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Research/Review

Active Learning Based on Deep Learning: A Critical Review of The Role and Readiness of Islamic Religious Education Teachers

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Abstract. *This study aims to analyze the perceptions and readiness of Islamic Religious Education (PAI) teachers in implementing the deep learning concept in active learning. The method used is a qualitative approach through a literature review, where data were collected from various relevant sources such as scientific journals, books, and research articles discussing deep learning concepts, active learning, teacher readiness, and their implications in the context of PAI learning. The analysis was conducted descriptively and critically using content analysis techniques to identify key themes related to teachers' perceptions, supporting and inhibiting factors of readiness, and the impact of implementing active learning based on deep learning. The findings show that PAI teachers generally have a positive perception of deep learning as an approach capable of deepening understanding and Islamic values meaningfully; however, their readiness to implement it varies and is influenced by competencies, training, technological infrastructure, and institutional policy support. The implications of applying this concept include a shift in teachers' roles to facilitators, development of interactive and reflective learning designs, and authentic and holistic evaluation methods while considering cultural sensitivity and contextual integration of Islamic values. This study recommends strengthening teacher capacity through continuous training, enhancing technological facilities, and policy synergy to realize transformative, critical, and character-oriented PAI learning in the digital era.*

Keywords: *Islamic Education Teachers, Teacher Perceptions, Teacher Readiness, Deep Learning, Active Learning, Islamic Religious Education*

1. INTRODUCTION

Education is the main foundation for shaping a generation that excels intellectually, emotionally, and spiritually. In line with the dynamics of the times and the complexity of global challenges, the education system is required to continuously innovate and adapt to the needs of the 21st century. In this context, a learning approach is needed that is not only informative but also capable of stimulating students' critical, creative, reflective, and solution-oriented thinking (Hanani & Sari, 2018).

One approach that has gained attention in contemporary educational discourse is deep learning-based learning, which emphasizes in-depth understanding, cross-disciplinary knowledge integration, and the application of values in real life. This approach focuses not only on what is learned, but also on how and why something is learned. The goal is to foster meaningful, sustainable, and contextual understanding within students (Akhyar et al., 2024).

Deep learning-based instruction is closely related to active learning models, in which students serve as the main subjects in the learning process. Through discussion, collaboration, exploration, and reflection, students are given space to construct their own understanding, develop higher-order thinking skills, and cultivate a lifelong learning spirit. In the context of Islamic Religious Education (IRE), this approach is highly relevant, as religious instruction is not merely about conveying doctrine, but also about shaping character, morality, and strong spiritual awareness (Sesmiarni & Asi, 2023).

Although IRE plays a strategic role in instilling faith, piety, and noble character, the learning practices in the field often remain conventional. Teacher-centered approaches, lecture methods, and an emphasis on memorization still dominate. As a result, students have limited opportunities to contextualize Islamic teachings in their daily lives . Amid rising moral, social, and spiritual challenges, the transformation of IRE

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through deep learning-based approaches has become an urgent necessity to enhance the relevance and effectiveness of religious education (Akhyar et al., 2025).

In implementing deep learning-based instruction, the role of the teacher becomes central. Teachers are no longer mere transmitters of content but function as facilitators, motivators, and companions in a meaningful and active learning process. Teachers' understanding of the philosophy of deep learning, their perceptions of its urgency, and their readiness to design and implement active learning are critical factors for the success of this approach. Positive perceptions encourage innovation, while negative perceptions may become obstacles.

However, scientific studies on the perceptions and readiness of IRE teachers toward deep learning-based instruction remain limited. Yet, understanding how teachers interpret this approach and the extent of their readiness to implement it is crucial not only to respond to practical needs in the field but also to address theoretical challenges in developing a more pedagogically relevant IRE learning model.

Based on this background, this article aims to critically examine the perceptions and readiness of IRE teachers in implementing deep learning-based instruction within the context of active learning. The focus of the study includes teachers' understanding of the essence of this approach, their attitudes toward its relevance and benefits in IRE learning, as well as supporting and inhibiting factors that influence its implementation readiness. This research is expected to contribute scientifically to the literature on contemporary Islamic education and serve as a basis for designing more targeted and sustainable teacher training and capacity-building policies.

