



Navigating Resistance And Adaptation: Reinforcing Teachers' Growth Mindset In Deep Learning Practices Under The Merdeka Curriculum Framework

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ABSTRACT

This study aims to analyze teachers' resistance toward the implementation of the deep learning approach within the Merdeka Curriculum and to examine the role of growth mindset in reducing such resistance in order to support the achievement of national education goals. The study employed a qualitative descriptive approach supported by quantitative data obtained through a closed-ended questionnaire distributed to teachers across several regions in Indonesia via Google Forms. The instrument consisted of ten questionnaire items representing the variables of resistance to deep learning and growth mindset. Data were analyzed using simple descriptive statistics. The findings indicate that teachers' resistance should not merely be interpreted as a form of rejection, but rather as a rational response to various challenges, including limited pedagogical competence, insufficient professional training, heavy administrative workloads, and inadequate educational facilities and infrastructure. In addition, some teachers perceived that the deep learning approach had not yet demonstrated significant differences compared to previous instructional approaches, particularly in improving academic achievement and fostering students' character development. This condition reflects a gap between policy expectations and classroom realities, suggesting that the implementation process remains in a transitional phase. Nevertheless, growth mindset plays a significant role in reducing teachers' resistance, as educators with a growth-oriented mindset tend to be more open to change, adaptive, and reflective in improving the quality of learning practices. Therefore, the successful implementation of deep learning largely depends on teachers' readiness, systemic support, and the transformation of educators' mindsets through comprehensive efforts, such as simplifying administrative demands, improving the quality of professional development programs, and strengthening the learning ecosystem to ensure that educational practices can be implemented effectively and sustainably.

1. Introduction

Deep learning within the context of the Merdeka Curriculum is not conceptualized as a new curriculum; rather, it is understood as a pedagogical approach oriented toward the deepening of meaningful learning experiences (Rosiyati, Erviana, Fadilla, & Sholihah, 2025). Recent scholarly

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discussions, particularly within educational policy and academic discourse in Indonesia, emphasize that deep learning positions profound conceptual understanding as the primary objective of education rather than merely encouraging surface-level mastery of content. Within this perspective, the learning process does not end with “what is known,” but extends toward understanding “why” and “how” knowledge is interpreted and applied in real-life contexts. The assertion that deep learning constitutes “a learning approach rather than a curriculum” further reinforces the idea that its essence lies in transforming ways of thinking and instructional practices, rather than merely altering curricular structures (Rosiyati, Erviana, Fadilla, & Sholihah, 2025).

Conceptually, deep learning can be defined as a learning approach that encourages learners to develop profound, reflective, and contextual understanding by connecting newly acquired knowledge with their prior knowledge and lived experiences (Amit, 2011). Within this approach, students are not only expected to understand “what” a concept is, but also to comprehend “why” it matters and “how” it can be applied in real-life situations (Nuraida & Mulyanti, 2026). This perspective aligns with the view that deep learning enables students to process information, engage in reflective thinking, and internalize knowledge as an integral part of their identity as learners (Usman et al., 2025). Within the framework of the Merdeka Curriculum, deep learning is regarded as a reinforcing dimension of educational freedom and learner autonomy. While the Merdeka Curriculum provides opportunities for exploration and flexibility in learning, deep learning contributes depth, meaning, and coherence to the educational process. This approach emphasizes students’ active engagement, the development of twenty-first-century competencies including critical thinking, creativity, collaboration, and communication and learning experiences that are mindful, meaningful, and joyful. Accordingly, deep learning in the context of the Merdeka Curriculum may be conceptualized as a learning approach oriented toward fostering profound understanding, character development, and the continuous growth of learners’ reflective capacities (Pengabdian & Masyarakat, 2026). Deep learning is a learning approach within the Merdeka Curriculum that emphasizes profound conceptual understanding, meaningful connections to real-world contexts, and the development of critical and reflective thinking skills, thereby enabling learning to become meaningful and sustainable (Merdeka & Literatur, 2026).

Learning approaches other than deep learning—such as rote learning, traditional lecture-based instruction, or approaches that are excessively examination-oriented—possess several fundamental limitations. One of the primary weaknesses lies in their tendency to position learners as passive recipients of knowledge. Within these approaches, students are more likely to receive information than to critically process and construct understanding from it. As a consequence, the knowledge acquired often remains superficial and is easily forgotten, as it is not developed through reflection, analytical engagement, or meaningful connections with real-life experiences (Wafa et al., 2025).

