Evaluation of the Implementation of a Pedagogical Deep Learning Pilot Project Based on Islamic Values to Support the *Kurikulum Merdeka* in Elementary Schools

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ABSTRACT

The implementation of Kurikulum Merdeka (Independent Curriculum) emphasizes contextual and meaningful learning as well as the strengthening of the Profil Pelajar Pancasila. However, empirical research on integrating Islamic values into a deep learning pedagogy within this curriculum remains limited. Addressing this gap, this study aims to: (1) evaluate the implementation of an Islamic-values-based deep learning approach in elementary education, (2) identify the forms of Islamic value internalization that emerge during the learning process, and (3) formulate challenges and recommendations for strengthening teacher competence. This descriptive qualitative study involved three teachers and 32 students at SDN 01 Pisang Baru, Lampung, using in-depth interviews, participatory observations, and document analysis. The findings indicate that the model effectively promotes reflective and collaborative learning and supports the internalization of Islamic values—such as honesty, responsibility, and empathy—through socially contextualized project activities. Teachers act as facilitators who connect academic concepts with the practical application of Islamic teachings. Nevertheless, several constraints were identified, including limited project time and teachers' insufficient mastery of character-based authentic assessment. The study contributes theoretically by providing an empirical framework for integrating Islamic values into deep learning pedagogy within Kurikulum Merdeka, and practically by offering recommendations to improve teacher professionalism in 21st-century learning.

ABSTRAK

Penerapan Kurikulum Merdeka menekankan pembelajaran yang kontekstual, bermakna, serta penguatan Profil Pelajar Pancasila. Namun, penelitian empiris mengenai integrasi nilai-nilai keislaman ke dalam pedagogi deep learning dalam kurikulum ini masih terbatas. Untuk mengisi kesenjangan tersebut, penelitian ini bertujuan untuk: (1) mengevaluasi implementasi pendekatan deep learning bernilai keislaman di pendidikan dasar, (2) mengidentifikasi bentuk internalisasi nilai Islam yang muncul selama proses pembelajaran, dan (3) merumuskan tantangan serta rekomendasi penguatan kompetensi guru. Penelitian kualitatif deskriptif ini melibatkan tiga guru dan 32 siswa di SDN 01 Pisang Baru, Lampung, menggunakan wawancara mendalam, observasi partisipatif, dan analisis dokumen. Temuan menunjukkan bahwa model pembelajaran ini efektif mendorong kegiatan belajar yang reflektif dan kolaboratif serta mendukung internalisasi nilai keislaman—seperti kejujuran, tanggung jawab, dan empati—melalui aktivitas proyek berbasis konteks sosial. Guru berperan sebagai fasilitator yang menghubungkan konsep akademik dengan penerapan praktis ajaran Islam. Meskipun demikian, beberapa kendala ditemukan, termasuk keterbatasan waktu pelaksanaan proyek dan kurangnya penguasaan guru terhadap asesmen autentik berbasis karakter. Secara teoretis, penelitian ini berkontribusi dengan menyediakan kerangka empiris integrasi nilai keislaman dalam pedagogi deep learning pada Kurikulum Merdeka, sementara secara praktis memberikan rekomendasi untuk meningkatkan profesionalisme guru dalam pembelajaran abad ke-21.

A. INTRODUCTION

The *Kurikulum Merdeka* (Independent Curriculum) is widely introduced as a response to the demands of 21st century learning; however, several studies note that its implementation faces structural disparities across schools.[1] While the policy emphasizes flexibility and post-pandemic recovery, empirical evidence shows that elementary teachers often lack the pedagogical preparation needed to implement higher-order learning (OECD, 2022). Thus, although Hartobi, Suradi, and Saputra describe the curriculum as a strategic adaptation, this claim remains descriptive and does not address the gap between policy expectations and classroom realities.[2] A critical examination is therefore necessary to understand whether deep learning—as promoted in the curriculum—can be operationalized effectively within the constraints of Indonesian primary schools.

Deep learning is frequently portrayed as a learning philosophy that cultivates conceptual understanding, critical thinking, and creativity. Yet, international studies demonstrate that its successful implementation is far more complex than commonly assumed. Hattie shows that deep learning requires sustained scaffolding and deliberate instructional design rather than relying on spontaneous student inquiry. Likewise, Fullan and Langworthy emphasize that deep learning depends heavily on teacher expertise, technological support, and coherent pedagogical models—conditions that are often limited at the primary school level. Although Cecep Darmawan identifies mindful, meaningful, and joyful learning as the core dimensions of deep learning, several scholars caution that these principles risk becoming rhetorical when not reinforced by systematic assessment mechanisms and classroom routines that support higher-order thinking.[3] Although Cecep Darmawan identifies mindful, meaningful, and joyful learning as the core dimensions of deep learning, several scholars caution that these principles risk becoming rhetorical when not reinforced by systematic assessment mechanisms and classroom routines that support higher-order thinking.

In Islamic-based elementary schools, the integration of values such as *ṣidq, amānah,* and *ta'āwun* is often framed as a moral obligation. However, presenting this integration as a necessity without scholarly justification results in a normative argument. Literature shows differing perspectives: while Dinata argues that Islamic education should harmonize traditional values with modern pedagogies, other researchers caution that value-based instruction may conflict with the inquiry-oriented nature of deep learning if not carefully designed.[4] The results of national research show that the contextual application of character education based on Islamic values is able to strengthen the formation of attitudes, morals, and spirituality of students.[5] These debates indicate that integrating Islamic values into academic

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[1] Kemendikdasmen, "Panduan Pembelajaran Dan Asesmen," *Badan Standar, Kurikulum, Dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, Dan Teknologi Republik Indonesia*, 2022, 123.

[2] Suplimi Hartobi, Ahmad Suradi, and Adi Saputra, "The Implementation of Independent Learning Curriculum (Merdeka Belajar) at the Primary School Level," *Indonesian Journal of Innovative Teaching and Learning* 1, no. 2 (2024): 105–16, https://doi.org/10.64420/ijitl.v1i2.181.

[3] Suplimi Hartobi, Ahmad Suradi, and Adi Saputra, "The Implementation of Independent Learning Curriculum (Merdeka Belajar) at the Primary School Level," *Indonesian Journal of Innovative Teaching and Learning* 1, no. 2 (August 2024): 105–16, https://doi.org/10.64420/ijitl.v1i2.181.

