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THE EFFECT OF THE DISCOVERY LEARNING MODEL ON THE LEARNING OUTCOMES OF GRADE V STUDENTS IN THE INDEPENDENT CURRICULUM

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ABSTRAK

The DL learning model emphasizes student-centered learning, one of which is to encourage students to find concepts independently through direct learning experiences. This model is believed to improve concept understanding and student learning outcomes, especially at the elementary school level. The purpose of the research is to find out how the DL model affects the learning outcomes of VA class students of SDN Gedang Porong 1 in the independent curriculum. The method applied is pre-experimental design with the type of one group pretest-posttest design. Researchers took a population of 28 students in class VA. The research subjects included VA class students who were given DL-based learning treatment. The data collection technique used the initial (pretest) and final (posttest) treatment tests. The sampling technique used saturated sampling technique. The data collection technique applied is the test technique used to find data about student learning outcomes. The research instrument used test sheets for pretest and posttest questions. Data analysis techniques using descriptive statistics using paired sample t-test. The results of the study prove that the average score of students' pre-test reached 75.57, while the average posttest score increased to 93. The results of data analysis with the t-test showed a significant level of <0.001 which is smaller than <0.05, so it can be concluded that there is a significant difference in learning outcomes before and after applying the DL model.

A. INTRODUCTION

A lot of problems are found that students at school are very lackluster and tend to get bored in doing learning at school even though in Indonesia itself education is very important and it is highly recommended to carry out the educational process by starting education at school, students will be equipped with various knowledge which is then applied in everyday life, while education itself has a meaning, namely education is an effort carried out with awareness and structured to build an environment and learning process that supports students in realizing their potential with full involvement (Rahman et al., 2022). Therefore, it is necessary that educators use approaches to convince students that the knowledge they are learning has long-term benefits and has the capacity to improve their attitudes, knowledge and skills. Appropriate learning approaches should be applied to maximize students' understanding and academic achievement (Pratama et al., 2024). One of the most important elements in learning is comprehension because it is very useful for students as a foundation for thinking and building learning theories and principles. This encourages students to participate optimally in class lessons (Safitri et al., 2022).

In the implementation of education in schools also requires creativity from a teacher, the lack of developing learning while at school leads students to become bored and lack enthusiasm in learning activities at school, for the implementation of innovative learning, namely in the transfer of knowledge and even values, the interaction of teachers and students always requires elements that are in harmony with each other (Abidin, 2019). All elements must be considered and managed as well as possible when developing the learning process. In fact, students in Indonesian schools tend to be lazy and have a low level of thinking. This occurrence is caused by the lack of understanding students are

motivated to learn and students are not suitable with the learning model used (Maslahah et al., 2021). Thus, in order to implement appropriate learning strategies for today's students, teachers must have high enthusiasm for learning and high creativity (Sunarto & Amalia, 2022).

In order to strive for skill-full active student learning abilities, before applying innovative learning techniques, educators need to first understand the characteristics and objectives to be achieved from each learning method applied to students. Each learning method presents a variety of learning experiences in line with the objectives and characteristics to be developed in students (Usman et al., 2022). As for student boredom, teachers often use the method (Teacher-Centered) giving assignments without a varied form related to teaching in the classroom, one example is that teachers teach in a way that is just that or not varied, the impact is that students become bored and lack enthusiasm in the learning process, and of course this will have an impact on the learning process. negative impact on student learning outcomes at school, regarding this, the creativity of a teacher in developing learning in the classroom is very important in order to produce good student learning outcomes in class (Fajri, 2019). One of them is the development of teacher creativity in teaching through the use of discovery learning and discovery models, which highlight the importance of student participation in learning and problem solving so that they can be more actively involved in the learning process. Discovery learning is a learning process where students discover new information by manipulating, structuring, and transforming it (Dewi et al., 2019).

The learning model itself means a design that is specifically designed to be applied in activities. In addition, the model is also known as a design that is systematically arranged so that it can be applied and run effectively. In conventional learning methods, students tend to be passive, lack initiative, and lack motivation because the learning process does not encourage their curiosity (Ridwan, 2021). Therefore, teachers must have the ability to design different learning strategies to meet various student characters. Thus, learning outcomes can be realized and beneficial for each student in the DL model. Linguistically, the term “discovery” stems from the English word. DL is an approach that is useful for fun and requires students to actively participate in designing, implementing, and assessing (Hendrizal et al., 2022).