Another notable limitation lies in the inadequate development of higher-order thinking skills. Non-deep learning approaches often place greater emphasis on lower-level cognitive abilities, such as memorization and surface-level understanding, without sufficiently encouraging learners to analyze, evaluate, and create. In the context of modern education, this condition becomes particularly problematic because students may become less accustomed to dealing with complex problems, less adaptable to change, and limited in their capacity for innovation. Moreover, this situation also contributes to their limited ability to connect and integrate knowledge across different disciplines (Usman et al., 2025). Learning approaches that are not grounded in deep learning principles frequently overlook the affective and contextual dimensions of the learning process. As a result, learning tends to become less meaningful because it is insufficiently connected to students’ real-life experiences, personal values, and future needs. Consequently, learners’ intrinsic motivation is often diminished, and education is perceived merely as an obligation rather than as a meaningful or

enjoyable experience. Over time, such conditions may weaken the development of students' character, creativity, and independent learning capacities (Anwar Prabu Mangkunegara, 2005)

The deep learning approach in education offers a significant advantage in fostering students' depth of understanding compared to approaches commonly implemented within the 2013 Curriculum, which in practice often remain constrained by administrative routines and content delivery. Through deep learning, students are not merely encouraged to know or memorize concepts, but to comprehend the meaning underlying those concepts, connect them with their lived experiences, and apply them in real-world situations. Consequently, the learning process becomes more meaningful, allowing knowledge to be retained more effectively and embedded more deeply within students' cognitive structures (Akmal et al., 2025)

Another notable advantage lies in the strengthening of higher-order thinking skills. Although the 2013 Curriculum conceptually promotes higher-order thinking skills (HOTS), its implementation in practice often remains focused on completing exercises and achieving curriculum targets. In contrast, deep learning more explicitly encourages learners to think critically, reflectively, and creatively through processes of exploration, discussion, and authentic problem-solving. Students are guided to analyze, evaluate, and create, enabling them to become better prepared to face the complex challenges of the modern era (Kazemi et al., 2020). In today's educational landscape, deep learning also demonstrates a distinct advantage in fostering students' emotional engagement and intrinsic motivation. This approach positions learners as active participants in the learning process rather than merely passive recipients of information. Learning experiences are designed to be more contextual, closely connected to real-life situations, and responsive to students' individual interests and potentials. As a result, learners tend to become more enthusiastic, develop stronger curiosity, and engage in learning with greater self-awareness rather than through external pressure. In the long term, such conditions not only enhance academic achievement but also contribute to the development of character, learner autonomy, and a lasting appreciation for the learning process itself (Pembelajaran, 2026)

The deep learning approach is fundamentally aligned with contemporary societal developments, particularly amid global dynamics characterized by complex challenges, rapid technological advancement, and the increasing demand for adaptive human resources. Deep learning emphasizes critical, reflective, and contextual thinking competencies that are essential for navigating the digital era and ongoing disruptions. Nevertheless, it cannot be assumed that this approach will automatically remain relevant in all contexts, as its effectiveness largely depends on the quality of its implementation. Without the support of competent teachers, a conducive school ecosystem, and adequate educational resources, deep learning risks remaining merely an idealized concept without producing meaningful educational impact (Dinata et al., 2025)

In relation to the goals of education in Indonesia, deep learning demonstrates a high degree of relevance. The objectives of national education emphasize the development of individuals who are faithful, morally grounded, knowledgeable, creative, independent, and capable of becoming democratic and responsible citizens. These values are closely aligned with the characteristics of deep learning, which emphasizes not only cognitive development but also affective and reflective dimensions of learning (Muassomah et al., 2025). Through meaningful and contextual learning experiences, students are encouraged to internalize values, develop character, and cultivate the capacity to make wise decisions in real-life situations. Nevertheless, the alignment between deep learning and the objectives of national education cannot be assumed to occur automatically. Strong integration is required among educational policies, curriculum design, teacher competencies, and the learning culture within schools. If this approach is adopted merely at a symbolic level without a genuine transformation in teaching paradigms, its outcomes are unlikely to be optimal. Therefore,

deep learning may be regarded as both relevant and potentially supportive of Indonesia's educational goals; however, its success is largely determined by the commitment of all stakeholders to implement it consistently, reflectively, and sustainably (Sekolah et al., 2025)

The resistance demonstrated by some teachers toward the deep learning approach within the Merdeka Curriculum can be understood as a rational response to the gap between conceptual expectations and classroom realities. Deep learning requires more complex instructional planning, the ability to design problem-based learning activities, and the implementation of authentic and continuous assessment practices. For teachers who have long been accustomed to structured instructional patterns and clearly defined curriculum targets, as commonly found in previous educational practices, this transition may be perceived as a substantial additional burden. Moreover, when such changes are not accompanied by adequate professional training and support, teachers are more likely to feel unprepared and concerned that the quality of learning may ultimately decline.

