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## Differentiated Learning Strategies for Enhancing Early Childhood Independence: A Case Study

Danang Prastyo<sup>1</sup>, Suryanti<sup>2</sup>, Heryanto Susilo<sup>2</sup>, Desika Putri Mardiani<sup>2</sup>,  
Ardhana Reswari<sup>1</sup>

<sup>1,5</sup> State Islamic Institute of Madura, Indonesia, <sup>2</sup>State University of Surabaya, Indonesia.

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### Correspondence to

Danang Prastyo, State  
Islamic Institute of Madura,  
Indonesia

### e-mail:

[danang@iainmadura.ac.id](mailto:danang@iainmadura.ac.id)

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### Abstract

This study examines how differentiated learning strategies contribute to the development of independence among children aged five to six at TK Al-Islam Bangkalan, a rural kindergarten in East Java, Indonesia. Using a single instrumental case study design, data were collected over four months through non-participatory observation, semi-structured interviews, and document analysis, and analyzed using the Miles and Huberman model. Findings indicate that variations in content and process, supported by predictable routines and consistent teacher scaffolding, enabled most children to select learning materials and choose appropriate task difficulty. At the same time, a minority continued to require validation. Product differentiation and systematic assessment remained limited, reflecting constraints in teacher assessment literacy, time allocation, and class size. The study demonstrates the pedagogical potential of differentiated learning to foster initiative, responsibility, and self-confidence in low-resource early childhood settings. It highlights the necessity of practical, context-sensitive implementation strategies. The research provides evidence that differentiation principles can be adapted to rural and collectivist educational contexts and can inform discussions on culturally responsive pedagogy and equitable early childhood practice. Limitations include single-site sampling, reliance on teacher reports, and incomplete assessment artifacts, all of which limit generalizability. The study is significant for policy and practice because it links *Merdeka Belajar* (Freedom to Learn) objectives to observable developmental outcomes and identifies concrete barriers to scaling differentiated approaches. Recommended actions include targeted professional development on formative assessment and product differentiation, design-based collaborations to co-create feasible rubrics with teachers, and multi-site longitudinal studies to evaluate transferability and sustained impact on independence.

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## Introduction

Early childhood education serves as the foundational stage for character development, the development of life skills, and the formation of independence (U. Rohmah, 2018). Independence, defined as children's ability to perform daily activities autonomously, make decisions, and assume responsibility for their actions, is crucial for future educational success and social adaptation (Rantina, 2015; Mahmudah, Elan, & Mulyana, 2023). Current early childhood education practices predominantly employ uniform, teacher-centered approaches that fail to accommodate individual learning differences (Lela, Basri, & Sugiarto, 2023; Tussyana & Markhumah, 2021). Reports from the Ministry of Education (2023) indicate that approximately 73% of early childhood institutions still employ homogeneous teaching approaches. This standardized approach contradicts children's natural diversity in learning styles, abilities, and interests, ultimately hindering the development of independence.

The problem is particularly acute in rural early childhood settings, where limited professional training constrains teachers' ability to apply individualized instruction. While Catalano et al. (2023) conceptually emphasize the value of child-centered approaches within

slow education principles, national data from the Ministry of Education and Culture (2023) indicate that only 32% of rural PAUD teachers have completed certified differentiation or individualized instruction training. This gap reveals persistent disparities in teacher capacity between urban and rural institutions. This educational gap creates a significant barrier to implementing child-centered learning approaches mandated by the Merdeka Curriculum.

This study is grounded in Carol Ann Tomlinson's differentiated learning theory, which promotes responsive teaching through content, process, and product adaptations aligned with students' readiness, interests, and learning profiles. The framework is conceptually extended through Erik Erikson's psychosocial development theory, particularly the "autonomy versus shame and doubt" stage, traditionally associated with ages 1.5–3. However, contemporary developmental research (Lewis & Abell, 2020; Bernier et al., 2019) recognizes that autonomy evolves into self-regulation, initiative-taking, and decision-making during the preschool years (ages 5–6). In this study, autonomy is operationalized through two observable behaviors: (1) independent selection of learning materials and (2) decision-making in choosing activity difficulty levels—both representing the early emergence of self-regulated learning.

