

The Effect of a Differentiated Learning Approach Based on Learning Styles on Learning Outcomes in Pancasila Education among Fifth-Grade Students at SD Inpres Minasa Upa

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ABSTRACT

This study examines the impact of a differentiated learning approach, based on students' learning styles, on learning outcomes in Pancasila Education for fifth-grade students at SD Inpres Minasa Upa. Using a quantitative method with a One-Group Pretest–Posttest Design, data were collected through multiple-choice tests and analyzed with a Paired Sample t-test. The results indicate a significant improvement in students' performance after the implementation of differentiated learning. Among the learning styles, auditory learners showed the greatest progress. Statistical analysis revealed a Sig. (2-tailed) value of 0.001, confirming the significant effect of the approach on student achievement. These findings suggest that differentiated learning, when adapted to students' learning preferences, can enhance academic outcomes and improve instructional effectiveness. The study recommends broader application of this approach in elementary education to support more inclusive and optimal learning.

Keywords: Differentiated Learning, Learning Styles, Pancasila Education.

1. INTRODUCTION

Pancasila Education is a learning process that aims to develop students' understanding, appreciation, and practice of the values of Pancasila as the foundation of the state, the nation's ideology, and a way of life within the contexts of society, nationality, and governance. Pancasila Education encompasses noble values rooted in the identity of the Indonesian nation, which are nurtured and cultivated in social, national, and state life to form intelligent, virtuous, and civilized citizens [1]. Furthermore, Mihit (2023) emphasizes that Pancasila Education plays a crucial role in transmitting Pancasila values to younger generations and citizens so that they gain a deep understanding of the nation's ideology [2].

Pancasila Education plays a vital role in fostering students' character, intelligence, and civility at the elementary school level. However, empirical observations indicate that students' learning outcomes in this subject remain below the Minimum Mastery Criteria (KKM). In addition, the learning process tends to be teacher-centered, monotonous, and not fully aligned with students' learning styles. As a result, students often act as passive recipients of knowledge rather than active participants in the learning process.

The problems we identified are consistent with latest research, that revealed that the low learning outcomes of students in Pancasila Education are influenced by several factors [3,4]. These include students' low level of activeness in the classroom, unengaging learning activities that tend to make students feel sleepy and bored, and a lack of learning motivation, which often causes students to become noisy during lessons. Moreover, the learning process remains predominantly teacher-centered, resulting in limited student involvement and participation during classroom activities.

Based on these issues, it is necessary to implement an appropriate strategy to address them. One possible solution is the application of differentiated learning, which enables each student to learn according to their individual needs, abilities, and learning styles. Tomlinson stated that differentiated learning is an appropriate approach to be implemented, as it allows teachers to adapt their teaching methods to students' learning styles, such as visual, auditory, and kinesthetic [5].

In line with this perspective, Mills stated that differentiated learning respects the diversity of students' knowledge, abilities, interests, and conditions, while also adapting the learning process so that all students can

develop optimally according to their individual characteristics [6]. Similarly, Wulandari explained that differentiated learning is an approach that accommodates, values, and meets the diverse needs of students in the learning process by adjusting instruction according to their levels of readiness, interests, and individual learning styles or preferences [7]. Furthermore, Tomlinson asserted that differentiated learning is an effort to adapt the teaching and learning process in the classroom to meet each student's individual learning needs [8]. This approach focuses on adjusting the learning process to fulfill the needs, interests, and abilities of each student, thereby creating a more equitable, meaningful, and effective learning experience for all learners.

According to Tomlinson, differentiated learning has four main characteristics: (1) it focuses on essential concepts and principles that align with the core competencies of learning; (2) students' readiness and learning progress are accommodated within the curriculum; (3) students are grouped flexibly based on their learning needs; and (4) students actively explore knowledge under the guidance and supervision of the teacher [8].

Consistent with these theoretical perspectives, several studies have demonstrated the positive impact of differentiated learning on improving students' academic outcomes. Research conducted by Azizah and Paksi [9], Kiranti, Riska, and Saputri [10], as well as Herwina [11], revealed that differentiated learning effectively enhances students' learning achievements. Meanwhile, studies by Rachmadhani and Kamalia [12] and Laia et al. [13] also confirmed that differentiated learning has a significant positive influence on students' learning outcomes. Therefore, based on these previous studies, the present research aims to examine *The Effect of a Differentiated Learning Approach Based on Learning Styles on Learning Outcomes in Pancasila Education among Fifth-Grade Students at SD Inpres Minasa Upa*.

2. METHOD

This study employed a quantitative approach with a *One-Group Pretest–Posttest Design* to determine the effect of differentiated learning on students' learning outcomes. The research sample consisted of fifth-grade students from SD Inpres Minasa Upa, who were selected using a purposive sampling technique. Students' learning outcomes were measured through multiple-choice tests administered before and after the implementation of differentiated learning, which was adapted to students' visual, auditory, and kinesthetic learning styles. The collected data were analyzed using a *Paired Sample t-Test* to examine the differences in students' learning outcomes before and after the intervention.