Another contributing factor relates to the limitations of educational facilities and the diverse conditions of classroom environments. Ideally, the deep learning approach is implemented within learning settings that support exploration, discussion, and collaboration. In reality, however, many schools continue to face challenges such as overcrowded classrooms, limited instructional time, and inadequate supporting facilities (Independent, 2024). Under such conditions, teachers may perceive the deep learning approach as difficult to implement effectively, leading them to prefer methods considered more practical and manageable. In addition, administrative pressures and accountability demands also constitute significant contributing factors. Although the Merdeka Curriculum seeks to simplify administrative burdens, in practice teachers are still required to manage various reports, assessments, and learning achievement targets. Since deep learning emphasizes process and depth of understanding, its outcomes are often not easily measured through quantitative indicators. Consequently, teachers may experience concerns about their ability to meet evaluation standards established by schools or educational systems. This situation can foster skeptical attitudes, as teachers may perceive that the approach is not fully aligned with existing assessment and accountability frameworks (Santi Dewi, 2005)

Finally, resistance may also be influenced by psychological and professional factors, such as discomfort in moving beyond established routines, concerns about losing classroom control, or doubts regarding the effectiveness of new instructional approaches. Teachers who have long relied on particular teaching methods often possess deeply rooted pedagogical beliefs, making paradigm shifts a process that requires time and gradual acceptance. In this context, resistance should not merely be interpreted as a negative reaction, but rather as part of an adaptive process that necessitates continuous support, professional dialogue, and tangible evidence demonstrating the effectiveness of deep learning in improving educational quality.

The issue of resistance toward the deep learning approach does not solely originate from technical factors; rather, it is also strongly influenced by teachers' perspectives and the prevailing culture within schools. Therefore, one of the most fundamental solutions lies in strengthening teachers' growth mindset. This mindset emphasizes that teaching ability, pedagogical creativity, and professional competence are not fixed attributes, but capacities that can continuously develop through learning, practice, and reflective experience (Hutahayan, 2020). With this perspective, educational changes such as deep learning are no longer perceived as threats, but rather as opportunities to enhance personal capacity and improve instructional practices. In contrast, a fixed mindset often becomes a major barrier to accepting educational innovation. Teachers who are constrained by a fixed mindset tend to believe that teaching ability is already "final" or unchangeable, causing educational change to be viewed as an additional burden or even a threat to their professional identity. In this context, deep learning may be resisted not because it lacks relevance,

but because it requires the transformation of long-established habits and routines. Therefore, educational transformation cannot rely solely on curriculum policy reform; it must also address the psychological dimensions and professional culture of teachers (Akmal et al., 2025)

The strengthening of teachers' growth mindset can be fostered through various strategies, including reflective professional development programs, teacher learning communities, and supportive school leadership. Teachers need to be provided with opportunities to experiment, experience failure, and learn again without fear of judgment. When schools cultivate a culture that values continuous learning, collaboration, and innovation, teachers are more likely to become receptive to deep learning approaches. Within such an environment, educational change is no longer perceived as pressure, but rather as a collective journey toward improving the quality of learning. Ultimately, the successful implementation of deep learning depends greatly on teachers' mental readiness and professional culture. Moving beyond a fixed mindset does not mean disregarding previous teaching experiences; instead, it involves transforming those experiences into a foundation for further growth and development. Through a growth mindset, teachers become more adaptive, creative, and reflective in responding to educational change. Consequently, resistance toward deep learning can be minimized and even transformed into a positive driving force for fostering more meaningful and sustainable educational transformation (Hariyadin & Nasihudin, 2021).

2. Methodology

This study employed a qualitative approach using an open-ended questionnaire as the primary research instrument, consisting of eight question items. These questions were developed based on the theoretical foundations underlying the variables examined in the study, namely teachers' resistance and the strengthening of teachers' growth mindset in the implementation of deep learning within the Merdeka Curriculum. Data were collected through the distribution of questionnaires to teachers, who served as research respondents and had previously participated in Deep Learning training programs organized by the Ministry of Primary and Secondary Education across Indonesia.

To ensure the validity and credibility of the questionnaire data, brief follow-up interviews were conducted to clarify and confirm respondents' answers. The interview findings were subsequently used to strengthen and support the data obtained through the questionnaires. Data analysis was carried out by examining the consistency and relevance of the collected data in relation to various scholarly references, previous relevant studies, grand theories, academic journal articles, educational policies, and applicable laws and regulations. Furthermore, the exploration of respondents' experiences and the realities they encountered in educational practice formed the basis for drawing research conclusions, thereby providing a comprehensive portrayal of teachers' experiences alongside the theoretical, policy, and legal frameworks that ideally govern the implementation of educational practice.

