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From Curriculum Reform to Classroom Readiness: Elementary Teachers' Perspectives on Deep Learning in Indonesia's *Merdeka Curriculum*

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Abstract: The integration of deep learning into Indonesia's Merdeka Curriculum reflects a broader shift from curriculum reform to classroom readiness, requiring teachers to translate policy aspirations into meaningful instructional practice. However, this transition depends not only on teachers' acceptance of reform but also on their conceptual understanding, pedagogical readiness, and access to institutional support. This study explores elementary school teachers' perspectives on curriculum reform, their understanding of deep learning, and their readiness to implement deep learning-oriented instruction within the Merdeka Curriculum. Using a qualitative exploratory design supported by descriptive questionnaire data, the study involved 18 elementary school teachers and one school principal. Data were collected through questionnaires and semi-structured interviews and analysed using descriptive statistics and thematic analysis. The findings show that most teachers perceived curriculum reform positively because it promotes flexibility, student-centred learning, character development, and twenty-first-century competencies. Teachers also demonstrated a relatively strong understanding of deep learning, associating it with higher-order thinking, real-world application, student engagement, and meaningful learning experiences. However, their readiness remained conditional, given unclear technical guidance, challenges in lesson planning and assessment design, administrative workload, limited resources, and the need for practical professional development. The findings suggest that deep learning-oriented reform cannot be realised through policy change alone. Its classroom implementation requires stronger alignment among curriculum expectations, teacher capacity building, school leadership, instructional resources, and reduced administrative burdens. This study contributes to curriculum reform discourse by highlighting how teacher readiness mediates the translation of deep learning policy into classroom practice in Indonesian elementary education.

Keywords: deep learning, merdeka curriculum, teacher readiness, elementary education, curriculum reform, classroom practice.

1. Introduction

Curriculum reform has become a central agenda in many education systems as schools are increasingly expected to prepare learners for complex social, technological, and economic changes. In the twenty-first century, education is no longer understood merely as the transmission of subject knowledge, but as a process

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of developing learners' competencies, character, agency, creativity, collaboration, and ability to apply knowledge in meaningful contexts. This shift has encouraged education systems to move from teacher-centered instruction toward more learner-centered, competency-oriented, and contextually responsive learning. International discussions on deeper learning emphasize that students need opportunities to develop transferable knowledge, higher-order thinking, communication, collaboration, creativity, and the capacity to solve authentic problems (Fullan et al., 2017; McTighe & Silver, 2020). Within this global orientation, curriculum reform is not only a matter of changing official documents, but also of transforming classroom practice.

In Indonesia, this shift is reflected in the implementation of the Merdeka Curriculum, which provides greater flexibility for schools and teachers to design learning based on students' needs, developmental stages, local contexts, and essential competencies. The official academic framework of the Merdeka Curriculum positions learning as a means of developing lifelong learners who are competent, character-oriented, and aligned with the Pancasila Student Profile (BSKAP, 2024). Compared with previous curriculum models that were often perceived as content-heavy, the Merdeka Curriculum emphasizes essential learning materials, differentiated instruction, formative assessment, project-based learning, and student-centered learning experiences. This orientation creates opportunities for teachers to design more meaningful and contextual learning. However, it also requires teachers to reinterpret their instructional roles, redesign learning activities, and develop assessment practices that are aligned with the principles of competency-based and meaningful learning.

Within the Merdeka Curriculum, the idea of Pembelajaran Mendalam, or deep learning, has gained increasing attention as a pedagogical orientation for strengthening classroom learning. In this study, deep learning refers to an educational approach, not to deep learning in artificial intelligence. In educational discourse, deep learning emphasizes conceptual understanding, higher-order thinking, reflection, knowledge transfer, learner engagement, and the application of knowledge in authentic contexts. Kemendikdasmen in Alim et al. (2025) defines Pembelajaran Mendalam as an approach that creates learning experiences that are mindful, meaningful, and joyful through the holistic integration of cognitive, ethical, aesthetic, and physical dimensions. This definition resonates with the literature on meaningful learning, mindful learning, and deeper learning, which stresses the importance of connecting new knowledge with prior understanding, developing learners' awareness of their thinking, and enabling students to use knowledge beyond classroom tasks (Ausubel, 2000; Langer, 2016; Darling-Hammond et al., 2020).

