

The Relationship and Consistency of Student Learning Outcomes in Differentiated Instruction: A Correlational Study on Abbreviation and Acronym Material in Elementary Schools

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Abstract

Differentiated instruction is a central pillar of the Merdeka Curriculum, aiming to accommodate students' diverse readiness, interests, and learning profiles. However, empirical evidence regarding the consistency of its impact—particularly on micro-linguistic materials such as abbreviations and acronyms at the elementary school level—remains limited. This study aims to analyze the relationship between students' learning outcomes at the end of the first and second cycles of differentiated instruction implementation. The intervention involved systematic differentiation of content and learning processes during the first cycle, tailored to students' initial readiness, followed by refinement in the second cycle through differentiated learning products and tasks based on reflection from previous outcomes, specifically in the context of Indonesian language materials on abbreviations and acronyms. Employing a quantitative correlational design, the study involved 25 fifth-grade students selected through total sampling. Learning outcomes were assessed through achievement tests administered at the end of each cycle and analyzed using Shapiro-Wilk normality tests, Spearman's and Pearson's correlations, as well as simple linear regression. The results indicated non-normal data distribution; Spearman's correlation coefficient ($\rho = 0.805$, $p < 0.001$) revealed a very strong positive relationship between the two cycles, with the percentage of students meeting the mastery criterion increasing from 60% to 92%. These findings affirm that differentiated instruction yields consistent and cumulative benefits for Indonesian language learning outcomes. Further research employing experimental designs is recommended to strengthen causal inferences.

Keywords

Differentiated Instruction; Learning Outcomes; Correlation; Elementary School; Abbreviations and Acronyms

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1. INTRODUCTION

Curriculum reform in Indonesia through the implementation of the Merdeka Curriculum has positioned differentiated instruction at the heart of pedagogical innovation. This approach requires teachers to design learning experiences that are responsive to students' diverse readiness, interests, and learning profiles, moving away from the traditional view of the classroom as a homogeneous unit



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(Anggrayani et al., 2023; Faiz et al., 2022; Rahmadayanti & Hartoyo, 2022). This transformation is a response to the longstanding recognition that students at the same grade level often demonstrate significant variation in their learning progress, particularly in subjects that demand mastery of discrete and incremental linguistic rules, such as Indonesian language material on abbreviations and acronyms at the elementary school level (Hapsari & Wijayanti, 2022; Ilhami, 2022; Siregar et al., 2024). Abbreviations and acronyms, as micro-linguistic content, require students not only to memorize specific forms but also to understand morphological and semantic rules that underlie their construction and usage. At the fifth-grade level, students are expected to differentiate between abbreviations (which are typically formed by shortening words or phrases) and acronyms (which are formed from initial letters and pronounced as words), as well as apply conventions for their formation and use in various contexts. Such distinctions, while subtle for adult speakers, often pose cognitive challenges for children whose meta-linguistic awareness is still developing. Moreover, the presence of irregular forms, exceptions to rules, and the influence of informal language in media and daily communication contribute to frequent misconceptions. (Hutapea et al., 2025; Meisella, 2025; Slamanda et al., 2025; Widyastuti & Winarni, 2025) The phenomenon of students' failure to meet the Minimum Competency Criteria (Kriteria Ketuntasan Tujuan Pembelajaran/KKTP) in this material has been consistently reported in various classroom observation studies in Indonesian elementary schools, indicating an unmet pedagogical need that is not optimally addressed through conventional approaches (Nurhamami, 2022; Saputri et al., 2023). This gap in learning outcomes necessitates the adoption of more adaptive and inclusive teaching strategies that not only recognize student heterogeneity but also respond to the dynamic needs of individual learners.

Differentiated instruction, as conceptualized in recent studies, involves the systematic modification of content, process, product, and learning environment based on continuous assessment of student needs (Kristiawan et al., 2025; Mulyawati et al., 2022). Implementing this approach requires teachers not only to recognize variations in students' readiness, interests, and cognitive profiles but also to manage the classroom flexibly so that each individual receives a meaningful learning experience suited to their capacity. The theoretical foundation of differentiated instruction is grounded in the principle that providing equal learning opportunities does not mean delivering uniform treatment; rather, it acknowledges that each child brings different starting points and learning styles into the classroom. Thus, instructional adaptation becomes essential in efforts to optimize the potential of all students in a heterogeneous classroom.