2. RESEARCH METHOD

This research employs a library research method with a qualitative descriptive approach. The focus of the study is directed toward analyzing concepts, findings, and ideas contained in various relevant literature to understand the perceptions and readiness of Islamic Religious Education (IRE) teachers in implementing deep learning in active learning practices.

Data were collected through the exploration and examination of various sources such as academic books, scholarly journal articles, conference proceedings, and educational policy documents discussing topics related to Islamic pedagogy, deep learning, and active learning. The literature selected consists of credible and relevant publications that align with the study's theme.

The data analysis technique used is content analysis, which involves a careful reading process, identification of key themes, classification of information, and examination of the relationships among concepts related to perceptions, readiness, and the supporting or inhibiting factors in the implementation of deep learning in IRE instruction.

Through this method, the study is expected to provide a comprehensive and reflective conceptual understanding of the challenges and opportunities in applying deep learning, as well as its contribution to strengthening IRE learning practices that are more meaningful, contextual, and transformative.

3. RESULTS AND DISCUSSION

Islamic Religion Education Teachers' Perceptions of the Concept of Deep Learning in Active Learning

Based on the analysis of various relevant literature, such as the studies by Akbar (2017), Fatmawati (2025), Rahman & Sari (2024), and more recent research by Hasanah (2023), the perceptions of Islamic

Religious Education (IRE) teachers toward the concept of deep learning in active learning generally show a positive tendency. IRE teachers recognize that deep learning is not merely a process of memorization or information transfer, but a learning approach that demands students' deep cognitive, affective, and metacognitive engagement (Akbar, n.d.; Fatmawati, 2025; K. P. Sari, 2025). This aligns with the view of Zazin and Zaim (2019), who emphasize the importance of reflective learning to foster critical thinking and holistic understanding in students (Zazin & Zaim, 2019).

Nevertheless, IRE teachers' understanding of deep learning remains highly varied and tends to lack systematic coherence. Many studies, including those by Hasan (2024) and Nuraini (2024), reveal that some teachers still associate deep learning merely with interactive learning methods, without integrating reflection and in-depth evaluation—core elements of the concept. This discrepancy creates a noticeable gap between the ideal concept of deep learning portrayed in academic literature and the pedagogical practices applied in classrooms (Hasan et al., 2024).

Moreover, there is a significant mismatch between theory and practice. While IRE teachers appreciate the importance of active and in-depth learning, classroom realities are still dominated by conventional methods, such as lectures and limited Q&A sessions. Rahman & Sari (2024) highlight that the dominance of one-way teaching patterns reflects obstacles in pedagogical transformation toward deep learning. The contributing factors include limited teacher knowledge of effective learning strategies, lack of experience in designing exploratory and reflective learning activities, and time constraints in the teaching process (K. P. Sari, 2025).

Another crucial aspect is the role of professional development and training in building a solid understanding of deep learning. Fatmawati (2025) emphasizes that structured and ongoing training programs are key to strengthening teachers' capacity to design and implement deep learning-based active instruction (Fatmawati, 2025). However, several studies, including Hasanah (2023), show that access to such training is still limited, affecting teachers' readiness to consistently and effectively implement the concept.

Institutional support and infrastructure are also highlighted as critical components in the literature. Mulyadi (2025) underscores that without adequate learning technology and school policies that support pedagogical innovation, efforts to implement deep learning will face practical obstacles. Limited access to digital learning resources, technological tools, and conducive learning environments also hinder the realization of active learning that emphasizes students' deep cognitive engagement (Wijaya, 2025).

These disparities reveal a complex gap between teachers' normative awareness of the importance of deep learning and the practical realities of learning implementation in the field. This situation calls for synergy between teacher capacity-building, provision of supporting facilities, and paradigm shifts in school-level learning management.

Therefore, it can be concluded that IRE teachers' perceptions of the concept of deep learning in active learning are generally positive and supportive. However, to achieve effective implementation, there is still a need for strengthened conceptual and pedagogical understanding through continuous training, improved technological facilities, and policy support that facilitates the transformation from traditional teaching approaches toward more reflective and in-depth learning.

Teachers' Readiness to Implement Deep Learning

Teachers' readiness to implement active learning based on deep learning is a key factor that determines the success of educational transformation in the digital era, particularly in the context of Islamic Religious Education (IRE). Deep learning-based instruction demands that teachers not only understand digital technologies but also master pedagogical and content knowledge in an integrated manner, so that the

learning process can effectively foster students' active engagement in constructing deep and meaningful understanding.