Deep learning is particularly relevant to the Merdeka Curriculum because both share a commitment to student-centered, flexible, contextual, and competency-oriented education. The Merdeka Curriculum encourages teachers to focus on essential competencies and learning outcomes rather than merely completing large amounts of content. Similarly, deep learning encourages teachers to design learning that promotes inquiry, problem solving, collaboration, reflection, formative assessment, and meaningful use of technology. Rahmawati et al. (2025) argue that Pembelajaran Mendalam represents a transformation toward more meaningful and high-quality learning, while Fullan and Langworthy (2014) view deep learning as closely related to new pedagogies that connect students with real-world challenges. From this perspective, deep learning should not be understood as an additional program or separate subject, but as a pedagogical orientation that can help teachers translate the goals of the Merdeka Curriculum into classroom practice.

Despite its pedagogical promise, the transition from curriculum reform to classroom readiness remains challenging. Teachers are the key actors who interpret policy, design instruction, assess learning, and create classroom experiences for students. When curriculum reform introduces new pedagogical expectations, teachers need more than positive attitudes toward change. They also need conceptual clarity, instructional knowledge, assessment competence, professional confidence, and institutional support. Studies on the implementation of the Merdeka Curriculum have shown that teachers' understanding of curriculum principles shapes teacher readiness, their ability to design learner-centered instruction, their assessment literacy, access to training, school leadership, infrastructure, and administrative demands (Yusa et al., 2023; Al Arsyadhi et al., 2024; Ben Gurion, 2024; Rohmah et al., 2024). These studies indicate that curriculum

reform can only become meaningful classroom practice when teachers are sufficiently prepared and supported.

The issue of readiness is especially important in elementary education. Elementary school teachers play a foundational role in shaping students' early learning habits, curiosity, self-regulation, literacy, numeracy, collaboration, and attitudes toward learning. At this level, deep learning is not merely about asking students to complete complex tasks; it involves designing age-appropriate learning experiences that are meaningful, engaging, reflective, and connected to students' daily lives. The Merdeka Curriculum also recognizes the importance of foundational competencies and developmentally appropriate learning, particularly in preparing students to become lifelong learners (Fauzan et al., 2023). Therefore, elementary teachers' understanding and readiness are crucial for determining whether deep learning can be implemented as a real classroom practice or remains only as a policy aspiration.

Previous studies have examined teachers' readiness and challenges in implementing the Merdeka Curriculum. Yusa et al. (2023) identified both opportunities and challenges in the implementation of the curriculum across Indonesian schools, while Al Arsyadhi et al. (2024) reported that elementary teachers' readiness is influenced by their knowledge, planning ability, and institutional conditions. Ben Gurion (2024) similarly found that teachers' readiness to implement the Merdeka Curriculum requires continuous support and professional development. More recent studies have also begun to discuss deep learning-oriented instruction in Indonesian schools. Subiyantoro and Musa (2024), for example, highlighted the importance of preparing primary school teachers for deep learning by addressing readiness, challenges, and institutional support. Kasi et al. (2025) also reported that teachers need clearer guidance and practical strategies to implement deep learning within school curricula. These studies provide important insights, but further investigation is still needed into how elementary teachers understand deep learning, how they perceive curriculum change, and how ready they feel to translate deep learning-oriented reform into everyday classroom instruction.

This gap is important because curriculum reform often fails not at the level of policy formulation, but at the level of classroom translation. Teachers may support the ideas of flexibility, student-centered learning, and meaningful learning, but still experience uncertainty when designing lesson plans, selecting learning strategies, developing assessments, managing administrative requirements, or accessing suitable learning resources. In this sense, teacher readiness should not be viewed only as an individual attitude, but as a multidimensional condition shaped by conceptual understanding, pedagogical competence, school leadership, professional learning opportunities, and resource availability. Examining teachers' perspectives can therefore reveal whether deep learning within the Merdeka Curriculum is understood as a practical pedagogical approach or merely as another reform discourse.

Based on this background, this study explores elementary school teachers' perspectives on deep learning within Indonesia's Merdeka Curriculum. Specifically, it investigates teachers' views on curriculum reform, their conceptual understanding of deep learning, and their readiness to implement deep learning-oriented instruction in classroom practice. By focusing on elementary teachers, this study contributes to current discussions on curriculum reform by highlighting the relationship between policy aspirations and classroom readiness. It also provides empirical insights into the forms of support teachers need to transform deep learning from a curriculum expectation into meaningful instructional practice. This study is guided by the following research questions: How do elementary school teachers perceive curriculum reform within the Merdeka Curriculum? How do teachers understand the concept of deep learning in relation to classroom instruction? To what extent are teachers ready to implement deep learning-oriented practices in elementary classrooms? Through these questions, the study aims to clarify how teachers negotiate the movement from curriculum reform to classroom readiness and what challenges and opportunities shape the implementation of deep learning in Indonesian elementary education.