Empirical evidence supporting the effectiveness of differentiated instruction is increasingly widespread. A systematic review and meta-analysis of 49 primary studies revealed a significant positive effect of differentiated instruction on learning outcomes across educational levels (Asriadi AM et al., 2023). Similar findings have been reported in various classroom-based studies in Indonesian elementary schools, where differentiated instructional interventions have proven effective in improving learning outcomes in science, social studies, and civics (Kusumaningpuri, 2024; Laila et al., 2022; Nawati et al., 2024). These results reinforce the position of differentiated instruction as an approach that is not only theoretical but also applicable in the context of elementary education in Indonesia. The reliability of this approach is further validated by its implementation across various subject areas.

Support for the effectiveness of differentiated instruction is not limited to local contexts, but is also backed by cross-cultural international studies. Research in Turkey demonstrated a significant improvement in science learning outcomes through differentiated instructional strategies (Kara & Tekindur, 2025), while in Nigeria, the application of differentiated instruction in basic science education positively impacted students' academic achievement (Adeniran et al., 2025). Another study in Bali confirmed the benefits of differentiated instruction in civics education (Ardiawan, 2024). This cross-contextual evidence indicates that the principles of differentiated instruction are universal and can be effectively adapted to various educational environments, both in developed and developing countries.

Nevertheless, a critical review of the literature reveals that the majority of previous studies tend to use experimental or classroom action research (CAR) designs that compare conditions before and after

intervention, or compare treatment and control groups (Nurhaswinda et al., 2025; Rahmah et al., 2026). In other words, most research focuses on the effect of a single instance of differentiated instruction without exploring the consistency or accumulation of its impact when implemented over more than one learning cycle. In real classroom practice, however, differentiated instruction is often carried out repeatedly and iteratively, making it important to determine whether students who perform well in the first cycle tend to maintain their performance in subsequent cycles. Identifying such patterns has practical implications for the development of more sustainable and predictive teaching strategies.

A further limitation of previous research lies in the lack of correlational analyses capable of determining whether there is a consistent relationship between student learning outcomes in the first and second cycles of differentiated instruction implementation. In fact, correlational analysis is highly relevant for tracing the strength and direction of the relationship between two continuous measurements taken from the same subjects at two different points in time (El-Habsi et al., 2023; Nurhaswinda et al., 2025). The use of inter-cycle correlation analysis in this context is not merely intended to establish test-retest reliability or to capture the effect of test familiarity. Rather, it serves as a conceptual and statistical indicator of the sustainability and cumulative nature of differentiated instruction's impact on learning outcomes. A strong and significant positive correlation between learning outcomes in Cycle I and Cycle II would reflect that students who benefit from differentiated instruction in the initial cycle continue to consolidate and build upon their gains in the following cycle, independent of mere exposure or repeated practice with similar assessments. This pattern is fundamentally distinct from test familiarity, which refers to improved scores due solely to repeated encounters with similar test formats, and from test-retest reliability, which simply measures the stability of test scores over time regardless of instructional intervention. By examining the inter-cycle relationship in the context of iterative differentiated instruction, the analysis directly tests the hypothesis that learning improvements are not incidental or temporary, but are instead sustained and progressively accumulated as a result of adaptive pedagogical strategies. As such, correlational research can reveal whether the benefits of differentiated instruction are cumulative and mutually reinforcing across cycles, or merely incidental and inconsistent. This aspect has so far received insufficient attention in the literature, particularly in the teaching of micro-linguistic material such as abbreviations and acronyms at the elementary school level (Rahmawati et al., 2023; Wulandari et al., 2026).

The urgency of this study is further underscored by the fact that abbreviation and acronym material, although seemingly simple, demands mastery of complex morphological and semantic rules and often causes misconceptions among elementary school students (Hapsari & Wijayanti, 2022; Nurhamami, 2022). Specific misconceptions observed among fifth-grade students include confusing abbreviations with acronyms, misapplying the conventions for their formation, and incorrectly integrating these forms into sentences. Additionally, the frequent exposure to nonstandard abbreviations in digital media further complicates students' understanding, leading to transfer errors and persistent misunderstandings. Failure to achieve the KKTP in this material not only affects learning assessments but also has broader implications for language skills. Therefore, a teaching approach is required that is not only adaptive but also capable of delivering consistent results over time. Research that examines the inter-cycle relationship of learning outcomes in the implementation of differentiated instruction can provide much-needed empirical evidence to support data-driven pedagogical decision-making.