[4] Feri Riski Dinata, Ali Kuswadi, and Marlina Marlina, "Kolaborasi Pesantren Dan Perguruan Tinggi Islam: Model Manajemen Kemitraan Berkelanjutan," *Islamic Management : Jurnal Manajemen Pendidikan Islam* 2, no. 1 (September 2025): 8–14, https://doi.org/10.63097/9s94b812.

[5] Shofwatunnida Julia Alfarisy and Iswandi, "Integration of Character Education Values in Islamic Religious Education Learning At School," *Multidisciplinary Indonesian Center Journal (MICJO)* 2, no. 2 (2025): 1503–9, https://doi.org/10.62567/micjo.v2i2.660.

content requires critical examination, especially regarding how such integration affects students' autonomy, reasoning depth, and engagement in open-ended learning processes.

Preliminary findings from SDN 01 Pisang Baru show early efforts to incorporate deep learning through projects and reflective tasks.[6] Although teachers report increased confidence and responsibility among students, these observations remain anecdotal and do not yet demonstrate deep conceptual shifts. The reliance on games to maintain attention suggests that students may still struggle with the sustained inquiry required for deep learning. Furthermore, the evaluation system—focusing on products, observable attitudes, and reflections—favors behavioral indicators over cognitive depth. This mismatch between intended deep learning outcomes and practical classroom assessment underscores the need for a more structured model that aligns Islamic values, higher-order thinking skills, and measurable learning progress.

Recent research (2020–2025) highlights growing interest in integrating Islamic values within 21st-century pedagogies; however, most studies predominantly report positive outcomes and provide limited critical reflection on contextual challenges. Research in the Journal of Education and Learning shows that personalization within deep learning strengthens both critical thinking and character, yet these results are derived from schools with strong cultural and institutional support, raising concerns about generalizability.[7] Similarly, studies in Attadrib demonstrate the potential of local-Islamic-value-based deep learning but seldom examine whether value integration may inadvertently constrain creative exploration. These gaps indicate the absence of empirical studies that critically analyze how Islamic values interact with deep learning practices in everyday elementary classrooms—precisely the space in which the present study positions its contribution and novelty.

Based on this description, this study aims to: 1. Evaluate the implementation of a deep learning pilot project based on Islamic values in elementary schools; 2. Analyze the process of integrating Islamic values in learning practices; and 3. Identify challenges and strategies for optimizing deep learning approaches in the context of Islamic-based elementary schools. This research contributes to providing empirical evidence regarding the practice of implementing deep learning approaches based on Islamic values at the elementary school level. The results of the study are expected to provide practical recommendations for teachers, schools, and policy makers in developing in-depth and characterful learning models, in line with the *Kurikulum Merdeka* (Independent Curriculum) and Pancasila Student Profile.

B. METHODS

This study employs field research with a qualitative–descriptive approach. A qualitative approach is selected because the study aims to uncover processes and meanings that cannot be captured through numerical measurement—specifically the ways Islamic values are integrated into classroom practices, the interaction patterns that shape deep learning, and the teacher–student dynamics that emerge during project-based and reflective activities. Such aspects require in-depth exploration, making qualitative inquiry the most appropriate methodological choice, as emphasized by scholars who highlight its strength in capturing

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[6] "Hasil Wawancara Dengan Guru Di SDN 01 Pisang Baru," preprint, n.d.

[7] Muhammad Akhyar Aji Saputra, Prima Cristi Crismono, and Saman Hudi, "Personalizing Learning Using Deep Learning: Innovation in Digital Education," *Jurnal Ilmu Pendidikan Dan Pembelajaran* 4, no. 1 (September 2025): 83–94, https://doi.org/10.58706/jipp.v4n1.p83-94.

context, experience, and educational processes holistically. The research focuses on evaluating the implementation of a deep learning–based pilot project that incorporates Islamic values at SDN 01 Pisang Baru, which was purposively selected as the study site. The research will be conducted in October 2025, when learning activities have stabilised in the odd semester. The research data source consists of primary and secondary data. Primary data will be obtained from approximately one principal, four classroom teachers (grades IV and V), one Islamic Education (PAI) teacher, and around twenty-four students from grades IV and V. Secondary data includes supporting documents such as teaching modules, lesson plans, assessment records, and samples of student work.

Data will be collected through in-depth interviews, classroom observations, and documentation analysis. Interviews aim to explore teachers' strategies, challenges, and the integration of Islamic values in instructional practice. Observations will be used to examine learning interactions directly, while documentation helps assess the alignment between planning and actual learning outcomes. Data analysis will follow an interactive model consisting of data reduction, data display, and conclusion drawing. The findings will be interpreted using the CIPP (Context, Input, Process, Product) evaluation model to provide a comprehensive understanding of program readiness, implementation, and outcomes.[8] Data validity will be ensured through source and technique triangulation.[9]

C. RESULTS AND DISCUSSION

1. The Context of the Implementation of Islamic Values-Based Deep Learning in Elementary Schools

The context of this study shows that SDN 01 Pisang Baru, as an early implementer of the *Kurikulum Merdeka* (Independent Curriculum), demonstrates an initial yet deliberate commitment to adopting deep-learning-oriented instructional practices. At the outset, the school identifies three core values—honesty, responsibility, and cooperation—as its moral foundation. These values function as guiding principles rather than recurring narrative elements and are referenced when relevant to avoid unnecessary repetition.[10]

The *Kurikulum Merdeka (Independent Curriculum)* positions learning as a process that is meaningful, contextual, and responsive to the demands of 21st-century competencies.[11] Within this framework, deep learning is conceptualized not merely as a pedagogical technique but as a philosophy that emphasizes conceptual understanding, higher-order thinking, and sustained reflection. As Darmawan argues, deep learning requires students to connect knowledge with real-life contexts, while Hattie and Fullan highlight that such an approach can only be successful when supported by consistent scaffolding and a collaborative school

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[8] Chandra Intan Berliana et al., "Integrating Islamic Values and AI-Based Deep Learning: Implementation at SMK Negeri 1 Kebumen Towards Achieving Educational SDGs," *Profetika: Jurnal Studi Islam* 26, no. 01 (June 2025): 33–48, https://doi.org/10.23917/profetika.v26i01.10632.

