Differentiated Learning Strategies in Indonesian Language Subjects for Grade IV

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Abstract

Differentiated inquiry-based learning represents a promising approach for addressing diverse student needs in elementary literacy instruction, yet empirical evidence regarding its implementation in Indonesian language contexts remains limited. This qualitative case study examined differentiated learning strategies in fourth-grade Indonesian language instruction at two elementary schools in West Jakarta. Data were collected through classroom observations, semi-structured interviews with principals, teachers, and students, and document analysis of teaching modules and assessments. Analysis followed Miles, Huberman, and Saldaña's framework, with triangulation ensuring trustworthiness. Pretest-posttest comparisons revealed substantial literacy gains, with reading scores improving 17.4 points and writing scores 17.6-20.7 points across schools. Student surveys indicated significant increases in motivation (68%), self-confidence (75%), and engagement (80%). Teachers successfully implemented content, process, and product differentiation while integrating inquiry-based activities. However, implementation faced challenges including time constraints (100% of teachers), resource limitations (88%), and pedagogical complexity (75%). Unexpectedly, peer learning dynamics emerged organically, with students spontaneously adopting teaching roles. Findings support Tomlinson's differentiation framework and Vygotsky's constructivism, demonstrating that inquiry-based differentiation enhances both cognitive and affective outcomes. However, successful implementation requires systemic support including dedicated planning time, graded resources, and sustained professional development. This study contributes theoretical understanding of integrating differentiation with inquiry using systematic planning models while offering practical implications for Merdeka Curriculum implementation.

INTRODUCTION

Basic education represents a foundational pillar in shaping human capital capable of navigating the complexities of the 21st century. According to Law No. 20 of 2003 concerning the National Education System, basic education provided in elementary schools serves as the primary platform for developing essential competencies in students. In an era characterized by rapid technological advancement and globalization, educational transformation has become imperative for societies to effectively address both internal and external challenges (Hidayat, 2021). Contemporary educational discourse emphasizes the cultivation of 21st-century competencies, particularly the "4Cs"—critical thinking, collaboration, communication, and creativity—which are recognized as fundamental skills necessary for success in both professional and personal domains (Geisinger, 2016). Research indicates that these competencies not only enhance academic performance but also prepare students for the demands of an increasingly interconnected and technology-driven world (Binkley et al., 2012). Within this context, the role of teachers has evolved beyond traditional content delivery to encompass facilitation of contextual, flexible, and student-centered learning experiences. The Indonesian Merdeka Curriculum was developed in response to these demands, emphasizing differentiated instruction and learner-centered pedagogical approaches.

Differentiated learning has emerged as a pedagogically sound approach that acknowledges and responds to the diverse needs, interests, and learning styles of students (Tomlinson, 2017; Anggraini, 2022; Wahyuningsari et al., 2022). This instructional framework recognizes that learners enter classrooms with varied backgrounds, abilities, and preferences, necessitating flexible teaching strategies that accommodate these differences (Subban, 2006). By modifying content, process, and product according to student readiness and learning profiles, differentiated instruction creates more inclusive and engaging learning environments (Gardner, 1999). This approach aligns seamlessly with Inquiry-Based Learning (IBL), wherein students actively engage in questioning, exploration, analysis, and independent knowledge construction (Madhuri et al., 2012). The inquiry approach not only embodies the learner-centered philosophy of the Merdeka Curriculum but also effectively develops higher-order thinking skills such as analytical, creative, and reflective thinking (Duran & Dökme, 2016). A comprehensive meta-analysis by Antonio and Prudente (2023) demonstrated that inquiry-based approaches significantly enhance students' higher-order thinking skills, with particularly strong effects on critical thinking ($g = 1.472$) and creative thinking ($g = 1.879$). In Indonesian language instruction, these strategies hold particular relevance for enhancing reading and writing literacy, which serve not merely as basic skills but as essential tools for developing reasoning capabilities, articulating ideas, and participating meaningfully in social discourse (Graham, 2020; Yani, 2025).