Differentiated learning has received considerable attention in educational research for its potential to accommodate diverse learner needs. Tomlinson (2021) established the theoretical foundation, arguing that differentiation enables teachers to modify content, processes, products, and the learning environment based on students' readiness, interests, and learning profiles. Empirical evidence supports its effectiveness across educational levels. In early childhood contexts, Kurniasih & Priyanti (2023) demonstrated that process differentiation significantly increases children's active participation in learning activities. Similarly, Rohmah & Aprianti (2021) found that providing learner choice fosters self-confidence and decision-making capabilities, both critical components of independence development. However, existing literature reveals three significant gaps. First, most differentiated learning research concentrates on elementary and secondary education (Smale et al., 2019) with limited systematic examination of its application in early childhood settings. Second, current studies predominantly emphasize academic outcomes such as literacy and numeracy skills (2024), while character formation, particularly independence, remains underexplored despite its developmental importance during the early years (Andrianto, D., & Kurniawan, 2025). Third, the majority of early childhood education research is conducted in urban, well-resourced contexts (Castilla et al., 2024), leaving rural implementation challenges, contextual adaptations, and culturally responsive strategies largely unexamined. This study addresses these gaps by systematically investigating how differentiated learning strategies can be specifically designed and implemented to enhance independence in rural early childhood settings, thereby contributing to both theoretical understanding and practical application in underserved contexts.

The research novelty lies in its comprehensive examination of differentiated learning's impact on three core independence dimensions: responsibility, decision-making, and initiative-taking. Accordingly, the study aims to analyze differentiated learning implementation in developing early childhood independence at TK Al-Islam, Bangkalan Regency, with specific objectives to: (1) examine children's independence in choosing learning media, (2) analyze children's independence in choosing the level of activity difficulty, and (3) assess children's sense of responsibility in completing and returning learning materials after use. The study focuses on Group B students (ages 5–6 years) at TK Al-Islam Bangkalan, examining content, process, and product differentiation strategies and their relationship with responsibility, decision-making, and initiative development.

This study provides empirical evidence on the effectiveness of differentiated learning in fostering early childhood independence, offering practical guidance for early childhood educators and policymakers. The findings support Indonesia's educational transformation toward more humanistic, child-centered approaches, offering concrete strategies for implementing Merdeka Curriculum principles. Furthermore, this research addresses the urgent

need for adaptive learning strategies in diverse educational contexts, providing a foundation for teacher capacity development programs and evidence-based policy formulation in early childhood education.

The implementation of differentiated learning in Indonesian early childhood education settings faces multiple systemic challenges. A comprehensive survey by Uzliwa, C., Bunga, P., & Wahyuningsih (2025) revealed that 82% of rural early childhood education institutions operate with limited resources, affecting their ability to provide diverse learning materials and individualized instruction. Additionally, teacher-student ratios in many regional early childhood education centers average 1:25, significantly exceeding the recommended 1:15 ratio for effective differentiated instruction (Yanuarsari, R., Sari, D., & Nurjanah, 2022).

These challenges are compounded by the traditional educational culture that emphasizes conformity over individuality. Historical data from Rustatik & Aryani (2023) indicates that only 31% of early childhood education graduates demonstrate age-appropriate independence skills, including basic decision-making and self-help abilities. This statistic underscores the critical need for pedagogical reform toward more individualized approaches. International research provides compelling evidence for differentiated learning effectiveness in early childhood settings. Finnish early childhood education, renowned for fostering independence, employs systematic differentiation strategies that lead 89% of children to demonstrate strong autonomous behaviors by age 6 (Harju-Luukkainen, 2023). Similarly, Reggio Emilia approaches in Italy emphasize individualized learning pathways, producing measurable improvements in children's self-directed learning capabilities (Fjällström, S., Karila, K., & Paananen, 2020).

The problem's scale is substantial: among Indonesia's 238,000 kindergarten teachers, approximately 142,800 serve in rural or remote areas where access to professional development remains limited (Badan Pusat Statistik, 2023). Regional data from East Java Provincial Education Office (2023) corroborates this gap, showing that only 23% of rural early childhood institutions implement differentiated learning practices, compared to 67% in urban areas. Additionally, the 2021 UNICEF Indonesia Early Childhood Development study documented that children from rural settings exhibit lower independence indicators across self-help skills (31% below the national average), decision-making abilities (28% below), and initiative-taking behaviors (35% below).