2. Method

2.1 Research Design

This study employed a qualitative exploratory design supported by descriptive quantitative data from questionnaires. This design was selected because the study aimed to examine elementary teachers' perspectives on curriculum reform, their conceptual understanding of deep learning, and their readiness to implement deep learning-oriented instruction within Indonesia's Merdeka Curriculum. A qualitative exploratory approach was appropriate for investigating a context-specific educational phenomenon in which teachers' interpretations, experiences, and support needs are central to understanding curriculum implementation. As Merriam and Tisdell (2016) argue, qualitative inquiry is useful for examining how individuals construct meaning from their experiences in particular social and educational contexts. The study did not aim to test causal relationships or generalize statistically to a wider population. Instead, it sought to generate an in-depth and contextualized understanding of how teachers negotiate the movement from curriculum reform to classroom readiness. In this design, the qualitative component enabled the researchers to explore teachers' interpretations and classroom-level experiences, while descriptive questionnaire data provided an overview of response tendencies across participants.

2.2 Research Context and Participants

The study was conducted in an Indonesian elementary school context where teachers were responding to the implementation of the Merdeka Curriculum and the growing emphasis on deep learning-oriented instruction. This context was considered relevant because elementary teachers are directly responsible for translating curriculum expectations into classroom practices, including lesson planning, instructional design, assessment, and student-centered learning activities. The participants consisted of 18 elementary school teachers across grade levels and one school principal. All teachers completed the questionnaire, while six classroom teachers representing Grades 1 to 6 were selected for in-depth interviews. The school principal was also interviewed to provide an institutional perspective on school-level support, leadership strategies, professional development, resource availability, and implementation challenges, including both teachers and the principal, which enabled the study to examine readiness not only as an individual teacher attribute, but also as a condition shaped by school-level support and institutional capacity.

Participants were selected through purposive sampling because the study required respondents who were directly involved in curriculum implementation and could provide relevant information about deep learning-oriented classroom readiness. Patton (2015) explains that purposive sampling is appropriate in qualitative research when participants are selected because they are information-rich and can illuminate the phenomenon under investigation. The inclusion criteria for teachers were that they were active elementary school teachers, involved in implementing the Merdeka Curriculum, and had experience engaging with school-level discussions or practices related to deep learning-oriented instruction. The principal was included because of their role in coordinating curriculum implementation and supporting teachers' professional practice. To protect confidentiality, teacher participants were coded as T1 to T18, interviewed teachers as IT1 to IT6, and the principal as P.

2.3 Research Instruments

Two instruments were used in this study: a questionnaire and a semi-structured interview guide. The questionnaire was designed to obtain descriptive information about three main areas: teachers' perceptions of curriculum reform, their understanding of deep learning, and their readiness to implement deep learning-oriented practices. It consisted of closed-ended and open-ended items. The closed-ended items were used to identify general response patterns. They were analyzed using percentage distributions, while the open-ended items allowed teachers to explain their views, challenges, and expectations briefly. The semi-structured interview guide was developed to obtain richer and more contextual data from selected participants. Semi-structured interviews were appropriate because they provided a flexible structure that

allowed the researchers to ask comparable questions across participants while still permitting follow-up questions and deeper exploration of emerging issues (Merriam & Tisdell, 2016). The teacher interviews explored participants' views on the Merdeka Curriculum, their interpretations of deep learning, their experiences in designing student-centered and meaningful learning, their challenges in lesson planning and assessment, and the forms of support they needed. The principal interview focused on school-level strategies, mentoring, administrative challenges, resource availability, and institutional readiness. Before data collection, the questionnaire and interview guide were reviewed to ensure alignment with the research questions and the three major constructs of the study: curriculum reform perspectives, deep learning understanding, and implementation readiness.

2.4 Data Collection

Data collection was conducted in two stages. In the first stage, questionnaires were distributed to 18 elementary school teachers to obtain an initial overview of teachers' perceptions, understanding, and readiness. The closed-ended responses provided descriptive patterns, while the open-ended responses helped identify issues that required further exploration during the interviews. In the second stage, semi-structured interviews were conducted individually with six classroom teachers and one school principal. The six teachers were selected to represent different grade levels so that the study could capture variations in classroom experience across elementary education. Each interview lasted approximately 30–45 minutes and was conducted face-to-face. Follow-up questions were asked when participants' responses required clarification or further elaboration. With participants' consent, the interviews were audio-recorded and transcribed verbatim for analysis. Before participating, all respondents were informed about the purpose of the study, the voluntary nature of their participation, confidentiality procedures, and their right to withdraw from the study. The use of questionnaires followed by interviews enabled methodological triangulation by combining general response patterns with deeper qualitative explanations.