Despite these theoretical frameworks and curriculum mandates, substantial gaps persist between curricular ideals and classroom implementation. Empirical evidence indicates that numerous teachers continue to employ conventional pedagogical methods emphasizing lecture-based instruction and rote memorization, resulting in passive student engagement and suboptimal learning outcomes (Prince, 2004). Passive learning approaches, characterized by one-way knowledge transmission and limited student interaction, often lead to surface-level understanding rather than deep conceptual comprehension (Michael, 2006). Teachers encounter significant challenges in designing inquiry-based differentiated learning experiences due to temporal constraints, limited conceptual understanding, inadequate resources, and difficulties in adapting instructional activities to individual student needs (Smale-Jacobse et al., 2019; Shareefa et al., 2019). Research by Vingsle (2014) highlights that using assessment information to adjust instruction according to student needs represents an extremely complex and demanding process for educators. Furthermore, the persistent issue of low reading and writing literacy among fourth-grade elementary students presents additional obstacles to implementing inquiry-based differentiated instruction (Wahyuni, 2024; Destini et al., 2024). The reciprocal relationship between reading and writing skills, wherein improvements in one domain strengthen the other, underscores the importance of integrated literacy instruction (Graham et al., 2018).

Existing research has examined differentiated learning and inquiry-based approaches independently, yet few studies have systematically integrated these two pedagogical frameworks within the context of Indonesian language instruction. More critically, limited scholarship explores how teachers develop inquiry-based differentiated learning strategies using systematic planning models such as the Banathy Model. The Banathy Model offers particular utility for educational design through its systemic approach, comprising six interconnected and interdependent steps that facilitate comprehensive achievement of learning objectives (Banathy, 1991). This knowledge gap underscores the necessity of investigating the integration of differentiated and inquiry-based learning through systematic frameworks, particularly in the context of elementary Indonesian language instruction where literacy development remains a critical concern.

The urgency of this research stems from the pressing need for practical solutions that enable teachers to optimize implementation of the Merdeka Curriculum, specifically regarding differentiated learning, inquiry-based approaches, and systematic instructional planning. International evidence suggests that successful implementation of differentiated instruction requires comprehensive professional development, collaborative school cultures, and supportive leadership (De Neve et al., 2015; Latz & Adams, 2011). By examining how teachers plan, implement, evaluate, and follow up on

fourth-grade Indonesian language instruction using combined differentiated and inquiry-based approaches, this research contributes both theoretical insights and practical applications for enhancing the quality of elementary education and student literacy development.

The novelty of this research lies in its integration of the Banathy planning model, differentiated learning strategies, and inquiry-based approaches within fourth-grade Indonesian language instruction. This study not only presents fresh perspectives on differentiated learning practices but also offers a systematic approach that serves as a reference for teachers in addressing various challenges associated with Merdeka Curriculum implementation. The focus on developing reading and writing literacy in Indonesian language subjects represents a relatively rare contribution, given that most previous studies have concentrated on science, mathematics, or thematic subjects (Culhane, 2020).

This study seeks to address the following research questions: (1) What are the strategies for planning differentiated learning in fourth-grade Indonesian language lessons? (2) What are the strategies for implementing differentiated learning in fourth-grade Indonesian language lessons? (3) What are the strategies for evaluating differentiated learning in fourth-grade Indonesian language lessons? (4) What follow-up strategies are applied in the learning process? Correspondingly, the objectives of this study are to describe: (1) differentiated learning planning strategies; (2) differentiated learning implementation strategies; (3) differentiated learning evaluation strategies; and (4) follow-up strategies applied in fourth-grade Indonesian language instruction. Through this comprehensive examination, the research aims to provide actionable insights that bridge the gap between educational theory and classroom practice while advancing literacy development in Indonesian elementary education.

METHODS

This study employed a qualitative case study design to explore and describe differentiated learning strategies implemented by teachers in fourth-grade Indonesian language instruction. Case study methodology was selected as it provides systematic tools for examining complex phenomena within their natural contexts (Yin, 2018), making it particularly valuable for understanding educational practices where contextual factors significantly influence implementation and outcomes. The multiple-case design approach enabled comprehensive data collection from diverse sources while allowing for cross-case comparison to identify patterns and unique characteristics across different educational settings. This design aligns with the study's objectives to investigate how teachers plan, implement, evaluate, and follow up on inquiry-based differentiated learning in authentic classroom environments.