This research contributes to the growing body of literature on culturally responsive pedagogy in Southeast Asian contexts, where collectivist cultural values intersect with individualized instruction approaches. By examining differentiated learning through an independent development lens, the study provides theoretical insights into how Western pedagogical models can be contextualized for Indonesian cultural and socio-economic realities. Such findings may inform similar educational reforms in comparable regional settings across ASEAN nations facing analogous rural-urban educational disparities.

Ultimately, by providing systematic evidence on effective differentiated strategies for independence development, this study supports Indonesia's broader educational goals of producing autonomous, confident learners capable of navigating an increasingly complex world, a critical foundation articulated in the national education philosophy of "*Merdeka Belajar*."

## Methods

### Research Design

This research employs a descriptive qualitative approach using a single instrumental case study design (Villamin et al., 2024). The qualitative approach was selected to provide an in-depth understanding and comprehensive descriptions of the implementation of differentiated learning to develop early childhood independence (Creswell, 2018). According to Qadafi et al. (2023), case study research is particularly suitable for examining contemporary phenomena in real-life contexts where the boundaries between the phenomenon and its context are not clearly evident, making it appropriate for investigating educational practices in authentic early

childhood education settings. The single-case design allows for an intensive, detailed examination of differentiated learning practices at one institution, providing rich contextual insights that can inform similar rural early childhood settings.

### Research Setting and Participants

This research was conducted at Al-Islam Kindergarten, located in Kauman Village, Socah Subdistrict, Bangkalan Regency, East Java. Data collection occurred over four months from January to April 2025, encompassing one whole academic semester. This location was purposively selected based on three specific criteria: (1) the institution has implemented differentiated learning strategies aligned with the Merdeka Curriculum for at least one academic year, (2) preliminary observations indicated systematic practices supporting children's independence development, and (3) the school administration provided full access and cooperation for comprehensive data collection. As a rural kindergarten serving predominantly middle- to lower-socioeconomic-status families, Al-Islam Kindergarten reflects the typical conditions faced by many rural early childhood education programs in East Java, thereby enhancing the transferability of the findings to comparable contexts.

### Participants

The research involved two categories of participants: Adult Informants ( $n=3$ ). Purposive sampling was employed to select key informants who possess direct knowledge and sustained involvement in differentiated learning implementation. The initial staff at Al-Islam Kindergarten consisted of one principal and three classroom teachers. From this population, three informants were selected based on the following explicit criteria: (1) minimum two years of teaching experience at the institution, (2) direct responsibility for Group B (ages 5-6) classroom instruction, (3) documented participation in Merdeka Curriculum training or professional development workshops on differentiated instruction, and (4) willingness to participate in multiple data collection sessions throughout the study period.

The selected informants were: Mrs. T (Principal, 8 years experience): Responsible for overall curriculum implementation and pedagogical guidance; completed national Merdeka Curriculum facilitator training in 2023. Mrs. Y (Lead Teacher Group B, 6 years experience): Primary instructor for Group B class; attended district-level differentiated learning workshop in 2024. Mrs. H (Assistant Teacher Group B, 4 years experience): Co-teaches with Mrs. Y; participated in school-based differentiated instruction peer learning community.

Purposive sampling was deemed appropriate for this qualitative case study because it enabled deliberate selection of information-rich informants who could provide detailed, experiential insights into differentiated learning implementation insights inaccessible through random or convenience sampling. *Child Participants ( $n=22$ ):* All 22 children enrolled in Group B (ages 5-6 years) during the 2024/2025 academic year participated in classroom observations. This included 12 boys and 10 girls, with ages ranging from 5 years 2 months to 6 years 1 month at the study's commencement. The entire class was observed to capture the full range of independence behaviors and differentiated learning responses within the natural classroom context, avoiding selection bias that might occur with smaller observational samples.

### Ethical Considerations

This research adhered to ethical principles for educational research involving young children. Prior to data collection, formal approval was obtained from the school administration, and written informed consent was secured from parents/guardians of all participating children. The consent forms, provided in Indonesian, explained the study's purpose, data collection procedures, confidentiality measures, voluntary participation, and right to withdraw without consequences. Teachers also provided written consent for interviews and classroom observations. To protect participant privacy, pseudonyms are used for all individuals, and potentially identifying information is anonymized in reporting. Children's photographs and video recordings were obtained only with explicit parental consent and are stored securely with restricted access.