3. Results

3.1 Questionnaire Findings

The research data obtained through questionnaires distributed to 12 respondents were used as the primary data source and analyzed using a descriptive method. The following section presents the results of teachers' responses regarding the implementation of deep learning in several schools across the Province of Aceh, reflecting diverse teacher perspectives. These findings are summarized in the following table of questionnaire response recapitulation.

Table 1. Tabulation of Respondents' Responses to the Questionnaire

No	Questions	Teachers' Responses	Respondents
1.	The Deep Learning approach is relevant to contemporary demands and societal developments	Respondents perceived deep learning as highly relevant because it promotes profound understanding, critical thinking, and meaningful learning experiences	G1: Teacher
2.	Deep Learning has provided teachers with meaningful understanding and insights	Deep learning training programs have enhanced teachers' understanding; however, broader accessibility and more in-depth professional development are still needed.	G1: Teacher
3.	Is the Deep Learning approach different from other learning approaches?	The deep learning approach differs from other learning approaches because it emphasizes profound conceptual understanding, active student engagement, and learning experiences that are meaningful and applicable to real-life contexts.	G1: Teacher
4.	Was the Deep Learning training program you participated in implemented effectively and efficiently?	The deep learning training program was perceived as effective and efficient, although further enrichment and contextual adjustment according to specific subject areas are still required.	G1: Teacher
5.	Has deep learning been implemented in your school at the present time?	The deep learning approach has begun to be implemented, although its application has not yet been fully optimal across all schools.	G1: Teacher
6.	Are there any obstacles to the implementation of deep learning in schools, particularly regarding school facilities or students' conditions and potentials?	The main obstacles to the implementation of deep learning stem from students' diverse conditions and abilities, low learning motivation, as well as limited support from the environment, parents, and teachers' readiness.	G1: Teacher
7.	Do you agree that the implementation of deep learning can effectively improve academic achievement?	Respondents agreed that deep learning can significantly improve students' academic achievement.	G1: Teacher
8.	Do you agree that the implementation of deep learning can contribute to students' character development?	Respondents generally perceived that deep learning can contribute to students' character development, although some considered the approach to be more strongly oriented toward academic aspects.	G1: Teacher
9.	Is the implementation of deep learning compatible with schools that have differing facilities and infrastructure?	Deep learning can be implemented flexibly across different school contexts; however, its effectiveness is influenced by the availability of facilities and the creativity of teachers in managing the learning process.	G1: Teacher
10	Can deep learning contribute to the achievement of national education goals?	Respondents believed that deep learning can support the achievement of national education goals if it is implemented optimally and supported collaboratively by all stakeholders.	G1: Teacher

Source: Processed Primary Data, 2025

3.2 Analysis of Teachers' Questionnaire Responses

Overall, the findings of this study indicate that the deep learning approach has begun to be implemented across various schools and has received positive responses from teachers. The approach is considered relevant to contemporary educational needs because it encourages deeper conceptual understanding, enhances student engagement, and contributes to the improvement of academic achievement. Nevertheless, its implementation continues to encounter several challenges, particularly those related to variations in students' abilities and motivation, limited educational facilities, and teachers' readiness to adapt to the approach. On the other hand, deep learning is also perceived as flexible and adaptable to diverse school contexts and conditions. Collectively, these findings suggest that deep learning possesses substantial potential to support the achievement of national education goals, provided that stronger support is directed toward teacher training, educational infrastructure, and collaboration among stakeholders to ensure more effective and sustainable implementation (Dinata et al., 2025).

The findings of this study indicate that the implementation of deep learning in schools cannot be separated from the role of professional training programs previously attended by teachers. Such training has contributed to strengthening teachers' understanding of learning processes that are oriented not only toward cognitive achievement, but also toward the development of students' character through reflective, meaningful, and contextual learning experiences. Teachers who had participated in deep learning training tended to demonstrate greater capability in designing instructional activities that foster student engagement, independence, and the cultivation of positive values among learners. Nevertheless, the effectiveness of implementation remains varied and is influenced by several factors, including teachers' readiness, students' conditions, and the availability of supporting facilities and learning environments. These findings suggest that deep learning training plays a strategic role as a foundational element in developing educational practices that not only enhance academic achievement but also strengthen students' character development in a sustainable manner (Mahardika & Jaya, 2025).