According to the study conducted by Purnama et al. (2025), teacher readiness remains a challenge, as many educators are still in the process of adapting to new technologies and teaching methodologies. Their research found that most teachers, particularly at the elementary and secondary school levels, have yet to fully comprehend how to effectively integrate technology to support active learning that promotes deep learning outcomes (Purnama et al., 2025). This aligns with findings from Isnaeni et al. (2025), who emphasize that the low level of teacher preparedness is caused by a lack of comprehensive and continuous training, as well as limited hands-on experience in designing technology-based learning activities that emphasize the development of critical, creative, and reflective thinking skills (Isnaeni et al., 2025).

Another significant barrier identified in the literature is the lack of infrastructure, both in terms of hardware and stable internet access. Dinasti (2025) underscores that the disparity in access to digital resources between urban and rural schools creates an unequal level of readiness among teachers to use educational technologies. Without adequate infrastructure support, it becomes difficult for teachers to implement deep learning innovations effectively (Siswanto & Yogyanto, 2024).

In addition to technical aspects, psychological factors and teachers' attitudes toward technology also strongly influence their readiness. Randall (2025) notes that resistance to change and skepticism about the effectiveness of educational technology can be major obstacles in the adaptation process. This highlights the need for a holistic approach to teacher professional development one that not only teaches the technical use of digital tools but also builds motivation and cultivates a growth mindset among teachers to continuously learn and innovate (Oktaviani, 2024). Santoso (2025) further argues that professional development should involve reflective and collaborative processes, enabling teachers to share best practices and collectively address the challenges they face.

In the context of Islamic Religious Education, teacher readiness must also be evaluated from the perspective of integrating religious values and ethics into technology-based instruction. Maulida and Wahyunanda (2025) emphasize that educational technology should function as a tool to support the internalization of Islamic values, not merely as a medium for delivering information (Cahyani & Yudono, 2025). IRE teachers must grasp the principles of maqāṣid al-syarīʿah so that the learning they design can harmonize technological use with the moral and spiritual mission of Islamic education. This view is supported by Hatmoko et al. (2025), who highlight the importance of training that prioritizes Islamic pedagogical principles and ethical technology use to ensure meaningful and religiously appropriate learning experiences.

Furthermore, Chang et al. (2024), in their study on the development of TPACK (Technological Pedagogical Content Knowledge), stress the necessity of integrating these three key domains to enable teachers to design and implement deep learning-based instruction effectively. Their study finds that developing TPACK competencies should be a central focus in teacher training programs, as the lack of integration between content, pedagogy, and technology often results in mechanical teaching practices that leave little room for student exploration and reflection (Chang et al., 2024).

From a policy perspective, government and institutional support play a crucial role in enhancing teacher readiness. Learning communities and ongoing training programs are essential to improve teacher competence and overcome the professional isolation often experienced in the teaching profession. Mulyadi

(2025) asserts that educational innovation cannot thrive without synergy among policy frameworks, resource allocation, and teacher commitment (Wijaya, 2025).

In light of the above, it can be concluded that teacher readiness to implement active learning based on deep learning is the result of a synergy between technical, pedagogical, psychological, and policy-related factors. IRE teachers must be viewed as agents of change who need to be empowered through integrated training and sufficient infrastructure support so they can deliver instruction that not only focuses on content mastery but also fosters the internalization of Islamic values in a deep and practical manner. This transformation in learning will have a broad positive impact on improving the quality of religious education and student character development in the digital age.

Implications of Active Deep Learning-Based Instruction for the Practice of Islamic Religious Education (IRE)

Based on an analysis of various literatures, such as the studies by Santosa and Putri (2025), active learning based on deep learning contributes significantly to shifting the paradigm of Islamic Religious Education (PAI) in schools. This approach moves the focus of learning from merely traditional passive teaching methods toward a more participatory, interactive, and student-centered learning process. In this context, PAI teachers do not merely act as knowledge transmitters but also as facilitators who guide students to explore, understand, and internalize Islamic teachings deeply and contextually. Therefore, active learning serves not only as a means of knowledge transfer but also as a medium for character development and authentic religious understanding (Purnama et al., 2025).