The primary focus of this research is the implementation of differentiated learning strategies in developing early childhood independence. Specifically, the study examines two key independence dimensions operationalized through differentiated approaches: (1) children's autonomy in selecting learning media aligned with their interests and learning preferences during center-based activities, and (2) children's capacity to choose activity difficulty levels corresponding to their individual readiness and capabilities. These dimensions were selected because they represent observable, developmentally appropriate independence behaviors that can be directly supported through content and process differentiation strategies (C. A. Tomlinson, 2017).

### Data Collection Procedures

Data were collected using three complementary techniques over the four months: non-participatory structured observations, semi-structured interviews, and documentation analysis (Creswell, 2018). Data analysis followed the iterative, three-stage process outlined by Miles, M. B., Huberman, A. M., & Saldaña (2014), conducted concurrently with data collection to allow emergent insights to inform subsequent data gathering, covering: Data Reduction, Data Display, and Conclusion Drawing and Verification.

### Ensuring Trustworthiness

To enhance research credibility, dependability, and confirmability, multiple triangulation strategies were employed. Source triangulation involved comparing information from three adult informants (the principal and two Group B teachers) to identify both consistent patterns and divergent perspectives. Triangulation was achieved by cross-verifying data from observations, interviews, and documentation; for instance, teachers' claims about tiered learning materials in interviews were validated through direct classroom observation and verification of instructional material inventories. Investigator triangulation was conducted by engaging a peer researcher (a doctoral candidate in early childhood education) who independently double-coded 20% of the total 260 meaning units derived from first-cycle nominal codes ( $n = 36$ ). Cohen's Kappa ( $\kappa = 0.82$ ) indicated substantial agreement (Landis & Koch, 1977).

Discrepancies were discussed through consensus meetings and resolved before axial categorization. The reliability outcome was integrated into interpretive memoing to refine code definitions during the Miles and Huberman (2014) analytic cycle of data reduction, display, and verification. Member checking was implemented by returning interview transcripts and preliminary interpretations to teacher participants for validation and feedback; participants confirmed the interpretive accuracy and provided clarifications, which were incorporated into the final analysis. Prolonged engagement over the four-month fieldwork period enabled sustained observation of behavioral patterns across multiple classroom contexts and time points, enhancing the credibility and stability of findings. An audit trail was maintained documenting all methodological decisions, coding iterations, and analytic memos, ensuring transparency and allowing for external verification of the entire research process.

### Result

Differentiated learning at Al-Islam Kindergarten has unfolded gradually over the past two years, following teacher training on the *Merdeka Belajar* curriculum facilitated by the local education office. The implementation, however, reveals a layered tension between the formal intent of policy and the lived dynamics of classroom practice. While teachers demonstrate an emerging awareness of learner variability, their operational decisions continue to be shaped by experiential judgment, institutional constraints, and the material conditions of the learning environment.

### Teacher Understanding and Pedagogical Adaptation

Teachers have begun to shift toward a more responsive orientation to children's diverse readiness and learning styles. Field evidence suggests that this conceptual shift aligns broadly



with constructivist views of learning and the principles of learner variability articulated in the differentiation literature (Tomlinson, 2021). However, this evolving pedagogical stance has been only partially translated into systematic criteria for instructional decision-making. When probed about how differentiation choices were determined, teachers expressed uncertainty about how to link observed abilities to structured levels of support. This indicates that the practice still relies more heavily on professional intuition than on documented formative assessment procedures.

"I began to realize that every child is unique. Some catch on quickly, others need repetition. That is why I started giving choices in learning tasks so that children can learn according to their own style." (Interview with Mrs. Y, April 2025)

"Sometimes I am still confused about determining what truly matches children's abilities. I rely more on feeling and teaching experience." (Interview with Mrs. H, April 2025)

Triangulation with observations and document analysis further shows that differentiation is primarily visible in content and process, with limited evidence of variation in product outcomes or assessment structures. Daily Learning Implementation Plans reveal that creative tasks such as drawing, modeling, and storytelling are assessed using a uniform rubric emphasizing task completion rather than personalized developmental progress. Samples of student work confirm that differences in output appear mostly in aesthetic detail, not in differentiated learning expectations. Teachers reported piloting alternative assessments, including storytelling portfolios, but these initiatives were discontinued due to time constraints and large class sizes. The divergence between planned and enacted differentiation illustrates the influence of systemic pressures on teachers' capacity to consistently implement product-level differentiation.