2.5 Data Analysis

The data were analyzed through descriptive quantitative analysis and thematic qualitative analysis. Closed-ended questionnaire responses were analyzed using percentage distributions to summarize teachers' perceptions of curriculum reform, conceptual understanding of deep learning, and readiness levels. These percentages were used descriptively, not inferentially, because the questionnaire data were intended to support the qualitative interpretation rather than produce statistical generalization. Qualitative data from open-ended questionnaire responses and interview transcripts were analyzed thematically using the interactive model of Miles et al. (2014), which involves data condensation, data display, and conclusion drawing. In the data condensation stage, the researchers repeatedly read the questionnaire responses and interview transcripts to identify meaningful statements related to the research questions. Initial codes included curriculum flexibility, student-centered learning, technical confusion, administrative burden, higher-order thinking, real-world application, student engagement, readiness, professional development needs, assessment challenges, resource limitations, and school support.

In the data display stage, similar codes were grouped into broader themes corresponding to the three research questions. Themes related to the first research question included positive perceptions of curriculum reform and implementation challenges. Themes related to the second research question included deep learning as higher-order thinking, real-world application, meaningful learning, and student engagement. Themes related to the third research question included conditional readiness, training needs, administrative constraints, instructional resources, and institutional support. The qualitative themes were then compared with the descriptive questionnaire results to ensure coherence between general response patterns and participants' detailed explanations. In the conclusion drawing stage, the researchers interpreted the themes in relation to the study's focus on moving from curriculum reform to classroom readiness.

2.6 Trustworthiness

Several strategies were used to strengthen the trustworthiness of the study. Methodological triangulation was applied by combining closed-ended questionnaire data, open-ended questionnaire responses, teacher interviews, and a principal interview. This helped the researchers compare general patterns with more detailed explanations from participants. Data triangulation was also supported by involving teachers across grade levels and including the principal as a supporting informant, which provided both classroom-level and school-level perspectives on curriculum implementation. Credibility was enhanced through repeated reading of the data, careful comparison between questionnaire results and interview findings, and the use of representative quotations in the findings section. Dependability and confirmability were supported by documenting the research process, including the questionnaire, interview guide, transcripts, coding notes, thematic categories, and descriptive results. These strategies are consistent with Lincoln and Guba's (1985) criteria for qualitative trustworthiness, particularly credibility, dependability, confirmability, and transferability.

3. Findings

The findings are organized into three thematic parts: teachers' perceptions of curriculum reform, teachers' understanding of deep learning, and teachers' readiness to implement deep learning-oriented instruction. Each part begins with a thematic summary of the questionnaire and interview data, followed by a narrative explanation supported by italicized direct quotations from participants.

3.1 Teachers' Perceptions of Curriculum Reform within the Merdeka Curriculum

The first research question examined how elementary school teachers perceived curriculum reform within the *Merdeka Curriculum*. The questionnaire data showed that most teachers viewed the reform positively, although several participants also reported practical challenges related to technical implementation, administration, and learning resources. Table 1 summarizes the main patterns of teachers' perceptions.

Table 1. Teachers' perceptions of curriculum reform

Theme	Percentage	Description	Representative evidence
Positive perception of curriculum reform	67%	Teachers viewed the Merdeka Curriculum as more flexible, student-centered, and relevant to students' learning needs.	*"The new curriculum provides more flexibility for teachers to adjust learning to students' needs."*
Technical implementation challenges	28%	Teachers experienced difficulty interpreting guidelines, preparing lesson plans, and designing assessment formats.	*"The new curriculum is more flexible, but at the beginning, the technical implementation in the classroom was confusing."*
Administrative burden and limited resources	5%	Teachers reported that documentation, reporting demands, and limited resources constrained classroom implementation.	*"The challenge is not only in the classroom but also in the increasing administrative burden."*

As shown in Table 1, most participants responded positively to the Merdeka Curriculum. Teachers generally perceived the curriculum as more flexible and more responsive to students' needs than previous curriculum models. This positive perception was closely related to the curriculum's emphasis on differentiated learning, student-centered pedagogy, character development, and twenty-first-century competencies. For many teachers, the reform opened opportunities to design learning that was less rigid and more adaptive to classroom diversity. One teacher explained that *"the new curriculum provides more flexibility for teachers to*

adjust learning to students' needs," indicating that flexibility was perceived as one of the main strengths of the reform.