3. RESULTS AND DISCUSSION

3.1. Results

This study was conducted to examine the effect of the differentiated learning approach on students' learning outcomes. The research employed a pre-experimental method with a *one-group pretest–posttest design*. The study was carried out at SD Inpres Minasa Upa, involving one class—Class VB—as the research sample. Data were collected using a written test instrument in the form of multiple-choice questions. The indicators of learning outcomes included: (1) cognitive aspects, (2) affective aspects, and (3) psychomotor aspects [14]. Accordingly, a multiple-choice test (cognitive domain) consisting of 15 items was administered as both the pretest and posttest.

Table 1. Learning Outcomes Pretest-Posttest Data

Descriptive Statistics	Learning Outcomes	
	<i>Pretest</i>	<i>Posttest</i>
Number of Students	22	22
Highest Score	80	100
Lowest Score	26,67	73,33
Mean	60,91	86,36
Standard Deviation	14,15	8,60

Based on Table 1, the average pretest score of 22 students was 60.91, with the lowest score of 26.67 and the highest score of 80. Meanwhile, the average posttest score of the same 22 students was 86.36, with the highest score of 100 and the lowest score of 73.33. The data indicate that the students' average learning outcomes

increased by 25.45 points after receiving the treatment. Furthermore, the standard deviation obtained in the pretest was 14.15, while in the posttest it was 8.60, suggesting that the distribution of pretest scores was more varied compared to the posttest scores, which showed a smaller standard deviation, indicating more consistent performance among students after the intervention.

Table 2. Distribution of Frequency and Percentage of Pretest and Posttest Scores

Score	Category	Learning Outcomes			
		<i>Pretest</i>		<i>Posttest</i>	
		f	%	f	%
80-100	Very High	0	0	13	59,09%
60-80	High	9	40,91%	9	40,91%
40-60	Moderate	11	50%	0	0
20-40	Low	2	9,09%	0	0
0-20	Very Low	0	0	0	0
Sum		22	100%	22	100%

Table 2 shows that the overall learning outcomes in both the pretest and posttest increased. The data presented indicate a significant improvement, with the posttest scores of students falling within the high category. Therefore, after the implementation of the treatment, students' learning outcomes became noticeably better than before.

Table 3. Descriptive Statistics of Students' Learning Outcomes in the Visual Group.

Descriptive Statistics	Visual	
	<i>Pretest</i>	<i>Posttest</i>
Number of Students	9	9
Highest Score	80	100
Lowest Score	26,67	73,33
Mean	60,74	86,67
Standard Deviation	16,81	10,54

Based on Table 3, the average pretest score of nine visual learners was 60.74, with the lowest score of 26.67 and the highest score of 80. Meanwhile, the average posttest score of the same students was 86.67, with the highest score of 100 and the lowest score of 73.33. The data indicate that the average learning outcome increased by 25.93 points after receiving the treatment. Furthermore, the standard deviation obtained in the pretest was 16.81, while in the posttest it was 10.54, showing that the distribution of pretest scores was more varied compared to the posttest, which had a smaller standard deviation of 10.54, indicating more consistent performance among students after the intervention.

Table 4. Frequency Distribution and Percentage of Descriptive Statistical Data Learning Outcomes of the Visual Group

Score	Category	Learning Outcomes			
		Pretest		Posttest	
		f	%	f	%
80-100	Very High	0	0	5	55,56%
60-80	High	4	44,44%	4	44,44%
40-60	Moderate	4	44,44%	0	0
20-40	Low	1	11,11%	0	0
0-20	Very Low	0	0	0	0
Sum		9	100%	9	100%

Table 4 shows that the pretest and posttest learning outcomes of the visual group increased. The data presented indicate a significant improvement, where the initial condition that had not yet reached an optimal level shifted toward a better state. This change reflects a positive development and an enhancement in the quality of the measured aspect.

Table 5. Descriptive Statistics of Students' Learning Outcomes in the Auditory Group

Descriptive Statistics	Auditory	
	Pretest	Posttest
Number of Students	6	6
Highest Score	80	100
Lowest Score	40	73,33
Mean	57,78	86,67
Standard Deviation	16,15	9,43

Based on Table 5, the average pretest score of six auditory learners was 57.78, with the lowest score of 40 and the highest score of 80. Meanwhile, the average posttest score of the same students was 86.67, with the highest score of 100 and the lowest score of 73.33. The data indicate that the average learning outcome increased by 28.89 points after receiving the treatment. Furthermore, the standard deviation obtained in the pretest was 16.15, while in the posttest it was 9.43, indicating that the distribution of pretest scores was more varied compared to the posttest, which showed a smaller standard deviation, reflecting more consistent performance among students after the intervention.

Table 6. Frequency and Percentage Distribution of Descriptive Statistical Data

Score	Category	Learning Outcomes			
		Pretest		Posttest	
		f	%	f	%
80-100	Very High	0	0	4	66,67%
60-80	High	2	33,33%	2	33,33%
40-60	Moderate	3	50%	0	0
20-40	Low	1	16,67%	0	0
0-20	Very Low	0	0	0	0
sum		6	100%	6	100%

Table 6 shows that the pretest and posttest learning outcomes of the auditory group increased. The presented data indicate a significant improvement, where the initial condition that had not yet reached an optimal level shifted toward a better state. This change reflects positive development and an enhancement in the quality of the measured aspects.