[9] La Zubair et al., "Strategi Inovatif Dalam Pengembangan Evaluasi Pembelajaran Pendidikan Agama Islam Untuk Meningkatkan Kualitas Pendidikan," *Jurnal Pendidikan Indonesia* 5, no. 11 (November 2024): 1217–27, https://doi.org/10.59141/japendi.v5i11.5911.

[10] Kementerian Pendidikan et al., *Kementerian Pendidikan, Kebudayaan, Riset, Dan Teknologi*, no. 021 (2023).

[11] "Bentley T (2017) OECD Transformative Competencies 2030: Coping with Tensions, Dilemmas. Organization for Economic Co-Operation and Development. Future of Education and Skills 2030: Reflexions on Transformative Competences 2030. EDU/EDPC(2017)16/ANN5. Unpu," preprint, n.d.

culture.[12] These theoretical expectations serve as a benchmark against which the empirical findings of this study are compared.

The findings indicate that SDN 01 Pisang Baru attempts to integrate deep learning with Islamic moral formation, a dual orientation common in Islamic-based schools. Project-based learning is used as the primary vehicle to merge these objectives. For instance, the "mini garden creation" project introduces ecosystem concepts while encouraging reflections on environmental stewardship. This approach begins to reflect elements of spiritual constructivism, wherein values are internalized through reflective engagement rather than through the mere insertion of Qur'anic verses or moral reminders. This practice emphasizes that Islamic values do not merely function as a complement, but rather as an epistemological foundation that directs the entire learning process. Previous research by Hidayat and Zainal found that Islamic schools need to make pedagogical adaptations so that modern learning innovations such as project-based learning or deep learning can be aligned with the principle of *tarbiyah islāmiyyah*, which is education that emphasizes a balance between intellectual and moral development.[13] The same can be seen at SDN 01 Pisang Baru, where collaboration between classroom teachers and Islamic Religious Education (PAI) teachers is the key in designing a learning experience that unites cognitive and affective dimensions.

The support of the principal plays an important role in building an innovative school culture. Fullan stated that the success of education reform depends heavily on the collaborative and reflective culture that grows in the school environment.[14] The results of field observations show that SDN 01 Pisang Baru has begun to build a learning climate that is open to innovation, although it is still in the transition stage to a fully deep learning-oriented learning model. The support of the principal plays an important role in building an innovative school culture. Fullan stated that the success of education reform depends heavily on the collaborative and reflective culture that grows in the school environment.[15] The results of field observations show that SDN 01 Pisang Baru has begun to build a learning climate that is open to innovation, although it is still in the transition stage to a learning model that is fully oriented to deep learning.

2. Teacher Readiness and Learning Facility Support
a. Teachers' Readiness in Implementing Deep Learning

Teachers have a strategic role in determining the success of the implementation of deep learning-based learning. The results of the interviews showed that most of the teachers at SDN 01 Pisang Baru had understood the basic principles of the *Kurikulum Merdeka (Independent Curriculum)* and the concept of student-centered learning, but the in-depth understanding of the deep learning approach was still limited to the conceptual level. The implementation of deep learning-based learning at SDN 01 Pisang Baru is carried out by

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[12] Muhamad Basyrul Muvid, "Menelaah Wacana Kurikulum Deep Learning: Urgensi Dan Peranannya Dalam Menyiapkan Generasi Emas Indonesia," *Jurnal Edu Aksara* 3, no. 2 (December 2024): 80–93, https://doi.org/10.5281/zenodo.14403663.

[13] Jeje Abdul Rojak, "Penerapan Nilai-Nilai Islam Dalam Pendidikan Modern: Tantangan Dan Strategi Efektif," *Jurnal Pendidikan, Penelitian, dan Pengabdian Masyarakat* 4, no. 2 (October 2024): 18–34, https://jurnalnala.id/index.php/nala/article/view/40.

[14] Dean Fink and Louise Stoll, "Educational Change: Easier Said than Done," in *Extending Educational Change: International Handbook of Educational Change*, ed. Andy Hargreaves (Dordrecht: Springer Netherlands, 2005), 17–41, https://doi.org/10.1007/1-4020-4453-4_2.

[15] Joanne Quinn et al., *The Right Drivers for Whole System Success*, no. February (2021).

linking Islamic values such as honesty, responsibility, and cooperation in project activities. The results of this study reinforce previous findings that show that the application of deep learning in Islamic Religious Education is able to increase the effectiveness of learning and active participation of students.[16] This approach also encourages the formation of religious character through reflective learning activities that instill the values of *ṣidq, amānah,* and *ta'āwun*.[17] Teachers tend to associate the term deep learning only with "meaningful learning" without understanding the in-depth cognitive structure that should be built in students. According to Martono, teachers' readiness is not only measured by their understanding of pedagogical terms, but also by their ability to convert theory into contextual learning practices that lead students to think critically, reflectively, and spiritually.[18] Teachers who are able to integrate Islamic values in deep learning are able to lead students not only to understand concepts cognitively, but also to instill awareness that knowledge is part of worship.

The results of observations in the classroom show that some teachers have made simple innovations, such as associating the concept of science with the greatness of God's creation, or inviting students to reflect on the moral value of learning outcomes. This effort shows that there is pedagogical initial capital to develop deep learning that is integrated with Islamic values. However, the limitations of formal training on the Islamic deep learning approach cause the variation between teachers in the application is still quite high.

Teachers as the main actors in learning have a strategic position to implement a Deep Learning approach that not only emphasizes cognitive mastery, but also the development of metacognition, reflection, and the application of values in daily life. Research by the Learning Policy Institute states that "deeper learning develops students' abilities to think critically and solve complex problems, communicate effectively, work collaboratively, and learn independently."[19] Thus, in the context of schools such as SDN 01 Pisang Baru, teachers who relate Islamic values such as *ṣidq, amānah,* and *ta'āwun* into learning projects have the opportunity to not only facilitate the mastery of concepts, but also the internalization of meaningful religious characters. Regarding Islamic religious learning, recent research shows that an integrated deep learning approach can be a bridge between knowledge mastery and value actualization. The Deep Learning Approach in the Merdeka Curriculum to Integrate Islamic Values in Elementary Schools research found that deep learning approaches allow teachers to "integrate Islamic values into students' real lives through a variety of strategies."[20] Similarly, the "Deep Learning-Based Islamic Education Transformation" study shows that in

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[16] Khusnul Khotimah and Vevy Lansari, "Study of the SQ3R Pop-Up Book Learning Method and Reading Ability of Elementary School Students: Studi Metode Pembelajaran SQ3R Pop-Up Book Dan Kemampuan Membaca Siswa SD," *Indonesian Journal of Education Methods Development* 20, no. 4 (August 2025): 1–10, https://doi.org/10.21070/ijemd.v20i4.911.

