At Turots: Jurnal Pendidikan Islam
Vol. 7, No. 1, Juni 2025, pp. 874-882
Print ISSN : 2656-7555|| Online ISSN : 2774-089X
http://journal.stitmadani.ac.id/index.php/JPI/index

Differentiated Instruction Strategies to Enhance Critical Thinking Skills of Elementary Students in Cianjur Regency

Ai Nurhaeti[a,1*], R. Supyan Sauri[b,2], Ifah Khadijah[c,3]

[a,b,c]Universitas Islam Nusantara, Bandung, Indonesia
[1,2,3]ainurhaeti@uninus.ac.id, uyunsupyan@uninus.ac.id, ifahkhadijah@uninus.ac.id
*Correspondent Author

Received: 05-03-2025 *Revised: 14-04-2025* *Accepted: 23-06-2025*

KEYWORDS

Differentiated Instruction, Critical Thinking, Elementary School.

ABSTRACT

This study aims to analyze the contribution of differentiated instruction strategies in enhancing the critical thinking skills of elementary school students. Utilizing a qualitative approach with an intrinsic case study design, the research was conducted at SDN Jatinagara and SDN Bojongkadu, Cianjur Regency. The primary focus of the study encompasses three components of differentiated instruction: content, process, and product/assessment. Data collection techniques involved participatory observation, semi-structured interviews with teachers and students, and documentation of student assignments and critical thinking assessment rubrics. The results indicate that learning content tailored to students' readiness and interests increases engagement and explorative abilities. A learning process based on discussions and open-ended tasks encourages students to analyze, construct arguments, and evaluate alternative solutions. Assessments utilizing critical thinking rubrics and adaptive formats allow for a fair and valid evaluation of the thinking abilities of students from diverse backgrounds. Data triangulation strengthens the validity of the findings, and the calibration process among teachers demonstrates high reliability in applying the instruments. This study suggests strengthening teacher training and developing critical thinking evaluation systems in elementary schools based on differentiated instruction.

Introduction

Imagine an elementary school classroom where each student does not merely memorize information, but actively engages in examining evidence, constructing arguments, and solving authentic problems through a tailored learning approach. In the context of 21st-century education, critical thinking is an essential competency that serves as the foundation for relevant and sustainable learning (Patras et al., 2019; Walsh et al., 2019). However, the reality in many elementary schools shows the dominance of traditional learning models oriented towards memorization and linear procedures, thus providing little room for students to construct meaning, evaluate information, and make independent decisions. Differentiated

 ISSN 2747-089X

Instruction (DI) emerges as a pedagogical approach responsive to the individual diversity of students through adjustments in content, process, and assessment based on students' learning readiness, interests, and learning profiles (Bobis & others, 2021). Current literature states that planned learning strategies through a variety of tasks and learning resources can increase engagement, strengthen learning autonomy, and significantly support the development of critical thinking skills at the elementary school level (Sulastri et al., 2024).

A rather surprising phenomenon is that most learning practices in elementary classrooms still do not provide explicit space for students to test hypotheses, critique assumptions, or systematically construct arguments in a meaningful context. Differentiated instruction, according to various empirical studies, is an effective approach in dealing with classroom heterogeneity because it provides various ways to access materials, process information, and evaluate understanding through varied and fair assessment mechanisms (Pozas et al., 2019). Studies developing DI models through a Realistic Mathematics Education (RME) approach found significant improvements in students' critical thinking indicators, as reflected in the N-gain acquisition in elementary mathematics (Alim et al., 2025; Sulastri et al., 2024). Furthermore, other studies show that integrating manipulative teaching aids such as LEGO in basic geometry learning can significantly increase students' motivation, engagement, and problem-solving abilities.

Support for the effectiveness of differentiated instruction is reinforced by empirical data showing that task designs tailored to student learning profiles, the use of diverse learning resources, and providing opportunities for collaboration can develop analytical, evaluative, and creative thinking dimensions (Özdemir & Işıksal-Bostan, 2021). For example, in mathematics learning, adjusting content and tasks based on student interests and readiness has been proven to improve critical thinking skills, with an N-gain of 61.08% in RME-based experiments . All these findings indicate that differentiated instruction, when implemented through proper design, can be a promising strategy for fostering critical thinking competencies within the 21st-century curriculum framework (Anwar & Umam, 2020).

