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The Influence of Differentiated Learning Models on Student Achievement in Islamic Religious Education at SMP Negeri 11 Palu

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ABSTRACT

Learning is a crucial component of the educational system. Educational quality cannot be optimized if the learning process is low in quality. Therefore, continuous improvement in instructional quality is essential to achieve high-quality education. Based on this premise, this study aims to examine whether the Differentiated Learning Model has a significant effect on students' learning outcomes in Islamic Religious Education (IRE) at SMP Negeri 11 Palu. This research employed a quantitative experimental approach. Data were collected through achievement tests and non-test instruments, including observation sheets and documentation. The results indicate that the differentiated learning model has a significant effect on students' learning outcomes. Statistical analysis shows that the mean posttest score of the experimental group was significantly higher than that of the control group. The t-test results reveal a significance value (p-value) of 0.001 < 0.05, with t_calculated > t_table, indicating a significant difference in learning outcomes between the two groups. Furthermore, the analysis of covariance (ANCOVA) supports these findings, with a p-value < 0.001, demonstrating that the differentiated learning model significantly influences students' learning outcomes even after controlling for pretest scores. Overall, differentiated learning positively impacts students' engagement, motivation, and comprehension of learning materials. Students become more actively involved in the learning process because the instruction is tailored to their learning styles, interests, and readiness levels. The implications of this research reinforce Tomlinson's theory, which asserts that differentiated instruction is effective at accommodating student diversity in interests, readiness, and learning styles. Consequently, these findings contribute to the development of modern learning theories that emphasize the importance of adaptive instruction responsive to individual student characteristics.

1. Introduction

Education is a fundamental pillar of human civilization and national progress. As mandated by Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, national education functions to develop human potential and to shape the character and civilization of a dignified nation, in order to educate the nation's life. Its primary objective is to develop learners into individuals who are faithful and devoted to Almighty God, possess noble character, are healthy, knowledgeable, competent, creative, independent, and become democratic and responsible citizens. In this context, learning is not merely understood as a transfer of knowledge, but rather as an educative interaction process aimed at transforming students' behaviour in a more positive direction across cognitive, affective, and psychomotor domains.

The quality of education is largely determined by the effectiveness of the learning process that occurs in the classroom. Supardi asserts that effective learning is created through a harmonious combination of human elements, procedures, equipment, and facilities aimed at improving students' behaviour. Essentially, learning is a process of behavioural change that occurs repeatedly within specific situations and is influenced by individual conditions. Therefore, teachers play a crucial role in designing instructional strategies that accommodate individual learning needs to optimally achieve learning objectives.

Islamic Religious Education (IRE) holds a strategic position within the national education system, as it aims to enhance students' understanding, internalization, and practice of Islamic teachings, thereby shaping faithful and pious Muslim individuals. However, classroom realities often reveal a gap between these ideal objectives and actual instructional practices. Based on preliminary observations and pre-survey data from SMP Negeri 11 Palu, IRE instruction is often limited to routine formalities. The dominant instructional method employed is one-way lecturing (teacher-cantered), in which teachers act as the primary source of information while students remain passive listeners. Such monotonous instructional conditions negatively affect students' interest and motivation to learn. Classroom atmospheres become less dynamic and more monotonous, failing to stimulate students' curiosity. Consequently, student engagement in the learning process is minimal, and difficulties in understanding instructional material increase. This situation ultimately leads to suboptimal learning outcomes that fall short of expected mastery standards. The problem is further exacerbated by the fact that each student possesses unique characteristics, learning pace, and learning styles, yet they are often treated using a uniform instructional approach ("one size fits all").

To address these challenges, Indonesia's educational paradigm has undergone a significant shift with the implementation of the Merdeka Curriculum. This curriculum emphasizes student-cantered learning and flexibility in instructional processes. This approach aligns with Government Regulation Number 57 of 2021 concerning National Education Standards, Article 12 paragraph (1) point (f), which stipulates that learning implementation must provide adequate space for initiative, creativity, and independence in accordance with students' talents, interests, and physical and psychological development. As one of the *Sekolah Penggerak* implementing the Merdeka Curriculum, SMP Negeri 11 Palu is required to adopt innovative instructional practices aligned with these principles.

One instructional model that is highly relevant in addressing student diversity is differentiated instruction. Differentiated instruction is defined as a deliberate effort by teachers to adjust classroom learning processes to meet individual students' learning needs. According to Tomlinson, this approach does not require teachers to teach in 25 different ways for 25 students, but rather involves a series of reasonable decisions oriented toward students' needs. In this model, teachers facilitate learning based on students' readiness, interests, and learning profiles by differentiating content, process, and product.

The implementation of differentiated instruction is expected to reduce student boredom caused by traditional lecturing methods and to improve learning outcomes. Although previous studies have demonstrated the effectiveness of

this model, research specifically examining its impact on Islamic Religious Education at the junior secondary school level in Palu—particularly in *Sekolah Penggerak*—remains limited. Therefore, this study aims to comprehensively analyze the effect of differentiated learning models on students' learning outcomes in Islamic Religious Education at SMP Negeri 11 Palu. This research is expected to contribute theoretically to the development of Islamic education scholarship and practically to assist teachers in improving the quality of classroom instruction.

2. Theoretical Framework

2.1 The Nature of Differentiated Learning

Differentiated learning, often referred to as differentiated instruction, is an educational approach that recognizes and responds to the diverse needs, readiness levels, interests, and learning profiles of students within a classroom. Rather than applying a single, uniform method of teaching, differentiated learning emphasizes flexibility in content, process, product, and learning environment. The goal is to ensure that all learners, regardless of their abilities or backgrounds, can access meaningful and challenging learning experiences. According to Tomlinson, differentiation is rooted in the belief that students learn best when instruction is tailored to their individual needs and when they are actively engaged in the learning process (Tomlinson, 2001).

A key feature of differentiated learning is its focus on student-centered instruction. Teachers assess students continuously to determine their readiness levels and adapt lessons accordingly. This may involve grouping students based on skill level, providing tiered assignments, or offering varied instructional materials. For example, advanced learners may be given enrichment tasks that extend their thinking, while students who need additional support receive scaffolding and guided practice. This adaptive structure helps ensure that no student is left behind while also preventing learning stagnation for more advanced learners (Tomlinson & Imbeau, 2010).

Differentiated learning also acknowledges that students learn in different ways. Some learners may prefer visual representations, while others benefit from auditory explanations or hands-on activities. As a result, teachers incorporate multiple teaching strategies such as multimedia resources, collaborative learning, problem-based tasks, and individualized assignments. This variety not only enhances comprehension but also increases student engagement by connecting learning to students' interests and real-life experiences. Vygotsky's theory of the Zone of Proximal Development further supports this approach, emphasizing the importance of providing appropriate levels of challenge with adequate support (Vygotsky, 1978).