To achieve this requires an environment that understands students' interests. Students have the opportunity to discover new things and make sense of everything they already know in an environment called discovery learning (Mayuni et al., 2021). By showing that students need to actively participate in the learning process, as this model emphasizes the meaning of their insights with respect to the structure or main thoughts in a field of knowledge. DL can also be defined as a type of learning where students focus on their thinking and logic while solving various problems to discover ideas that can be applied in the real world (Priadi et al., 2021). In addition, discovery learning is also a hands-on learning approach. It seeks students to depend on learning theories presented in textbook guides. This learning model is carried out with several processes/syntaxes of the DL learning model including several stages, namely stimulation, problem statement, data collection, data processing, proof, and conclusion drawing (Sinaga et al., 2022).

The approach in the DL teaching-learning process in the independent learning curriculum has been widely implemented in schools, because the independent curriculum is considered a major influential innovation in the learning process in Indonesia, because it emphasizes student-centered learning to overcome the challenges of traditional education. This independent curriculum provides educators to adapt the teaching-learning process to suit local needs and make the student learning experience more exciting and full of innovation. In addition, the independent curriculum also helps students be more independent and become better overall and overcome class retention through effective planning and implementation, incorporating competency assessment, simplified lesson plans, and flexible student acceptance to create a fun and pressure-free learning environment. In the independent curriculum, the DL model is one of the appropriate methods with the independent curriculum, this method directs the learning process by focusing on students as the main center and students can explore and discover something new in contrast to the general learning method which only

focuses on educators and the DL learning method was chosen in the independent curriculum because it can help students learn to think critically, creatively, collaborate (Rachman et al., 2023). In this case, the DL learning model is expected to go through a systematic learning process that results in an increase in the achievement of student learning outcomes.

Learning outcomes also exist in changes in behavior that arise from the learning process. Knowledge, understanding, skills and students not only memorize information (knowledge), but are also able to explain its meaning (understanding), and apply it in the form of action or problem solving (skills). Bloom also explained that the flow of learning, both in the environment both within educational institutions and outside educational institutions, develops 3 types of potential known as Bloom's Taxonomy, namely the potential aspects of thinking, attitudes, and skills (Rahayu et al., 2019). Students also have activeness in learning when teachers apply interesting learning models. Thus, teachers can apply the DL model to be able to learning activities at school (Elvirawati & Rezania, 2022). Thus, learning outcomes become a reflection of efforts for learning theory to occur or how information develops in students' minds. This DL learning model is expected to be useful for improving students' abilities in cognitive theory or student knowledge. Cognitive learning theory focuses on the teacher's thinking not only on the final impact, but also on the student's thinking process. In addition to measuring the correctness of the answer, the teacher needs to understand the steps taken by students in reaching the answer. Thus, learning emphasizes students' efforts and their active participation in every activity. In the classroom, emphasis is not placed on the direct delivery of knowledge, but rather students are directed to find out the concept of knowledge by communicating naturally with the environment. Piaget's theory recognizes individual differences in development, assuming that each student will go through the same stages of development, but at varying speeds (Tahya & Saija, 2023). So the role of the teacher in the cognitive learning process is: 1) facilitate the formation of knowledge by presenting information that is meaningful and appropriate for students 2) facilitate students in expressing or applying their own ideas 3) help students consciously develop learning strategies independently.

There are several previous researchers regarding the effect of the DL Model on student learning outcomes by using the DL model to strengthen this research, namely in article 1). The effect of the DL Model on independent 2013 curriculum ipa learning outcomes in class IV students at sdn 104201 kolam (Ananda et al., 2024), 2) The application of the DL model to improve the learning outcomes of students in class XI PLB 2 on cell material (Tugubu et al., 2023), 3) The effect of the discovery learning model on student learning outcomes on substance material and its changes in class IV SD negeri 1 naioni kupang (Un Lala et al., 2023). Where the results of the 3 previous studies, it can be concluded that the DL learning model is useful for increasing activeness and independence, increasing self-confidence, increasing student learning outcomes creatively and thinking critically.