Based on the aforementioned background, this study aims to analyze the relationship between students' learning outcomes at the end of the first and second cycles of differentiated instruction on Indonesian language material (abbreviations and acronyms) in fifth grade elementary school. This study is expected to make an original contribution in the form of new insights regarding patterns of relationship and consistency of learning outcomes in repeated implementations of differentiated instruction in real classrooms. The findings of this research are expected to enrich the academic discourse on the effectiveness of differentiated instruction, while also offering practical insights for

teachers and curriculum designers in optimizing sustainable and responsive teaching strategies. The novelty of this study lies in its use of a two-cycle correlational approach to examine the consistency of the impact of differentiated instruction on micro-linguistic material, which has not been widely explored in previous studies dominated by single-cycle experimental or classroom action research designs. Furthermore, this research fills a gap in the literature by highlighting the importance of inter-cycle learning outcome patterns as indicators of the sustainability and predictability of the effectiveness of differentiated instruction.

2. METHODS

This study employed a quantitative correlational design to analyze the strength and direction of the relationship between two learning outcome variables, both measured on the same subjects without manipulation of any treatment variable (El-Habsi et al., 2023; Jabnabillah & Margina, 2022). The study population consisted of all fifth-grade students at Al-Azhar Syifa Budi Elementary School, Cibubur, with a total sampling technique applied so that the entire population of 25 students was included as the research sample. The use of total sampling was based on the relatively small and accessible population size, in accordance with best practices in single-class correlational studies (Mustain et al., 2021; Rangkuti & Albina, 2025).

This study analyzed two main variables: Variable X was the Indonesian language learning outcome score on abbreviation and acronym material obtained at the end of Cycle I, following the implementation of differentiated instruction based on students' initial readiness profiles (content and process differentiation). Variable Y was the learning outcome score obtained at the end of Cycle II, during which differentiated instruction continued with improvements based on reflections from Cycle I (process and product differentiation). Both variables were measured using parallel achievement tests developed by the teacher and equated according to the Minimum Competency Criterion (KKTP) of 75, ensuring the validity and reliability of comparisons between the two measurement points. To ensure that the achievement tests administered in Cycle I and Cycle II were truly equivalent in terms of difficulty level and discrimination power, both instruments underwent a formal test-equating process. This process included item analysis using classical test theory, where each test item was evaluated for its difficulty index and discrimination index. Items with comparable indices across both cycles were retained, and peer review validation was conducted to further confirm content equivalence and fairness. This rigorous equating procedure guarantees that score comparisons between the two cycles are valid and not confounded by test construction bias.

Schematically, the research procedure flow is presented in Figure 1.

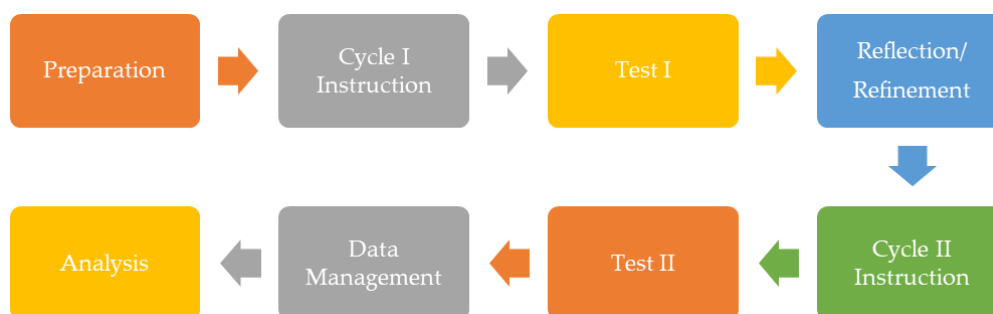


Figure 1. Correlational Research Procedure

(Adapted from El-Habsi et al. (2023), Jabnabillah & Margina (2022), and Mustain et al., 2021)

As shown in Figure 1, this research procedure was conducted systematically through several interconnected stages. In the *preparation phase*, the researcher first obtained research permits from the school and written consent from students' parents. Subsequently, the researcher developed parallel

achievement test instruments for abbreviation and acronym material, which were then validated by peers to ensure content equivalence and comparable difficulty levels. In the *implementation phase*, differentiated instruction was carried out in Cycle I based on students' initial readiness profiles. Upon completion of the first cycle, the first achievement test (Variable X) was administered to all participants. The test results were analyzed and used as a basis for reflection to assess instructional effectiveness and identify areas requiring improvement. Based on this reflection, the differentiated instruction strategy was refined and implemented in Cycle II. At the end of Cycle II, the researcher again administered the second achievement test (Variable Y) to the students.