4. Discussion

4.1 Implementation of Deep Learning in School Learning Practices

This discussion begins by examining teachers' perceptions regarding the relevance of the deep learning approach in educational practice, as part of an effort to understand the direction of educational transformation toward more meaningful and contextual learning. Based on respondents' answers to the first question concerning the implementation of the deep learning approach, the majority of respondents perceived this approach as highly relevant to contemporary learning needs. Respondents emphasized that deep learning enables students to develop a deeper understanding of subject matter while simultaneously encouraging active engagement in the learning process. Furthermore, the approach was considered consistent with the demands of contemporary societal development, which increasingly emphasize critical, reflective, and contextual thinking skills. These findings indicate a relatively strong awareness among teachers regarding the urgency of transforming learning practices from merely transferring knowledge toward fostering deeper meaning-making and understanding. This perspective is closely aligned with the principles of Constructivism as proposed by Jean Piaget and further developed by Lev Vygotsky (Vygotsky, 1978).

From the constructivist perspective, learning is understood as an active process in which learners construct knowledge through experience and interaction with their surrounding environment. This perspective is closely aligned with the characteristics of deep learning, which emphasize conceptual understanding, reflection, and students' active engagement in the learning process. Furthermore, Lev Vygotsky, through the concept of Zone of Proximal Development (ZPD), highlighted the important

role of teachers as facilitators who assist learners in reaching higher levels of understanding through instructional scaffolding. Accordingly, the deep learning approach is not only practically relevant, but also grounded in a strong theoretical foundation that supports meaningful and contextual learning experiences.

The findings obtained from respondents' interviews are also supported by the framework of deep learning in education developed by Michael Fullan and Joanne Quinn through the concept of New Pedagogies for Deep Learning. Fullan and Quinn emphasize that deep learning focuses on the development of global competencies, including critical thinking, creativity, collaboration, and character formation. This approach is directed not merely toward mastery of content, but also toward transforming students' ways of thinking and learning so that they become more adaptive in responding to the challenges of the twenty-first century (Quinn, 2016). Consistent with the respondents' perspectives, the implementation of deep learning is considered capable of responding to contemporary educational demands because it provides students with opportunities to engage actively in the learning process and construct more meaningful understanding. Therefore, the integration of this approach into educational practice represents a strategic step toward improving the quality of education in ways that are oriented toward future competencies and twenty-first-century learning needs.

Regarding the second question concerning the effectiveness of deep learning training programs, the majority of respondents stated that the training they had attended significantly contributed to improving their understanding and professional competencies. The training programs were perceived as providing valuable insights and facilitating teachers' ability to implement the deep learning approach in classroom practice. Nevertheless, several respondents also indicated that the training initiatives still require further improvement, particularly in terms of equitable access and deeper exploration of the learning materials. These findings suggest that although the training programs have generally been implemented effectively, there remains a need for more comprehensive and sustainable teacher capacity-building efforts. This perspective is supported by the theory of adult learning (andragogy) proposed by Malcolm Knowles (Knowles, 1980). Malcolm Knowles emphasized that adults, including teachers, learn effectively when training materials are relevant to practical needs, grounded in experience, and directly applicable within their professional contexts. In the context of deep learning training, teachers' positive responses indicate that the training programs have fulfilled the fundamental principles of andragogy by providing understanding that is both practical and meaningful.

However, the identified need for broader access and deeper exploration of training materials suggests that adult learning requires continuous professional development as well as differentiated approaches based on participants' varying levels of need and readiness. Therefore, deep learning training should ideally be designed not merely as a one-time activity, but as an ongoing process that is contextual, reflective, and adaptive to the evolving competencies and challenges faced by teachers in educational practice (Mardiana & Tri Herlambang, 2025).

Furthermore, in relation to the third question concerning the distinction between the deep learning approach and previous instructional approaches, respondents generally acknowledged the existence of substantial differences. Deep learning was perceived as an approach that places greater emphasis on conceptual understanding, reflective thinking, and students' active participation in the learning process, in contrast to conventional approaches that tend to prioritize memorization-oriented practices. Respondents also emphasized that deep learning is concerned not merely with final learning outcomes, but equally with the quality and meaningfulness of the learning process itself.

These findings indicate an emerging shift in educational paradigms toward a more humanistic and constructive form of student-centered learning, in which learners are encouraged to actively construct knowledge and meaning through engagement, reflection, and authentic learning experiences (Martinez, 2022).

Based on the respondents' answers, the findings indicate that the majority of participants perceived the deep learning approach as substantially different from other instructional approaches. The primary distinction lies in its emphasis on deeper conceptual understanding, reflective processes, and students' active engagement in learning activities. Respondents also highlighted that within the deep learning approach, students assume a more active role, while teachers function primarily as facilitators who guide and support the learning process.

In addition, this approach prioritizes meaningful and applicable learning experiences rather than merely focusing on the delivery of subject matter. Although several respondents considered the differences to be less pronounced in certain aspects, the overall consensus suggests that deep learning offers greater depth, stronger instructional focus, and more structured learning design aimed at fostering students' competencies in a comprehensive manner (Muassomah et al., 2025).