[17] Hamdi Saiful, "Model Pendidikan Integratif Dalam Penanaman Nilai Dasar Ahlussunah Wal Jama'ah An Nahdliyah Di Mi Ma'arif Nu 1 Pageraji Kabupaten Banyumas" (doctoral, UIN Prof. K.H. Saifuddin Zuhri Purwokerto, 2024), https://repository.uinsaizu.ac.id/25035/.

[18] auliya Erma, "Implementasi Kurikulum Merdeka Dan Dampaknya Terhadap Kinerja Guru Ppkn Di Smp Negeri 16 Mataram" (skripsi, Universitas Mataram, 2025), https://eprints.unram.ac.id/51551/.

[19] Linda Darling-Hammond, Maria E. Hyler, and Madelyn Gardner, *Effective Teacher Professional Development* (Learning Policy Institute, 2017), https://eric.ed.gov/?id=ED606743.

[20] Lutfina Aribah et al., "Deep Learning Approach in The Merdeka Curriculum to Shape Students' Character Through Islamic Religious Education," *Kalijaga Journal of Islamic Religious Education* 1, no. 1 (October 2025): 16–35, https://ejournal.uin-suka.ac.id/tarbiyah/jire/article/view/12070.

PAI learning, deep learning is not just memorizing or understanding the material, but rather encourages students to reflect on values and apply them in their daily actions.[21]

The transition stage of deep learning implementation in schools shows that teachers' understanding is still at the conceptual level, so strengthening pedagogical capacity is an urgent need. Capacity building is not only related to the understanding of terms or concepts, but also the ability to design learning that fosters the cognitive, affective, and spiritual aspects of students in an integrated manner. Teachers need to be able to facilitate collaboration between students and build a culture of reflection in the classroom, as well as integrate Islamic values in the context of project-based learning so that students understand the relationship between knowledge and religious character. In addition, providing space for students as the main agents of learning through questioning, planning, implementing projects, and conducting deep reflection are important elements in realizing authentic deep learning, in accordance with the principles of apprenticeship, depth over breadth, and student ownership.[22]

Institutional support is also a determining factor for the success of learning transformation. The provision of professional training on Islamic values-based deep learning models, teachers' collaborative time to design learning, and the strengthening of a reflective culture in an ongoing manner are necessary for teachers to be able to translate concepts into consistent practice. This condition is in line with previous research findings that affirm that the success of deep learning is influenced by teacher readiness, pedagogical space to innovate, and school culture that supports sustainable change towards more meaningful and transformative learning.[23]

b. Support for Learning Facilities and Infrastructure

The availability of facilities and infrastructure is a key determinant of the successful implementation of the deep learning approach, as this learning model requires a learning environment that encourages exploration, collaboration, and deep reflection. The results of the field findings show that SDN 01 Pisang Baru has provided basic facilities such as adequate classrooms, LCD projectors in several classrooms, and thematic books as learning resources. These facilities are the initial prerequisites to support project-based learning and group discussions, which are integral to deep learning strategies.

Based on observations and interviews, digital infrastructure such as computers, internet connectivity, and learning technology devices is still very limited. This condition has an impact on limited access to information and digital exploration activities that should be part of 21st century literacy. These findings are in line with research that confirms that the lack of digital infrastructure is a major obstacle to the implementation of deep learning in many

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[21] Arini Rochyati, "Deep Learning-Based Islamic Education Transformation : Innovation in Islamic Learning in the Digital Era," *International Journal of Islamic Educational Research* 2, no. 4 (October 2025): 53–60, https://doi.org/10.61132/ijier.v2i4.430.

[22] Anita Candra Dewi, "Pendekatan Pembelajaran Mendalam Untuk Mengembangkan Kreativitas Dan Keterampilan Menulis Di Era Digital," *Journal of Humanities, Social Sciences, and Education* 1, no. 8 (October 2025): 1–12, https://doi.org/10.64690/jhuse.v1i8.322.

[23] Abdul Mukhlis and Saini, "Transformasi Pembelajaran Pendidikan Agama Islam Berbasis Nilai Sosial Di Era Digital (Studi Di SDN Kemiri Sewu 1, Kecamatan Pandaan, Kabupaten Pasuruan)," *CBJIS: Cross-Border Journal of Islamic Studies* 7, no. 1 (June 2025): 252–66, https://doi.org/10.37567/cbjis.v7i1.4119.

Indonesian schools, especially in non-urban areas.[24] These challenges are further reinforced by other findings that say that limited facilities are a factor inhibiting the transformation of learning towards a more in-depth and independent model.[25]

Data in the field show that there are adaptive efforts from teachers in overcoming the limitations of facilities through the use of simple learning resources such as concrete objects, visual media, and projects based on the school environment. The creativity of these teachers shows that the initial success of deep learning does not depend solely on technological sophistication, but on the ability to design meaningful learning experiences. This is in line with the view that the limitations of facilities can be overcome through pedagogic innovation and institutional support.[26]

The context of Islamic values-based schools shows that the support of facilities and infrastructure does not only focus on physical and technological aspects, but also includes spiritual and social dimensions. A positive environment, structured religious activities, and spaces that support the process of value reflection are integral parts of educational facilities that encourage character building. In line with that, previous research also emphasized that the success of deep learning practices in elementary schools requires the support of physical facilities, a collaborative school culture, and the integration of religious moral values as a pedagogic foundation.[27] Therefore, the existence of learning facilities in schools not only functions as a technical operational support, but also as a medium for internalizing Islamic values such as *amanah, ta'awun*, and concern for the environment. Facilities that support worship habits, positive social interactions, and collective learning ethics also strengthen the meaningful learning process, so that deep learning can be realized comprehensively in the cognitive, affective, and spiritual realms.