After both cycles were completed, *data collection and management* were conducted by systematically gathering all individual learning outcome scores from both cycles and documenting them anonymously to ensure participant confidentiality. The next stage was *data analysis*, beginning with descriptive statistical calculations of the mean and standard deviation for each variable. The Shapiro-Wilk normality test was then performed to determine whether the data were normally distributed. Since the normality test results indicated that the data were not normally distributed, the Spearman rank-order correlation coefficient was used as the primary inferential statistic, with the Pearson correlation coefficient also calculated for comparison. In addition, simple linear regression was conducted to estimate the proportion of variance in Cycle II learning outcomes explained by Cycle I results (R^2). Although the normality assumption was not met ($p < 0.05$), linear regression analysis was still performed to provide an estimation of the predictive relationship and explained variance, as regression models are considered robust to moderate violations of normality, especially with continuous outcome variables and when used for exploratory or descriptive purposes in small-sample educational research. The results of the regression should, however, be interpreted with caution and primarily as supplementary evidence to the main non-parametric correlation analysis.

To minimize potential intervention bias, several control steps were implemented throughout both cycles. The interval between Cycle I and Cycle II was kept short (within one academic month) to limit the effects of student maturation. To control for inter-test memory effects, parallel achievement tests were designed with equivalent content but different item formulations, and students were not informed in advance about specific test items. Teacher bias was mitigated by adhering to a standardized lesson plan for both cycles and involving an independent observer to monitor the fidelity of instructional implementation and scoring procedures. These precautions were intended to ensure that observed changes in student learning outcomes were attributable to the differentiated instruction process rather than external or procedural confounders.

All statistical analyses were conducted at a significance level of $\alpha = 0,05$. This systematic procedure ensures that the research can be replicated and that the results can be interpreted validly. All research stages were conducted in accordance with established educational research ethics. Prior to data collection, approval was obtained from the school and from students' parents. All participant data were processed anonymously and used exclusively for research purposes.

3. FINDINGS AND DISCUSSIONS

Findings

General Overview of Research Implementation

This research was conducted at SD Al-Azhar Syifa Budi Cibubur during the current academic year. The entire population of fifth-grade students, consisting of 25 individuals, was used as the research sample through total sampling technique. The study took place over two cycles of differentiated instruction on Indonesian language material concerning abbreviations and acronyms. Each student was assigned an initial code to ensure confidentiality. The school environment during the research was relatively conducive, with full support from both the school and parents. The participating students

came from middle socioeconomic backgrounds, with considerable diversity in learning readiness and learning styles. All research instruments and procedures received ethical approval from the school and parents.

Description of Students' Learning Outcomes

Students' learning outcomes were measured through two achievement tests: after Cycle I (X) and after Cycle II (Y). The descriptive statistics summary for both cycles is presented in Table 1.

Table 1. Descriptive Statistics of Students' Learning Outcomes in Cycle I (X) and Cycle II (Y)

Statistic	Cycle I (X)	Cycle II (Y)
Mean	74.60	84.60
Standard Deviation	5.94	6.44
Maximum Score	88	98
Minimum Score	62	70
Number of Students	25	25
Mastery (KKTP)	60%	92%
Statistic	Cycle I (X)	Cycle II (Y)

As shown in Table 1, there was an increase in the average score by 10 points from Cycle I to Cycle II. The percentage of students achieving the Minimum Mastery Criteria (KKTP ≥ 75) also increased significantly from 60% in Cycle I to 92% in Cycle II.

Results of Normality Test

Before conducting correlation analysis between students' learning outcomes in Cycle I and Cycle II, a normality test was performed to determine the appropriate statistical technique. The Shapiro-Wilk test was used for both variables, namely the scores from Cycle I (X) and Cycle II (Y). The results showed that the Cycle I data had a Shapiro-Wilk statistic of $W = 0.913$ with a significance value of $p = 0.045$, while the Cycle II data had $W = 0.927$ with $p = 0.048$. Since both p -values are less than 0.05, it can be concluded that the data distribution in both cycles does not meet the normality assumption. Therefore, the correlation analysis in this study utilized the non-parametric Spearman rank correlation to maintain the validity of the relationship analysis between variables.