Expert views reinforce the urgency of systematically implementing DI rather than sporadically. Bobis & others (2021) emphasize the importance of "instructional moves" that give students the space to choose learning strategies and explore solutions through open-ended tasks with varying levels of difficulty. This principle allows the formation of a learning culture that facilitates autonomy and reflective thinking. Furthermore, effective DI must apply a tiered instruction approach and tasks that have a low-floor but high-ceiling potential. In addition, Problem-Based Learning (PBL) combined with DI principles has been proven to improve the quality of students' critical thinking through explorative and reflective processes (Anwar et al., 2025). Evaluations of these approaches show that DI not only improves conceptual understanding but also strengthens higher-order thinking capacity through task designs based on Bloom's taxonomy and standardized assessment. Based on this discourse, this study positions DI as the primary conceptual framework to explore the enhancement of elementary students' critical thinking in Cianjur Regency.

Globally, the literature on DI is growing alongside the increasing awareness of the importance of responding to student diversity in inclusive and transformative learning contexts. Studies show that differentiated instruction can increase engagement, learning independence, and higher-order thinking, especially when materials, processes, and evaluations are adjusted to student readiness. In mathematics, the use of manipulatives like LEGO and open task designs has been proven to strengthen conceptual understanding and logical and creative thinking skills (Cueva & Susada, 2024; Padmore & others, 2023). However, the literature also reveals that successful DI implementation depends on various contextual factors, such as teacher readiness, time and facility support, and task design quality (Bayram et al., 2019; El-Asri & Karfa, 2024; Pozas et al., 2019). Therefore, task planning that integrates analysis, synthesis, and evaluation based on Bloom's taxonomy needs to be combined with assessment mechanisms that allow for reflective feedback.

In Indonesia, most studies on DI are focused on secondary and higher education levels, while studies in the elementary school context are still relatively limited (Ottay & Rocmah,

 ISSN 2747-089X

2025). This article is positioned to fill this gap by conducting an in-depth study of DI implementation across three main domains—content, process, and assessment—to enhance critical thinking in two elementary schools in Cianjur Regency.

Method

This study employed a qualitative approach with an intrinsic case study design to explore the implementation of differentiated instruction strategies in enhancing elementary students' critical thinking. The study was conducted at two public elementary schools in Cianjur Regency, namely SDN Jatinagara and SDN Bojongkadu, which were selected purposively based on student characteristic diversity and teachers' commitment to implementing learning innovations. The study focuses on three main components of learning differentiation: content preparation, learning process, and assessment.

The research subjects consisted of Grade IV and V teachers and students in both schools. Data collection techniques included participatory observation, semi-structured interviews, and documentation. Observations were conducted to observe differentiated teaching practices and student responses. Interviews were conducted with teachers to gain an in-depth understanding of instructional planning, implementation, and evaluation. Documentation included the analysis of lesson plans (RPP), assignment sheets, and critical thinking assessment rubrics. Data validity was ensured through source and technique triangulation, member checking, and an audit trail. Data analysis was conducted thematically through data reduction, data display, and conclusion drawing.

Results and Discussion

Results

1. Implementation of Differentiated Content and Its Relation to Students' Critical Thinking

The implementation of differentiated content at SDN Jatinagara and SDN Bojongkadu served as the crucial first step in cultivating an environment conducive to critical thinking. Prior to implementing this strategy, both schools predominantly relied on standardized textbooks, which often alienated students whose academic readiness or learning styles did not align with conventional textual delivery. The intervention began with comprehensive diagnostic assessments conducted at the beginning of the semester. Teachers mapped students based on three primary metrics: cognitive readiness, personal interests, and learning profiles (visual, auditory, kinesthetic). This data driven approach allowed teachers to curate diverse learning materials that provided multiple entry points to the same core competencies.