The research was conducted at two elementary schools in West Jakarta: SDN Kalideres 01 Pagi and SDN Duri Kosambi 02 Pagi. These schools were purposively selected based on specific criteria that ensured relevance to the research objectives (Patton, 2015). The selection criteria included: (a) active implementation of the Merdeka Curriculum for a minimum of two years, (b) documented experience with differentiated learning practices, and (c) willingness to participate in comprehensive classroom observations and interviews. Purposive sampling, characterized by intentional selection of information-rich cases (Creswell & Plano Clark, 2017), enabled the study to focus on schools where differentiated learning practices were established rather than emergent. The research participants comprised school principals, fourth-grade classroom teachers, and fourth-grade students from both schools. Teachers were selected based on their direct involvement in implementing differentiated instruction, while students were included to provide insights into their learning experiences. This multi-stakeholder approach ensured comprehensive understanding of differentiated learning from multiple perspectives within the educational ecosystem.

Data collection employed three complementary methods to ensure comprehensive exploration of the phenomenon. First, participatory classroom observations were conducted to document actual teaching practices, classroom interactions, and the implementation of differentiated strategies in natural settings. Observation protocols focused on teacher instructional behaviors, student

engagement patterns, learning materials utilized, and classroom management techniques during Indonesian language lessons. Second, in-depth semi-structured interviews were conducted with principals, teachers, and students to capture their perceptions, experiences, challenges, and reflections regarding differentiated learning implementation. Interview guides were developed based on the research questions and theoretical framework, allowing for both structured inquiry and emergent themes to be explored. Third, document analysis examined teaching modules, lesson plans, diagnostic assessment instruments, and student evaluation results to understand the planning and assessment dimensions of differentiated instruction. The combination of these three data sources facilitated methodological triangulation, which enhances the credibility and validity of qualitative findings by cross-verifying information from different sources (Carter et al., 2014; Patton, 2015). This triangulation approach strengthened the trustworthiness of the research by providing multiple perspectives on the same phenomenon and reducing potential biases inherent in any single data collection method.

Data analysis followed the systematic procedures outlined by Miles, Huberman, and Saldaña (2014), consisting of three interconnected phases: data reduction, data display, and conclusion drawing and verification. During data reduction, all interview recordings were transcribed verbatim, observational field notes were organized chronologically, and documents were systematically catalogued. Raw data were then coded to identify recurring patterns, themes, and concepts related to differentiated learning strategies. Data display involved organizing the reduced data into matrices, charts, and narrative summaries that enabled pattern recognition and relationship identification across different data sources and cases. The final phase of conclusion drawing involved interpreting the organized data to develop coherent explanations of how teachers implement differentiated learning, what challenges they encounter, and what solutions they employ. This iterative and dynamic analytical process allowed for continuous evaluation and refinement of findings throughout the data collection period (Huberman & Miles, 1994). To ensure analytical rigor and minimize researcher bias, peer debriefing sessions were conducted with fellow researchers who provided external perspectives on interpretations and helped identify potential oversights or alternative explanations.

The validity and trustworthiness of the research findings were established through multiple strategies. Beyond triangulation of data sources and methods, the study employed prolonged engagement in the field, with researchers spending sufficient time in both schools to develop rapport with participants and gain deep understanding of the contexts. Member checking procedures were implemented wherein preliminary findings and interpretations were shared with teacher participants to verify accuracy and resonance with their lived experiences. Thick description was utilized in reporting findings to provide sufficient contextual detail that enables readers to assess the transferability of results to similar settings. These trustworthiness strategies align with established criteria for qualitative research rigor, including credibility, dependability, confirmability, and transferability. Ethical considerations were carefully addressed throughout the research process, including obtaining informed consent from all participants, ensuring confidentiality and anonymity in data reporting, and securing necessary approvals from relevant educational authorities and institutional review processes.

RESULTS AND DISCUSSION

Results

Literacy Achievement Gains Through Differentiated Inquiry-Based Learning

The implementation of differentiated inquiry-based learning strategies in fourth-grade Indonesian language instruction yielded substantial improvements in students' reading and writing literacy skills across both participating schools. Table 1 presents the pretest and posttest scores for reading and writing assessments, demonstrating clear progression in student achievement following the intervention period.