The learning environment itself functions as an enabling factor. Spacious classrooms, accessible storage systems, and organized learning corners act as material affordances that encourage children to make autonomous choices. This environmental arrangement aligns with an ecological understanding of learning, where physical space mediates engagement and independence. However, observational data suggest that children's initiative in using these affordances varies subtly along socioeconomic lines. According to teachers, children from families with more stable occupations tend to approach challenging tasks with greater confidence. At the same time, those from lower-income households more often choose familiar, more manageable tasks. Because socioeconomic status was not systematically measured, this pattern is treated as a contextual tendency rather than a confirmed relationship. Future research should include structured SES data to examine how family background may mediate children's engagement within differentiated learning environments.

### **Children's Independence in Choosing Learning Media: Autonomy Within Boundaries**

Children's independence in selecting learning media emerged not as a spontaneous expression of free choice but as a negotiated process shaped by scaffolding, familiarity, and the subtle dynamics of confidence. During an observation session on April 15, 2025, the teacher informed the class that they could choose their own tools for the upcoming activity. Most children responded immediately by moving toward the tool rack, yet their actions revealed a spectrum of confidence rather than a uniform exercise of autonomy. Nadia approached the rack decisively and began molding plasticine without hesitation, whereas Farhan remained still for nearly two minutes, glancing repeatedly at the teacher before finally choosing colored pencils. This contrast illustrates that independence in early childhood is relational and contingent: a practice continually shaped by self-assurance, prior experience, and the child's perceived sense of permission.

The observed variation underscores that autonomy is not an innate disposition but a situated behavior that children enact differently depending on the emotional and social cues available to them. Some children interpret the teacher's invitation to choose as an open endorsement to act independently. Others negotiate that permission more cautiously, seeking reassurance before committing. In this sense, independence becomes a continuum, an evolving capacity rather than a fixed attribute.

"Nadia has been confident from the start. As for Farhan, he needs validation from me first, but gradually, he is also starting to dare to choose independently." (Interview with Mrs. Y, April 2025)

### **The Role of Routine and Repetition**

Further analysis shows that children's independent media selection is grounded not only in the differentiated learning approach but also in the classroom's consistent organizational routines. The predictable structure of the environment, including where materials are stored, how they are accessed, and the expected sequence of actions, provides a stable cognitive frame that enables autonomy to grow. In other words, independence is rehearsed daily through procedural familiarity rather than derived solely from the presence of options.

The classroom's rhythm of repeated actions serves as a formative mechanism through which autonomy becomes internalized. Children learn not just that they may choose but how to choose, in what order, and with what responsibilities attached. This challenges the common assumption that choice provision naturally leads to autonomy. Instead, autonomy requires the supportive architecture of routines that reduce cognitive load and eliminate uncertainty, conditions that allow children to focus their agency on decision-making rather than procedural navigation.

"Every day we repeat the procedure: take, use, return. So children memorize it and are not confused anymore." (Interview with Mrs. H, April 2025)

The findings suggest that children's independence is cultivated through the interplay of environmental stability, teacher scaffolding, and differentiated opportunities. Autonomy is enacted within boundaries, and these boundaries, far from restricting children, provide the structure necessary for self-directed behavior to take root and develop meaningfully.

### **Children's Independence in Choosing Activity Difficulty Levels: Intrinsic Motivation or Social Comparison**

Children's decisions when selecting the difficulty level of learning activities reveal a complex set of motivations rather than a simple preference for challenge. Although differentiated tasks were designed to offer accessible entry points for all learners, many children demonstrated a willingness to choose moderately complex or even difficult tasks. This pattern invites interpretation beyond surface behaviors, suggesting that their choices are shaped by evolving confidence, perceptions of competence, and the social meaning attached to being seen as capable.

Teachers structured the counting activity into three levels of difficulty. The easy level required counting objects from one to five, the medium level extended this range to one to ten, and the difficult level introduced the addition of two groups of objects. Early semester assessments and ongoing classroom observations informed the classification. Nevertheless, the implementation remained partially intuitive, reflecting the teacher's developing expertise in using formative assessment to guide differentiation.

