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## A Community-Based Differentiated Arabic Learning Model within Indonesia's Merdeka Curriculum: Empirical Evidence from Islamic Primary Education

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### المستخلص

يهدف هذا البحث إلى تحليل فاعلية نموذج التعلم القائم على المجتمع والتمايز في تعليم اللغة العربية (CBDALM) ضمن إطار منهج الاستقلال في تنمية مهارتي القراءة والكتابة لدى طلاب المرحلة الابتدائية، في ظل محدودية تطبيق التمايز التعليمي والتعلم القائم على المشروعات في هذا السياق. اعتمد البحث على منهج مختلط بتصميم شبه تجريبي قائم على الاختبار القبلي والبعدي مع مجموعة ضابطة، وشملت العينة طلاباً من بيئة تعليمية إسلامية. أظهرت النتائج وجود فروق ذات دلالة إحصائية لصالح المجموعة التجريبية في مهارتي القراءة والكتابة، مع حجم أثر كبير، إضافة إلى تحسن ملحوظ في تفاعل الطلاب من خلال الأنشطة التعليمية التفاعلية والسياقية. وتتمثل إسهامات البحث في تقديم نموذج تعليمي تكاملي يجمع بين التمايز والتعلم القائم على المشروعات في سياق تعليمي إسلامي >

الكلمات المفتاحية: التمايز التعليمي؛ التعلم القائم على المجتمع؛ التعلم القائم على المشروعات؛ تعليم اللغة العربية؛ تفاعل الطلاب

### Abstract

*This study aims to analyze the effectiveness of the Community-Based and Differentiated Arabic Language Learning Model (CBDALM) within the framework of the Merdeka Curriculum in developing reading and writing skills among elementary school students, particularly in light of the limited implementation of differentiated instruction and project-based learning in this context. The study employed a mixed-method approach using a quasi-experimental design with pre-test and post-test control groups. The sample consisted of elementary students in an Islamic educational setting. The results revealed statistically significant differences in favor of the experimental group in both reading and writing skills, with a large effect size. In addition, there was a noticeable improvement in student engagement through interactive and contextual learning activities. The study contributes by proposing an integrative instructional model that combines differentiated instruction and project-based learning within an Islamic educational context.*

**Keywords:** differentiated instruction; community-based learning; project-based learning; Arabic language teaching; student engagement

## Introduction

The growing demand for student-centered and inclusive education has driven major reforms in educational systems worldwide, emphasizing flexibility, differentiation, and contextualized learning. Within this paradigm, differentiated instruction has gained prominence as an effective approach to addressing learners' diverse needs through the adaptation of content, process, and product (Tomlinson, 2014). In parallel, project-based learning (PBL) has been widely recognized for fostering active engagement, critical thinking, and problem-solving skills through authentic learning experiences (Thomas, 2000; Bell, 2010). Both approaches are closely aligned with the development of 21st-century competencies (Prince, 2004).

Despite these advancements, the application of innovative and adaptive instructional approaches in Arabic language education remains limited. Arabic language teaching is still largely characterized by teacher-centered practices, with a strong focus on grammar instruction and memorization, which may restrict students' communicative competence and active engagement (Richards & Rodgers, 2014).

This challenge is particularly evident in non-Arabic-speaking contexts, where learners often face limited exposure, low motivation, and insufficient pedagogical support (Nation, 2009). In response to global educational trends, the Indonesian government has introduced the *Merdeka* Curriculum, which promotes learner autonomy, differentiated instruction, and contextual learning. Although its conceptual foundations

have been widely discussed, empirical evidence regarding its implementation in specific subject areas particularly Arabic language education remains scarce.

Previous research has demonstrated the effectiveness of differentiated instruction in enhancing student engagement and learning outcomes (Tomlinson & Imbeau, 2010), as well as the positive impact of PBL on language learning through real-world, meaningful tasks (Beckett & Slater, 2005). However, studies integrating both approaches within a unified instructional model for Arabic language learning are still very limited. Furthermore, there is a notable lack of research conducted in Islamic primary education contexts, which represent a unique and underexplored educational setting. To address these gaps, this study proposes the Community-Based Differentiated Arabic Language Learning Model (CBDALM), implemented within the framework of the *Merdeka* Curriculum.

This model integrates differentiated instruction, project-based learning, and community-based learning to create a more contextual, flexible, and student-centered learning environment. Accordingly, this study aims to examine the effectiveness of CBDALM in improving students' reading and writing skills, as well as their engagement in Arabic language learning.

The research questions are as follows: (1) What is the impact of the implementation of CBDALM on students' reading and writing skills? (2) To what extent does the model enhance students' engagement in Arabic language learning? (3) How do teachers perceive the implementation of differentiated instruction within the *Merdeka* Curriculum framework?

This study contributes to the existing literature in several ways. First, it extends the application of differentiated

instruction and PBL within the context of Arabic language education, which remains underrepresented in international research.

Second, it proposes an integrative instructional model that aligns curriculum reform with community-based learning practices. Third, it provides empirical insights from an Islamic primary education context, offering valuable implications for educators and policymakers seeking to develop more inclusive and context-responsive learning environments.