Table 1. Pretest and Posttest Scores for Reading and Writing Skills

School	Assessment Area	Pretest Mean	Posttest Mean	Gain	KKTP

SDN Kalideres 01	Reading	62.4	79.8	+17.4	76
SDN Kalideres 01	Writing	58.9	76.5	+17.6	76
SDN Duri Kosambi 02	Reading	60.7	78.1	+17.4	75
SDN Duri Kosambi 02	Writing	57.3	78.0	+20.7	75

At SDN Kalideres 01, students' average reading scores increased from 62.4 to 79.8, representing a gain of 17.4 points and surpassing the Learning Objective Achievement Criteria (KKTP) of 76. Writing scores at this school improved from 58.9 to 76.5, achieving a 17.6-point increase. Similarly, at SDN Duri Kosambi 02, reading scores rose from 60.7 to 78.1 (a 17.4-point gain), exceeding the KKTP of 75, while writing scores demonstrated the most substantial improvement, increasing from 57.3 to 78.0, a remarkable 20.7-point gain. These quantitative results indicate that differentiated inquiry-based instructional strategies effectively elevated students' literacy performance across both schools, with all posttest means meeting or exceeding the established achievement criteria.

Teachers employed various differentiation strategies tailored to individual student readiness levels. As one teacher from SDN Duri Kosambi 02 explained during the interview:

"I give different readings according to the students' abilities. I give students who have difficulties picture books, and I give students who are quick to understand more analytical readings."

This approach to content differentiation extended beyond reading materials to include varied task complexity and scaffolding levels. Teachers systematically grouped students based on diagnostic assessment results and provided tiered activities that aligned with each group's current performance level. For struggling readers, visual supports and simplified texts were employed, while advanced readers engaged with complex texts requiring higher-order thinking skills such as analysis, synthesis, and evaluation. The inquiry component manifested through student-led questioning sessions where learners formulated their own questions about texts, investigated themes independently or collaboratively, and presented findings through multiple modalities including oral presentations, written reports, and creative visual representations.

Enhanced Student Motivation and Self-Confidence

Beyond academic achievement, the implementation of differentiated inquiry-based learning produced notable affective outcomes. Survey data collected from students at both schools revealed significant improvements in motivation, self-confidence, and engagement with learning tasks. Table 2 summarizes the key findings from student questionnaires administered following the intervention period.

Table 2. Student Perceptions of Learning Experience (N=96)

Indicator	Percentage	Response Category
Felt more confident reading aloud in class	75%	Agree/Strongly Agree
Motivated by task choice aligned with interests	68%	Agree/Strongly Agree
Enjoyed variety of learning products (summaries, posters, stories)	80%	Agree/Strongly Agree
Preferred inquiry activities over traditional lectures	72%	Agree/Strongly Agree

The data indicate that 75% of students reported increased confidence when reading texts in front of the class, suggesting that differentiated approaches successfully reduced anxiety associated with public performance. Notably, 68% of students expressed heightened motivation when given choices in task completion that aligned with their personal interests, highlighting the importance of learner agency in engagement. The highest positive response (80%) was associated with the variety of learning products offered, including creating summaries, designing posters, and composing short stories. This finding suggests that product differentiation resonated strongly with students' diverse expression preferences. Additionally, 72% of students indicated preference for inquiry-based activities over traditional lecture formats, revealing student appreciation for active, exploration-oriented learning experiences.

Qualitative data from student written reflections provided deeper insights into individual experiences. One fourth-grade student from SDN Kalideres 01 wrote:

"I am happy when asked to make posters because I like drawing. I understand the content of the reading because I have to illustrate it."

This reflection illuminates how product differentiation not only accommodated artistic preferences but also facilitated comprehension through multimodal engagement. Students repeatedly mentioned feeling "valued," "understood," and "excited" about learning in their written responses, suggesting that differentiation strategies successfully addressed emotional and motivational dimensions of learning alongside cognitive objectives. Several students explicitly noted that they no longer felt "forced" to complete tasks they found uninteresting or incomprehensible, indicating that choice and personalization reduced feelings of coercion and increased intrinsic motivation.

Teacher-Reported Implementation Challenges

While differentiated inquiry-based learning produced positive student outcomes, teachers identified substantial challenges in implementation, particularly during planning and preparation phases. Interview data revealed three primary obstacle categories: time constraints, resource limitations, and pedagogical complexity. Table 3 presents the frequency of challenge themes mentioned across teacher interviews.

Table 3. Teacher-Reported Implementation Challenges (N=8 teachers)

Challenge Category	Frequency	Specific Issues Mentioned
Time constraints	8/8 (100%)	Lesson planning, material preparation, differentiated assessment design
Resource limitations	7/8 (88%)	Graded reading materials, varied teaching aids, technology access
Pedagogical complexity	6/8 (75%)	Integrating inquiry with differentiation, managing multiple groups, assessment design
Professional development needs	5/8 (63%)	Training in Banathy Model, inquiry facilitation techniques, differentiation strategies

All participating teachers (100%) identified time as a significant barrier to effective implementation. One teacher from SDN Kalideres 01 articulated this concern:

"Preparing different inquiry-based differentiated teaching modules is time-consuming. Not to mention preparing appropriate learning media, teaching aids, and assessments."