Regarding the fourth question concerning the implementation of deep learning training programs, the majority of respondents perceived that the training had been conducted effectively and efficiently. Nevertheless, several critical perspectives also emerged, indicating that the training programs still possessed certain limitations, particularly in relation to the depth of material delivery and the extent to which the content could be applied practically in classroom contexts. Some respondents further emphasized the need to improve the quality of training programs so that they become more contextual and responsive to the realities encountered in educational practice. These findings suggest that continuous evaluation of both the design and implementation of training programs is essential to ensure their effectiveness and long-term impact on instructional practices. Based on respondents' perspectives, the implementation of deep learning training has generally contributed positively to enhancing teachers' understanding, professional skills, and instructional inspiration in designing learning experiences that are more meaningful, interactive, and student-centered (Riyadi & Nugroho, 2025). Sebagian besar responden juga mengakui bahwa pelatihan mampu menggeser paradigma mengajar dari yang bersifat teoritis menuju praktik yang lebih aplikatif (Ester Marga Retta et al., 2025).

Nevertheless, several important considerations were also identified, particularly regarding the need for deeper exploration of training materials and the adjustment of training programs according to specific subject areas in order to make them more contextual and discipline-oriented. These findings indicate that although the training programs have provided substantial benefits, further development and refinement are still required to ensure that their implementation becomes more optimal, comprehensive, and responsive to teachers' diverse professional needs (April & Kunci, 2024).

Furthermore, regarding the implementation of deep learning in schools, the findings indicate that the majority of respondents stated that the approach has begun to be applied, although its implementation has not yet reached an optimal level. Several schools have integrated deep learning into classroom practices; however, a number of challenges remain, including limited educational facilities, varying levels of teacher readiness, and insufficient systemic support. On the other hand, some respondents also noted that the implementation process has not yet been carried out effectively in their respective school contexts. These findings confirm that the implementation of deep learning is still situated within a transitional phase, thereby requiring stronger support from multiple stakeholders. Such support is needed not only in the form of educational policies, but also

through advanced professional training programs and the provision of adequate educational facilities and infrastructure to ensure more effective and sustainable implementation (Tuna et al., 2026). Based on the respondents' perspectives, the implementation of deep learning in schools has generally begun to take place, although it has not yet been fully optimized. The majority of respondents stated that this approach has already been incorporated into classroom learning practices and continues to be progressively developed by teachers. Nevertheless, several respondents also indicated that its implementation remains limited or uneven across educational settings, while others reported that the approach has not yet been fully applied in their schools. These findings suggest that the implementation of deep learning is still in a transitional stage, in which teacher readiness, the availability of educational facilities, and institutional support from schools constitute crucial factors in determining the effectiveness and sustainability of its implementation (Rosiyati, Erviana, Fadilla, Sholihah, et al., 2025).

The implications of this study suggest that the successful implementation of deep learning requires a transformation in teachers' roles, positioning them as facilitators of active and meaningful learning rather than merely transmitters of knowledge. This transformation must be accompanied by the strengthening of teachers' competencies through continuous and context-oriented professional development programs. Furthermore, the implementation of deep learning also depends on the availability of a supportive educational ecosystem, including adequate facilities, responsive educational policies, and active environmental involvement. Considering the diversity of student characteristics and school conditions, the deep learning approach should be implemented in a flexible and adaptive manner to ensure its effectiveness in improving the overall quality of learning processes and educational outcomes.

4.2 Barriers and Support for the Implementation of Deep Learning in Learning Practices

This discussion examines the various barriers encountered in the implementation of deep learning in schools as part of an effort to understand the factors influencing the success of its application in educational practice. Based on respondents' answers to the first question regarding obstacles to the implementation of deep learning, the findings indicate that the majority of respondents acknowledged the existence of multiple challenges in the field. The most dominant barriers were associated with students' conditions and potentials, including differences in abilities, levels of learning readiness, and mindsets that remain strongly influenced by conventional learning practices (Fithriani, 2019).

Other factors, such as limited facilities, insufficient learning media, and less supportive learning environments, were also identified as significant challenges. These findings indicate that the implementation of deep learning does not depend solely on conceptual understanding, but is also strongly influenced by the overall readiness of the educational ecosystem. The interview findings further revealed that the barriers to implementing deep learning in schools are highly diverse and are predominantly associated with students' conditions and potentials, including differences in abilities, low learning motivation, and mindsets that remain oriented toward conventional learning approaches. In addition, limited support from families and the surrounding environment emerged as another significant obstacle in fostering successful learning experiences. On the other hand, constraints related to educational facilities, such as limited classroom space and learning media, also affected the effectiveness of implementation, although these were not considered the primary barriers. Several respondents additionally highlighted teachers' readiness and professional competencies, as well as the influence of technology use on students' cognitive development, as further challenges in the implementation process. Overall, these findings suggest that the successful implementation of deep learning requires comprehensive support from multiple stakeholders,

accompanied by continuous adaptation efforts to ensure that the approach can be applied effectively and sustainably (Mardiana & Tri Herlambang, 2025).