In this case the researcher relates the problems in DL-based learning in order to improve and update the shortcomings that exist in previous studies, according to previous articles, the average weakness in this learning model is that if there is learning in schools with conventional methods or learning that does not use learning models in the current era, then students are given direction with the previous DL learning model, so that this DL learning model runs well, if the teacher continues to use conventional methods, it is necessary to introduce and understand the DL model to teachers and students so that in the future teachers and students can communicate and interact well and be active in teaching. So what will be researched is to find out how influential this DL-based learning is on the results of the study teaching model that will be developed is very good for increasing the enthusiasm for student learning at school, aims to make the learning process more effective and to support an effective and innovative learning process, teaching materials need to be adjusted to the cognitive educational level of students so that they can be optimally manipulated and what distinguishes this research from previous research is that this study uses IPAS chapter IV material which is carried out at SDN gedang porong 1 in class VA with material entitled let's get acquainted with our earth.

Development they are experiencing. therefore, the discovery model called DL learning model is present in relation to the creation of new ideas that can solve problems that arise in the classroom.

This research aims to develop students' thinking skills, allowing them to express their understanding according to the stages of development they experience. Therefore, the discovery model called DL learning model is present in relation to the creation of new ideas that can solve problems that arise in the classroom. Therefore, the discovery model called DL learning model is present in relation to the creation of new ideas that can solve problems that arise in the classroom.

B. METHODS

This research method applies quantitative methods with experimental research types, using pre-experimental designs with one group *pretest-posttest* designs. In this study, pretest and post-test were conducted in one class by comparing before using the DL model and after using the DL model. The one-group *pretest-posttest* research design is in table 1.

Table 1. *Desain one-group pretest-post-test*

class	***pretest***	**treatment**	***Post-test***
V A	O_1	X	O_2

(Sugiyono, 2013)

The subject of this research was carried out at SDN Gedang Porong 1, this study took from a population of 28 students in class VA. This sampling technique uses saturated sampling technique. In experimental analysis, sample selection is not randomized, so there are still external factors that can affect the formation of the dependent variable. In experimental analysis, sample selection is not randomized, so there are still external factors that can affect the formation of the dependent variable (Sugiyono, 2013). The data collection technique used is the test technique used to find data about student learning outcomes.

The research instrument used a test, which was used by selecting pretest and post-test items to determine student learning outcomes in class VA. The test used is in the form of multiple-choice questions with alternative answers A, B, C and D. Before being tested, the test instrument must include validity testing to determine how far the level of validity of the test. In this study, testing in the form of a validity test to determine the validity of an instrument. (Widodo et al., 2023)

This study also uses a reliability test, to determine the results of measurements that remain consistent and are carried out repeatedly. Data analysis techniques using descriptive statistics using paired sample t-test. Aims to determine the significance difference between pretest and *post-test*.

Then in this study, a test was first carried out by conducting a normality test. The normality test aims to determine whether the data is normally distributed or not. Then, a paired sample t-test was carried out on the hypothesis with the help of SPSS software. Furthermore, the hypothesis testing criteria H0 was rejected and H1 was accepted if sig <0.05. To describe the data obtained using the paired sample t-test, in addition.

C. RESULTS AND DISCUSSION

1. Research Result

The results of giving pretest-posttest questions and implementing direct learning by researchers in the VA class of SDN Gedang Porong 1 related to the effects of using the DL strategies to improve learners' academic performance. found several answers in the form of relevant data to be the subject of discussion, where the data is directly taken from the results of the implementation of ipas learning using the DL model. All data starting from the implementation of the pretest-posttest, until the implementation of learning using the DL model is carried out in the VA class of 28 students, from the data researchers have collected that the DL learning model at SDN Gedang Porong 1 is quite satisfying results, because before researchers used learning with the DL model in the class, The average student score is below KKM, and after subsequent research using the DL model with the theme of getting acquainted with our earth, produced quite good results, which initially their learning outcomes were below KKM to above KKM, not all students with scores above KKM, but students have better learning outcomes after using the DL model.

