, students' cognitive abilities must always be familiarized and developed. *The discovery learning model* is a learning model that aims to increase students' curiosity, be active in learning, process-oriented, and seek the information needed to achieve goals. In subtheme 1, animals and plants in my home environment, class IV students who were studied using the *discovery learning model* will be viewed from student activities that influence student learning outcomes.

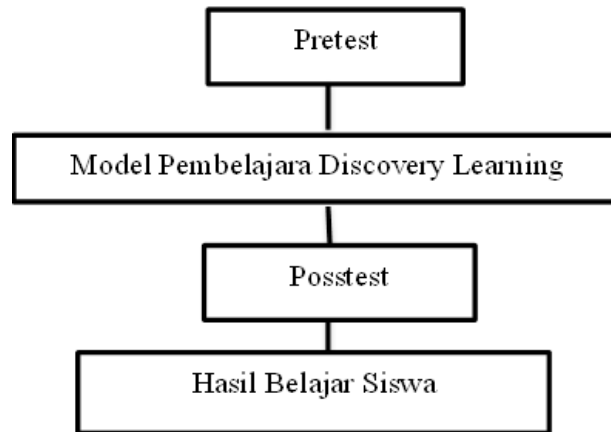


Figure 1. Conceptual Framework

METHODS

The type of research method used in this research is a quantitative research method using a pre-experimental research approach. The researcher used a pre-experimental design research design, divided into two forms of design, namely posttest only control design and pretest group design. . This design was chosen because this research wanted to know the learning outcomes of the experimental class. This means that the research was carried out on one class, namely the experimental class. In the experimental class, treatment is carried out in the form of the use of the discovery learning model. Before being given treatment, a pretest is carried out first. To see the effect, a posttest was given at the end of the research. The questions given in the pretest and posttest are the same. (Sugiyono, 2010:75)

$$0_1 \times 0_2$$

Information :

0_1 = Pretest score (before training is given)

0_2 = Posttest score (after being given training)

The population in the research were all students at SD Negeri 091254 Batu Onom, and the sample taken by class IV students was 30 students. This research uses a test instrument in the form of multiple choices with the aim of measuring learning outcomes. Before it is used for data collection, the data testing stage uses validity testing, reliability testing, difficulty level testing, and differentiating data testing. In data analysis, the t-test was used.

RESULT & DISCUSSION

Result

In this research, instrument testing was carried out on class IV students at SD Negeri 091254 Batu Onom, totaling 30 students. This research uses a test instrument in the form of multiple choices with the aim of measuring learning outcomes. Before it is used for data collection, the data testing stage uses validity testing, reliability testing, difficulty level testing, and differentiating data testing. In data analysis, the t-test was used.

Instrument Test

1. Validity Test

The validity test is carried out to test each question item in measuring each variable. Testing the validity of the data, this research was carried out by correlating the score for each question in the item shown to the respondent with the total score for all questions. The technique used is *person product moment correlation* and the calculation uses SPSS 21.0. If the correlation coefficient value of the test item is greater than r_{table} , it can be concluded that the item is valid. Based on the results of calculations using SPSS 21.0, it shows that 25 questions were tested on students. From the results of validation calculations by formulating person production correlations, there were 20 valid questions and 5 invalid questions.

2. Reliability Test

Reliability calculations on the instrument included 20 questions. Calculation of the reliability of the formula put forward by Kuder Richardson with the overall reliability stated. Because the calculated $r > r_{table}$, the questions as a whole are declared to be reliable, because the calculated r is $0.848 > 0.396$, so the questions are declared to be reliable.

3. Difficulty Level Test

The difficulty level test shows that the test obtained for the student's ability has a difficulty level of the questions out of a total of 25 questions which have a difficulty level, namely 3 questions in the difficult category, 11 questions in the medium category, 0 in the difficult category, 9 questions in the medium category, and 11 questions in the easy category.

4. Differentiating Power Test

The results of the student's test ability have the ability to distinguish questions from the bad category, there are 3 questions, 9 questions are fair, 11 questions are good, 0 very good, and 2 questions are not good. In the valid questions there are 3 questions in the bad category, and 2 questions in the bad category.

Test Requirements Analysis

1. Normality Test Results

The data normality test for the experimental class was carried out to test whether the pre-test and post-test data were normally distributed or not. The condition in this test is that if the sig level is > 0.05 then the data is said to have a normal distribution. The normality test is carried out with the help of the SPSS program and can be determined using the Kolmogorov-Smirnov test.

Table 1 Data Normality Test

	Tests of Normality		
	Kolmogorov-Smirnov ^a		
	Statistics	Df	Sig.
Pretestexperiment	,186	30	,009
Posttestexperimen t	,161	30	,047

a. Lilliefors Significance Correction

The test of normality above shows that the Sig Kolmogorov-Smirnov value in the pre-test was 0.009 and the Sig Kolmogorov-Smirnov value in the post-test was 0.047. So it can be concluded that the experimental class got sig > 0.05 results so it is said to have a normal distribution.

2 Homogeneity Test Results

The Homogeneity Test is used to show that two or more groups of sample data that have been taken come from populations that have the same variance. The basis for decision making in the homogeneity test is that if the significant value on Based on Mean is > 0.05, then the data is said to be homogeneous. The calculation process is carried out with the help of the SPSS 21.0 for Windows program.

Table 2 Data Homogeneity Test Table

Test of Homogeneity of Variances

pretestexperiment

Levene Statistics	df1	df2	Sig.
1,488	4	25	,236

The significant value is $0.236 > 0.05$, so it can be concluded that the pre-test and post-test are homogeneous or have the same variance.