The non-normal distribution in Cycle I can be attributed to the diversity in students' initial abilities, resulting in a wider spread of scores and some clustering in the lower and middle score ranges. In Cycle II, the non-normality is likely caused by the high proportion of students achieving scores above the minimum mastery criterion (92% mastery), which leads to a concentration of high scores (ceiling effect) and a reduced variability in the upper score range. This clustering at the top end of the distribution is a common phenomenon when instructional interventions are highly effective and the majority of students approach or reach the maximum score.

Correlation Analysis Results

Correlation analysis was conducted to identify the strength and direction of the relationship between students' learning scores in Cycle I and Cycle II after the implementation of differentiated instruction. Based on the calculation of the Spearman rank correlation coefficient, a value of $\rho = 0.805$ was obtained, with a significance of $p < 0.001$. This indicates a very strong and statistically significant positive relationship between the learning outcomes in Cycle I and Cycle II. Additionally, for comparison purposes, the Pearson correlation coefficient was also calculated, resulting in $r = 0.813$ with a significance of $p < 0.001$, which consistently reinforces the main findings of the study. Furthermore, simple linear regression analysis was conducted to estimate the extent to which the Cycle I scores

influenced Cycle II scores. The regression results yielded the equation $Y = 18.82 + 0.88X$, with a coefficient of determination $R^2 = 0.661$, meaning approximately 66.1% of the variance in Cycle II learning scores can be explained by Cycle I scores. This finding confirms that student success in the first cycle is a strong predictor of success in the subsequent cycle within the context of differentiated instruction implementation.

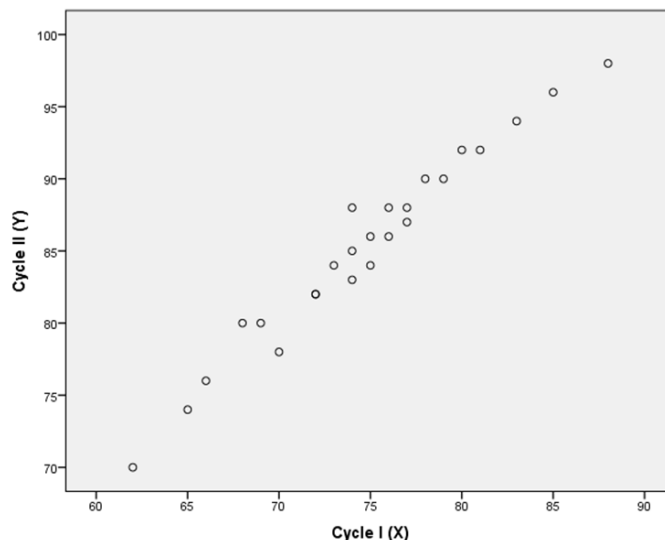


Figure 2. Scatter Plot of Learning Outcomes between Cycle I (X) and Cycle II (Y)

Figure 2 presents a scatter plot of students' learning scores in Cycle I (X) and Cycle II (Y). Each point on the diagram represents an individual student, labeled anonymously. Visually, nearly all data points follow a positive linear pattern, where students who scored high in Cycle I also tended to achieve high scores in Cycle II. This condition indicates consistency in individual performance across cycles following the implementation of differentiated instruction.

Moreover, there were no extreme outliers deviating far from the general pattern, indicating that almost all participants experienced a uniform trend of improvement. This pattern aligns with the previously described correlation analysis results, which showed a very strong and significant positive relationship between the two variables. Thus, this scatter plot visually supports the statistical findings that continuous differentiated instruction not only improves the class average but also provides proportional opportunities for learning gains to nearly all students. This suggests that differentiated interventions are effective not only for certain groups but comprehensively across heterogeneous classes.