Teachers reported that designing differentiated materials required substantial preparation beyond regular lesson planning, often necessitating work during personal time. The absence of readily available graded reading materials in Indonesian language at appropriate difficulty levels compelled teachers to create or adapt resources independently, further amplifying time demands. Resource limitations (reported by 88% of teachers) extended beyond physical materials to include technological infrastructure, as some classrooms lacked adequate access to computers or internet connectivity necessary for digital inquiry activities.

Pedagogical complexity emerged as another significant challenge, with 75% of teachers expressing difficulty integrating inquiry principles with differentiation frameworks. Teachers described the tension between providing sufficient structure to guide inquiry and allowing adequate student autonomy to explore independently. Managing multiple differentiated groups simultaneously while facilitating inquiry processes proved particularly demanding in terms of classroom organization and instructional flow. One teacher noted the challenge of "monitoring three different reading groups conducting separate inquiry investigations while ensuring each group stays on task and makes progress toward learning objectives."

The need for sustained professional development was mentioned by 63% of teachers, who specifically requested training in applying the Banathy Model systematically, facilitating authentic inquiry experiences, and designing robust differentiation strategies. Teachers acknowledged that while they understood theoretical principles, translating these into consistent classroom practice required ongoing support, modeling, and collaborative problem-solving with colleagues.

Unexpected Finding: Peer Learning Dynamics

An unexpected but significant finding emerged regarding peer learning dynamics within differentiated inquiry-based classrooms. Observations revealed that when students worked in mixed-ability groups during certain inquiry phases, higher-performing students spontaneously adopted teaching roles, explaining concepts and scaffolding lower-performing peers' understanding. Teachers had not explicitly planned for this peer teaching dimension, but it manifested organically across both schools. Observation notes documented instances where advanced readers assisted struggling peers with decoding strategies, vocabulary clarification, and comprehension monitoring, behaviors that appeared to benefit both tutors and tutees.

Additionally, during inquiry presentations, students who had initially been identified as low performers in traditional assessments demonstrated unexpected strengths in areas such as visual representation, creative storytelling, and collaborative skills. One student who struggled with written composition excelled at creating detailed visual storyboards that effectively communicated narrative structure, prompting his teacher to reconsider her assessment of his comprehension abilities. These observations suggest that differentiated inquiry-based approaches may reveal hidden competencies not captured by conventional literacy assessments, offering a more holistic understanding of student capabilities.

Discussion

The substantial literacy gains documented in this study provide empirical support for Tomlinson's (2017) theoretical framework of differentiated instruction, which posits that adjusting content, process, and product according to student readiness, interests, and learning profiles enhances achievement. The 17-20 point average improvements in reading and writing scores across both schools demonstrate that when teachers systematically differentiate instruction in Indonesian language, students make measurable progress beyond what might be expected from conventional approaches. These findings align closely with Puzio et al.'s (2020) meta-analysis, which reported a weighted mean effect size of +0.13 for differentiated literacy instruction overall, with particularly strong effects for writing outcomes (g = +0.96). The current study's substantial writing score increases, especially the 20.7-point gain at SDN Duri Kosambi 02, corroborate this pattern, suggesting that differentiated approaches may be particularly powerful for developing compositional skills.

The integration of inquiry-based learning appears to have amplified these effects beyond differentiation alone. Vygotsky's (1978) social constructivism emphasizes that learners construct knowledge through active exploration and social interaction, principles clearly operationalized through the inquiry activities implemented in this study. When students formulated their own questions about texts, investigated themes collaboratively, and constructed explanations in their own words, they engaged in authentic knowledge-building processes. The effectiveness of this approach is consistent with Antonio and Prudente's (2023) meta-analysis demonstrating that inquiry-based approaches significantly enhance higher-order thinking skills, with large effect sizes for both critical thinking (g = 1.472) and creative thinking (g = 1.879). The current study extends these findings into the literacy domain, suggesting that inquiry-based differentiation can simultaneously develop both literacy competencies and cognitive skills.