In practice, differentiated content manifested through the simultaneous use of varied instructional media. For instance, during a science unit on ecosystems in Grade V at SDN Jatinagara, the teacher provided three distinct types of content delivery. Students with a strong visual preference accessed richly illustrated infographics and short documentary clips on tablets. Kinesthetic learners were provided with manipulative materials, including physical models of flora and fauna and LEGO blocks, to physically construct food webs. Meanwhile, auditory learners engaged with interactive story-based podcasts followed by guided peer discussions. This tailored approach dramatically reduced cognitive overload for lower-readiness students while maintaining engagement for advanced learners.

The correlation between this differentiated content and the emergence of critical thinking was highly observable. When students accessed information through a medium that resonated with their learning profile, their cognitive energy shifted from merely decoding the material to analyzing it. A Grade V teacher at SDN Jatinagara noted a profound shift in classroom dynamics:

> "Before, my lower-achieving students were passive consumers. They spent all their energy just trying to read the text. Once I provided the ecosystem material through an interactive visual map, those same students suddenly started asking 'what if' questions. They asked, 'What if this predator goes extinct? Won't the whole web collapse?' That level of analytical thinking was entirely absent when we only used textbooks."

 ISSN 2747-089X

Furthermore, the implementation of "low-floor, high-ceiling" tasks proved instrumental. In a mathematics class at SDN Bojongkadu focusing on geometry and area, students were given a uniform foundational task (the 'low floor'): determining the area of a standard rectangular garden. However, the differentiated content provided 'high ceiling' extensions based on readiness. Advanced students received complex architectural blueprints with irregular shapes and were asked to calculate the optimal use of space given specific constraints, requiring synthesis and evaluation. Lower-readiness students used grid paper and manipulatives to physically count square units, grounding abstract concepts in concrete reality. Because all students were working on the same overarching theme but interacting with materials suited to their levels, the entire class could participate in the subsequent plenary discussion.

The use of manipulative materials, particularly in mathematics, acted as a powerful catalyst for critical thinking. It moved students away from memorizing formulas to understanding the underlying logic. A teacher at SDN Bojongkadu shared a specific observation regarding fractions: "Normally, fractions are a nightmare to teach. But when we differentiated the content using fraction circles, LEGO bricks, and contextual story problems about sharing local Cianjur snacks, the abstraction disappeared. I observed a student who previously failed math tests physically manipulate the blocks to prove to his peer that $2/4$ is exactly equivalent to $1/2$. He didn't just know the answer; he could physically demonstrate the evidence. That is the essence of critical thinking: providing evidence for a claim."

Despite these pedagogical victories, the transition to differentiated content presented substantial administrative and logistical challenges. Teachers in both schools reported a significant increase in their preparatory workload. Sourcing, creating, and organizing three to four different sets of materials for a single lesson required immense dedication. Additionally, the limited availability of technological devices meant that digital content had to be managed through careful rotation schedules. However, the teachers unanimously agreed that the qualitative shift in student engagement and the visible emergence of analytical questioning justified the rigorous preparation. The differentiated content essentially leveled the playing field, ensuring that every student had the necessary cognitive tools to participate in critical discourse.

2. Differentiated Learning Process in Encouraging Student Analysis and Argumentation

While differentiated content provided the necessary cognitive tools, the differentiated learning process was the engine that actively drove student analysis and argumentation. The instructional process at SDN Jatinagara and SDN Bojongkadu was entirely restructured from a traditional teacher-centered transmission model to a dynamic, student-centered, and dialogic framework. This restructuring heavily relied on strategic "instructional moves," including fluid grouping, scaffolding, Socratic questioning, and the facilitation of structured debates.

The core of the differentiated process lay in how students interacted with the material and with each other. Teachers deliberately utilized fluid grouping strategies—sometimes grouping students homogeneously by readiness to provide targeted scaffolding, and other times heterogeneously to foster peer tutoring and diverse perspectives. During heterogeneous grouping, the learning process focused heavily on collaborative problem-solving. For example, during a social studies lesson on local environmental issues in Cianjur, students were tasked with proposing solutions for community waste management. The process was differentiated by the level of scaffolding provided. Some groups received guided question prompts to help structure their analysis, while advanced groups were given open-ended mandates requiring independent research and hypothesis generation.