In addition, differentiated learning promotes equity in education. It does not mean lowering standards; rather, it ensures that all students have equitable opportunities to meet high expectations through different pathways. By recognizing that students are not identical in their learning processes, educators create inclusive classrooms that value diversity. This approach is particularly important in multicultural and heterogeneous classrooms where learners come from varied linguistic, cultural, and socioeconomic backgrounds.

Ultimately, differentiated learning enhances both teaching effectiveness and student achievement. It requires teachers to be flexible, reflective, and responsive to student needs. While it can be demanding in terms of planning and assessment, the long-term benefits include improved academic outcomes, greater student motivation, and a more supportive learning environment. As education continues to evolve, differentiated instruction remains a critical framework for addressing the complexities of modern classrooms.

Differentiated instruction is a pedagogical approach that places students' needs at the core of instructional design. According to Tomlinson, differentiated instruction is a deliberate effort to adjust classroom learning processes in

order to meet the individual learning needs of each student. This definition emphasizes that differentiation is not a rigid teaching method, but rather a flexible teaching philosophy in which teachers proactively respond to student diversity.

This concept is grounded in the understanding that every student possesses unique characteristics in terms of learning readiness, interests, and learning profiles. Learning readiness refers to students' prior knowledge and skills before engaging with new material. Interest relates to students' attraction to particular topics that can stimulate intrinsic motivation. Meanwhile, learning profiles encompass learning styles (visual, auditory, and kinesthetic), preferred learning environments, and multiple intelligences.

In response to this mapping of student characteristics, differentiation strategies are implemented through adjustments in instructional content and process. Content differentiation concerns the learning materials presented to students. Teachers provide a variety of learning resources—such as reading texts, colourful infographics, video presentations, or audio recordings—to accommodate diverse learning modalities without lowering curricular standards. Process differentiation, on the other hand, refers to the design of instructional scenarios that enable students to comprehend information effectively. This may include tiered group discussions, intensive scaffolding for students who require additional support, or independent enrichment activities for students who grasp concepts more quickly.

Beyond content and process, another crucial element is product differentiation. Products represent tangible evidence of students' learning outcomes after engaging with instructional material. In this model, teachers allow students to demonstrate their understanding through formats that align with their interests and talents. For example, in Islamic Religious Education classes, students may choose to submit a reflective essay, a digital poster, a campaign video, or an oral presentation as their final assignment. This freedom in selecting product formats is intended to enhance students' sense of ownership over their learning process while simultaneously fostering diverse creative potentials.

In practice, differentiated instruction does not require teachers to design entirely separate lesson plans for each individual student, which would be excessively burdensome. Instead, this approach emphasizes a "series of reasonable decisions" made by teachers to facilitate the learning needs of small groups of students who share similar characteristics. Corley further argues that differentiated instruction enables teachers to plan varied strategies so that all students—both high-achieving learners and those requiring additional guidance—can achieve the same learning objectives through different pathways.

The implication of this flexible approach is the creation of an inclusive and supportive learning environment in which every student has an equitable opportunity to succeed. By allowing students to learn according to their preferences, psychological barriers to learning can be significantly reduced. Students feel acknowledged and valued by their teachers, which in turn fosters a strong sense of belonging to the learning process. This positive psychological condition serves as a fundamental prerequisite for the development of sustained intrinsic motivation, while simultaneously transforming Islamic Religious Education from a traditionally rigid, teacher-centered practice into a dynamic and fully student-centered learning process.

2.2 Strategies and Elements of Differentiation

Differentiated instruction is built on a set of flexible strategies that allow teachers to respond effectively to learner diversity in the classroom. One of the most widely used strategies is tiered instruction, where tasks are designed at varying levels of complexity but aligned with the same essential learning goals. This ensures that all students work toward the same objectives while engaging in activities that match their readiness levels. Another common strategy is flexible grouping, where students are grouped and regrouped based on learning needs, interests, or performance on specific

tasks. These groupings are temporary and dynamic, allowing learners to collaborate with different peers and benefit from varied perspectives (Tomlinson, 2014).

Another important strategy in differentiation is the use of learning stations or centers. In this approach, the classroom is organized into different areas where students engage in various activities related to the lesson objectives. Each station may focus on different skills or modes of learning, such as reading, writing, digital tasks, or hands-on exploration. This method encourages student autonomy and active engagement while allowing teachers to address multiple learning styles within a single lesson. Additionally, choice boards or learning menus are often used to give students options in how they demonstrate their understanding, increasing motivation and ownership of learning (Heacox, 2012).

The elements of differentiation are typically organized into four key areas: content, process, product, and learning environment. Content refers to what students are expected to learn. Teachers may modify content by providing texts at different reading levels or offering supplementary materials for deeper exploration. Process involves how students engage with the content, such as through group work, independent study, or guided instruction. Product refers to how students demonstrate their learning, which can vary from written reports to presentations, models, or digital projects. Finally, the learning environment encompasses the physical and emotional classroom setting, including classroom arrangement, routines, and the level of support provided to students (Tomlinson & Imbeau, 2010).

In addition to these structural elements, effective differentiation relies on ongoing assessment and feedback. Teachers use formative assessments such as quizzes, observations, and discussions to monitor student progress and adjust instruction accordingly. This continuous cycle of assessment allows instruction to remain responsive and targeted. It also ensures that students receive timely support or enrichment based on their evolving needs, reinforcing the idea that differentiation is not a one-time adjustment but an ongoing instructional process.

Overall, strategies and elements of differentiation work together to create a responsive and inclusive learning environment. When effectively implemented, they enable teachers to meet diverse learner needs without lowering academic expectations. Instead, they promote deeper engagement, improved understanding, and greater student success across a wide range of abilities and learning profiles.

The implementation of differentiated instruction in the classroom can be carried out through modifications to three main curriculum elements, namely content, process, and product:

2.2.1 Content Differentiation

Content refers to what is taught to students. Differentiation at this level is carried out by adjusting instructional materials based on students' readiness, interests, and learning profiles. For instance, for students with visual learning preferences, teachers may provide infographics or instructional videos, whereas for auditory learners, audio recordings or oral explanations may be more effective. Although the formats of the materials differ, the core learning objectives and competency standards remain the same.