### **Method**

This study employed a mixed-methods approach to comprehensively evaluate the effectiveness of the Community-Based Differentiated Arabic Language Learning Model (CBDALM), combining quantitative and qualitative data to provide a more holistic understanding of both learning outcomes and classroom processes (Creswell & Creswell, 2018).

A quasi-experimental design with a pretest–posttest control group was used to examine the causal impact of the model on students' learning outcomes. This design is commonly applied in educational research when group comparison is required but random assignment is not feasible (Shadish et al., 2002). The study was conducted in Islamic primary schools in Indonesia, where Arabic is taught as part of religious education. Participants were selected through purposive sampling based on their relevance to the research objectives (Etikan et al., 2016). The sample consisted of two groups with comparable proficiency levels: an experimental group that received

instruction using CBDALM and a control group that was taught using conventional teacher-centered methods.

The intervention was implemented over several instructional sessions. In the experimental group, learning activities were designed based on three integrated components: differentiated instruction, project-based learning, and community-based learning. Instruction was adapted to students' readiness, learning preferences, and interests. Students engaged in project-based activities, such as constructing simple Arabic texts related to real-life contexts, to enhance meaningful language use. Additionally, learning was connected to students' social and cultural environments to increase contextual relevance. In contrast, the control group received traditional instruction focusing on grammar explanation and textbook-based exercises.

Multiple instruments were used to ensure data validity and reliability. Reading and writing tests were administered to assess students' comprehension and written production skills. A student engagement questionnaire, adapted from established frameworks, was used to measure behavioral and emotional engagement (Fredricks et al., 2004). Classroom observations were also conducted using an observation checklist to document instructional practices and student participation.

Data collection was carried out in three stages: pretest administration to establish baseline competencies, implementation of the intervention, and posttest administration to measure learning gains. Quantitative data were analyzed using descriptive and inferential statistics. Learning improvement was measured using N-Gain analysis (Hake, 1999), while an independent samples t-test was conducted to determine differences

between groups. Effect size (Cohen's *d*) was calculated to evaluate the magnitude of the treatment effect (Cohen, 1988). Assumptions of normality and homogeneity were tested prior to analysis to ensure statistical validity (Field, 2013).

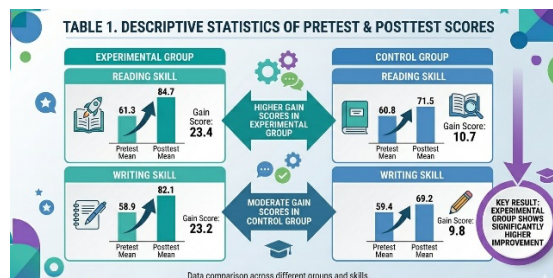
Qualitative data were analyzed using thematic analysis to identify patterns related to student engagement and instructional processes (Braun & Clarke, 2006), providing deeper insights that complemented the quantitative findings.

Ethical considerations were addressed by ensuring informed consent, confidentiality, and voluntary participation throughout the study.

## Results and Discussion

### 1. Descriptive Statistics

Table 1. Descriptive Statistics of Pretest and Posttest Scores

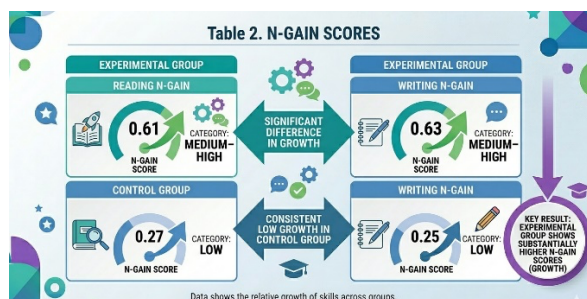


The descriptive results indicate a substantial improvement in both reading and writing skills among students in the experimental group compared to the control group. While both groups showed progress, the gain scores in the experimental group were more than double those of the control group. This suggests that the CBDALM intervention provides a stronger learning impact, particularly in

enhancing productive (writing) and receptive (reading) language skills.

### 2. N-Gain Analysis

Table 2. N-Gain Scores



N-Gain analysis revealed that the experimental group attained a level of moderate to high effectiveness, while the control group remained in the low effectiveness category.

The result confirms that differentiated instruction and project-based learning, when integrated, improve learning effectiveness significantly, a notion supported by previous studies (Hake, 1999; Zhang & Zou, 2024).

### 3. Hypothesis Testing (T-Test)

Table 3. Independent Sample T-Test Results

Variable	t-value	Sig. (2-tailed)	Result
Reading	5.87	0.000	Significant
Writing	6.12	0.000	Significant

The independent sample t-test results indicate that both reading and writing skills show statistically significant differences between the experimental and control groups ( $p < 0.05$ ). This confirms that the intervention had a meaningful impact on students' Arabic language performance.