Overall, the support for learning facilities at SDN 01 Pisang Baru is in the transition stage, with strength in educator creativity and school cultural support, but it still needs to strengthen digital infrastructure. Therefore, facility development, continuous technopedagogic training, and policy support are strategic needs so that the implementation of deep learning is not only adaptive, but sustainable and systematic in the long term.

c. Leadership and Institutional Support

Support from school leadership and institutional stakeholders is a very decisive input element in the transformation of learning towards a deep learning model. The principal's leadership plays a role as a facilitator of innovation that creates a collaborative culture in the school environment. Dinata, Kuswadi, and Marlina emphasized that the success of Islamic educational institutions in building sustainable collaboration is largely determined by the

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[24] Suwandi, Riska Putri, and Sulastri, "Inovasi Pendidikan Dengan Menggunakan Model Deep Learning Di Indonesia," *Jurnal Pendidikan Kewarganegaraan Dan Politik* 2, no. 2 (December 2024): 69–77, https://doi.org/10.61476/186hvh28.

[25] Fitri Nuranggraeni and Nabella Alani, "Transformasi Pembelajaran Dengan Deep Learning: Studi Literatur Terhadap Inovasi Pembelajaran Masa Kini," *Bale Aksara* 6, no. 1 (2025): 16–22, https://scholar.google.com/scholar?cluster=15789036027676110580&hl=en&oi=scholarr.

[26] Emilda Sulasmi, "Can Deep Learning Provide Solutions to The Challenges of 21st-Century Education in Indonesia?," *International Journal of Computational and Experimental Science and Engineering* 11, no. 2 (May 2025): 3682–90, https://doi.org/10.22399/ijcesen.2636.

[27] Herlina Aulia and Hanik Mahliatussikah, "Implementing Deep Learning in Arabic Language Education at Madrasah Aliyah: Enhancing Critical Thinking and Contextual Learning," *Abjadia : International Journal of Education* 10, no. 3 (September 2025): 584–94, https://doi.org/10.18860/abj.v10i3.33342.

ability to manage partnerships between traditional values and academic innovation through an adaptive and sustainable partnership management model.[28] At the school level, the role of the principal as a facilitator of innovation is crucial—from providing internal training for teachers, creating a forum for teacher reflection, to providing space for teachers to experiment with project-based learning and Islamic values. The results of the interview at SDN 01 Pisang Baru revealed that the principal is actively committed to making the school a pilot school for the application of deep learning-based learning with religious values, which shows that institutional support is not just a formality, but a proactive action towards pedagogical innovation.

This is consistent with research findings that transformational leadership or transformative leadership in schools has a significant influence on innovative culture and the success of the implementation of new learning.[29] For example, in the article "Why Is School Leadership Key to Transforming Education?" it was found that school leadership actively initiates visions of change, supports teachers in pedagogical experiments, and creates a professional culture that allows teachers to grow and participate in innovation.[30] Thus, school principals who are open to change and give teachers the freedom to "play" with new learning strategies are an important catalyst for the implementation of deep learning.

On the other hand, school institutions consist not only of formal leaders but also of school committees, parents, and the community. The involvement of the school committee and parents in the provision of simple facilities—such as environment-based thematic project activities or Islamic values—makes the school community a partner in sharing responsibility in learning. Thus, institutional support is collective and social: it is not only the administrative structure of the school that provides the facilities, but the entire educational ecosystem that supports change. The strengthening of these institutions and communities is also important so that pedagogical changes do not only occur within the classroom, but have resonance to the environment outside the classroom and to the daily lives of students.

Based on the available inputs, three main points can be deduced; 1. Teachers at SDN 01 Pisang Baru have shown an initial understanding of deep learning, but need to strengthen concepts and advanced training based on Islamic values to be able to design and implement more in-depth learning; 2. The available learning facilities are still limited, especially in terms of digital technology, but the creativity and commitment of teachers have been able to compensate for some of these shortcomings through simple media and alternative learning activities; 3. The leadership of school principals and institutional support (school committees, parents, communities) are important social capital that strengthens the culture of innovation and provides an institutional framework for deep learning-based learning transformation.

Thus, in order for the implementation of deep learning to be not only adaptive but also sustainable and systematic, policies are needed that strengthen instructional leadership, collaborative school institutions, and institutional investment in the form of training, collaborative time, and implementation monitoring. This support model should be an integral

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[28] Dinata, Kuswadi, and Marlina, "Kolaborasi Pesantren Dan Perguruan Tinggi Islam," 8–14.

[29] Michael Fullan, *Leading in a Culture of Change* (John Wiley & Sons, 2020).

[30] Monica Mincu, "Why Is School Leadership Key to Transforming Education? Structural and Cultural Assumptions for Quality Education in Diverse Contexts," *PROSPECTS* 52, no. 3 (2022): 231–42, https://doi.org/10.1007/s11125-022-09625-6.

part of the school system's input so that changes towards deep learning can be internalized and sustainable.

3. Implementation of Deep Learning Approach in Islamic Value-Based Learning
a. Deep Learning-Based Learning Planning

The preparation of learning planning in the context of the *Kurikulum Merdeka* (Independent Curriculum) does not only function as a technical guide, but also as a strategic instrument in translating educational philosophy into classroom practice.[31] The planning process carried out by teachers at SDN 01 Pisang Baru refers to the official document of the *Kurikulum Merdeka* (Independent Curriculum), including mapping Learning Outcomes (CP), learning objectives (TP), activity flows, as well as formative and summative assessments. However, the results of the document review show that the integration of Islamic values in the teaching module is still declarative—shown through the insertion of prayers, Qur'anic verses, and moral messages—but has not yet reached the operational stage in indicators, learning activities, and assessment instruments that assess cognitive, affective, and spiritual aspects in an integrated manner.[32]

In fact, value-based learning planning requires pedagogical coherence between objectives, activities, and evaluations that allow students to build a relationship between science and morals within the framework of *ma'rifatullah*.[33] This kind of planning model is in line with the paradigm of spiritual constructivism, where learners build knowledge and value through reflection and contextual experiences.[34] Therefore, learning planning should integrate deep learning principles—such as meaning-based spark questions, exploration activities, problem-solving, personal reflection, and authentic projects—with Islamic values such as *ṣidq, amānah,* and *ta'āwun*.