In relation to teachers' agreement toward the implementation of deep learning, the majority of respondents expressed strong support for the approach. Respondents perceived deep learning as having substantial potential to improve the quality of education, particularly in strengthening conceptual understanding and enhancing students' engagement in the learning process. This support reflects a positive acceptance among teachers toward educational innovations that are more oriented toward meaningful learning experiences. Nevertheless, several respondents also emphasized that the implementation process must be carried out optimally in order for its benefits to be fully realized.

The interview findings further revealed that most respondents agreed that the implementation of deep learning can contribute significantly to the improvement of students' academic achievement. Respondents argued that this approach enables learners to develop deeper conceptual understanding, which consequently enhances the overall quality of learning outcomes. Moreover, deep learning was perceived as an approach that focuses not only on final outcomes, but also on learning processes that are critical, meaningful, and personalized. However, several respondents highlighted that the success of this approach is highly dependent on effective implementation as well as the availability of adequate educational facilities and infrastructure (Pembelajaran, 2026).

Furthermore, in response to the third question regarding respondents' perspectives on the impact of deep learning implementation, the majority of respondents stated that this approach provides students with opportunities to develop their talents, interests, and critical thinking abilities. Deep learning was perceived as creating greater space for students to become more active, creative, and reflective throughout the learning process. However, several respondents also acknowledged that their understanding of the deep learning concept remains limited, resulting in implementation practices that have not yet reached an optimal level. These findings highlight the importance of strengthening conceptual literacy and professional understanding of deep learning among educators to support more effective and comprehensive implementation in educational practice.

The analysis of the fourth question indicates that the implementation of deep learning requires collaboration and commitment from multiple stakeholders. Respondents emphasized that the successful application of this approach cannot be achieved individually, but instead depends on the support of all educational elements, including teachers, schools, and policy makers. In addition, consistency in implementation was identified as a crucial factor to ensure that the approach does not remain merely temporary, but becomes sustainably integrated into everyday learning practices. Finally, in response to the fifth question, respondents reaffirmed that despite the various challenges encountered, the implementation of deep learning remains both feasible and necessary for continued development. The majority of respondents expressed optimism that improvements in teacher training, educational facilities, and the readiness of both teachers and students would enable this approach to produce significant positive impacts on educational quality. Therefore, it can be concluded that deep learning possesses considerable potential for implementation; however, its success depends on the presence of well-designed, adaptive, and sustainable implementation strategies to ensure optimal educational outcomes (Minhar et al., 2020).

This discussion demonstrates that the implementation of deep learning in schools encounters various challenges, particularly those related to students' conditions and potentials, including differences in abilities, low learning motivation, and mindsets that remain oriented toward conventional learning practices. In addition, limitations in educational facilities and insufficient environmental support also emerged as significant barriers. Despite these challenges, the majority of respondents expressed strong support for the implementation of the deep learning approach, as

it was perceived to significantly enhance conceptual understanding, increase student engagement, and improve academic achievement. Deep learning was also viewed as providing opportunities for the development of students' critical thinking, creativity, and reflective capacities, although further strengthening of conceptual understanding among teachers remains necessary. The success of its implementation is highly dependent on collaboration among multiple stakeholders, consistency in educational practice, and adequate support through professional training and educational facilities. Therefore, although deep learning faces several implementation challenges, it continues to demonstrate substantial potential to be developed as an effective instructional approach, provided that it is implemented in an adaptive, well-planned, and sustainable manner (Boak, 2026).

4.3 Implementation of Deep Learning: Alignment, Challenges, and Learning Achievement

Based on respondents' answers to the first question regarding the suitability of deep learning implementation, the majority of respondents stated that this approach is appropriate for application within contemporary learning contexts. Respondents perceived deep learning as a flexible approach that can be adapted to the conditions and characteristics of individual schools. The approach was also considered capable of addressing educational needs that emphasize deeper understanding and the development of students' competencies. Nevertheless, several respondents noted that the suitability of deep learning implementation is highly dependent on the availability of educational facilities and the readiness of schools to support its application effectively (Amit, 2011).