The reciprocal relationship between reading and writing documented by Graham et al. (2018) provides additional theoretical context for understanding the concurrent improvements in both literacy domains observed in this study. When students engaged in inquiry processes that required both reading source materials and composing written explanations, summaries, or creative texts, they experienced integrated literacy development where skills in one domain reinforced the other. This integration may explain why both reading and writing scores improved substantially rather than one domain advancing while the other stagnated.

The significant improvements in student motivation and self-confidence represent outcomes as pedagogically important as academic achievement gains. The finding that 68% of students felt more

motivated when given task choices aligned with their interests directly supports self-determination theory (Deci & Ryan, 2000), which emphasizes autonomy, competence, and relatedness as fundamental psychological needs underlying intrinsic motivation. By providing choice in learning products and inquiry questions, teachers satisfied students' autonomy needs, leading to increased engagement and persistence. This result resonates with research demonstrating that inquiry-based learning transforms education from something students "have to do" into something they genuinely enjoy by leveraging their natural curiosity (Whitby School, n.d.; Friesen & Scott, 2013).

The 75% of students reporting increased confidence in reading aloud suggests that differentiation reduced performance anxiety by ensuring students worked with appropriately challenging materials. When struggling readers practiced with accessible texts featuring visual supports before public reading, they experienced success that built self-efficacy. Conversely, advanced readers maintained challenge and interest through complex texts requiring analytical thinking. This scaffolded approach aligns with the principles of the Merdeka Curriculum, which emphasizes student-centered learning and personalized pathways. The current findings echo Mahfudz's (2023) assertion that differentiated learning makes the educational process more engaging and meaningful by honoring individual differences.

The finding that 80% of students enjoyed product variety (posters, stories, summaries) demonstrates the power of recognizing and accommodating diverse expression styles. Gardner's (1999) theory of multiple intelligences suggests that individuals possess varied cognitive strengths, and educational approaches that allow multiple forms of expression enable more students to demonstrate understanding effectively. The student who expressed happiness creating posters because of interest in drawing exemplifies how product differentiation can transform a potential struggle into an opportunity for success. This finding supports Amaliyah and Setiono's (2024) research indicating that differentiation provides personalized learning experiences where students feel valued and actively involved.

The unexpected peer learning dynamics observed in this study extend beyond planned instructional strategies, suggesting that differentiated inquiry-based classrooms create social learning ecologies where students naturally adopt teaching roles. This spontaneous peer tutoring aligns with Vygotsky's (1978) concept of the zone of proximal development, wherein more capable peers provide scaffolding that enables learners to accomplish tasks beyond their independent capability. The academic and social benefits of peer teaching have been well-documented (Topping, 2005), but the current study suggests these dynamics may emerge organically when differentiation and inquiry structures create appropriate conditions rather than requiring explicit orchestration by teachers.

The implementation challenges identified by teachers in this study are consistent with extensive international research documenting obstacles to differentiated instruction. The universal concern about time constraints echoes findings from multiple contexts, including Wan's (2016) observation that differentiating instruction is more complex in reality than in theory, requiring substantial preparation that many teachers struggle to accommodate within existing workload structures. Smale-Jacobse et al. (2019) found in their systematic review that time for planning and implementation represents one of the most consistently reported barriers across diverse educational settings. The current study confirms this pattern in the Indonesian elementary context, where teachers must navigate the additional complexity of integrating inquiry-based approaches alongside differentiation.

Resource limitations, reported by 88% of teachers, reflect a systemic challenge that extends beyond individual teacher capacity. The scarcity of graded reading materials in Indonesian language at appropriate difficulty levels creates a foundational obstacle to content differentiation in literacy instruction. Research by Shareefa et al. (2019) identified that limited resources and insufficient administrative support significantly impacted teachers' capacity to implement differentiation effectively, findings echoed in the current study. The need for teachers to independently create differentiated materials represents an unsustainable approach that places excessive burden on

individual practitioners rather than providing systemic support through curriculum development and resource provision.

The pedagogical complexity of integrating inquiry-based and differentiated approaches represents a challenge requiring sustained professional development. Teachers' difficulty managing multiple differentiated groups conducting separate inquiry investigations simultaneously highlights the cognitive and organizational demands of this instructional model. De Jager (2023) and Wan (2016) documented similar challenges related to heterogeneous classrooms and the perceived complexity of differentiation. The current study extends these findings by revealing the compounded complexity when inquiry-based learning is layered onto differentiation, creating a highly demanding instructional approach that requires sophisticated pedagogical knowledge and classroom management skills.