The most significant outcome of this differentiated process was the dramatic improvement in students' argumentation skills. By removing the pressure of finding one single "correct" answer and instead emphasizing the process of reasoning, students felt psychologically safe to take intellectual risks. Teachers acted as cognitive coaches, utilizing Socratic questioning to push students deeper. Instead of correcting a wrong answer, teachers

 ISSN 2747-089X

routinely asked, "What evidence led you to that conclusion?" or "Can anyone offer a counter-argument to what Budi just proposed?" This pedagogical shift forced students to articulate their logic. The Grade V teacher at SDN Bojongkadu provided a compelling vignette:

> "We were discussing the impact of deforestation. In a heterogeneous group, one student argued that cutting trees is necessary for the economy. A few months ago, the other students would have just accepted it or waited for me to correct him. Instead, a student from a lower-readiness group—who had been studying the visual data of landslides in our region—raised his hand and said, 'I disagree. The money from the wood doesn't pay for the destroyed houses when the flood comes.' He used the data he learned to dismantle a peer's argument logically and respectfully. It was a breakthrough moment."

Furthermore, the differentiated process explicitly taught students the framework of Claim, Evidence, and Reasoning (CER), adapted for the elementary level. Students were not allowed to merely state opinions; they were required to back them up. In a science class at SDN Jatinagara comparing the properties of different materials, the process required students to physically test the materials (e.g., flexibility, strength) before drawing conclusions. When groups presented their findings, the teacher structured a "gallery walk" where students engaged in peer critique. They were taught how to ask probing questions such as, "Did you test that material under the same conditions as the others?"

This active, dialogic process directly cultivated analytical thinking. However, managing this dynamic environment required high-level pedagogical skills. Teachers admitted that managing the noise levels, keeping off-task behavior in check during independent group work, and ensuring that extroverted or high-achieving students did not dominate the conversations were constant challenges. To mitigate this, teachers implemented "talking tokens" to ensure equitable participation and assigned specific roles within groups (e.g., evidence checker, summarizer, devil's advocate).

The observational data confirmed that when the learning process is differentiated to allow for varying paces of understanding and multiple avenues for expression, students develop a robust capacity for critical analysis. They transition from passive recipients of facts to active investigators who understand that knowledge is constructed through inquiry, evidence gathering, and rigorous, respectful debate.

3. Differentiated Assessment in Measuring Critical Thinking Outcomes Fairly and Validly

The culmination of differentiated instruction at SDN Jatinagara and SDN Bojongkadu was the implementation of Differentiated Assessment (Penilaian Terdiferensiasi or PTD). Recognizing that standardized, multiple-choice testing inherently contradicts the principles of differentiated learning and often fails to capture higher-order thinking, the schools adopted a multi-modal, rubric-based assessment strategy. This approach ensured that the evaluation of critical thinking was both equitable (fair to diverse learning profiles) and valid (actually measuring critical thought rather than rote memorization or linguistic fluency).

The cornerstone of this assessment strategy was the Structured Assignment Sheets for Critical Thinking Skills (LPT-KBKi), paired with a specialized critical thinking rubric mapped to Bloom's Taxonomy. The rubric evaluated four distinct dimensions: (1) the ability to identify and define the core problem, (2) the capacity to select and analyze relevant evidence, (3) the logical construction of an argument, and (4) the evaluation of alternative solutions. Crucially, this rubric was introduced to the students at the beginning of the learning modules, ensuring transparency and providing a clear metacognitive roadmap for what was expected of them.

Differentiated assessment manifested most clearly in the variety of "products" students were allowed to create to demonstrate their understanding. A single learning objective could be assessed through multiple formats. For example, at the end of a history unit detailing the Indonesian independence struggle, the core competency was to critically analyze the causal factors of a specific historical event. To assess this, the teacher provided options. Student A, who possessed strong linguistic skills, submitted a traditional written essay. Student B, a highly

 ISSN 2747-089X

visual learner who struggled with syntax, created a detailed chronological comic strip that visually depicted the cause-and-effect relationships. Student C, an auditory/kinesthetic learner, delivered an oral presentation using role-play.