In the implementation of collecting data from the value of student learning outcomes carried out at SDN Gedang Porong 1 which amounted to 28 students for one class in class VA. In the beginning, before conducting research,

researchers gave pretest questions with the theme of ipas material getting acquainted with our earth, the purpose and purpose of this pretest was to find out how the initial ability of students. Which later will be held the next step, namely research using the DL model for research in this VA class in the IPAS map. After obtaining the findings of the pretest and posttest, the next process is to conduct normality testing to ensure that the research class has data with a normal distribution and hypothesis statistical tests using a two-sided t-test through SPSS with an independent sample t-test approach. Research data regarding the impact of *pretest* and *posttest* learning. The results of measurements before and after the test are attached in the table 1 section in the form of the following.

Table 1. *Pretest* And *Posttest* Learning Outcomes

Analysis Result	***Pretest***	**Analysis Result**	***Posttest***
Total Score	2.116	Total score	2.329
Mean	75,57	Mean	83,17
Minimum score	69	Minimum score	77
Maximum score	85	Maximum score	93

From the *pretest* and *posttest* data presented, it can be concluded that there is an increase in student learning outcomes after being given the DL learning model treatment.

The total student score increased from 2,116 *pretest* to 2,329 *posttest*, indicating an overall improvement in learning outcomes. while the average student score increased from 75.57 in the *pretest* to 83.17 in the posttest, indicating an increase in student understanding of the material after the learning was carried out. The minimum score increased from 69 *pretest* to 77 *posttest*, indicating that even the lowest scoring students made progress. The maximum score also increased from 85 to 93, indicating that even the highest-scoring students were able to improve their achievement. Overall, the data shows that the intervention or treatment provided succeeded in improving student learning outcomes, both in terms of average and range of scores.

Then carried out with a normality test, the following results of the data normality test in this study are presented in table 1.

Table 2. Normality Test Results

	Kolmogrov-Smirnov			Shapiro-Wilk		
Group	Statistic	Df	Sig.	Statitic	Df	Sig.
pretest	,110	28	,200	,960	28	,341
posttest	,141	28	,163	,928	28	,053

in the second table. To find out the data is nomal, it is done by collecting data using the shapiro-wilk technique with the help of SPSS, because the population is less than 30 students, using the shapiro-wilk technique. with a significant pretest of 0.341> and posttest of 0.053> from a significant value of more than <0.05, it shows that the data on student learning outcomes is normally distributed.

The following are the results of the t-test using a significant paired sample t-test that has been carried out after the treatment obtained a significance smaller than <0.05, because it is smaller than <0.05, Ho is rejected and H1 is accepted on the pretest and posttest learning outcomes of class V students and can be presented in table 3.

Table 3. Paired Sample T-Test Results

				Significance	
		T	Df	One-Sided p	Two-Sided p
Pair 1	pretest-postest	-14.549	27	<,001	<,001

Based on the statistical test conducted by the researcher, it can be concluded that there is a difference in student learning outcomes using the DL model on the learning outcomes of the VA class ipas in the independent curriculum. This can be seen from the significant value that is smaller than <0.05, namely with a significance value of <0.001 and student learning outcomes are more improved than before treatment. Because the average posttest value after being given treatment is higher than the average pretest value before being given treatment. So research using the DL learning model has an influence on the learning outcomes of VA class students in the independent curriculum at SDN Gedang Porong 1.

2. Discussion

Based on the results of research in the second implementation using the DL model in class VA, which in the learning outcomes carried out with the stages of the DL model through syntax includes the following: 1) stimulus, 2) problem identification, 3) information gathering, 4) information processing, 5) verification, and 6) conclusion. When providing a stimulus, students are explained to the problem so that it causes confusion, then continue by not giving general conclusions so that there is an urge to find out for themselves. then, in the process of identifying problems, the teacher provides opportunities for students to find as many aspects of the problem as possible in relation to the teaching material, then thoroughly determined and formulated in the form of temporary conjectures (hypotheses) on existing problem questions.