Content differentiation may also be implemented by varying the level of complexity of learning materials. For students who are still at the concrete operational stage, teachers need to provide instructional resources that are tangible and directly observable, such as real objects or examples from the school environment related to the lesson topic. Conversely, for students who are ready for abstract thinking, teachers can offer more conceptual and cognitively challenging materials. Tomlinson emphasizes that content differentiation is not merely about assigning

"more" tasks to advanced students or "fewer" tasks to those who learn more slowly, but rather about modifying the ways in which students access information so that it aligns with their current cognitive capacity.
In the context of this study, which focuses on Islamic Religious Education (IRE) with learning materials on environmental preservation, content differentiation was implemented through the use of diverse and enriched learning resources. The teacher presented Qur'anic verses and Hadiths related to environmental stewardship not only in the form of Arabic texts and their translations from the textbook, but also through documentary videos depicting environmental degradation to evoke students' emotional engagement (visual modality), as well as recent environmental news articles for critical analysis (textual/linguistic modality). This multi-source approach ensured that religious content was not perceived as abstract or monotonous, but rather as relevant and accessible through multiple learning modalities.

2.2.2 Process Differentiation

Process differentiation relates to how students make sense of or process the information they receive. Teachers design varied learning activities to help students understand the material. Strategies may include tiered activities, learning centers, or providing different pacing for students who require more time to grasp concepts. The goal is to ensure that each student engages in the knowledge construction process at a pace suited to their learning needs.

In this study, process differentiation was implemented by grouping students according to their learning profiles: visual, auditory, and kinesthetic. For the visual group, learning activities emphasized observation and visual literacy. Students were encouraged to observe videos of natural phenomena or analyze diagrams of Qur'anic tajwid rules. They processed information by creating concept maps or charts illustrating the relationship between humans and the environment in accordance with Islamic teachings. This strategy helped visual learners "see" abstract concepts more concretely.

For the auditory group, learning activities focused on listening and oral discussion. The teacher provided access to recorded Qur'anic recitations (murottal) related to environmental topics and facilitated group discussions (Focus Group Discussions) on verse interpretations. Students were encouraged to verbally explain their understanding to peers through peer teaching. Meanwhile, for the kinesthetic group, learning activities involved physical engagement. Students participated in simulations or hands-on demonstrations, such as sorting waste according to Islamic cleanliness guidelines or role-playing scenarios on environmental stewardship.

In addition to activity variations based on learning styles, process differentiation was also applied through varying levels of scaffolding. Teachers provided more intensive guidance and detailed instructions for students experiencing learning difficulties (slow learners), while students who grasped concepts quickly (fast learners) were given higher-order thinking tasks (HOTS) to complete independently. As a result, the learning process became equitable, as each student received attention and challenges aligned with their individual learning needs.

2.2.2 Product Differentiation

Product differentiation refers to students' assignments or performance outcomes that demonstrate their understanding of the material. Teachers give students the freedom to choose the form of their final product based on their interests and talents. For example, in Islamic Religious Education (IRE) lessons on environmental preservation, students may choose to create a campaign poster, write a reflective essay, or produce a vlog documenting activities that promote cleanliness. Product differentiation allows students to express their understanding in ways that are most comfortable and effective for them. Although the forms of student work vary, assessment is still based on the same learning objectives using standardized rubrics.

During the product development process, teachers act as facilitators, providing intensive guidance to ensure that students' work aligns with Qur'anic verses and Hadith. Students are not left entirely independent; they are given opportunities for both technical and substantive consultations. For instance, students creating an environmental advocacy vlog receive guidance on scriptwriting to ensure the moral messages are accurate and consistent with Islamic teachings. Students who choose to produce bulletin boards or 3D posters receive feedback on aesthetics and clarity of information. This support ensures that the autonomy granted to students remains directed toward achieving the targeted core competencies.

The culmination of product differentiation is a presentation or gallery walk, where students can showcase their work to the class and receive peer recognition. Students who are typically passive or shy tend to become more confident, as they present something they are genuinely interested in and proficient at. Furthermore, the student-created products—such as anti-littering posters or videos encouraging tree planting—do not simply end up as stacks of assignments on the teacher's desk. Instead, they become creative advocacy media that can be shared within the school environment, allowing students to experience the practical and meaningful application of knowledge (amaliyah) in real-life contexts.

2.3 Advantages and Disadvantages of Differentiated Instruction

The implementation of differentiated instruction offers several significant advantages that support the creation of a humanistic learning ecosystem. First, this model is able to accommodate the diverse needs of students, allowing each individual to feel seen and heard. In the context of religious education, this is particularly important, as the sense of being valued fosters inner calm, which facilitates the internalization of spiritual values. The positive impact is evident in increased intrinsic motivation and student engagement, where students no longer feel compelled to learn but do so based on an awareness of their own needs.

Second, differentiation promotes higher learning outcomes. This is because instructional materials are presented at a level of difficulty appropriate to each student's Zone of Proximal Development (ZPD), as theorized by Vygotsky. Students are not given tasks that are too easy (which may be boring) or too difficult (which may cause frustration), but rather challenging tasks that can be completed with appropriate scaffolding. Third, this model facilitates collaboration and the development of social skills through flexible grouping. Students become accustomed to interacting with peers who have different learning styles, thereby cultivating tolerance and teamwork skills.

However, alongside its advantages, this model also presents significant challenges. The primary challenge is the intensive preparation and extra time required from teachers. Teachers must conduct initial diagnostic assessments to map students' needs—such as readiness, interests, and learning profiles—before designing instruction. In addition, teachers must prepare a variety of materials and media for a single lesson topic. This demands a higher level of dedication and work ethic compared to conventional lecture-based teaching, which relies on a single learning resource.

Beyond preparation, classroom management becomes considerably more complex because multiple activities occur simultaneously within the same classroom. Teachers must divide their attention to guide the visual group watching videos while monitoring the kinesthetic group engaged in simulations, ensuring the learning environment remains orderly and not chaotic. Therefore, teachers' competencies in time management and classroom management are critical to the success of this model. Teachers are required to be adaptive, responsive, and capable of making on-the-spot decisions to ensure that all students remain on the correct learning track.

2.4 Concept of Learning Outcomes in Islamic Religious Education

Learning outcomes serve as indicators of the success of the educational process. According to Hamalik, learning outcomes are manifested as observable and measurable changes in a person's behaviour, encompassing knowledge, attitudes, and skills. In the context of Islamic Religious Education (IRE), learning outcomes are not limited to cognitive mastery but also include the internalization of religious values, as reflected in moral character and ethical conduct.

In this study, the indicators of learning outcomes focus on the cognitive domain and are measured through tests. Improvement in learning outcomes is assessed by comparing pretest scores (initial ability) with post test scores (final ability), as well as by evaluating the achievement of the Minimum Mastery Criteria (MMC/Kriteria Ketuntasan Minimal, KKM). The effectiveness of instruction is considered successful if there is a significant increase in students' understanding of the learning material, such as the topic "Qur'anic Inspiration: Preserving Nature and Caring for the Environment."