However, positive perception did not automatically mean smooth implementation. A substantial number of teachers reported technical challenges, particularly during the early stages of curriculum implementation. These challenges included uncertainty in interpreting curriculum guidelines, preparing lesson plans, aligning learning activities with learning outcomes, and designing assessment instruments. One participant stated, *"The new curriculum is more flexible, but at the beginning, the technical implementation in the classroom was confusing."* This statement shows a tension between conceptual acceptance and practical readiness. Teachers welcomed the idea of flexibility, but they also needed clearer examples, models, and mentoring to translate that flexibility into classroom practice. Administrative burden and limited resources were also identified as barriers, although reported by a smaller number of participants. Teachers explained that documentation, reporting, and evaluation requirements often reduced the time available for planning meaningful learning activities. One teacher noted, *"The challenge is not only in the classroom but also in the increasing administrative burden."* This response suggests that curriculum reform was experienced not only as a pedagogical shift but also as an increase in bureaucratic responsibility. Limited learning materials, digital facilities, and contextual resources also affected teachers' ability to implement curriculum expectations. These findings indicate that teachers' perceptions of curriculum reform were generally positive, but the practical conditions of implementation shaped their experiences.

3.2 Teachers' Understanding of Deep Learning in Classroom Instruction

The second research question explored how teachers understood the concept of deep learning in relation to classroom instruction. The data showed that teachers associated deep learning mainly with higher-order thinking, real-world application, and student engagement. Table 2 presents the thematic summary of teachers' understanding.

Table 2. Teachers' understanding of deep learning

Theme	Percentage	Description	Representative evidence
Deep learning as higher-order thinking	72%	Teachers understood deep learning as learning that develops critical thinking, analysis, evaluation, synthesis, and problem-solving.	*"Deep learning teaches students to think critically and apply concepts in different situations."*
Deep learning as a real-world application	17%	Teachers associated deep learning with connecting classroom knowledge to students' daily lives and authentic contexts.	*"Students need to connect what they learn with real situations around them."*
Deep learning as student engagement	11%	Teachers viewed deep learning as learning that encourages curiosity, active participation, and motivation.	*"Students are more active, think critically, and have a high level of curiosity."*

Table 2 shows that most teachers understood deep learning as a process that develops higher-order thinking. They associated it with students' ability to analyze information, evaluate ideas, solve problems, and apply concepts in different situations. One teacher stated, *"Deep learning teaches students to think critically and apply concepts in different situations."* This response suggests that teachers did not interpret learning merely as content delivery or memorization. Instead, they understood deep learning as a process that encourages students to construct meaning and use knowledge flexibly.

A smaller group of teachers emphasized the connection between learning and real-world contexts. For these teachers, deep learning becomes meaningful when students can relate classroom knowledge to daily life and practical situations. One participant explained, *"Students need to connect what they learn with real situations around them."* This view is important because it reflects an understanding that deep learning requires contextualization. Learning is not considered deep only because students complete difficult tasks, but

because they can recognize the relevance of knowledge beyond the classroom. Teachers also associated deep learning with student engagement. Some participants described deep learning as a process that encourages curiosity, active participation, motivation, and student ownership of learning. One teacher stated, *"Students are more active, think critically, and have a high level of curiosity."* This response indicates that teachers understood deep learning not only as a cognitive process but also as an affective and motivational experience. In this sense, deep learning requires classroom environments that encourage students to ask questions, explore ideas, participate actively, and remain engaged in the learning process.

These findings suggest that teachers had a relatively strong conceptual understanding of deep learning. They were able to connect the concept with higher-order thinking, authentic learning, and student engagement. However, the distribution of responses also shows that teachers' understanding was not entirely uniform. While most teachers emphasized cognitive dimensions, fewer teachers highlighted real-world application and engagement. This variation indicates the need for shared professional learning so that teachers can develop a more comprehensive and practical understanding of deep learning as a classroom approach.

3.3 Teachers' Readiness to Implement Deep Learning-Oriented Instruction

The third research question examined teachers' readiness to implement deep learning-oriented instruction in elementary classrooms. The findings show that most teachers expressed readiness, but their readiness was conditional and depended on training, practical guidance, reduced administrative burden, resources, and school-level support. Table 3 summarizes teachers' readiness levels and support needs.