In addition, planning in the era of Independent Learning must be based on differentiation, namely providing space for variations in students' readiness, learning interests, and learning profiles. In the context of Islam, differentiation can also include reflective assignments, such as gratitude journals and daily good practices based on social projects. The development of authentic assessment instruments is an important component that ensures that spiritual character is not only mentioned, but also observed, measured, and reflected through behavioral indicators and performance rubrics.[35]

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[31] Kurikulum Merdeka et al., *Pengantar*, n.d.

[32] Fauza Masyhudi, Rendy Nugraha Frasandy, and Martin Kustati, "Integrasi Nilai-Nilai Islam Dalam Pembelajaran Bahasa Indonesia Di Sekolah Dasar Islam Tepadu Azkia Padang," *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran* 10, no. 1 (June 2020): 81–93, https://doi.org/10.25273/pe.v10i1.6243.

[33] Nailah Fatma et al., "Integrasi Nilai-Nilai Pendidikan Islam dalam Pembelajaran IPA Meningkatkan Hasil Belajar Siswa di Sekolah Dasar," *Al-Madrasah: Jurnal Ilmiah Pendidikan Madrasah Ibtidaiyah* 7, no. 3 (July 2023): 1288–98, https://doi.org/10.35931/am.v7i3.2316.

[34] Khoiri and Abdul Rasyid M. Akib, "Implementation Of Deep Learning In Islamic Religious Education (Pai) Learning In Madrasah," *Indonesian Journal of Islamic Studies (IJIS)* 1, no. 2 (July 2025): 143–56, https://doi.org/10.62567/ijis.v1i2.909.

[35] Wandri Ramadhan and Sedya Sentosa, "Analisis Integrasi Nilai-Nilai Keislaman Dalam Pembelajaran Ilmu Pendidikan Alam Dan Sosial (IPAS) Pada Kurikulum Merdeka Di Sekolah Dasar," *El-Ibtidaiy:Journal of Primary Education* 6, no. 1 (April 2023): 81–92, https://doi.org/10.24014/ejpe.v6i1.20416.

Planning that is oriented to deep learning and religious values also demands teachers' digital literacy.[36] Teaching modules ideally direct learners to utilize Islamic digital learning resources, learning videos, and collaborative platforms so that students not only understand concepts theoretically, but also connect them to actual phenomena through credible sources.[37] This is important to create an academic and digital culture that is inseparable from Islamic ethics. No less important, good practices in learning planning need to be strengthened through teachers' professional collaboration mechanisms, such as lesson studies, internal reflection forums, and learning communities (PLCs) based on Islamic values. This approach encourages teachers to provide each other with feedback, align learning designs, and ensure that the preparation of teaching modules is not administratively individual, but collaborative, reflective, and sustainable.[38] This effort also perfects the integration of Islamic values so that it does not stop at the ritual aspect, but is manifested conceptually, procedurally, and evaluatively.[39]

Thus, the learning planning at SDN 01 Pisang Baru has shown an initial commitment to the integration of deep learning approaches, although development is still needed in the aspects of value operationalization, authentic assessment design, educator digital literacy, and strengthening teachers' collaborative practices.[40] Strengthening this dimension will allow learning that not only builds academic competence, but also substantive spiritual awareness and Islamic character.

b. Implementation of Learning in the Classroom

The implementation of learning at SDN 01 Pisang Baru is carried out through the application of various active and collaborative learning strategies, including problem-based learning, project-based learning, and discovery learning. This approach is designed to provide an authentic learning experience, allowing learners to construct knowledge through a process of exploration, collaboration, and reflection. The results of the observation showed that teachers invited students to investigate real phenomena and relate them to Islamic values contextually. For example, in learning the theme "Water is the Source of Life", students make observations on the water cycle and then are directed to reflect on the importance of maintaining water sources as a mandate from Allah SWT, so that learning is not only oriented to factual knowledge but also to the formation of spiritual and moral awareness.[41]

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[36] Muhammad Atho'illah, Kasuwi Saiban, and Ahmad Manshur, "Integrasi Nilai Pendidikan Islam dalam Struktur Kurikulum Merdeka: Kajian Perspektif Al-Qur'an dan Hadits," *JIMU:Jurnal Ilmiah Multidisipliner* 3, no. 02 (May 2025): 1127–35, https://ojs.smkmerahputih.com/index.php/jimu/article/view/733.

[37] Dhia Alfa Della et al., "Pengembangan Bahan Ajar Pendidikan Agama Islam Berbasis Pendekatan Pembelajaran Mendalam (Deep Learning)," *Al-Madrasah Jurnal Pendidikan Madrasah Ibtidaiyah* 9, no. 4 (October 2025): 2161, https://doi.org/10.35931/am.v9i4.5527.

[38] Muhammad Atho'illah, Kasuwi Saiban, and Ahmad Manshur, "Integrasi Nilai Pendidikan Islam dalam Struktur Kurikulum Merdeka: Kajian Perspektif Al-Qur'an dan Hadits," *JIMU:Jurnal Ilmiah Multidisipliner* 3, no. 02 (May 2025): 1127–35, https://ojs.smkmerahputih.com/index.php/jimu/article/view/733.

[39] Ali Wafa, Syarifah Syarifah, and Moh. Nadhif, "Transformasi Pembelajaran Pendidikan Agama Islam Berbasis Deep Learning: Dari Pendekatan Hafalan Menuju Internalisasi Nilai," *Academicus: Journal of Teaching and Learning* 4, no. 2 (September 2025): 103–16, https://doi.org/10.59373/academicus.v4i2.95.

[40] Afifah 'Ulya et al., "Implementasi Penilaian Autentik Dalam Pembelajaran PAI Materi Ibadah Haji Di SD 19 Batuang Taba: Penelitian," *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan* 4, no. 1 (July 2025): 40–44, https://doi.org/10.31004/jerkin.v4i1.1529.

[41] Damien Hutchinson and Jason Wells, "An Inquiry into the Effectiveness of Student Generated MCQs as a Method of Assessment to Improve Teaching and Learning," *Creative Education* 04, no. 07 (2013): 117–25, https://doi.org/10.4236/ce.2013.47A2014.