Compared to general subjects, learning outcomes in IRE are broader in scope. They encompass not only cognitive (intellectual) mastery but also the internalization of religious values, manifested in moral behaviour and religious practice. Specifically, Benjamin S. Bloom categorizes learning outcomes into three domains:

1. Cognitive Domain: Relates to thinking abilities, ranging from memorization of religious texts (dalil), understanding of Qur'anic exegesis (tafsir), to analysis of Islamic law (fiqh).
2. Affective Domain: Pertains to attitudes and values, such as faith, piety, and social responsibility, which develop after studying religious material.
3. Psychomotor Domain: Concerns physical skills in practicing religious teachings, such as performing prayer correctly or taking tangible actions to maintain environmental cleanliness.

Although ideally all three domains should be assessed, the indicators of learning outcomes in this study focus specifically on the cognitive domain, measured through written tests. Improvement in learning outcomes is evaluated by comparing pretest scores (initial ability before treatment) and post test scores (final ability after treatment), as well as students' achievement of the school's Minimum Mastery Criteria (MMC/KKM).

Instruction is considered effective if there is a significant increase in students' understanding of the learning material. In this study, the focus material is "Qur'anic Inspiration: Preserving Nature and Caring for the Environment." The expected learning outcomes are not limited to students memorizing Qur'an verses, such as Q.S. Ar-Rum verse 41 or Q.S. Ibrahim verse 32, but also include a deep understanding of the theological concept that environmental stewardship is part of faith (khalifah fil-ardh). Thus, an improvement in test scores on this material reflects students' comprehensive understanding of the integration between religious teachings and ecological responsibility.

3. Methodology

This study employed a quantitative approach with a quasi-experimental research design. A quantitative approach was chosen because the study focuses on the collection and analysis of numerical data to test the predetermined hypotheses. The research design applied was the Nonequivalent Control Group Design, which involves two non-randomly assigned sample groups: an experimental group and a control group. The experimental group received treatment in the form of differentiated instruction, while the control group was taught using conventional lecture-based methods. Before the treatment, both groups took a pretest to measure baseline abilities (O1 and O3). After the treatment, a posttest was

administered to assess changes in learning outcomes (O2 and O4). This design was chosen to compare the effectiveness of the two teaching methods in improving student learning outcomes under natural classroom conditions.

The research was conducted at SMP Negeri 11 Palu, located on Jalan Keramik, Kelurahan Duyu, Kecamatan Tatanga, Kota Palu, in July 2025. The population included all seventh-grade students in the odd semester of the 2025/2026 academic year, consisting of four classes. Purposive sampling was used to select the sample, considering teacher recommendations and the relative homogeneity of class characteristics. Based on these criteria, Class VII A (25 students) was selected as the experimental group, and Class VII B (25 students) as the control group, resulting in a total sample of 50 students.

The primary instrument for collecting learning outcome data was a 15-item multiple-choice test covering Chapter 1, "The Qur'an and Environmental Preservation." Before implementation, the test underwent validity and reliability testing. Validity was assessed using the Pearson Product-Moment correlation via Jamovi software. The results indicated that all 15 items had a significance level (p-value) < 0.05 and r-count > r-table, confirming the test items were valid and suitable for measurement. Reliability was assessed using Cronbach's Alpha, yielding a coefficient of 0.747, exceeding the 0.70 threshold, indicating high consistency and reliability. Additionally, observation sheets were used to monitor teacher and student activities during instruction, and documentation provided supporting data such as school profiles, location images, and photographs of learning activities.

Data collection procedures began with preparation, including the development of teaching modules, student worksheets (LKPD), and validated test instruments. The implementation stage started with a pretest for both groups, followed by three treatment sessions. In the experimental class, teachers applied differentiated instruction covering content differentiation (varied learning materials), process differentiation (group discussions based on learning styles), and product differentiation (varied assignments). The control class was taught using conventional lecture methods and standard assignments. The final stage was a post test with items of comparable difficulty to the pretest to measure final learning outcomes.

Data analysis was conducted quantitatively using Jamovi software. Preliminary tests included normality testing using the Shapiro-Wilk method to assess data distribution, and homogeneity testing with Levene's Test to ensure equal variances between groups. Hypothesis testing involved two main statistical techniques. First, an Independent Sample t-Test was used to determine whether the mean post test scores of the experimental and control groups differed significantly. Second, Analysis of Covariance (ANCOVA) was employed to examine the effect of the treatment on learning outcomes while controlling for pretest scores as a covariate, thus minimizing bias from students' initial abilities. Hypothesis decisions were based on a 5% significance level ($\alpha = 0.05$); if $\rho < 0.05$, the alternative hypothesis ($H\alpha$) was accepted.

4. Findings and Discussion

4.1 Descriptive Statistical Analysis

Based on data processing using descriptive statistics, an overview of the distribution of students' learning outcome scores in both groups was obtained, as presented in **Table 1** below:

Descriptives	Metode	Pretest	Posttest
N	Berdiferensiasi	25	25
	Ceramah	25	25
Missing	Berdiferensiasi	0	0
	Ceramah	0	0
Mean	Berdiferensiasi	60.4	88.0

	Ceramah	58.9	69.5
Median	Berdiferensiasi	60	87
	Ceramah	60	67
Standar Deviation	Berdiferensiasi	6.74	4.27
	Ceramah	5.22	2.96
Minimum	Berdiferensiasi	53	80
	Ceramah	53	67
Maximum	Berdiferensiasi	73	97
	Ceramah	67	73

Based on **Table 1**, the initial conditions of the two classes were relatively balanced. The mean pretest score of the experimental class was 60.4, while the control class scored 58.9. The small initial mean difference of only 1.5 points indicates that both groups started from an equivalent baseline. The pretest score range in the experimental class was 53-73, while the control class ranged from 53 to 67. The standard deviation of the pretest was 6.74 in the experimental class and 5.22 in the control class, indicating a reasonable variation of student abilities within each class.

A significant change was observed in the posttest results following the intervention. The experimental class, which applied differentiated instruction, recorded a sharp increase in the mean score to 88.0. The minimum score in this group rose substantially to 80, and the maximum score reached nearly perfect at 97. This indicates that almost all students in the experimental class successfully exceeded the mastery criteria. The mean gain in this class was 27.6 points.

In contrast, the control class, which used the conventional lecture method, achieved a posttest mean of only 69.5. Although there was an improvement from the initial score, the gain was relatively small, only 10.6 points. The maximum score in the control class was only 73, even lower than the minimum score in the experimental class (80). Descriptively, these data strongly suggest that differentiated instruction had a far greater impact on learning outcomes compared to conventional methods.