Table 3. Teachers' readiness for deep learning implementation

Theme	Percentage	Description	Representative evidence
Ready but still requiring support	61%	Teachers expressed willingness and basic confidence, but still needed training, examples, and mentoring.	*"I am fairly ready, though I am aware there is still much to learn. This readiness certainly needs to be supported by training and an active learning community."*
Not fully ready	28%	Teachers reported limited technical understanding, difficulty designing lesson plans and assessments, and a lack of resources.	*"We need practical guidance to know whether our implementation is appropriate or not."*
Very ready	11%	A small number of teachers showed stronger confidence in applying deep learning principles.	*"I feel ready because I have tried to apply activities that encourage students to think critically and solve problems."*
Support is needed for implementation.	—	Teachers needed practical training, reduced administrative workload, contextual resources, and school mentoring.	*"Training should give examples that can be directly applied in the classroom."*

As shown in Table 3, most teachers reported that they were ready to implement deep learning-oriented instruction, but this readiness was not absolute. Teachers in this category showed openness to curriculum change and a basic understanding of deep learning principles, but they still needed continuous support. One teacher explained, *"I am fairly ready, though I am aware there is still much to learn. This readiness certainly needs to be supported by training and an active learning community."* This statement shows that readiness was understood as developmental rather than fixed. Teachers were willing to implement deep learning, but they also recognized that readiness must be supported by professional learning and collaboration.

Teachers who reported not being fully ready identified several barriers. These included limited technical understanding, uncertainty in designing deep learning-based lesson plans, difficulty developing appropriate assessments, and limited instructional resources. One teacher stated, *"We need practical guidance to know whether our implementation is appropriate or not."* This response indicates that teachers needed more than

general explanations about deep learning. They required concrete models, classroom examples, assessment templates, and mentoring that could help them judge whether their implementation aligned with deep learning principles. Only a small proportion of teachers reported being very ready. These teachers expressed stronger confidence because they had begun applying activities that encouraged critical thinking, creativity, collaboration, and problem solving. One teacher explained, *"I feel ready because I have tried to apply activities that encourage students to think critically and solve problems."* However, the small percentage of teachers in this category suggests that advanced readiness was not yet widespread. Deep learning implementation was still in a transitional stage, where most teachers were willing to engage with the approach but required further support to implement it consistently.

The principal's perspective strengthened this finding. The principal emphasized that deep learning implementation could not rely solely on individual teacher motivation. It required school-level strategies, collaborative planning, mentoring, and institutional support. The principal highlighted the importance of professional learning communities, teacher collaboration, and school policies that reduce unnecessary administrative pressure. This institutional perspective suggests that readiness is not only an individual characteristic but also a systemic condition shaped by leadership, resources, and professional culture. Teachers also identified several forms of support needed for implementation. They emphasized practical and application-based training, contextual teaching materials, clearer guidance for assessment design, opportunities for peer collaboration, and reduced administrative workload. One participant noted, *"Training should give examples that can be directly applied in the classroom."* This statement reflects teachers' need for professional development that is practical rather than merely theoretical. Therefore, the findings suggest that classroom readiness for deep learning depends on the alignment between teacher understanding, instructional competence, school leadership, resources, and policy support.

4. Discussion

This study reveals a critical tension between curriculum reform as a policy aspiration and classroom readiness as an instructional reality. Elementary teachers generally perceived the Merdeka Curriculum positively because it offers flexibility, encourages student-centered learning, supports character development, and aligns with twenty-first-century competencies. This positive response suggests that teachers did not reject the reform at the conceptual level. Rather, they recognized its potential to make learning more adaptive, meaningful, and responsive to students' developmental differences. This orientation is consistent with the official direction of the Merdeka Curriculum, which emphasizes essential competencies, differentiated learning, formative assessment, and the Pancasila Student Profile (BSKAP, 2024). It also reflects broader international arguments that contemporary education should move beyond content coverage toward transferable knowledge, learner agency, collaboration, creativity, and authentic problem solving (Fullan et al., 2017; McTighe & Silver, 2020).

However, teachers' acceptance of reform did not automatically translate into confident classroom enactment. The findings show that teachers experienced uncertainty in interpreting curriculum guidelines, preparing lesson plans, designing assessments, managing administrative requirements, and locating appropriate instructional resources. This points to a common problem in curriculum reform: policy language may be progressive, but classroom implementation depends on teachers' ability to operationalize abstract principles into daily instructional decisions. Previous studies on the Merdeka Curriculum have similarly found that implementation is shaped by teachers' conceptual understanding, planning competence, assessment literacy, infrastructure, and school support (Yusa et al., 2023; Al Arsyadhi et al., 2024; Ben Gurion, 2024; Rohmah et al., 2024). The present study strengthens this argument by showing that teachers' main struggle was not resistance to reform, but the difficulty of translating curriculum flexibility into practical classroom routines. Flexibility can empower teachers when they have sufficient pedagogical knowledge, resources, and institutional support. However, it can also create uncertainty when teachers are left without clear examples, mentoring, or assessment guidance.