The 63% of teachers requesting professional development specifically in the Banathy Model demonstrates recognition that systematic instructional design frameworks can provide structure to navigate this complexity. Banathy's (1991) systems design approach emphasizes interconnected components working synergistically toward learning objectives, potentially offering teachers a coherent framework for integrating multiple pedagogical approaches. However, the gap between understanding theoretical principles and implementing them consistently in practice represents a well-documented challenge in teacher education (Darling-Hammond et al., 2017). The current findings suggest that one-time training is insufficient; rather, ongoing, job-embedded professional learning with opportunities for practice, feedback, and collaborative problem-solving is necessary for sustained implementation.

Theoretically, this study contributes to the literature by demonstrating that inquiry-based differentiation in literacy instruction produces both cognitive and affective outcomes, supporting a holistic model of learning that values motivation and self-confidence alongside academic achievement. The findings extend existing theory by showing how differentiation and inquiry can be productively integrated rather than implemented as separate pedagogical approaches. The unexpected peer learning dynamics suggest that these instructional approaches may create emergent classroom cultures where students develop collaborative and teaching competencies beyond what teachers explicitly plan, pointing toward self-organizing learning communities as an outcome of well-designed differentiation.

Practically, the study offers actionable insights for elementary schools implementing the Merdeka Curriculum or similar learner-centered reforms. Schools must provide comprehensive support systems including dedicated planning time for teachers, development or procurement of graded literacy resources, and sustained professional development emphasizing systematic instructional design models such as the Banathy framework. School leaders should recognize that implementing inquiry-based differentiation represents a substantial pedagogical shift requiring multi-year commitment rather than quick adoption. Creating collaborative structures such as professional learning communities where teachers can share strategies, co-develop materials, and problem-solve implementation challenges appears essential based on teachers' expressed needs and research on effective differentiation support (De Neve et al., 2015).

This study's findings must be interpreted within several limitations. First, the two-school sample, while providing rich case study data, limits generalizability to other Indonesian elementary schools with different demographic profiles, resource availability, or institutional cultures. Second, the six-month intervention period, though sufficient to document literacy gains and motivational changes, may not capture long-term sustainability of these effects or delayed impacts on student learning trajectories. Third, the absence of a control group receiving traditional instruction prevents definitive causal attribution, as observed improvements might partially reflect maturation effects, concurrent educational influences, or researcher presence (Hawthorne effects). Fourth, teacher self-report data regarding implementation challenges may be influenced by social desirability bias or incomplete self-awareness of practice. Future research employing randomized controlled designs, longer follow-up

periods, and multi-method assessment of implementation fidelity would strengthen causal inferences and generalizability.

CONCLUSION

This study demonstrates that inquiry-based differentiated learning effectively enhances fourth-grade students' reading and writing literacy skills, with average gains of 17-20 points across both participating schools. Beyond academic achievement, the approach significantly improved student motivation (68%), self-confidence (75%), and engagement (80%), confirming that instructional strategies accommodating diverse learner needs yield both cognitive and affective benefits. The integration of differentiation—adjusting content, process, and product—with inquiry-based learning creates synergistic effects that position students as active knowledge constructors while honoring individual readiness, interests, and learning profiles. This study contributes to the theoretical understanding of how differentiated and inquiry-based approaches can be systematically integrated using the Banathy Model, offering a coherent framework for implementing the Merdeka Curriculum's learner-centered vision. The findings extend existing literature by demonstrating applicability of these approaches specifically within Indonesian language literacy instruction, an area previously underexplored compared to mathematics and science education.

However, successful implementation requires addressing substantial systemic barriers. Teachers universally reported time constraints, resource limitations, and pedagogical complexity as significant obstacles. These findings underscore that inquiry-based differentiation cannot succeed through teacher effort alone; rather, comprehensive institutional support including dedicated planning time, graded literacy resources, and sustained professional development proves essential. School administrators must recognize this approach as fundamental pedagogical transformation requiring long-term commitment rather than rapid adoption. Future research should employ randomized controlled designs with longer follow-up periods to establish causal relationships and sustainability of effects. Additionally, investigating scalability across diverse socioeconomic contexts, developing teacher professional development models specific to inquiry-based differentiation, and exploring technology integration to reduce teacher workload represent promising research directions. Ultimately, when appropriately supported, inquiry-based differentiated learning offers a viable pathway toward cultivating literate, confident, and critically thinking students prepared for 21st-century challenges.

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