The equivalence of initial ability (baseline) as reflected in the pretest data is an important aspect of internal validity in this study. With a very small mean difference (1.5 points) and overlapping score ranges, it can be ensured that both classes had homogeneous cognitive characteristics before the treatment. This confirms that the significant increase in achievement at the end of the study was not due to student input factors (e.g., one class being naturally smarter) but purely the effect of the manipulated independent variable, namely the differentiated instruction model. This initial homogeneity provides strong legitimacy for concluding the effectiveness of the tested model.

Analysis of the minimum posttest score in the experimental class, which reached 80, reveals an interesting fact about **equity in learning**. In conventional learning, only high-achieving students typically show improvements in scores, while slow learners remain behind. However, in the differentiated class, even the lowest scores were well above the Minimum Mastery Criteria (KKM). This demonstrates that differentiation strategies—particularly scaffolding for students who need guidance—effectively improved the performance of lower-achieving students. No student was left behind; all improved significantly.

The most striking descriptive statistical finding is that the maximum score in the control class (73) was still lower than the minimum score in the experimental class (80). This phenomenon shows a substantial gap in learning quality. In other words, the "best-performing" students in the lecture-based class still underperformed compared to the "lowest-performing" students in the differentiated class. This serves as compelling empirical evidence that the lecture method, regardless of how it is delivered, has a ceiling effect that is difficult to surpass compared with a method that accommodates students' learning styles.

Regarding data distribution, the posttest standard deviation reflects different dynamics. In the experimental class, the high mean, coupled with a high minimum score, indicates that scores tended to cluster in the higher range, with a tight distribution around mastery. This suggests collective learning success. In contrast, the control class exhibited moderate, uneven increases in scores, leaving some students still struggling near the mastery threshold. This variability confirms that differentiated instruction reduces disparities in student ability within a class.
Finally, from an efficiency perspective, the 17-point gain difference (27.6 minus 10.6) between the two classes indicates a clear acceleration in understanding. Students in the experimental class grasped the PAI material on environmental preservation nearly three times as effectively as their peers in the control class. This implies that the time and effort invested in differentiated instruction—even if initially complex—yielded a high **return on investment** in the form of deep, comprehensive conceptual understanding for students.

4.2 Observation Results of Learning Activities

In addition to learning outcomes data, this study also recorded teacher and student activity data using observation sheets conducted over three meetings. The observations aimed to monitor the implementation of the differentiated instruction procedures and to assess students' responses to the method.

4.2.1 Teacher's Activity

Based on the analysis of observation data, the teacher's ability to manage differentiated instruction showed a positive trend of improvement across the meetings. In the first session, the implementation of learning reached 65%, falling within the "Good" category. At this initial stage, the teacher was still making adjustments to manage the classroom's complexity. The biggest challenge was organizing the students into learning groups based on visual, auditory, and kinesthetic learning styles, which took slightly longer than planned. Additionally, the teacher was still striving to balance attention between delivering general instructions and providing targeted guidance for each group.

By the second session, the teacher's performance improved to 68% (Good category). The teacher became more flexible in facilitating group discussions and utilizing diverse learning media. Instructions were more structured, ensuring that students no longer experienced confusion while completing the Student Worksheet (LKPD). The peak occurred in the third session, where teacher activity reached 80% with a "Very Good" category. At this stage, the teacher had fully mastered the differentiated instruction procedures, from the opening activities to the core and closing phases. The teacher effectively acted as a facilitator, providing constructive feedback and motivating students to complete their final products with confidence.

The increase in teacher activity from 65% to 80% illustrates a reasonable pedagogical adaptation curve. Differentiated instruction requires a fundamental paradigm shift for a teacher accustomed to classical methods. In the initial session, a high cognitive load was expected because the teacher had to consider three simultaneous learning scenarios (visual, auditory, kinesthetic). The moderate increase in the second session and the significant jump in the third session demonstrate that a teacher's competence in managing classroom complexity can be developed through reflective, repeated practice.

One of the key indicators of teacher success in the final session was efficiency in managing transitions. Initially, student movement between groups consumed effective learning time. However, by the third session, the teacher had established solid classroom routines. The teacher no longer needed to shout to organize students, merely giving brief signals or instructions, and students moved independently to their learning stations. The teacher's ability to create "order in the midst of activity" became a key factor in executing differentiated procedures without compromising classroom discipline.

Achieving an 80% score also marked the successful transformation of the teacher's role from the "sage on the stage" to the "guide on the side." In PAI environmental lessons, the teacher no longer dominated the discussion. Instead, the teacher moved dynamically from group to group, posed probing questions to groups experiencing discussion blocks, and acknowledged groups with rapid progress. This flexible role allowed the teacher to detect and correct misconceptions in real time, an intervention difficult to achieve in mass lecture methods.

Another crucial aspect that improved markedly was the teacher's ability to distribute attention fairly (equitable attention). Initially, the teacher tended to focus on the most active or problematic group. However, data from the third session showed that the teacher was able to allocate guidance proportionally, providing intensive scaffolding to students struggling with dalil naqli while still offering enrichment challenges to advanced students. This balance ensured that all students felt attended to, psychologically strengthening the teacher-student bond and minimizing disruptive behavior in class.

Overall, the findings regarding teacher activity refute the skepticism that differentiated instruction is "too complicated" to implement in regular schools. Although challenging initially, the data show that with careful preparation and consistency, teachers can achieve a "Very Good" level. This implies that the success of this model depends not only on the curriculum or facilities but also significantly on teachers' professional competence and willingness to continuously learn (growth mindset). The teacher's success in orchestrating student diversity in the experimental class serves as a reference model worthy of replication by other PAI educators.

4.2.2 Students' Activity

In line with the improvement in the teacher's classroom management, student learning activity also increased significantly. In the first session, student engagement was recorded at 67% (Good category). Although this was already categorized as good, some students remained passive and hesitant to interact within their new groups. A few students also appeared reluctant to express their opinions because they were not yet accustomed to a learning model that demands active participation.

In the second session, the percentage of student activity rose to 77% (Good category). Students began to show high interest in the learning material because it was presented in a format that suited their learning preferences. The visual group appeared enthusiastic analyzing video content, the auditory group actively engaged in discussions, and the kinesthetic group eagerly participated in simulations. Peer interaction became smoother and more collaborative.

The most drastic increase occurred in the third session, where student activity reached 93% (Very Good category). In this session, almost all students were actively involved, particularly during product creation and presentation (differentiated products). Students were very enthusiastic about presenting their work, whether posters or oral presentations, in front of the class. The classroom atmosphere became vibrant and dynamic, very different from conventional classes, which tend to be static. This indicates that the differentiated instruction model is effective in gradually increasing student engagement and self-confidence.