Teachers' understanding of deep learning was strongest in relation to higher-order thinking. Most participants associated deep learning with critical thinking, analysis, evaluation, problem solving, and the application of concepts in different situations. This interpretation aligns with established views of deeper learning as the development of transferable knowledge and skills that enable learners to use knowledge in new contexts (Fullan & Langworthy, 2014; McTighe & Silver, 2020). It also resonates with the Indonesian framework of Pembelajaran Mendalam, which positions learning as mindful, meaningful, and joyful through the integration of cognitive, ethical, aesthetic, and physical dimensions (Kemendikdasmen as cited in Alim et al., 2025). Teachers' emphasis on critical thinking and application, therefore, indicates that they had begun to understand deep learning as a pedagogical orientation rather than as a mere curriculum slogan.

At the same time, teachers' interpretations of deep learning were not yet fully balanced across its broader dimensions. Fewer participants emphasized real-world application and student engagement, although both are central to meaningful learning. Deep learning cannot be reduced to difficult tasks or higher-order questions; it requires students to connect knowledge with prior understanding, lived experiences, social contexts, and authentic problems. Ausubel (2000) emphasizes that meaningful learning occurs when new knowledge is connected to what learners already know, while Langer (2016) highlights mindful engagement as a key condition for learning that is flexible and context-sensitive. Darling-Hammond et al. (2020) further argue that effective learning environments must integrate cognitive, social, emotional, and developmental dimensions. This suggests that teachers' conceptual understanding of deep learning needs to be expanded from "thinking deeply" to "learning meaningfully." At the elementary level, this distinction is especially important because deep learning should not be interpreted as making tasks more difficult for young learners. It should involve age-appropriate activities that encourage curiosity, questioning, exploration, collaboration, reflection, and connection to students' everyday lives.

The findings on teacher readiness demonstrate that readiness should not be treated as a simple yes-or-no condition. Most teachers reported that they were ready to implement deep learning-oriented instruction, but their readiness was conditional. They expressed willingness and basic confidence, yet they also needed training, mentoring, practical examples, contextual teaching materials, assessment models, and reduced administrative demands. This indicates that readiness is developmental: teachers may begin with conceptual acceptance and willingness, but they require sustained professional support before they can implement deep learning consistently and confidently. This finding aligns with Ben Gurion (2024), who argues that teacher readiness for the Merdeka Curriculum depends on continuous professional development and institutional support. Subiyantoro and Musa (2024) also emphasize that preparing Indonesian primary school teachers for deep learning requires attention to readiness, implementation challenges, and school-level support. Riani and Sujarwati (2025) further note that readiness for deep learning involves planning, differentiation, and authentic assessment practices.

The principal's perspective reinforces the view that readiness is not only an individual teacher attribute but also an ecological condition shaped by leadership, resources, collaboration, administrative workload, and professional learning culture. Deep learning implementation was viewed as requiring collaborative planning, mentoring, learning communities, and school policies that create space for instructional innovation. This is consistent with Fullan et al. (2017), who argue that deep learning requires coherence among pedagogy, leadership, partnerships, and system conditions. When teachers are expected to implement deep learning without supportive structures, readiness remains fragile. When schools provide mentoring, collaboration, and practical resources, readiness becomes more sustainable. In this sense, school leadership plays a central role in transforming curriculum expectations into shared professional practice.

Administrative burden emerged as a particularly important factor in the ecology of readiness. Teachers reported that documentation and reporting demands limited the time available for designing meaningful learning. This finding reveals a policy-practice contradiction: curriculum reform promotes flexibility and creativity, yet excessive administrative requirements can reduce teachers' capacity to innovate. Similar concerns have been identified in studies on Merdeka Curriculum implementation, where teachers struggled

with technical requirements, documentation, and assessment demands (Yusa et al., 2023; Al Arsyadhi et al., 2024; Rohmah et al., 2024). Reducing administrative burden should therefore be understood not only as a matter of workload management, but also as a pedagogical condition for enabling deep learning. If teachers spend substantial time completing documents rather than designing learning experiences, the reform risks becoming bureaucratic rather than transformative. In addition, the findings also suggest that teacher professional development needs to move from conceptual socialization to practice-based capacity building. Teachers in this study did not simply need more information about deep learning; they needed practical guidance, examples of deep learning-based lesson design, assessment templates, contextual resources, mentoring, and professional learning communities. This indicates that professional development should be designed around classroom cases, lesson study, peer observation, collaborative planning, and reflective discussion. McTighe and Silver (2020) argue that deeper learning requires deliberate task design that promotes meaning-making and transfer, while Darling-Hammond et al. (2020) emphasize learning environments that integrate cognitive, social, and emotional development. For Indonesian elementary teachers, this means that professional learning should help them design tasks that are intellectually meaningful, emotionally engaging, culturally relevant, and feasible within classroom constraints.

