

The Effect of Differentiated Learning Strategies on Student's Learning Outcomes

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Abstract: The purpose of this study is to determine the influence of differentiated learning strategies on student's learning outcomes. The research was conducted using an experimental method with a pretest-posttest control group design. Data were collected through a learning outcome test and analyzed using a t-test. The results showed that there was a significant difference in learning outcomes between the group that used differentiated learning strategies and the control group that did not use learning strategies. The group that used differentiated learning strategies had a score of 87.12. Meanwhile, the group that did not use learning strategies was 66.96. This means that there is an influence of differentiated learning strategies on student learning outcomes. The results of this study have the implication that differentiated learning strategies can be an alternative for teachers to improve student learning outcomes.

Keywords: Education, Differentiated Learning, Learning Outcomes

A. Introduction

Education is a process and environment in which students can acquire the necessary religious spiritual strength, self-control, personality, intelligence, noble character, and skills (Rahma and Effendy 2017). "Community, country, and announce" as stated by (Juwandani and Febrianti 2024), the dynamics in the world of education continue to change as time goes by. Therefore, teachers must continue to improve their abilities. It includes teacher training, curriculum, student development, teaching methods,

teaching aids, learning opportunities, and resources. Education, especially the education system, is difficult to improve.

According to (Yoga Pratama 2024) education is a conscious and planned effort to create an environment and learning process in which students actively develop their potential to acquire the religious, self-control, personality, intelligence, noble character, and skills necessary for themselves, society, and the country. Therefore, teachers must continue to develop their abilities, including teacher training, curriculum, student development, teaching methods, teaching aids, learning opportunities, and resources. Education, especially the education system, is not easy to improve and improve.

The emergence of awareness that character education is very important for the education system in Indonesia is one of the efforts to improve the quality of education (Faturrahman et al. 2022). The purpose of character education is to teach children to make wise decisions and apply them in their daily lives so that they can have a positive influence on their environment.

Learning strategies are very important during the learning process to achieve learning goals effectively and efficiently. Teachers must continue to develop their abilities, including teacher training, curriculum, student's development, teaching methods, teaching aids, learning opportunities, and resources, Education, especially the education system, is not easy to improve. One method that an educator can use to ensure that learning takes place in the most effective way to meet the diverse learning needs of learners is differentiated learning (Siringoringo, Asbari, and Margareta 2023).

Education aims to prepare humans to undergo various transformations, which require creativity, awareness, and the power of the mind (Rompi 2023). To achieve this, of course, it must be supported by teachers who are experienced in providing high quality education. It is the main obligation of teachers to provide high quality education to build outstanding students in order to face the increasingly fierce competition today. If the students achieve satisfactory learning results, teachers will be very proud.

Education in the 5.0 era is expected to adapt and develop the need for competent human resources in their respective fields. This means that education must be more innovative and dynamic to solve existing problems or problems (Noviyanti, Yuniarti, and Lestari 2023). Therefore, schools, parents, and the community must work well together to achieve the goals of Education (Rozie 2018).

Ki Hajar Dewantara's educational philosophy is in line with the concept of differentiated learning. According to the philosophy of Ki Hajar Dewantara, the purpose of education is to "guide all the natures that exist in children so that they can achieve the highest safety and happiness both as human beings and as members of society." Differentiated learning is based on the learning needs of different students (Ayu Sri Wahyuni 2022).

The results that students achieve after learning within a certain period of time are called learning outcomes. Learning outcomes can also be considered as a representation of the student's learning effort: the more effort the student learns, the better the learning outcome (Yandi, Nathania Kani Putri, and Syaza Kani Putri 2023). Therefore, learning outcomes can be used as a way to assess student learning success. If students experience the expected development and improvement of behavior during the formulation of learning objectives, the learning outcomes are considered achieved (Rompis 2023). Learning outcomes are essentially changes in a person's behavior that include cognitive, affective, and psychomotor abilities after participating in a certain teaching and learning process (Sakti and Ainiyah 2024).

Differentiated learning is a learning method that aims to meet the diverse learning needs of all students in the classroom (Pebriyanti 2023). Differentiated learning shows that educators are better able to identify, investigate, and serve the different learning needs of diverse learners (Pebriyanti 2023). Differentiated learning is expected to help the three visual, auditory, and kinesthetic learning styles that students have. This is done to address individual differences in learning, as well as to address individual differences in students' abilities, interests, and learning styles (Aljowaysir et al., 2019). Although the idea of differentiated learning is very good, it is a challenge for teachers to be creative.