The hesitation observed in the first session (67%) can be analyzed as a form of academic culture shock. Students who were accustomed to being passive recipients in lecture-based methods were suddenly required to become active participants, moving, discussing, and making decisions. This change in routine required an adaptation period. Observations showed that passive students generally came from groups that had not yet identified their own learning styles. However, the teacher's patient guidance in facilitating group dynamics successfully eased the awkward atmosphere, gradually reducing psychological barriers to participation.

The increase in activity in the second session is evidence that material personalization is key to motivation. When the "Preserving Nature" material was presented through waste-sorting simulations for kinesthetic learners, they did not feel they were "studying" in the cognitive sense, but rather "playing" in a meaningful way. Similarly, visual learners, who typically daydream during lectures, became highly focused when asked to identify environmental damage through images and videos. The alignment between teacher stimuli and student preferences triggered dopamine release, making the learning process enjoyable and far from boring.

The surge to 93% in the third session strongly correlates with the implementation of differentiated products. Allowing students to choose the form of their final task (poster, video, or essay) fostered a sense of ownership over their work. Students were not merely completing assignments to fulfill teacher requirements; they were expressing their identity and creativity. The drive to present the best version of themselves encouraged full participation, even from students who were usually the quietest in the class.

Beyond the individual aspect, differentiated learning also proved successful in developing social skills. In small groups, peer tutoring occurred naturally. Students who grasped concepts quickly were willing to help classmates struggling with understanding *dalil ayat*. This interaction created an inclusive and supportive classroom climate. No single voice dominated; all voices were heard, and all roles were valued. This aligns closely with the goals of Islamic Religious Education, which aims to cultivate the character of *ta'awun* (mutual help in goodness).

The high level of student activity (93%) is not just a statistical reflection of a busy classroom; it is a predictive indicator of cognitive success. According to active learning theory, the higher the student engagement—both mentally and physically—the deeper the information processing in the brain. This explains why the experimental class's posttest average reached 88.0. The high scores are the result of an intensive, participatory, and enjoyable learning process carried out over three sessions. High physical and mental activity during learning acts as a memory enhancer, ensuring the material remains well retained in students' long-term memory.

4.3 Assumption Tests for Analysis

Before conducting the hypothesis test, the pretest and posttest data were examined for normality and homogeneity to determine the appropriate type of statistical analysis.

4.3.1 Normality Test

The normality test was conducted using the Shapiro-Wilk technique with the assistance of Jamovi. The results were as follows:

Experimental Pretest: $p = 0.002$ (< 0.05)
Experimental Posttest: $p = 0.001$ (< 0.05)
Control Pretest: $p < 0.001$ (< 0.05)
Control Posttest: $p < 0.001$ (< 0.05)

Since all significance values (p) were less than 0.05, it was concluded that the data were not normally distributed. Nevertheless, considering the relatively large sample size ($N = 50$), parametric analyses (t-test and ANCOVA) could still be applied based on the Central Limit Theorem, which states that the sampling distribution of the mean approaches normality with a large sample size. Additionally, these tests are known to be robust against violations of the normality assumption.

The non-normal distribution in this study is understandable within the context of educational research, particularly when measuring learning outcomes. In the experimental posttest, the data were negatively skewed because most

students achieved high scores (above the Minimum Mastery Criteria/KKM) due to the effectiveness of the differentiated instruction. Conversely, in the pretest, scores tended to cluster at lower values. This asymmetrical distribution reflects the real conditions of heterogeneous student abilities, influenced by prior educational backgrounds (e.g., graduates from Islamic elementary schools vs. general elementary schools).

The decision to continue using parametric statistics is theoretically justified by the Central Limit Theorem. This theorem asserts that if the sample size is sufficiently large ($n > 30$), the sampling distribution of the mean will approximate a normal distribution, regardless of the population distribution. In this study, with a total sample of 50 students (25 experimental and 25 control), this condition was satisfied. Therefore, the assumption of raw data normality could be set aside since the t-test and ANCOVA focus on mean inference rather than individual score distribution.

Moreover, modern statistical literature (Norman, 2010; Knief & Forstmeier, 2021) consistently shows that parametric tests such as t-tests and ANOVA are highly robust. That is, they can still produce accurate p-values and maintain Type I error rates even when the normality assumption is violated, provided that the data variances are not extremely unequal and no extreme outliers exist. In this study, the standard deviations of both classes were relatively similar, meeting the robustness requirement.

The choice of parametric analysis over non-parametric alternatives (e.g., Mann-Whitney U test) is also based on statistical power considerations. Parametric tests are more sensitive in detecting true differences (effects) between groups. If a rank-based non-parametric test were used, information on the mean difference—which is a key indicator of the effectiveness of the differentiated learning model—would be lost or reduced. Therefore, to preserve the precision of treatment effect analysis, the parametric approach is considered more appropriate and representative.

In conclusion, the violation of the normality assumption in this dataset does not undermine the validity of the analysis. Using advanced software like Jamovi ensures the precision of statistical calculations. The subsequent hypothesis test results can be interpreted with confidence, knowing that the observed score differences are attributable to the impact of differentiated learning interventions rather than to statistical distortion due to inappropriate test selection. This methodological approach aligns with contemporary quantitative educational research practices, which prioritize substantive data from large samples over strict adherence to ideal bell-curve distributions.

4.3.2 Homogeneity Test

The homogeneity of variance test was conducted using Levene's Test. The results showed an F statistic of 0.260 with a p-value of 0.612. Since $p > 0.05$, it can be concluded that the variance of learning outcomes between the experimental and control classes is homogeneous. This meets the fundamental assumption for conducting inter-group comparisons.

Statistically, the significance value (p-value) of 0.612, which is well above the 0.05 threshold, indicates that the null hypothesis (H_0), stating that the variances of both groups are equal, is accepted. In other words, there is no significant difference in the variability or distribution of student scores between the two classes. This implies that prior to the treatment, the psychological and cognitive conditions of students in both the experimental and control classes exhibited similar levels of dispersion. No class contained students with "extremely mixed" abilities (very high achievers mixed with very low achievers) compared to the other class.

Meeting the homogeneity assumption is a crucial pillar in maintaining the internal validity of experimental research. If the data variances were not homogeneous, mean comparisons could be biased due to inherent differences in the score distributions. With homogeneous variances, comparisons are made "apples to apples." Both groups start from the same baseline variability, so any differences observed at the end of the study can be confidently attributed to the independent variable (the learning model) rather than to pre-existing differences in variance.