This study contributes to curriculum reform scholarship by positioning teacher readiness as the central bridge between policy aspiration and classroom practice. The Merdeka Curriculum and deep learning-oriented instruction provide a strong policy direction for meaningful, student-centered, and competency-based education. Nevertheless, the realization of these goals depends on whether teachers understand the reform, have confidence in its pedagogical value, and receive sufficient support to enact it in classrooms. Teacher readiness is, therefore, not a secondary implementation issue; it is the mechanism through which curriculum reform becomes visible in students' learning experiences. This argument is particularly relevant in the Indonesian context, where curriculum changes often require teachers to adapt rapidly to new terminology, administrative systems, instructional expectations, and assessment demands. The study also contributes to the discussion of deep learning in Indonesian elementary education by showing that teachers already possess important conceptual entry points, especially regarding higher-order thinking and meaningful learning. However, these entry points need to be strengthened through a more comprehensive understanding, practical training, and institutional support. Without such alignment, deep learning risks remaining a policy term that teachers endorse but struggle to enact. With stronger alignment among curriculum expectations, teacher capacity, school leadership, resources, and assessment practices, deep learning has greater potential to transform elementary classrooms into spaces where students think critically, connect knowledge to real life, participate actively, and develop competencies for lifelong learning.

Several practical implications emerge from these findings. Curriculum authorities and schools need to provide clearer operational guidance on how deep learning can be implemented within the Merdeka Curriculum, especially at the elementary level. Professional development should be practical and continuous, focusing on lesson design, formative assessment, differentiated instruction, inquiry-based learning, project-based learning, contextual learning, and reflection. School leaders should also create professional learning communities that allow teachers to share practices, discuss challenges, and develop context-sensitive solutions. Administrative requirements should be reviewed so that teachers have sufficient time and cognitive space to design meaningful learning experiences. Learning resources should also be contextualized to students' daily lives so that deep learning does not remain an abstract concept but becomes a lived classroom experience. A stronger bridge between curriculum reform and classroom readiness requires alignment among policy, teacher capacity, leadership, resources, and assessment. When these elements are disconnected, deep learning may remain a policy ideal that teachers support in principle but struggle to enact. When they are aligned, deep learning has greater potential to support meaningful learning in elementary classrooms. This study, therefore, positions teacher readiness not as a supporting element of curriculum reform, but as the central condition through which deep learning-oriented policy can become meaningful classroom practice.

5. Conclusion

This study explored elementary teachers' perspectives on curriculum reform, their understanding of deep learning, and their readiness to implement deep learning-oriented instruction within Indonesia's Merdeka Curriculum. The findings show that teachers generally perceived the Merdeka Curriculum positively because it provides greater flexibility, encourages student-centered learning, supports character development, and aligns with the development of twenty-first-century competencies. However, this positive perception did not automatically translate into full classroom readiness. Teachers continued to face challenges related to technical implementation, lesson planning, assessment design, administrative workload, limited instructional resources, and the need for clearer practical guidance. The study also found that teachers' understanding of deep learning was relatively strong, particularly in relation to higher-order thinking, critical thinking, problem solving, real-world application, and student engagement. Nevertheless, their readiness remained conditional and developmental, requiring sustained professional development, mentoring, collaborative planning, contextual teaching materials, supportive school leadership, and reduced administrative burdens. These findings suggest that deep learning-oriented curriculum reform cannot be realized through policy change alone. Its successful implementation depends on the alignment between curriculum expectations, teacher capacity, institutional support, and classroom-level resources. This study contributes to curriculum reform scholarship by positioning teacher readiness as the central bridge between policy aspiration and classroom practice. For deep learning to become meaningful in elementary classrooms, teachers need not only to understand the concept but also to be supported in translating it into age-appropriate, contextual, reflective, and student-centered learning experiences. Future research may examine how deep learning-oriented instruction is enacted across different school contexts, how students experience such learning practices, and how sustained professional development influences teachers' classroom implementation over time.

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7. Declaration of AI Use

The authors acknowledge that ChatGPT and Grammarly were used to support language refinement, grammar checking, and manuscript editing during the preparation of this article. These tools were not used for data collection, data analysis, interpretation of findings, or the generation of research results. All AI-assisted suggestions were carefully reviewed, verified, and approved by the authors, who take full responsibility for the accuracy, originality, and integrity of the final manuscript.

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