The critical element was that the teacher used the exact same critical thinking rubric to evaluate all three products. The teacher at SDN Bojongkadu highlighted the profound fairness of this system:

> "In the past, Student B would have failed the essay test because of poor spelling and grammar, and I would have assumed he didn't understand the history. But when I evaluated his comic strip using the rubric, I saw that he perfectly captured the sequence of events, identified the main conflict, and showed the consequences of the historical figures' decisions. He demonstrated high-level critical thinking; he just needed a different language to express it."

To ensure the validity and reliability of this subjective grading process, the schools instituted rigorous inter-rater calibration sessions. Teachers from different classes gathered to blindly grade sample student portfolios using the rubric. Initially, discrepancies arose, as teachers had to unlearn their biases toward neat handwriting or complex vocabulary. However, through continuous dialogue, the teachers established a shared understanding of what constitutes a "logical argument" or "relevant evidence" across different formats. This calibration process achieved an inter-rater reliability score of >0.80, proving that qualitative assessments of critical thinking can be systematically standardized across an institution.

Formative assessment was equally vital. Because the learning process was differentiated, feedback had to be continuous and individualized. Teachers utilized observation checklists during group discussions and provided immediate, verbal feedback based on the rubric criteria. Furthermore, the assessment strategy heavily incorporated self-reflection and peer evaluation. After completing a project, students were required to evaluate their own work against the rubric, identifying areas where their arguments lacked evidence or where their logic was flawed.

A Grade V student at SDN Jatinagara reflected during an interview: "I like knowing how I will be graded before I start. Now, when I finish my work, I check it myself. If I make a claim, I look to see if I wrote down the proof. If I didn't, I know I won't get a good score on the rubric, so I go back and fix it." This level of metacognitive awareness is the ultimate indicator of successful critical thinking assessment. By decoupling the measurement of critical thinking from rigid, standardized formats, the differentiated assessment framework provided a truly valid, inclusive, and empowering reflection of students' intellectual capabilities.

Discussion

The findings of this study offer a compelling empirical narrative regarding the efficacy of Differentiated Instruction (DI) in cultivating critical thinking competencies among elementary school students. By systematically dissecting the implementation of DI across three core pedagogical domains—content, process, and assessment—this research provides a holistic understanding of how tailored instructional environments shift the cognitive paradigm from passive assimilation to active, critical argumentation.

Firstly, the strategic differentiation of learning content serves as the foundational catalyst for cognitive engagement. The observation that students, particularly those with previously low academic readiness, exhibited heightened participation when presented with varied materials aligns strongly with the theoretical assertions of Özdemir & Işıksal-Bostan, (2021) and (Bobis et al. (2021). The integration of manipulatives, such as LEGO blocks, alongside context-based modules, effectively bridged the gap between abstract mathematical/scientific concepts and concrete understanding. This phenomenon reinforces the concept of "low-floor/high-ceiling" tasks (Fountoulakis, 2024), where the entry point of the content is highly accessible, yet the potential for cognitive complexity is unbounded. By allowing students to access information through modalities that resonate with their specific learning profiles, teachers effectively dismantled the initial barriers to learning. Consequently, students were not merely consuming facts; they were empowered to manipulate variables,

 ISSN 2747-089X

observe outcomes, and initiate the foundational steps of critical inquiry: asking "why" and "how."

Secondly, the transition from differentiated content to a differentiated learning process catalyzed the development of analytical and argumentative skills. Traditional elementary classrooms often emphasize convergent thinking, where the objective is to find a singular correct answer. Conversely, the DI process documented in this study championed divergent, dialogic learning. By grouping students heterogeneously and presenting open-ended problem-solving tasks, teachers engineered an environment that necessitated intellectual friction and collaboration. The shift observed by teachers—where students progressed from simple binary answers to constructing evidence-based claims—is a hallmark of critical thinking maturation (Walsh et al., 2019). The instructional moves employed by the educators, such as prompting students to defend their problem-solving strategies against peer critique, fostered a classroom culture where reasoning was valued over rote accuracy. This dialogic process mirrors the findings of (El-Asri & Karfa, 2024), demonstrating that when students are granted the autonomy to navigate their learning paths, they naturally develop the metacognitive capacity to evaluate their own logic and the perspectives of others.