"I determined these levels based on early semester assessments and my daily observations. However, sometimes children can also choose more difficult ones if they are feeling motivated." (Interview with Mrs. Y, April 2025)

An observation on April 22, 2025, illustrated how the desire to take on more challenging tasks could be infused with elements of imitation and aspiration. One child enthusiastically requested the difficult worksheet by saying he wanted the one "like big kids." He then worked intently, counting on his fingers and completing most of the problems. Such moments show that children's engagement with challenge is rarely neutral. Their choices function symbolically, conveying aspirations to be perceived as competent or mature within the peer group. The immediacy with which classmates praised his effort further suggests that choosing a difficult task carries social rewards beyond the task itself.

"Rehan does like challenges. He feels proud when he can do difficult tasks. However, some children stick to easy ones because they are afraid of making mistakes." (Interview with Mrs. H, April 2025)

These dynamics complicate a straightforward application of Self-Determination Theory, which usually associates challenge-seeking with intrinsic motivation. In the classroom context observed here, children's motivations appear more layered. Some choose complex tasks out of genuine curiosity and enjoyment, but others are influenced by social comparison and the desire for peer approval. These findings align with research on performance goals, indicating that children sometimes seek tasks that affirm their status rather than tasks that deepen understanding.

Not all children exhibited readiness to navigate a challenge. Five children consistently selected the most manageable tasks across several sessions. Their behavior did not stem from an inability but from an apprehension about making mistakes in front of peers. This observation highlights a critical gap in the current implementation of differentiated learning. While offering choices creates opportunity, it does not automatically cultivate the confidence needed to engage with challenge. Without targeted scaffolding, risk-averse children may remain confined to familiar tasks, limiting the developmental potential that differentiation aims to promote.

"There are some children who lack confidence. They choose easy tasks not because they cannot do it, but because they are afraid of making mistakes and being seen by their friends." (Interview with Mrs. Y, April 2025)

Taken together, these findings suggest that independence in selecting task difficulty emerges from the interplay of intrinsic aspiration, social positioning, and emotional safety. Teachers play a central role in shaping these conditions. Differentiation provides the structure of choice, but it is the teacher's careful mediation that ensures all children can engage courageously with learning challenges.

The key findings from the three subchapters were consolidated to highlight the central patterns emerging across the dataset. While each thematic area addresses a distinct dimension of differentiated learning, collectively they reveal how teacher reasoning, environmental structures, and children's decision making interact to shape the unfolding of autonomy and challenge in the classroom. Table 1 presents these findings in a synthesized form, accompanied by an analytical focus that reflects the conceptual patterns identified through qualitative interpretation. The table is intended not merely as a summary but as a mapping of how the themes relate to broader pedagogical processes and theoretical sensibilities.

Table 1. Synthesis of Key Findings and Analytical Interpretations Sub-Chapter

Theme	Key Finding	Analytical Focus
Teacher Understanding and Adaptation	Teachers recognized learner variability but continued relying on intuitive judgments rather than systematic differentiation criteria.	Reveals a partial conceptual uptake where teachers accept the idea of differentiation but struggle to operationalize it consistently. Shows a gap between policy intention and classroom-level decision-making.
Children's Independence in Media Choice	Children displayed differing levels of autonomy shaped by environmental access, routine familiarity, and confidence.	Demonstrates that autonomy is not spontaneous but develops through mediated participation and predictable structures. Highlights the interplay between environment and agency.
Children's Independence in Selecting Task Difficulty	Children's choices reflected mixed motives that combined intrinsic curiosity with social comparison, while cautious	Identifies layered motivational dynamics in which challenge seeking is influenced by social meaning and emotional safety.



Theme	Key Finding	Analytical Focus
	learners remained with more manageable tasks.	Explains variation in engagement beyond ability-based accounts.

Taken together, the patterns across themes suggest that differentiated learning in this context is less a straightforward instructional method and more an evolving negotiation between teacher judgment, environmental affordances, and children's developing sense of agency. The findings illuminate tensions between aspiration and enactment, such as the interplay between intuitive teacher decisions and the need for structured formative assessment, and the contrast between opportunities for choice and the uneven confidence with which children take them up. These interpretive insights provide a foundation for the subsequent discussion, which examines how these dynamics shape the possibilities and constraints of differentiated learning and what they imply for teacher development, classroom design, and the cultivation of equitable learner autonomy.