These results also serve as a "green light" for proceeding to the next stage of parametric inferential analysis, including the Independent Sample t-Test and ANCOVA. In parametric statistical procedures, equal variances (homogeneity of variance) are an essential prerequisite for accurate t-test calculations. With such a small F value (0.260), the stability of the standard error estimate is maintained. This minimizes the risk of Type I Error (concluding a difference exists when it does not) or Type II Error (concluding no difference exists when one actually exists) in the final conclusions.

Furthermore, homogeneity of variance reflects the quality of the sampling technique employed. It indicates that students selected for the experimental and control classes fairly represent the population of SMP Negeri 11 Palu. There is no clustering of high-achieving students in one class or concentration of struggling students in another. This representative and homogeneous sample condition strengthens the generalizability of the research findings, suggesting that the effectiveness of the differentiated learning model is likely applicable to other student populations with similar characteristics.

In methodological conclusion, passing the homogeneity assumption confirms the integrity of the research data. The researcher does not need to perform data transformation or switch to alternative non-parametric tests such as Welch's t-test, which is typically used when variances are unequal. Consistent variances provide a solid foundation, indicating that the test instruments were perceived to have relatively uniform difficulty across students of varying abilities in both classes, ensuring that the scores genuinely measure the cognitive competence of PAI learning outcomes.

4.4 Hypothesis Testing

This study proposes the hypothesis that the differentiated learning model has a significant effect on Islamic Religious Education (PAI) learning outcomes. Hypothesis testing was conducted using two statistical approaches.

4.4.1 Mean Difference Test (Independent Sample t-Test)

The t-test was used to examine the significance of the difference in posttest means. The Jamovi analysis results showed:

Calculated t-value: 18.6
Degrees of freedom (df): 48
Significance value (p): < 0.001
Mean Difference: 18.1

With a t-value (18.6) far exceeding the critical t-value (2.010) and $p < 0.05$, the Null Hypothesis (H_0) is convincingly rejected. This confirms a highly significant difference in learning outcomes between students taught using the differentiated model and those taught using the lecture method.

Statistically, a t-value of 18.6 is extraordinary. In social and educational research, t-values that exceed the table value typically range from 2 to 5. However, 18.6 indicates that the ratio between the group mean difference and the within-group variability (signal-to-noise ratio) is extremely large. This confirms that the observed score difference is not due to chance or random fluctuations but is a direct, powerful impact of the differentiated learning treatment. The teacher's intervention has drastically reshaped student performance.

The significance value ($p < 0.001$) indicates a statistical confidence level above 99.9%. In other words, the probability that this difference occurred by chance is almost zero. In research terms, this finding has a very high degree of certainty. It can be stated with strong confidence that if this study were replicated multiple times with the same

population under the same conditions, the differentiated learning model would consistently produce superior learning outcomes compared to conventional methods. This provides strong scientific legitimacy for schools to adopt this model.

The Mean Difference of 18.1 points has substantial practical implications. A difference of 18 points on a 0–100 scale is roughly equivalent to a jump of nearly two grade levels (e.g., from C to A, or from "Sufficient" to "Excellent"). This disparity shows that the gap in competence between students whose learning needs were addressed (experiment group) and students who were treated uniformly (control group) is very large. The lecture method leaves students nearly 20 points behind their maximum potential. This figure is not just statistical; it represents a much deeper mastery of environmental preservation concepts among students in the experimental class.

The magnitude of this difference also confirms the success of the differentiation strategy in handling classroom heterogeneity. The high t-value indicates that the increase in scores in the experimental class was uniform and collective, not driven by a few high-achieving students. By simultaneously accommodating visual, auditory, and kinesthetic learning styles, learning barriers that usually hinder student progress were eliminated. As a result, the performance curve of the experimental class shifted far to the right (higher scores), leaving the control class's curve behind and creating a statistically significant gap, as clearly recorded in this test.

In conclusion, the rejection of H_0 and acceptance of H_a (Alternative Hypothesis) is not only a statistical victory but also an academic achievement for the development of Islamic Religious Education. These data conclusively answer the research problem by demonstrating that the differentiated learning model has a positive and significant effect on PAI learning outcomes. The findings dispel doubts about the effectiveness of student-centered approaches and provide empirical evidence that respecting individual differences among students is the best path to achieving academic excellence.

4.4.2 Analysis of Covariance (ANCOVA)

To strengthen the t-test results and eliminate bias due to initial ability, an ANCOVA was conducted with pretest scores as a covariate.

Table 2. ANCOVA Test Results

ANCOVA POSTTES	Sum Of Squares	df	Mean Square	F	P	Ш²
Metode	3980	1	3979.9	388.1	<.00.1	0.856
Pretes	166	1	166.2	16.2	<.00.1	0.034
Residuals	482	47	10.3			

The table above indicates that the variable **"Learning Method"** has a very large F-value (388.1) with a p-value < 0.001. This confirms that, after controlling for initial ability (pretest scores), the differentiated learning model exerts a very strong effect on students' learning achievement.

4.5. Discussion

The findings of this study provide strong empirical evidence that the differentiated learning model is superior to conventional methods in improving PAI learning outcomes. The discussion of these findings can be elaborated from three main perspectives: the effectiveness of differentiation strategies, comparison with the lecture method, and theoretical implications.

4.5.1. Effectiveness of Differentiation Strategies in Accommodating Learning Styles

The significant increase in learning outcomes in the experimental class (average score 88.0) can be attributed to the teacher's successful implementation of differentiated content and processes. According to Tomlinson's theory, when students learn in line with their readiness and interests, learning barriers can be minimized. During the "Preserving Nature" lesson, visual learners benefited from infographics and videos illustrating environmental damage, which helped them visualize abstract concepts more concretely. Auditory learners gained deeper understanding through discussions and oral explanations, while kinesthetic learners, who often struggle to sit still during lectures, were engaged through hands-on project activities. This personalization accelerated information absorption and promoted long-term memory retention.

Observation data during the study showed that differentiation in the "Qur'anic Inspiration: Preserving Nature" lesson had a tangible impact. For visual learners, the teacher used documentary videos on deforestation and ocean pollution, effectively helping them grasp the contextual meaning of Q.S. Ar-Rum verse 41. Students who had previously struggled to imagine abstract concepts of land and sea damage became highly enthusiastic and were able to explain the material in detail after seeing the visualizations.

Auditory learners' needs were met through group discussions and oral explanations. The teacher provided recitations of relevant environmental verses and facilitated Focus Group Discussions to dissect the content. This approach allowed auditory learners to process information through listening and verbalization, their primary strengths, resulting in better comprehension and fluency in explaining verses compared to simply reading textbooks silently.