Thirdly, the research highlights that true differentiation is incomplete without an aligned, differentiated assessment strategy. Standardized, high-stakes testing frequently fails to capture the nuanced development of critical thinking, often penalizing students whose expressive modalities differ from the conventional written format (Pozas et al., 2019). The implementation of critical thinking rubrics and the Structured Assignment Sheets for Critical Thinking Skills (LPT-KBKi) in this study represents a shift toward equitable evaluation. By assessing the process of problem identification, evidence utilization, and argument construction rather than just the final answer, teachers validated the students' cognitive journeys. Furthermore, allowing students to demonstrate mastery through varied formats (e.g., oral presentations, visual mapping) ensured that the assessment measured critical thinking capacity rather than mere linguistic proficiency or memorization capability. The high inter-rater reliability achieved through teacher calibration underscores that qualitative, process-oriented assessments can be both valid and reliable when supported by clear, criterion-referenced rubrics (Yumansyah & Suyono, 2024).

Despite these profoundly positive outcomes, the study does not shy away from the systemic and practical challenges inherent in executing DI within the Indonesian public school context. The constraints of time and resources echo the established literature regarding the burdens of differentiated planning (Nuraini & Abidin, 2020). Creating multiple entry points for learning, managing dynamic group discussions, and conducting individualized, rubric-based assessments demand a significant paradigm shift and a heavy investment of teacher bandwidth.

These challenges highlight a critical implication for educational policy and school leadership. The successful implementation of DI for critical thinking cannot rely solely on the heroic efforts of individual educators; it necessitates institutional scaffolding. There is a pressing need for continuous professional development focused on diagnostic assessment, dynamic classroom management, and the construction of higher-order thinking tasks (İmamoğlu & others, 2024). Furthermore, the development of localized, differentiated curriculum banks could significantly alleviate the planning burden on teachers.

Ultimately, this study contributes vital contextual evidence from the Global South to the international discourse on 21st-century education. It proves that elementary school students, regardless of their socioeconomic or geographic backgrounds, possess the latent capacity for rigorous critical thought. Unlocking this potential requires abandoning a "one-size-fits-all" pedagogy in favor of a differentiated ecosystem where content invites curiosity, processes demand argumentation, and assessments honor diverse intellectual expressions.

Conclusion

This study demonstrates that differentiated instruction integrated comprehensively through content preparation, teaching processes, and assessment systems can significantly

 ISSN 2747-089X

enhance the critical thinking skills of elementary school students. This approach creates a learning environment responsive to differences in student readiness and interests while enabling fair, evidence-based evaluation. Contextual materials, open-ended tasks, and critical thinking rubrics provide meaningful space for cognitive exploration for students.

Although the results are positive, this study is limited by a small sample size and a localized geographic scope. Therefore, generalizing the findings to a national context must be done cautiously. Future studies are advised to use longitudinal approaches and involve more schools from diverse backgrounds. Additionally, further quantitative research is necessary to statistically measure the long-term impacts and effectiveness of the instruments.

References

Alim, J. A., Hermita, N., Putra, Z. H., & Sulastio, A. (2025). Integrating differentiated learning based on {RME} to enhance critical thinking among elementary learners. *Mosharafa: Jurnal Pendidikan Matematika*, *14*(1). https://doi.org/10.31980/mosharafa.v14i1.2591

Anwar, S., Maulani, F., Lutfiah, W., Syadiah, S. I. H., & Azizah, A. S. N. (2025). Integrasi Nilai Ketauhidan dan Ekopedagogi dalam Kurikulum Madrasah Ibtidaiyah untuk Penguatan Karakter Peduli Lingkungan. *TSAQAFATUNA: Jurnal Ilmu Pendidikan Islam*, *7*(1).