Although the majority of respondents expressed positive views regarding the suitability of deep learning implementation, several critical perspectives also emerged, indicating that limitations in educational facilities and infrastructure remain major obstacles. Some respondents argued that schools with inadequate facilities would encounter difficulties in implementing deep learning effectively and optimally. These findings suggest that disparities in educational resources among schools may significantly influence the level of success in applying this approach. Therefore, greater attention from policy makers is needed to ensure equitable distribution of educational support and infrastructure. Based on respondents' perspectives, the implementation of deep learning is generally considered adaptable to a wide range of school facilities and infrastructural conditions. The approach was perceived as flexible and feasible to implement through teachers' creativity and the optimization of available resources. Nevertheless, several respondents emphasized that the level of effectiveness may vary, as schools equipped with more complete facilities are more likely to implement deep learning in a more optimal manner. In addition, some respondents acknowledged that infrastructural limitations continue to pose challenges for certain schools. Overall, the findings indicate that the success of deep learning implementation depends not only on the availability of facilities, but also on teachers' innovation, readiness, and capacity to manage meaningful learning processes effectively (Independent, 2024).

Regarding the second question related to the achievement of educational goals through the deep learning approach, the majority of respondents expressed optimistic perspectives. They believed that deep learning has the potential to support the attainment of educational objectives, particularly in fostering character development, strengthening conceptual understanding, and developing students' overall potential. Respondents also emphasized that such success is highly dependent on the seriousness and commitment demonstrated by teachers, students, and schools throughout the implementation process. These findings indicate that commitment and consistency constitute key

4.4 factors in achieving the intended educational outcomes.

Based on respondents' perspectives, the majority further believed that deep learning possesses strong potential to contribute to the achievement of Indonesia's national education goals, especially in promoting intellectual development and nurturing students' capacities comprehensively. Respondents perceived this approach as capable of accommodating students' learning needs while emphasizing not only memorization, but also understanding, character formation, and critical thinking processes. Nevertheless, several respondents stressed that the success of deep learning implementation is strongly influenced by the seriousness of its application, the support of all stakeholders, and its integration with other components of the educational system. Therefore, deep learning is regarded as a promising educational approach; however, its effectiveness depends on optimal, collaborative, and sustainable implementation in order to achieve national educational objectives successfully (Independent, 2024).

In addition, several respondents associated the achievement of deep learning objectives with the importance of collaboration and collective commitment among all components of the educational system. Implementation that is carried out in a planned, consistent, and sustainable manner was believed to produce significant impacts on the quality of learning. Respondents also highlighted the importance of careful instructional planning to ensure that deep learning does not remain merely a conceptual framework, but is genuinely realized in classroom practice. These findings indicate that the success of deep learning depends not only on the strength of the idea itself, but also on the effectiveness of its implementation strategies. The analysis further demonstrates that deep learning is perceived as a relevant, adaptive, and promising approach for achieving educational objectives. Although several challenges remain, particularly in relation to facilities and school readiness, respondents maintained a high level of optimism regarding the success of its implementation. Therefore, continuous efforts are required to strengthen educational resources, enhance teacher professional development, and ensure supportive educational policies so that the implementation of deep learning can be carried out effectively and generate meaningful impacts on the improvement of educational quality (Amit, 2011).

This discussion demonstrates that the implementation of deep learning is perceived as relevant and aligned with the needs of contemporary education because of its flexible nature and its capacity to promote deeper understanding and the development of students' competencies. Nevertheless, the effectiveness of its implementation continues to be influenced by the availability of educational facilities and the readiness of schools, indicating that disparities in infrastructure may become a determining factor in the success of implementation. Respondents also expressed optimism that this approach can support the achievement of educational objectives, both in terms of academic development and character formation, provided that it is implemented seriously and supported by all components of the educational system. Furthermore, the success of deep learning is strongly dependent on careful planning, collaborative efforts, and consistency in implementation. Therefore, despite the various limitations encountered, deep learning continues to demonstrate considerable potential for improving the quality of education when supported by adaptive implementation strategies, continuous professional development for teachers, and educational policies that promote equity and equal access to educational resources (Najib & Mas, 2026)

5. Conclusions

The implementation of deep learning within the Merdeka Curriculum represents a strategic effort to realize learning processes that are meaningful, contextual, and oriented toward the development of twenty-first-century competencies. This approach requires a shift from surface-level learning toward deeper understanding and the practical application of knowledge in real-life contexts. However, based on empirical findings, its implementation remains in a transitional phase and has not yet been applied evenly across educational settings. The success of implementation is highly dependent on teachers' readiness and professional competencies, the effectiveness of training programs, and the support of the broader school ecosystem, including leadership, learning culture, and the availability of educational resources. In this context, strengthening teachers' growth mindset emerges as a key factor in encouraging adaptability and innovation in responding to educational change. Therefore, the implementation of deep learning requires not only modifications in instructional methods, but also a broader transformation of educational paradigms supported by continuous professional development and comprehensive readiness across the educational system.

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