This approach is in line with the characteristics of deep learning, which emphasizes deep conceptual understanding through exploratory activities, the development of inter-idea linkages, and critical reflection.[42] In the perspective of deep learning theory, students do not just memorize information, but connect learning experiences with real-life contexts and personal values, thus giving rise to meaningful long-term understanding. Teachers also integrate *tadabbur* verses of the Qur'an, such as QS. Al-Anbiya:30 regarding the creation of everything from water, to lead students to understand that preserving water is part of the mandate of faith and a form of responsibility as a caliph on earth.[43]

The findings of field observations show that the implementation of the strategy faces challenges, especially related to limited learning time and a fairly high administrative burden on teachers. As a result, spiritual reflection activities are sometimes carried out briefly at the end of learning so that they are not optimal in encouraging the process of internalizing values in depth. This condition is in line with the results of previous research which emphasized that the application of deep learning requires sufficient time to provide a space for critical and reflective thinking for students.

Despite the obstacles, teachers' commitment to maintaining the essence of Islamic values in each learning session reflects pedagogical consistency and positive adaptation to value-based learning innovations. This shows that the development of cognitive, affective, and spiritual abilities can be pursued simultaneously through learning strategies that are designed in a meaningful and reflective manner according to the learning context in elementary school.[44]

c. Learning Evaluation and Reflection

The evaluation and reflection stage of learning is an important process to see the extent to which learning objectives are achieved. Teachers at SDN 01 Pisang Baru began to implement authentic assessments that include cognitive, affective, and psychomotor domains. This alternative assessment assesses students' understanding through group discussions, as well as recording attitudes of responsibility and cooperation through Islamic value-based projects. The assessment model not only focuses on the final achievement, but also assesses the learning process, so that teachers can comprehensively observe student development in academic and character aspects.[45]

The assessment process applied reflects efforts to observe the real behavior of students in applying Islamic values. When students undertake thematic projects, they engage in collaborative activities that require honesty, perseverance, and empathy. The selection of this assessment strategy is in line with the concept of religion-based character education which emphasizes observation of attitudes and practices of worship as well as social behavior. This

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[42] Faris Irfanuddin, Selamat Selamat, and Hendro Widodo, "Analisis Implementasi Pembelajaran Mendalam (Deep Learning) Dalam Kurikulum PAI Di SD Negeri 125 Ogan Komering Ulu Sumatera Selatan," *Jurnal Pendidikan Dan Pembelajaran Indonesia (JPPI)* 5, no. 3 (July 2025): 1566–76, https://doi.org/10.53299/jppi.v5i3.1798.

[43] Jamilatun Nafi'ah and Dukan Jauhari Faruq, "Conceptualizing Deep Learning Approach in Primary Education: Integrating Mindful, Meaningful, and Joyful," *Journal of Educational Research and Practice* 3, no. 2 (July 2025): 225, https://doi.org/10.70376/jerp.v3i2.384.

[44] Diana Rosiyati et al., "Pendekatan Deep Learning Dalam Kurikulum Merdeka," *Al-Irsyad Journal of Mathematics Education* 4, no. 2 (July 2025): 131–43, https://doi.org/10.58917/ijme.v4i2.270.

[45] Mimi Musmiroh Idris and Abas Asyafah, "Penilaian Autentik Dalam Pembelajaran Pendidikan Agama Islam," *Jurnal Kajian Peradaban Islam* 3, no. 1 (January 2020): 1–9, https://doi.org/10.47076/jkpis.v3i1.36.

kind of authentic approach is recommended in Islamic Religious Education learning because it provides a complete picture of the Islamic profile of students inside and outside the classroom.[46]

Student reflection is an integral part of the final evaluation of the theme. In this activity, students were asked to tell about moral values and moral lessons obtained after participating in learning. The activity accustomed students to revisit learning experiences, engage self-awareness, and understand the relevance of the material to real life. The implementation of reflective learning is in line with the principles of deep learning, which leads students to not only understand information, but also internalize spiritual and social values as the basis for action.[47]

Strengthening reflective skills has an impact on the formation of students' character. When students evaluate their feelings, behaviors, and learning outcomes, the process of high-level thinking is further developed. Reflection activities provide opportunities for learners to build moral awareness, correct mistakes, and set self-improvement goals. Empirical studies show that deep learning-based learning improves deep understanding, critical thinking skills, and spiritual sensitivity to the problems of daily life.[48]

The application of authentic assessment and reflection of values shows that the implementation of Islamic value-based learning at SDN 01 Pisang Baru takes place in a participatory, integrative, and reflective manner. Nevertheless, improvements are still needed in the aspects of systematization of Islamic value indicators, the development of more measurable evaluation instruments, and the consistency of the implementation of learning documentation. This strengthening direction is a strategic step so that learning based on religious character can run more effectively, structured, and sustainable in accordance with the goals of the curriculum and the mission of forming a generation with noble character.[49]

4. The Impact and Results of the Implementation of Islamic Value-Based Deep Learning on Students

The application of a deep learning approach based on Islamic values has a significant impact on the academic development of students at SDN 01 Pisang Baru. Students demonstrate the ability to connect learning concepts with real-life contexts, especially in environmental, social, and worship themes. When working on thematic projects, students can explain scientific concepts while integrating Islamic values, such as trust and gratitude. These findings corroborate the study that the deep learning model encourages students' ability to construct knowledge meaningfully and contextually in religious life.[50]

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[46] Muzlikhatun Umami, "Penilaian Autentik Pembelajaran Pendidikan Agama Islam Dan Budi Pekerti Dalam Kurikulum 2013," *Jurnal Kependidikan* 6, no. 2 (November 2018): 222–32, https://doi.org/10.24090/jk.v6i2.2259.

[47] Alya Fitriani and Santiani Santiani, "Analisis Literatur: Pendekatan Pembelajaran Deep Learning Dalam Pendidikan," *Jurnal Ilmiah Nusantara* 2, no. 3 (April 2025): 50–57, https://doi.org/10.61722/jinu.v2i3.4357.

[48] Hidayat Edi Santoso, "Integrasi Teknologi Deep Learning Dalam Pembelajaran Pendidikan Agama Islam (PAI) Di Era Digital," *Jurnal Manajemen Pendidikan Dan Ilmu Sosial* 6, no. 2 (March 2025): 1476–83, https://doi.org/10.38035/jmpis.v6i2.4041.