Table 7. Descriptive Statistics of Students' Learning Outcomes in the Kinesthetic Group

Descriptive Statistics	Kinesthetic	
	<i>Pretest</i>	<i>Posttest</i>
Number of Students	7	7
Highest Score	73,33	93,33
Lowest Score	53,33	80
Mean	63,81	85,71
Standard Deviation	9,31	5,99

Based on Table 7, the average pretest score of seven kinesthetic learners was 63.81, with the lowest score of 53.33 and the highest score of 73.33. Meanwhile, the average posttest score of the same students was 85.71, with the highest score of 93.33 and the lowest score of 80. The data indicate that the average learning outcome increased by 21.90 points after receiving the treatment. Furthermore, the standard deviation obtained in the pretest was 9.31, while in the posttest it was 5.99, suggesting that the distribution of pretest scores was more varied compared to the posttest, which had a smaller standard deviation of 5.99, reflecting more consistent performance among students after the intervention.

Table 8. Frequency and Percentage Distribution of Descriptive Statistical Data

Score	Category	Learning Outcomes			
		<i>Pretest</i>		<i>Posttest</i>	
		<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>
80-100	Very High	0	0	2	28,57%
60-80	High	3	42,86%	5	71,43%
40-60	Moderate	4	57,14%	0	0
20-40	Low	0	0	0	0
0-20	Very Low	0	0	0	0
	Sum	7	100%	7	100%

Table 8 shows that the pretest and posttest learning outcomes of the kinesthetic group increased. The data indicate a significant improvement, where the initial condition, which had not yet reached an optimal level, shifted toward a better state. This change reflects positive development and an enhancement in the quality of the measured aspects.

3.2. Discussion

This study demonstrates that differentiated learning, tailored to students' learning styles (visual, auditory, and kinesthetic), is effective in enhancing students' motivation and learning outcomes in Pancasila Education. In terms of learning outcomes, a significant improvement was observed following the implementation of differentiated instruction.

The pretest data showed that the average student score was 60.91, which increased to an average of 86.36 in the posttest. These results confirm that the differentiated learning method has a direct impact on students' learning outcomes. Based on the normality test of the learning outcome scores using the Shapiro-Wilk test, the significance values were 0.068 for the pretest and 0.064 for the posttest. Since both values are greater than the significance level of 0.05, it can be concluded that the students' learning outcome data are normally distributed.

Students with a visual learning style demonstrated a considerable improvement in their learning outcomes. The pretest average was 60.74, while the posttest average increased to 86.67, with a difference of 25.93 points. Auditory learners had a pretest average of 57.78, which rose to 86.67 in the posttest, showing a difference of 28.89 points. This indicates that they better comprehend the material when it is delivered through listening and speaking activities. Kinesthetic learners also experienced notable improvements, with a pretest average of 63.81 and a posttest average of 85.71, yielding an increase of 21.90 points. Kinesthetic students understood concepts more effectively through hands-on practice and physical activities involving real experiences.

Hypothesis testing using the Paired Sample T-Test revealed a significance value (2-tailed) of 0.001, which is less than the significance level of 0.05. Therefore, H_0 is rejected and H_1 is accepted, indicating a significant effect of differentiated learning on students' learning outcomes.

These findings are supported by Bloom's theory [15], which explains that learning outcomes encompass three main domains: cognitive (understanding and knowledge), affective (attitudes and motivation), and psychomotor (skills and hands-on practice). In differentiated learning, students have the opportunity to comprehend the material using approaches that align with their individual learning styles, enabling them to achieve optimal learning outcomes.

This approach is also consistent with Purnawanto [16], who emphasizes that differentiated learning allows students to learn according to their existing knowledge, interests, and learning styles. Moreover, Wardani [17] explains that the implementation of a differentiated approach involves selecting appropriate learning materials, grouping students based on their learning needs, and facilitating the use of suitable instructional media. Such a differentiated learning approach can effectively enhance students' learning outcomes.

4. CLOSURE

Based on the research findings, a significant improvement in students' learning outcomes was observed following the implementation of a differentiated learning approach. This was evidenced by the results of the Paired Sample T-Test at a 5% significance level, which yielded a Sig. (2-tailed) value of 0.001. This value indicates that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. Based on the hypothesis testing results, it can be concluded that the implementation of a differentiated learning approach has a significant impact on improving students' learning outcomes. Students with an auditory learning style experienced the highest increase in learning outcomes compared to those with visual or kinesthetic learning styles. These findings support the assumption that a learning approach tailored to students' individual characteristics can enhance their interest and engagement in the learning process.

AUTHORS' CONTRIBUTIONS

Abdul Azis contributed as a data collector in the field. A. Elfikasari participated as an analyst and technology. Syamsuriyanti participated as a proofreader.

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