### 4. Effect Size (Cohen's *d*)

Table 4. Effect Size Analysis

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Skill	Cohen's <i>d</i>	Interpretation
Reading	1.02	Large effect
Writing	1.08	Large effect

The effect size values indicate a large practical impact of the intervention (Cohen, 1988). This suggests that the CBDALM model is not only statistically significant but also educationally meaningful

### Discussion

The findings of this study indicate that the implementation of the Community-Based Differentiated Arabic Language Learning Model (CBDALM) significantly improves students' reading and writing skills. The descriptive statistics show that although both groups improved, the experimental group demonstrated substantially higher gains. This suggests that integrating differentiated instruction with contextual and project-based approaches creates a more effective learning environment than conventional teacher-centered instruction. This result can be explained through the lens of differentiated instruction theory, which emphasizes responsiveness to learners' variability in readiness, interests, and learning profiles (Smale-Jacobse et al., 2019).

When instruction is adapted to individual learner differences, students are more likely to engage cognitively and achieve better learning outcomes. In the context of language learning, such adaptability is particularly important, as learners differ widely in linguistic background and exposure. The N-Gain results

further confirm that the experimental group achieved moderate to high effectiveness, while the control group remained at a low level. This supports the effectiveness of integrating project-based learning (PBL), which has been widely recognized as a means of enhancing deep learning and learner autonomy. According to Krajcik and Blumenfeld (2006), PBL encourages students to actively construct knowledge through inquiry and authentic tasks. In language education, this approach enables learners to use the target language meaningfully, thereby improving both receptive and productive skills. Recent studies have also shown that PBL enhances language proficiency and engagement, particularly when tasks are connected to real-life contexts (Chen & Yang, 2019).

The statistically significant results of the independent samples t-test ( $p < 0.05$ ) indicate that the observed differences are attributable to the CBDALM intervention. This aligns with broader findings in educational research that student-centered and active learning approaches consistently yield better outcomes than traditional methods (Freeman et al., 2014).

In particular, active engagement in learning tasks has been shown to improve both comprehension and retention. Moreover, the large effect size demonstrates that the intervention has strong practical significance. This finding reinforces the argument that combining multiple pedagogical approaches rather than relying on a single method can produce a synergistic effect on learning outcomes. The integrative nature of CBDALM allows it to address multiple dimensions of learning simultaneously, including cognitive, social, and contextual aspects. Another key finding is the improvement in student engagement, which can be attributed to the incorporation of community-based

learning. By connecting classroom instruction to students' lived experiences and social environments, learning becomes more meaningful and relevant.

This is consistent with sociocultural theory, which highlights the role of social interaction and context in shaping learning processes (Lantolf & Thorne, 2006). Furthermore, contextualized learning environments have been found to increase motivation and participation, particularly in foreign language learning settings (Derakhshan et al., 2024). In sum, the effectiveness of CBDALM lies in its holistic and integrative design. By combining differentiated instruction, project-based learning, and community-based approaches, the model addresses key limitations of traditional Arabic language teaching. These findings contribute to the growing body of research advocating for innovative, learner-centered pedagogies, particularly in underexplored contexts such as Islamic primary education.

## **Conclusion**

This study examined the effectiveness of the Community-Based Differentiated Arabic Language Learning Model (CBDALM) within the framework of the Merdeka Curriculum, with a particular focus on improving students' Arabic reading and writing skills. The findings demonstrate that the integration of differentiated instruction, project-based learning, and community-based learning significantly enhances both cognitive and affective learning outcomes.

Statistical analysis revealed significant differences between the

experimental and control groups, accompanied by a large effect size, indicating substantial practical significance. Students who participated in the CBDALM intervention showed notable improvements in reading and writing skills compared to those who experienced conventional instruction. These results confirm that adaptive and contextually grounded instructional approaches can create more engaging and effective language learning environments.

From a theoretical perspective, this study contributes to the expansion of differentiated instruction within the field of Arabic language education, which remains underexplored in international research. It also enriches the literature by demonstrating how differentiated instruction and project-based learning can be integrated within a curriculum reform framework, particularly in non-Western and Islamic educational contexts. Furthermore, the study highlights the role of community-based learning as a meaningful dimension in enhancing language acquisition.

Practically, the findings suggest that teachers should adopt flexible instructional strategies that accommodate diverse learner needs, integrate project-based activities connected to real-life contexts, and foster interactive and collaborative classroom environments. The incorporation of community-based contexts further enhances the relevance and authenticity of learning. For policymakers, this study provides empirical support for the implementation of the Merdeka Curriculum through structured and integrative pedagogical models such as CBDALM. It also underscores the importance of supporting teachers through professional development, strengthening curriculum design for project-based learning, and

promoting institutional frameworks that enable contextual and student-centered learning.

Despite its contributions, this study has several limitations. It was conducted in a limited number of Islamic primary schools, which may affect the generalizability of the findings. The focus was restricted to reading and writing skills, without addressing other important language competencies such as speaking and listening. In addition, the duration of the intervention was relatively short, limiting insights into long-term learning effects. Although a mixed-methods approach was employed, the qualitative component remained limited in depth.

Future research is therefore recommended to explore the application of this model across broader educational contexts, include all language skills, and adopt longitudinal designs to examine long-term impacts. Deeper qualitative investigations are also needed to better understand the dynamics of classroom interaction and learner experiences within this model.

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