[49] Bachtiar Annas Imanudin, "Penilaian Autentik Terhadap Pembelajaran Pendidikan Agama Islam," *Raudhah Proud To Be Professionals : Jurnal Tarbiyah Islamiyah* 8, no. 2 (August 2023): 527–39, https://doi.org/10.48094/raudhah.v8i2.310.

[50] Aribah et al., "Deep Learning Approach in The Merdeka Curriculum to Shape Students' Character Through Islamic Religious Education," 16–35.

Positive changes are also seen in the ability to think critically and collaboratively. Students are more active in discussing, asking, and analyzing problems through problem-based learning and project-based learning methods. Group discussion patterns develop communication, leadership, and cooperation skills. These results are in line with research showing that the application of deep learning in primary education improves students' high-level thinking skills (HOTS) and collaboration competence.[51] Another study reinforces that deep learning-based reflective learning contributes to the development of students' analytical and evaluative abilities in Islamic education.[52]

The transformation of students' character is the most striking aspect. Students show improvement in terms of discipline, responsibility, honesty, and empathy through spiritual habituation activities such as joint prayer, gratitude journals, and mini-social service practices in schools. Teachers noted a change in behavior from passive to proactive and responsible. This is in accordance with the findings that the integration of Islamic values in learning is able to form moral character through authentic learning experiences.[53] Other research confirms that Islamic-based character education is effective through a reflective and contextual learning approach.[54]

The spiritual dimension of students also develops rapidly through the habit of reflection on values and the practice of daily worship. Students are used to associating every learning activity with verses of the Qur'an and the meaning of worship such as maintaining ablution, saying prayers, and showing good behavior to friends. This practice is proof that a deep learning approach based on religious values is able to produce transformative learning experiences that foster students' spiritual awareness.[55] Previous research has stated that Islamic pedagogical approaches that integrate tadabbur and reflection increase students' religious awareness.[56]

Challenges in the implementation of this model remain found, such as variations in student readiness, limited project time, and the need for intensive training for teachers in designing authentic value-based assessment instruments. Nonetheless, the positive impact seen on the cognitive, affective, and spiritual realms suggests that this approach is worthy of further development. The effectiveness of this implementation shows that deep learning-based learning contributes to the formation of Pancasila student profiles with Islamic characteristics, as well as becoming a relevant strategy in educational transformation in the era of the *Kurikulum Merdeka* (Independent Curriculum).[57]

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[51] Shofwatunnida Julia Alfarisy and Iswandi, "Integration Of Character Education Values In Islamic Religious Education Learning At School," *Multidisciplinary Indonesian Center Journal (MICJO)* 2, no. 2 (April 2025): 1503–9, https://doi.org/10.62567/micjo.v2i2.660.

[52] Suwandi, Putri, and Sulastri, "Inovasi Pendidikan Dengan Menggunakan Model Deep Learning Di Indonesia," 69–77.

[53] Ramadhan and Sentosa, "Analisis Integrasi Nilai-Nilai Keislaman Dalam Pembelajaran Ilmu Pendidikan Alam Dan Sosial (IPAS) Pada Kurikulum Merdeka Di Sekolah Dasar," 81–92.

[54] Alfarisy and Iswandi, "Integration Of Character Education Values In Islamic Religious Education Learning At School," 1503–9.

[55] Rochyati, "Deep Learning-Based Islamic Education Transformation," 53–60.

[56] Amana Irfa' Fadlana, Maryono Maryono, and Moh Sakir, "Implementasi Pembelajaran Ke-Nu-An Dalam Kegiatan Belajar Mengajar Siswa Madrasah Ibtida'iyah Ma`Arif Campursari Kejajar Wonosobo," *Jurnal Intelek Dan Cendikiawan Nusantara* 2, no. 5 (October 2025): 8804–12, https://jicnusantara.com/index.php/jicn/article/view/5318.

[57] Christian Janiesch, Patrick Zschech, and Kai Heinrich, "Machine Learning and Deep Learning," *Electronic Markets* 31, no. 3 (September 2021): 685–95, https://doi.org/10.1007/s12525-021-00475-2.

D. CONCLUSIONS

This study demonstrates that the implementation of an Islamic values–based deep learning approach within the *Kurikulum Merdeka* (Independent Curriculum) at SDN 01 Pisang Baru effectively bridges the demands of 21st-century learning with the cultivation of Islamic moral character. The integration of deep learning principles with spiritual and ethical values—such as *ṣidq, amānah,* and *taʿāwun*—supports the development of reflective, collaborative, and contextually grounded learning experiences. Students not only construct deeper conceptual understanding but also internalize Islamic virtues through practical engagement. The synthesis of planning, implementation, and evaluation processes indicates the emergence of an integrated pedagogical model that combines higher-order cognitive skills, social–spiritual literacy, and religious awareness. Nevertheless, the model remains in a transitional stage, requiring further systemic reinforcement, particularly in authentic assessment, digital literacy for teachers, and more consistent learning design across classrooms. The scientific contribution of this study lies in offering an operational framework for Islamic values–based deep learning at the public elementary school level, thereby enriching curriculum development and teacher professional growth, as well as contributing to the formation of a religious, critical, and reflective Pancasila Student Profile within Islamic-oriented basic education. This study is limited by its single-site design and the relatively small number of teacher participants, which may restrict the generalizability of findings. The research also relies primarily on qualitative data, without longitudinal measurement of student outcomes. Future studies should integrate mixed-method designs and include multiple school contexts for broader validation. Future implementation should prioritize the strengthening of authentic assessment systems, the enhancement of teachers' digital and inquiry-based pedagogical competencies, and the consolidation of school-wide learning design to ensure consistency. Schools would benefit from expanded institutional support through structured collaboration time, pedagogical mentoring, and the establishment of professional learning communities to sustain innovation. Collaborative partnerships between schools, local governments, and universities are recommended to encourage applied research and the development of scalable Islamic deep learning models. Parental and community engagement in reinforcing religious practices and literacy culture outside the school environment is also essential to ensure continuity in value internalization. Further research should focus on developing rubric-based Islamic character assessment instruments and testing the applicability of Islamic deep learning models in diverse educational settings to strengthen both theoretical and practical contributions to Islamic education in the *Kurikulum Merdeka* (Independent Curriculum) era.

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