Results of Simple Linear Regression Analysis

To determine the extent to which learning outcomes in Cycle I contributed to those in Cycle II, simple linear regression analysis was performed with Cycle I scores (X) as the predictor variable and Cycle II scores (Y) as the dependent variable. The analysis resulted in the regression equation $Y = 18.82 + 0.88X$. This equation indicates that each one-point increase in Cycle I learning scores is followed by a 0.88-point increase in Cycle II scores. In addition, the coefficient of determination (R^2) obtained was 0.661. This means that approximately 66.1% of the variance in students' learning scores in Cycle II can be explained by their scores in Cycle I, while the remaining 33.9% is influenced by other factors outside the model. These findings indicate that learning outcomes in Cycle I are a highly significant and substantial predictor of achievement in Cycle II within the context of differentiated instruction for abbreviations and acronyms in elementary school.

Summary of Main Findings

The results of this study indicate a significant improvement in students' learning scores following

the implementation of differentiated instruction over two learning cycles on abbreviations and acronyms. The average student score increased from 74.60 in Cycle I to 84.60 in Cycle II, accompanied by a rise in mastery percentage from 60% to 92%. Correlation analysis revealed a very strong positive relationship between Cycle I and Cycle II scores, as reflected in the Spearman correlation ($\rho = 0.805$) and Pearson correlation ($r = 0.813$), both statistically significant. Simple linear regression analysis further confirmed that Cycle I learning scores are a substantial predictor of achievement in Cycle II, with a coefficient of determination (R^2) of 0.661. These quantitative findings are supported by reflections from both the teacher and participating students. The teacher stated that differentiated strategies in Cycle II became more effective in overcoming students' learning challenges. Several students also reported improved understanding and confidence due to instructional methods tailored to their individual needs. One student (A5) expressed, "In the second cycle, I understood abbreviations and acronyms better because the learning method suited my preferences," highlighting the importance of adaptive instructional approaches.

A concise summary of the main research findings is presented in Table 2 below.

Table 2. Summary of Main Research Findings

Aspect	Cycle I	Cycle II	Change
Mean score	74.60	84.60	+10
Standard deviation	5.94	6.44	+0.5
Mastery percentage	60%	92%	+32%
Spearman correlation	-	$\rho = 0.805$	Strong & significant
Regression R^2	-	0.661	-

Table 2 above shows consistent increases in mean scores, standard deviation, and mastery percentage between Cycle I and Cycle II. The strong Spearman correlation and high regression R^2 value underscore the substantial positive relationship and predictability between students' learning achievements in Cycle I and Cycle II. These findings provide empirical evidence that sustained differentiated instruction can effectively promote better and more inclusive learning outcomes in Grade V elementary school classes, particularly for micro-linguistic materials.

Discussion

This study found a very strong positive correlation between students' learning outcomes in the first and second cycles of differentiated instruction on micro-linguistic material in Indonesian (abbreviations and acronyms). Specifically, students who performed well in the first cycle also tended to achieve good results in the second cycle. The class average and the percentage of classical mastery also increased significantly from 60% to 92%. This substantial increase in mastery is closely linked to the specific instructional adjustments made between cycles: while the first cycle focused on content and process differentiation—adapting learning materials and instructional steps to students' initial readiness—the second cycle shifted towards process and product differentiation, allowing students to demonstrate their understanding through varied output formats and reflective activities. This shift enabled more students to access the material meaningfully and express their comprehension in ways best suited to their learning profiles, thus substantially raising the proportion of students who reached the mastery threshold. These findings underscore the importance of differentiated instruction in creating consistent and progressive improvements in student learning outcomes.

Alignment and Contribution to the Literature

These results are in line with the meta-analyses by Asriadi AM et al. (2023), Shabrina et al. (2025) and Ardiawan (2024), which confirm that differentiated instruction has a significant positive impact on student achievement in various contexts. This research further extends the literature by demonstrating

that the benefits of differentiation are not temporary but are sustained with reflective and cyclical implementation. This longitudinal consistency supports the idea of cumulative benefits from differentiated instruction as suggested by Kristiawan et al. (2025). Furthermore, these findings reinforce the results of Ziernwald et al. (2022), Anwar et al. (2025) and Barbier et al. (2022), which show that systematic differentiation—whether through content, process, or product modification—positively contributes to students' cognitive and character development, especially in mixed-ability classrooms.

Our findings further reveal that the most effective differentiation strategy for reducing misconceptions in abbreviations and acronyms was process differentiation, particularly when combined with structured, guided practice and peer discussion. During the second cycle, when students were encouraged to analyze, compare, and construct their own examples collaboratively, common errors such as confusing abbreviations with acronyms or misapplying formation rules were significantly reduced. Product differentiation, which allowed students to present their understanding in diverse formats (e.g., mind maps, infographics, creative presentations), also contributed by making students' conceptual grasp visible and facilitating targeted feedback.