Hypothesis test

1. T-test

Hypothesis testing (t test) was carried out to determine the positive and significant influence between the use of the discovery learning model and learning outcomes.

Table 3 t test results

Paired Samples Test

	Paired Differences				Q	Df	Sig. (2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower				Upper
Pair 1 Pretest posttest	36,500	8,110	1,481	39,528	33,472	24,650	29	,000

Based on the table above, it is found that $t = 24,650$ with a significant level (2-tailed) 0.000, significant probability < 0.05 $t_{count} > t_{table} = 24,650 > 2,045$, so H_0 is rejected and H_a is accepted. This explanation shows that there is an influence of the *Discovery Learning* learning model on student learning outcomes.

DISCUSSION

The research was carried out in class IV of SD Negeri 091254 Batu Onom for the 2023/2024 academic year starting from 15 October to 25 October 2023. The population used was all students of class IV of SD Negeri 091254 Batu Onom with a sample of 30 class IV students.

Based on the results of the pre-test scores, the average student learning outcome was 49.66 with all students scoring below the KKM. Looking at the existing percentages, it can be seen that student learning before using the discovery learning learning model was relatively low.

Furthermore, the average post-test score was 81.50 after using the discovery learning learning model which had better learning results than before using the discovery learning learning model. After carrying out the pretest and posttest normality tests, a homogeneity test was carried out. Based on the normality test, the value is influenced by the Sig Kolmogorov-Smirnov value in the pre-test with a result of 0.009 and the Sig Kolmogorov-Smirnov value in the post-test with a result of 0.047. So it can be concluded that the experimental class got $\text{sig} > 0.05$ results so it is said to have a normal distribution. The homogeneity test shows that the significant value is $0.236 > 0.05$, so it can be concluded that the pre-test and post-test are homogeneous or have the same variance.

After the normality test and homogeneity test have been fulfilled, hypothesis testing is carried out. From the results of the students' tests, it was obtained that $t = 24,650$ with a significant level (2-tailed) 0.000, significant probability < 0.05 $t_{\text{count}} > t_{\text{table}} = 24,650 > 2,045$, so H_0 was rejected and H_a was accepted. This explanation shows that there is an influence of the *Discovery Learning* learning model on student learning outcomes.

Based on the results of the descriptive analysis and inferential statistics obtained as well as the results of the research conducted, it can be concluded that there is an influence in the discovery learning learning model on student learning outcomes in subtheme 1 animals and plants in my home environment for class IV students at SD Negeri 091254 Batu Onom.

CONCLUSION & RECOMMENDATIONS

Based on the discussion of the research results, it is concluded that the application of the *discovery learning learning model* can improve the learning outcomes of class IV students in the 2023 academic year. This can be proven by looking at the children's completeness scores in taking the multiple choice pre-test before being given treatment and the post-test after being given treatment with the *discovery learning learning model*. The results of the research study are based on criteria that have been calculated using the following formula:

the discovery learning model on student learning outcomes in subtheme 1 animals and plants in my home environment class IV State Elementary School 091254 Batu Onom. It can be proven from the results of the hypothesis test value that has been obtained $t_{\text{count}} < t_{\text{table}}$ of $0.000 < 0.05$ so that the hypothesis in this research is accepted and successful.

FUTURE STUDY

So further lessons that can be given to make it better in the future are:

a. Advice for teachers

In the learning process, teachers can apply the *discovery learning model* so that the student learning atmosphere in the classroom can be more active in expressing what students know and getting maximum results so that learning is not teacher-centered.

b. Advice for students

Students in the *discovery learning model* can express each child's individual opinion in providing answers to what the students know. So that students do not feel bored and concentrate more during the learning process

c. Suggestions for schools

discovery learning model in learning to develop abilities and guide students to get the most out of learning before using *the discovery learning model*.

d. Suggestions for researchers

This researcher can be a basis for developing future researchers who will apply it to students.

REFERENCES

- Arikunto, S. (2020). *Research Procedures: A Practical Approach*. Rineka Cipta, 193
- Astuti. (2015). Improving Questioning Skills and Student Learning Outcomes Class 2 SDN Slungkep 03 Using the Discovery Learning Scholaria Model. (5)(1):page10-23.
- Bahari, et al. (2018). The Influence of the Discovery Learning Model Assisted by Media in the Natural Environment on Science Learning Outcomes. *Primary School Scientific Journal*. (2)(2): 103-112
- Cintia et al. (2018). Application of the Discovery Learning Learning Model to Improve Creative Thinking Abilities and Student Learning Outcomes. *Educational Science Perspective*. (32)(1): pages 69-77
- Dafrita. (2017). The Influence of Discovery Learning on Critical and Analytical Thinking Abilities in Discovering the Concept of Plant Diversity. *Journal of Informatics and Science Education*. (6)(1): pages 32-46
- Dayana, et al. (2019). Application of the Discovery Learning Model Assisted by Audio Visual Media to Improve Student Learning Outcomes. *Widyagocic*. (7)(1): pages 58-70
- Dimiyati, M. (2015). *Learning and Learning*. Rikena Cipta: Jakarta. page 45
- Fajri, Z. (2019). Discovery Learning Learning Model in Improving Elementary School Student Learning Achievement. *IKA Journal*. (7)(2): Pages 66-73

Fitriningtyas & Radia. (2017). Improving Science Learning Outcomes Through the Discovery Learning Model for Class IV Students at SDN Gedanganak 02. *Ejurnalmitra Pendidikan*.(1)(6): pages 708-720