Anwar, S., & Umam, H. (2020). Transformative Education: Emphasizing 21st Century Skills and Competencies in The Independent Learning Curriculum. *AIM: Journal of Islamic Education Management*, *1*(1), 1–16. https://doi.org/10.15575/aim.v1i1.28886

Bayram, D., Kurt, G., & Atay, D. (2019). The implementation of {WebQuest}-supported critical thinking instruction in pre-service {English} teacher education: The {Turkish} context. *Participatory Educational Research*, *6*(2). https://doi.org/10.17275/per.19.18.6.2

Bobis, J., & others. (2021). Instructional moves that increase chances of engaging all students in learning mathematics. *Mathematics*, *9*(6). https://doi.org/10.3390/math9060582

Cueva, C. P., & Susada, B. L. (2024). The effectiveness of {Lego} manipulatives in solving area problems involving squares and rectangles for grade 3 students. *Davao Research Journal*, *15*(4). https://doi.org/10.59120/drj.v15i4.277

El-Asri, S., & Karfa, A. E. (2024). A mixed-method action research on promoting critical thinking in the classroom: Implications for {EFL} teachers. *Arab World English Journal*, *15*(2). https://doi.org/10.24093/awej/vol15no2.18

Fountoulakis, M. St. (2024). Optimizing police and military academy training: Implementing a tiered education program through comprehensive cadet assessments. *International Journal of Scientific Research in Science and Technology*, *11*(3). https://doi.org/10.32628/ijsrst2411346

İmamoğlu, Y., & others. (2024). Experiences of mathematics teachers of a test preparation center during professional development for incorporating critical thinking skills into their practice. *Bartın University Journal of Faculty of Education*. https://doi.org/10.14686/buefad.1322032

Ottay, N. A. C., & Rocmah, L. I. (2025). *The Implementation of Differentiated Learning in Developing Cognitive Development of Children Aged 4-5 Years at {TK} {Dharma} {Wanita} {Persatuan} {Tawangsari} 2*.

Özdemir, D., & Işıksal-Bostan, M. (2021). A design based study: Characteristics of differentiated tasks for mathematically gifted students. *European Journal of Science and Mathematics Education*. https://doi.org/10.30935/scimath/10995

Padmore, E. A., & others. (2023). Differentiating instruction in a mathematics classroom: Its effects on basic 7 learners' academic performance and engagement in common fraction. *Frontiers in Contemporary Education*, *4*(3). https://doi.org/10.22158/fce.v4n3p1

Patras, Y. E., Iqbal, A., Papat, P., & Rahman, Y. (2019). Meningkatkan kualitas pendidikan melalui kebijakan manajemen berbasis sekolah dan tantangannya. *Jurnal Manajemen Pendidikan*, *7*(2), 800–807.

Pozas, M., Letzel, V., & Schneider, C. (2019). Teachers and differentiated instruction: Exploring differentiation practices to address student diversity. *Journal of Research in Special Educational Needs*. https://doi.org/10.1111/1471-3802.12481

 ISSN 2747-089X

Sulastri, N., Anwar, S., Suherman, U., & Cipta, E. S. (2024). Deep Learning-Based Planning Model for Islamic Education in Indonesian Integrated Schools. *EDUKASIA Jurnal Pendidikan Dan Pembelajaran*, *5*(2), 645–658. https://doi.org/https://doi.org/10.62775/edukasia.v5i2.1734

Walsh, C., Quinn, K. N., Wieman, C., & Holmes, N. G. (2019). Quantifying critical thinking: Development and validation of the physics lab inventory of critical thinking. *Physical Review Physics Education Research*, *15*(1). https://doi.org/10.1103/physrevphyseducres.15.010135

Yumansyah, C. A., & Suyono, S. (2024). Kelayakan lembar penugasan terstruktur keterampilan berpikir kritis pada materi laju reaksi untuk melatihkan keterampilan berpikir kritis. *Unesa Journal of Chemical Education*, *13*(1), 16–24. https://doi.org/10.26740/ujced.v13n1.p16-24