According to (Kurniawan and Mathematics 2023) differentiated learning is in line with the philosophy of educational thought according to Ki Hadjar Dewantara, that education (opvoeding) provides guidance to all the natural strengths that children have so that children are able to achieve the highest safety and happiness both as a human being and as a member of society. With this method, learners' potential can be developed according to their needs, characteristics, and level of achievement (Andajani 2022).

It can be concluded that differentiated learning is learning that is developed to respond to students' needs in learning which can vary, including their learning readiness, interests, potential, or learning styles. Differentiated learning has several features that distinguish it from other learning. Before implementing differentiated learning, there needs to be a mature plan. This plan should be based on a mapping of the student's learning needs that has been evaluated by the teacher (Khasanah and Alfiandra 2023). Differentiated learning means that teachers consider the learning needs of all students in the classroom, including their readiness, interests, and learning profiles.

According to (Susila and Aryasuari 2023) in the Leadership Training Institute, the outline states several different learning principles: 1) delivering material related to a wide range of topics, themes, or problems, 2) organizing various disciplines within a field of study, 3) providing deep and interrelated insights, 4) providing opportunities to choose topics, 5) improving learning skills, 6) improving reasoning skills, 7) centralizing open-ended tasks, 8) improve cognitive and cognitive abilities.

Adequate facilities must be provided to support the learning process in the classroom. The approaches, models, and learning methods used by teachers must be in accordance with the needs of each student (Sujana 2019). Educators must also function as facilitators in the process of achieving educational goals.

The differentiated learning outline focuses on the role of teachers as learning activators who have the ability to evaluate the circumstances and needs of students in school. As professionals, teachers must be able to meet the needs of students through unique learning. The government is trying to reconstruct education in Indonesia to be

more advanced by improving the professionalism of teachers through the Teacher Driving Program. Students must get a proper education because they are the forerunners of society. Because of the impact of good education, it will also have an impact on Indonesia's progress.

Supported by research (Sitorus et al. 2022) the results showed that, with a significant value of <0.05 , differentiated learning strategies had an influence on student learning outcomes. The hypothesis test showed that the differentiated learning strategy had an influence on student learning outcomes with an average score of 42.4 before implementation, and the average score increased to 83.6 after implementation. medium level of effectiveness. Therefore, it can be concluded that students in grade IV of SDN Karangrejo 02 see the application of differentiated learning from the perspective of impactful learning styles.

Further from the research (Dian Aprelia Rukmi and Khosiyono 2023) the results of the study show that differentiated learning has a positive influence on students' creativity and confidence. This is shown by the increase in the average score of students' creativity from the initial condition of 56.43 increased in the first cycle to 67.86 and in the second cycle increased to 79.29. The level of students' confidence also increased, which was originally 60.77 increased in the first cycle to 73.85 and in the second cycle increased to 80. In addition, differentiated learning can also improve student learning outcomes by showing that the average test score from 59.71 in the first cycle can increase to 80.21 and in the second cycle to 84.14.

Based on the description above, the researcher is interested in investigating how the Influence of Differentiated Learning Strategies on Student Learning Outcomes. What is expected from this study is that students have better learning outcomes than before the research was conducted. For this reason, the researcher will conduct a study entitled "The Influence of Differentiated Learning Strategies on Student Learning Outcomes".

B. Methods

This research was conducted at SD Negeri 19 Palembang. This research was attended by 33 students of class VA and 33 students of class VB of SDN 19 Palembang. The research method in this study is the Experimental quantitative research method. According to Sugiyono (2020) research methods are a scientific way to obtain data with specific purposes and uses. Quantitative research is a way of describing, researching, and explaining something that is studied as it is, and drawing conclusions from observable phenomena using numbers.

The method used in this study is an experimental study method. Where in this type of study it is used to find the influence of differentiated learning on student outcomes. Qualitative research is a research method that aims to understand and explain social phenomena as a whole by looking at the perspectives, experiences, and contexts of the people involved (Ardiansyah, Risnita, and Jailani 2023). This study aims to find out the process of calculating the validity test of the teaching material instrument to be used. This study used a quantitative approach in the form of statistical data (Kartikaningrum and Muhtarom 2024).