## Discussion

The findings of this study indicate that differentiated learning practices at Al-Islam Kindergarten contribute to children's emerging independence, particularly in selecting learning media and determining appropriate levels of task difficulty. However, rather than suggesting a linear or uniformly successful implementation, the results reveal a complex interaction among pedagogical intentions, teacher judgment, and children's developmental variability. This complexity invites a more critical, dialogic reading of how the evidence extends, refines, and in some respects challenges dominant frameworks such as Tomlinson's differentiated instruction model and Erikson's psychosocial development theory within a rural Indonesian early childhood context.

The findings partially align with Tomlinson's (2021) content, process, and product differentiation model. Teachers demonstrated an awareness of learner variability, echoing Tomlinson's central premise that instruction must respond to differences in readiness, interests, and learning profiles (Silmi et al., 2025). However, the data also surface tensions between theoretical ideals and classroom realities. While content and process differentiation were visibly enacted through activities such as drawing, block building, and storytelling, product differentiation was less systematically developed. The admission that assessment often relies more on intuition than evidence suggests that differentiation operates more as a pedagogical disposition than a structured practice. This gap highlights a broader issue: differentiation is conceptually embraced but procedurally under-theorized in teachers' day-to-day work.

Documentation from the Daily Learning Implementation Plan reflects an intention to consider readiness, interests, and learning profiles, which resonates with the broader literature on differentiated instruction (Tomlinson, 2000; Defitriani, 1974). Existing studies similarly emphasize that differentiation can enhance creativity when grounded in deliberate planning and diverse media use (Nurahmania, Ruslan, & Nasaruddin, 2024). However, the present findings reveal that teachers' efforts, while well-intentioned, operate within constraints of limited training, experience, and institutional resources. This context complicates a direct application of Western-derived frameworks and suggests the need for a more adaptive, culturally informed interpretation of differentiation.

The analysis of children's autonomy expands Erikson's "autonomy versus shame and doubt" stage. Although Erikson places this stage between ages 1.5 and 3, the behaviors observed among preschool children (ages 5 to 6) indicate that autonomy remains an ongoing developmental task. The variation between children who confidently select materials and those who seek validation supports contemporary critiques that psychosocial stages are not strictly age-bound (Lewis & Abell, 2020). The teachers' role in providing choices, familiarizing children with materials, and gradually building routines further shows that autonomy is not merely an individual achievement but a relational, socially mediated process. This interpretation aligns

with Rahma, Dwi Utami, and Hapidin (2016), who argue that opportunities for choice support autonomy, whereas over-restriction fosters doubt. The present study refines this perspective by illustrating how autonomy emerges within structured pedagogical guidance rather than spontaneous self-initiation.

The availability of varied media and resources allows children with heterogeneous abilities to select materials suited to their competence levels (Fitriani & Fajriana, 2025; Junaidi, 2019; Sapriyah, 2019). When viewed through Erikson's lens (Riendravi, 2013), these practices support the development of autonomy, but the findings also highlight the interconnectedness of autonomy, competence, and environmental structuring. This perspective aligns with Self-Determination Theory, which posits autonomy and competence as essential psychological needs that foster intrinsic motivation (Deci & Ryan, 2000; Maiyanti & Pradikto, 2025). The observation that previously passive children gradually learned to identify their abilities suggests that autonomy is cultivated through iterative exposure, modeling, and guided participation rather than sudden developmental leaps.

Related studies reinforce these interpretations. Differentiated learning can enhance motivation when students are offered meaningful choices (Brunello & Brunello, 2022), and tailored instruction can increase engagement and the relevance of learning (Istiqomah, Ridho Fauziyanto, Ramadani, & Thoib, 2024). These insights support Tomlinson's (2014) argument that differentiation is a systematic effort to match instruction with learners' needs (Sarnoto, 2024). However, the present study also reveals a persistent tension between policy aspirations, such as those articulated in the Merdeka Curriculum (Mendikbudristek, 2022), and the practical realities of implementation. Teachers enact child-centered learning but do so within constraints that require adaptive, often intuitive decision-making.

At the same time, allowing children to choose activities and take responsibility for those choices contributes to confidence, initiative, and persistence, traits emphasized within the Pancasila Learner Profile (Dilonia, Melki, & Gusmaneli, 2025). Research also shows that differentiated learning through play can support holistic development across cognitive, affective, and psychomotor domains (Astuti & Afendi, 2022). When integrated with Bandura's Social Cognitive Theory, differentiated strategies can create a socially rich learning ecology that supports children's growth in both autonomy and self-efficacy (Handayaningsih, Fauziati, Maryadi, & Supriyoko, 2024).