To answer the problem, students first look for as much appropriate information as possible to show whether the hypothesis is correct or not. Then, students analyze data through experiments to identify concepts or principles that have been arranged by the educator in the form of questions available on the student activity sheet. The results of the experiment are then evaluated and recorded on the sheet. Each group presents their findings and proves them to their classmates. In the DL learning approach, teachers need to design and prepare the necessary equipment and materials, check the readiness of students, and support students who face difficulties, so that the learning process can take place well (Fithriyah et al., 2021). The following are the stages of researchers when conducting direct learning in SDN Gedang Porong 1 class VA students, first of all the students are given readings related to getting acquainted with the earth, the second step is, group formation to make a problem statement and the third, then the researcher explains using a video in the form of material that is acquainted with our earth, the fourth, The researcher provides teaching materials to process data, after completion, students look for examples of natural appearances around us to make verification, then the final step is to draw conclusions from the topic of material that has been discussed, DL learning is a learning method that emphasizes understanding concepts, meanings, and relationships through an intuitive process to reach a final conclusion. This approach allows learners to measure the extent to which they have creativity and critical thinking skills. Thus, students will have the skills to solve various problems independently based on the findings they have explored previously and make observations or observations independently (Maulina, 2022). This learning is also a learning activity that has a high memory and is difficult to forget because it is indeed by means of independent and group learning so that students find it difficult to forget the memory of learning by using this DL model.

With this DL model, researchers strive to provide a good learning experience, of course, researchers want students to get good learning outcomes, without a good teaching model from various learning models that have been taught, students will also not get a good learning experience, as a good learning experience, of course students must also be able to produce good learning outcomes, learning outcomes are the process of assessing student achievement through evaluation activities or cognitive assessment of students (Gulo, 2022). The main purpose is to measure the extent of student achievement after carrying out a lesson process in class, while the assessment becomes a reference in success, where the value is in the form of a character, term, or sign. Learning outcomes show the true potential of students after experiencing the delivery of knowledge by someone who has experience or also has broad insight. This shows that the existence of learning outcomes, can find out how far students can absorb, strengthen understanding, and mastery in specific materials. In this case, the teacher must be able to design a series of lessons in the classroom with efficient learning media/models (Yogi Fernando et al., 2024).

In connection with student learning outcomes through the use of the DL learning model, it also does not forget the emergence of a number of cases that affect student learning outcomes, the existence of good learning outcomes due to seeing and observing from the point of view of cases in learning outcomes, where these cases

involve two cases, namely the first case is usually an internal case where this case is a case that exists in each student, including physiological aspects (such as health and senses) and psychological (such as awareness and interest). Second, external factors which include social elements (relatives, educators, and friends) and non-social elements (the state of the learning environment and supporting facilities) (Damayanti, 2022). By paying attention to the factors that exist in efforts to improve student learning outcomes, teachers should also have their own hand in overcoming these problems, because good results must be maximized properly as well. Merdeka curriculum is also considered an important innovation in Indonesian education because it emphasizes flexibility, student-centered learning, and overcomes the challenges of traditional education. This curriculum provides teachers to equalize teaching methods through such local interests and makes students' learning experience more enjoyable. It is also proven to have an impact on students' improved learning outcomes. (Nurwahidin et al., 2023).

D. CONCLUSIONS AND SUGGESTIONS

The end of this writing is summarized with a note that this DL learning model has an effort to improve student learning outcomes at SDN Gedang Porong 1. This study measures the difference in initial and final learning outcomes of applying the DL model.The results showed that the value of the average student pretest amounted to 75.57, while the average posttest value increased to 93. In addition, the results of hypothesis testing using the paired sample t-test showed a sig value of <0.001, which is smaller than the significance <0.05. This situation means that there is a significant difference between the pretest and posttest scores proving that the DL model has a significant impact on student learning outcomes. The increase in this study is that students experience significant development after participating in learning with the DL model. As well as the results of using the DL learning model, all data was taken directly by the researcher in order to produce relevant results. This learning model encourages students to actively discover concepts on their own through exploration, observation and analysis, thus improving their understanding and retention of the material. The DL model provides freedom for students to learn according to their interests, which contributes to improved learning outcomes and engagement in learning. The results showed that students who learned with this model experienced a better increase in knowledge compared to conventional teaching methods, The results showed that students who learned with this model experienced a better increase in knowledge compared to conventional teaching methods, which means that the learning model used in the research of the innovative DL model is more effective in improving student learning outcomes compared to conventional learning which tends to be passive and does not involve students actively in the learning process. . It can also be seen that the DL model has a good impact on the learning outcomes of fifth grade students of SDN Gedang Porong 1.

Suggestions for further researchers who discuss the DL learning model, namely students are given direction with the previous DL learning model, so that this DL learning model runs well, and it is necessary to introduce and understand the DL model to teachers and students so that in the future teachers and students can communicate and interact well and actively in teaching.

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