The strategy was most prominent for kinesthetic learners. In conventional methods, they are often seen as unfocused due to difficulty sitting still. In this study, their energy was channelled through physically relevant activities such as sorting organic and inorganic waste and creating environmental campaign posters. Hands-on engagement made the learning experience concrete, which was a key factor in achieving the experimental class's posttest average of 88.0, as every student accessed the lesson material through the "doorway" that matched their cognitive style.

4.5.2. Limitations of the Lecture Method for Generation Z

The low learning outcomes in the control class (average of 69.5) underscore that a one-way lecture method is increasingly irrelevant for Generation Z students, who prefer interactive and visual learning. In the control class, students were forced to receive information in the same way, regardless of comprehension. Observations revealed many students appeared passive, bored, and some even sleepy. This aligns with Mudzakkir (2024), who noted that non-varied teaching can increase frustration and reduce student motivation.

Statistically, the 18.5-point difference between the experimental and control classes represents "lost potential." In the teacher-centered control class, the teacher dominates as the sole source of information, narrowing the channels of information. Visual and kinesthetic learners are forced to function auditorily during lessons. This mismatch between teaching methods and natural learning styles is a primary cause of a less deep understanding of environmental preservation concepts.

Psychologically, modern middle school students are digital natives accustomed to rapid and interactive visual information. Forcing them into prolonged lectures creates a gap in stimulation. Their brains, used to active multimedia processing, suddenly become passive listeners, reducing attention span after the first 10–15 minutes. Observed sleepiness or daydreaming is the brain's defense against boredom from insufficient stimulus variation.

Other drawbacks of lecture dominance include limited opportunities to develop 21st-century skills (4Cs: Critical Thinking, Creativity, Collaboration, Communication). In the control class, interaction was one-way and rigid. Students

rarely discussed with peers or solved problems collaboratively. PAI material on the environment requires dialectics and idea exchange to achieve contextual understanding of religious values. Without differentiated processes such as group discussions, students miss opportunities to develop social and critical-thinking skills.

Specifically, for "Qur'anic Inspiration: Preserving Nature," lectures failed to evoke emotional urgency. Teacher explanations of environmental damage (fasad) only reached surface-level cognition; students understood the verses' meaning but did not feel the impact. Without real visuals or projects, the moral message feels distant and abstract. Control class students often treat the material as rote memorization for grades, rather than a moral call to act in preserving the environment—the essence of PAI learning objectives.

These findings serve as constructive criticism for conventional PAI practices. Maintaining lecture-only instruction ignores student diversity. Teaching all students in the same way results in educational inequity. Therefore, shifting from a uniform teaching paradigm to differentiated learning is not merely an alternative but an urgent necessity to preserve the interest and learning outcomes of future generations.

4.5.3. Relevance to Theory and Previous Research

This study reinforces findings by Laia et al. (2022) and Kamal (2022), who also reported positive effects of differentiation on learning outcomes. However, this study adds value by proving that differentiation is effective not only in STEM subjects (Physics/Math) but also in value-based subjects like PAI. Differentiated learning in PAI allows internalization of religious values to be more personal and meaningful. Beyond cognitive aspects, the increase in student activity scores to 93% (Very Good) shows positive affective impact. Students felt valued and included, as teachers addressed their unique needs, creating a positive, safe, and supportive learning environment—a prerequisite for effective learning.

Theoretically, this success validates Lev Vygotsky's social constructivism, particularly the Zone of Proximal Development (ZPD). Differentiated content and process ensured students learned at an appropriate challenge level—not too easy, not too hard. Teachers provided scaffolding tailored to readiness, enabling students to overcome cognitive barriers and construct understanding of Qur'anic verses on the environment through methods matching their learning styles: visual, auditory, or kinesthetic.

Increased learning comfort also aligns with Abraham Maslow's hierarchy of needs. Before students can achieve self-actualization (high academic performance), basic needs for safety and social acceptance must be met. Differentiated learning implicitly conveys that every student is valuable and differences are accepted. Meeting these psychological needs reduces academic stress, placing students' brains in optimal conditions (relaxed alertness) for absorbing information, as reflected in high levels of active participation.

Nationally, these findings manifest Ki Hajar Dewantara's philosophy of child-centered education. Differentiation guides every innate potential of the child—natural and temporal—toward safety and happiness. By not enforcing a uniform approach to learning, teachers respect each student's unique disposition. This demonstrates that modern PAI can coexist with Indonesia's humanistic and liberating educational wisdom.

The novelty of this study lies in proving that differentiation transforms PAI from mere knowledge transfer into value transfer. Traditionally seen as rote memorization, PAI becomes an avenue for students to express religiosity creatively. By creating environmental campaign posters or da'wah videos, students train as agents of change. This confirms that interest-based learning deepens the internalization of spiritual values, as reflected in real-life behavior.
Finally, the high student activity rate (93%) confirms the Student Agency theory. Differentiated learning grants students autonomy to decide how to learn and demonstrate their understanding. The shift from passive to active learner is crucial.

This study shows that responsible freedom increases student accountability, countering concerns that choice leads to disorder; instead, responsible freedom fosters positive discipline and remarkable achievement.

5. Conclusion

Based on the in-depth data analysis and discussion presented, this study produces several key conclusions:
First, the implementation of the differentiated learning model has been empirically shown to significantly improve students' learning outcomes in Islamic Religious Education (PAI) at SMP Negeri 11 Palu. This is evidenced by the notable difference in posttest average scores: the experimental class achieved an average of 88.0, while the control class reached only 69.5. The substantial point difference indicates that the intervention using a differentiation approach is far more effective than conventional methods.

Second, the hypothesis testing results using the Independent Sample t-Test and Analysis of Covariance (ANCOVA) consistently show p-values < 0.001 (smaller than the 0.05 significance level). These statistical findings confirm that the increase in learning outcomes in the experimental class is not due to chance but rather to the direct impact of the differentiated learning model implemented. Even after controlling for students' initial abilities through ANCOVA, the differentiated model remains the main determinant of students' learning success.

Third, differentiated learning not only affects cognitive aspects but also successfully creates an inclusive and enjoyable learning environment. The increase in student activity from the "Good" category to "Very Good" during the study indicates that students are more motivated and engaged when the learning content and methods are tailored to their unique needs (visual, auditory, kinesthetic).

As a recommendation, PAI teachers are encouraged to move away from the "one-size-fits-all" paradigm and adopt more adaptive strategies such as differentiated learning. Although this approach requires more thorough preparation for mapping student profiles and designing materials, the outcomes are commensurate with the enhanced understanding and enthusiasm demonstrated by the students.

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