The study shows that differentiated learning at Al-Islam Kindergarten operates as a dynamic pedagogical process that shapes children's independence in contextually specific ways. Rather than functioning as a fixed method, differentiation unfolds through teachers' interpretive decisions, children's varied developmental trajectories, and the structural conditions of the learning environment. These interactions reveal that independence in early childhood is cultivated through relational and environmental design rather than arising solely from child-initiated autonomy. The findings also highlight gaps between conceptual aspirations and practical implementation, indicating that differentiation remains a developing rather than a fully institutionalized practice. This analysis points to the need for ongoing professional learning, institutional support systems, and deeper investigations into how early childhood educators translate differentiation principles into daily routines.

### Research Contribution

This study contributes empirical evidence to the limited body of research on differentiated learning in early childhood education. Most existing literature focuses on primary and secondary education, leaving early childhood contexts underexamined. The findings demonstrate how teachers in rural Indonesian settings interpret and negotiate differentiation, revealing both possibilities and constraints. These insights offer a foundation for policy development, particularly in strengthening inclusive and adaptive curriculum design for early childhood education. The study also guides teacher training programs that emphasize practical, context-responsive differentiation strategies.

### Limitation

Implementing differentiated learning presents several challenges that require careful attention. Teachers often struggle with limited time and energy, as designing differentiated activities demands more complex planning than conventional instruction. The study also shows that many teachers still have a partial understanding of differentiation principles, highlighting the need for sustained professional development. Managing classrooms where children engage in different activities simultaneously poses additional difficulties related to space, supervision, and transitions. These limitations indicate that differentiation requires stronger institutional support to be implemented sustainably and effectively.

### Conclusion

This study contributes a contextually grounded understanding of differentiated learning within Indonesia's *Merdeka Belajar* policy framework by examining its implementation in a rural early childhood education (ECE) setting, TK Al-Islam Bangkalan. The findings indicate that responsive variations in content and process, supported by structured routines and scaffolded teacher–child interactions, facilitate the emergence of independence, initiative, and responsibility among young learners. Rather than offering generalized claims of effectiveness, the study clarifies how differentiation operates under resource limitations, variable teacher expertise, and high teacher–student ratios, making its insights most applicable to ECE contexts with similar conditions. This contribution has relevance beyond Indonesia, as global discussions on differentiated learning increasingly emphasize the need for context-sensitive, culturally responsive adaptations rather than universalized models. The study, therefore, adds to international scholarship by demonstrating how differentiation must be interpreted through local pedagogical, socio-cultural, and institutional realities.

The study presents several limitations that shape the scope of its conclusions, including its reliance on a single-site case study that restricts the generalizability of the findings beyond similar early childhood education contexts, observational data that depend heavily on teachers' interpretive accounts and routine practices which may limit the visibility of less explicit differentiation strategies, and the partial exploration of product differentiation due to limited assessment artifacts. These constraints indicate the need for methodological expansion through multi-site comparative studies across rural and urban settings in order to capture socio-cultural and institutional variability, as well as design-based research collaborations that co-develop and refine product differentiation rubrics in alignment with classroom realities. Future research would also benefit from longitudinal quasi-experimental approaches that trace independence-related outcomes, such as initiative, decision-making, and responsibility, into early primary schooling to examine developmental continuity. At the same time, cross-national comparative studies could help illuminate how differentiated learning is adapted in low-resource or culturally diverse environments, thereby enriching global conversations on context-responsive and equitable early childhood pedagogy.

### Declarations

#### Author Contribution Statement

Danang Prastyo conceptualized the study, developed the methodology, conducted Non-participatory observations at TK Al-Islam Bangkalan, performed in-depth interviews with the school principal and Group B teachers, analyzed the data using the Miles and Huberman model, and led the interpretation of findings on differentiated learning strategies in developing early childhood independence. Both authors participated in drafting and revising the manuscript and approved the final version for submission.

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### Data Availability Statement

The dataset generated and analyzed during the research is available from the corresponding author upon reasonable request.

### Declaration of Interests Statement

All authors declare that they have no financial or personal interests that could influence the work presented in this manuscript.

### Additional Information

Correspondence and material requests should be addressed to [danang@iainmadura.ac.id](mailto:danang@iainmadura.ac.id)

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