Analysis of Unexplained Variance

Although the regression model showed that learning outcomes in the first cycle explained 66.1% of the variance in the second cycle ($R^2 = 0.661$), there remains 33.9% of variance unaccounted for by this model. This residual variance suggests the presence of other influential factors outside the measured instructional interventions. It is highly plausible that individual differences in learning motivation, students' initial literacy levels, or the quality of home environment and parental support contributed to these unexplained outcomes. For example, students with high intrinsic motivation or strong foundational literacy may be better equipped to capitalize on differentiated instruction, while those with robust family support—such as encouragement to study or access to additional learning resources at home—may demonstrate greater gains regardless of classroom strategy adjustments. These external factors, though not directly targeted by the instructional model, likely interact with classroom interventions to shape student progress, and thus warrant further investigation in future studies.

The increase in the percentage of classical mastery also highlights the importance of ongoing instructional reflection and refinement. In line with Rukmi et al. (2023), Kusumaningrum (2024), and Herwina (2021), the iterative process of improving differentiation strategies has proven effective in enhancing both learning outcomes and student self-confidence. Thus, this study provides empirical evidence that adaptive differentiated instruction can meet individual learning needs and promote more inclusive student achievement. This conclusion is also supported by findings and previous literature reviews (Ashraf, 2026; Goyibova et al., 2025; Ulfha et al., 2025).

Pedagogical Implications and Practical Contribution

This research specifically emphasizes the importance of differentiation to address challenges in mastering micro-linguistic content, such as abbreviations and acronyms, which have long been problematic at the elementary level (Diarera & Budiarti, 2024; Hapsari & Wijayanti, 2022; Nisa & Mulyati, 2023). By tailoring instruction to students' readiness and learning profiles, differentiation not only facilitates more meaningful content mastery but also creates a learning environment that empowers all students. The cycle-based model of differentiated instruction can also serve as a reference for teachers and policymakers in implementing systematic and continuous monitoring, reflection, and instructional development.

Research Limitations

While this study provides a promising overview of the consistent impact of differentiated instruction, there are several important limitations. The correlational design does not allow for causal inferences, so the strong relationship between learning outcomes across cycles may not fully reflect the effect of differentiated instruction and could also be influenced by other factors such as stable individual

differences, student maturity, or test familiarity. In addition, the study's scope, which involved only one class with a limited sample size, restricts the generalizability of the findings to broader educational contexts. From a data analysis perspective, the use of Spearman's coefficient due to non-normal data distribution also indicates the potential presence of outliers or skewness, which should be considered when interpreting the strength of these findings.

Recommendations for Future Research

Based on these limitations, future research is strongly recommended to employ experimental or quasi-experimental designs with control groups to more accurately test the causal contribution of differentiated instruction. Additionally, studies with larger and more diverse samples from various schools are needed to enhance external validity and assess the consistency of differentiation's effectiveness across different student populations. Longitudinal research involving more than two instructional cycles, as well as consideration of additional variables such as student motivation, family support, and teacher competence in differentiation, is also crucial for deepening the understanding of the mechanisms underlying sustained improvement in learning outcomes.

4. CONCLUSION

Based on the results of this study, it can be concluded that the implementation of differentiated instruction on abbreviation and acronym material in fifth grade elementary school consistently improves student learning outcomes, as reflected in increased average scores, a higher percentage of mastery, and a very strong and significant positive correlation between achievements in the first and second cycles. These findings reinforce the literature indicating that differentiated instruction is not only effective in the short term but also provides cumulative and predictive benefits in ongoing learning cycles, making it highly recommended as a primary strategy for accommodating diverse student readiness and learning profiles in micro-linguistic content. However, the limitations of the correlational design and the small sample size necessitate further research using experimental approaches and broader coverage to strengthen causal claims and generalize these findings to more diverse educational contexts. Operationally, it is recommended that elementary school Indonesian language teachers apply differentiated instruction strategies—such as pre-assessment of student readiness, flexible grouping, and targeted scaffolding—when teaching similar grammar topics, including affixes, word classes, and sentence structure, in order to optimize learning outcomes and foster inclusive classroom environments.

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