In this study, a pretest-posttest control design was used. In this design, two groups of experimental groups and a control group were randomly selected. Then, a pretest was carried out to find out if the classes of the experimental group and the control group were different in the initial state (Ineke Febby Wulandari, Kabib Sholeh, and Sylvia Lara Syaflin 2023). Furthermore, in the experimental class, treatment was given using differentiated learning. Then after being given treatment, the researcher gave a posttest to the experimental class and control class to find out the results after being given treatment.

Quantitative research is research that only describes the content of a variable in the research, not intended to test a specific hypothesis (Setyo Adji Wahyudi, Mohammad Siddik, and Erna Suhartini 2023). Thus, it can be seen that quantitative research is research that describes, examines and explains a phenomenon with data (numbers) as it is without intending to test a certain hypothesis.

According to (Ahmad Bilantua, Meyko Panigoro 2023) quantitative research is related to research that is directed to see whether or not there is an influence of certain treatments, namely free variables (X) on bound variables (Y) In the research design, SD Negeri 19 Palembang is made as the object of research. The main objective of qualitative research is to gain a better understanding of the phenomenon being studied (Ardiansyah, Risnita, and Jailani 2023).

Valid and reliable tools are needed to provide valid and reliable research results because valid and reliable instruments are used to collect data (Rusly et al. 2024). Because of the quantitative research, the instrument used is the Paired Sample T-Test.

C. Results and Discussion

The subjects in this study are grade V students of SD Negeri 19 Palembang. The research was carried out for one month, namely from the end of May to the end of June. The purpose of this study is to determine whether differentiated learning media has an influence on the learning outcomes of SD Negeri 19 Palembang students. The study involved two classes of samples. The VB class is used as the experimental class and the VA class is used as the control class. Description questions are used as a test tool in this study to determine whether the average posttest of students between the experimental class and the control class is greater.

The posttest score of the experimental class was higher than the posttest score of the control class with a difference of 20.16%. The average score of the experimental class was 87.12, while the average score of the control class was 66.96. The normality test was carried out on the posttest data of the experimental and control classes. The following is the formulation of the hypothesis test, which is as follows:

Ho : There is no influence of differentiated learning strategies on student outcomes

Ha : There is an influence of differentiated learning strategies on student outcomes

Table 1. Control Class Normality Test
Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	Df	Sig.	Statistics	Df	Sig.
pretest	.170	33	.016	.924	33	.024

a. Lilliefors Significance Correction

From the data obtained by Kolmogorov-Smimov, it can be seen that the significant value for the pretest variable of 0.016 is greater than 0.05 thus the data is normally distributed.

Table 2. Experimental Class Normality Test Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	Df	Sig.	Statistics	Df	Sig.
posttest	.142	33	.088	.934	33	.047

a. Lilliefors Significance Correction

From the data obtained by Kolmogorov-Smimov, it can be seen that the significant value for the posttest variable of 0.088 is greater than 0.05 thus the data is normally distributed. have gone through a prerequisite test, then the hypothesis is tested using regression analysis. The purpose of this study is to find out whether there is an influence of differentiated learning on student learning outcomes.

Table 3. Simple Linear Regression Test Coefficients^a

Type	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	78.523	11.339		6.925	.000
	Posttest	.128	.168	.136	.763	.451

a. Dependent Variable: posttest

Based on table 3, it is obtained that the constant value of the regression equation a+ 78.523 and the value of the coefficient of the free variable b+ 0.128, then the regression equation is obtained as follows: $Y = a + bx = 78.523 + 0.128x$. This means that there is an influence of differentiated learning on student learning outcomes.

Table 4. Paired Sample T-Test

	Paired Samples Test							Sig. (2-tailed)	
	Paired Differences								
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	Df		
			Lower	Upper					
Pair 1	Score Before P - posttest	-20.15152	9.72150	1.69230	-23.59861	-16.70442	-11.908	32	.000

Based on the results of the t-test calculation above, it was obtained that the significant value (2-tailed) was 0.00. Since the significant value (Probability) is less than 0.025, then H_0 is rejected. This means that H_a is accepted, so there is an influence of the Differentiated learning strategy on student learning outcomes.

D. Conclusion

Based on the results of data analysis and discussion, it can be concluded that there is an influence of differentiated learning strategies on student outcomes at SD Negeri 19 Palembang. The results of the analysis of pretest and posttest data show the results of the increase that occurred in the study of students, where the results obtained before being given differentiated learning were 66.96. Where the experimental class learns from students after being given differentiated learning of 87.12. This shows that there is an influence of the Differentiated learning strategy on student learning outcomes.

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