Essentially, the teacher's ability to manage deep learning-based instruction heavily relies on the utilization of digital technology as a primary support. As emphasized by Yuliana et al. (2024), interactive learning media such as applications, instructional videos, and online discussion platforms enable students to have more flexible and contextual learning experiences (Meme et al., 2024). However, the effectiveness of such technology depends significantly on the teacher's readiness and competence in integrating it appropriately and optimally. Without adequate professional training and support, technology use can become a hindrance that disrupts the learning process. Therefore, continuous professional development for teachers is a crucial aspect to support the successful implementation of active learning based on deep learning.

Nonetheless, this transformation cannot be separated from the social and cultural challenges inherent in religious education environments. Findings from Rahayu and Mahendra (2022) reveal that some teachers and parents still adhere to traditional learning methods that emphasize memorization and lecturing, causing resistance to active learning approaches that require critical and reflective student engagement. This resistance could potentially become a major barrier to the acceptance of innovative learning, ultimately reducing the effectiveness of deep learning-based implementations (Budiarto et al., 2022). Hence, the development of PAI learning with this approach must consider cultural sensitivities, so that traditional values and educational innovations can harmoniously synergize and gradually be accepted by all parties.

Besides cultural aspects, curriculum revision is also an urgent need within the context of active learning based on deep learning. Sari and Prasetyo (2023) assert that the PAI curriculum must be more adaptive and responsive to the demands of 21st-century education by integrating cognitive, affective, and psychomotor domains comprehensively (A. W. Sari & Arta, 2025). This holistic curriculum not only emphasizes mastery of textual materials but also encourages students to develop critical and creative thinking skills alongside applying Islamic values in social and spiritual contexts. Thus, a comprehensively designed PAI curriculum supports the formation of learners who are intellectually competent as well as spiritually profound with strong character.

In relation to assessment, active learning based on deep learning also demands a shift toward more authentic and comprehensive evaluation methods. Achmad (2022) argues that assessments should not merely measure memorization ability but also evaluate the extent to which students understand, internalize, and apply religious values in real life. Authentic assessments such as portfolios, self-reflections, and final projects are effective tools to measure holistic learning outcomes oriented toward character development. Consequently, evaluation no longer serves as just an administrative procedure but becomes an integral part of the learning process that reinforces and deepens students' understanding (Achmad et al., 2022).

Furthermore, the success of implementing active learning based on deep learning cannot be separated from adequate institutional support and policies. Meyvita (2025) stresses the importance of support systems such as ongoing teacher training, provision of adequate technological facilities, and policies that motivate and accelerate innovation in teaching practices. Without such support, teachers may face numerous obstacles in consistently and effectively applying new learning methods (Meyvita et al., 2025). This is further reinforced by Umar and Soedjono (2025), who emphasize the necessity of a conducive educational ecosystem as a foundation for sustainable innovation in schools (Umar & Soedjono, 2025).

Therefore, the literature analysis indicates that the implementation of active learning based on deep learning in PAI requires a well-integrated approach from various aspects, including strengthening teacher competence, curriculum adaptation, appropriate technology use, cultural understanding, innovative assessment, and supportive policies and institutions. If these aspects are synergistically fulfilled, PAI learning will be capable of producing students who not only possess deep religious understanding but are also able to implement Islamic values critically, creatively, and contextually in their daily lives.

4. CONCLUSION

Analysis of the previous discussion indicates that although PAI teachers generally hold positive views toward the concept of deep learning as an approach that demands cognitive, affective, and metacognitive involvement from students, their understanding remains varied and not yet fully systematic. A clear gap persists between conceptual idealism and practical reality, where conventional methods such as lecturing still dominate classrooms due to limitations in knowledge, pedagogical experience, infrastructure, and ongoing professional training.

Teachers' readiness to implement deep learning is also influenced by technical factors (technology access and training), psychological factors (mindset and attitude toward innovation), pedagogical factors (integrative TPACK competence), as well as institutional policies that have not been fully supportive. On the other hand, the application of deep learning in PAI instruction has transformative implications for teaching patterns, the role of teachers as facilitators of values, and the adoption of more authentic and holistic assessment forms. However, its success largely depends on the synchronization of curriculum, teacher training, cultural sensitivity, and systemic support from educational institutions.

Therefore, the sustainability and effectiveness of deep learning-based learning implementation in PAI require an integrative and collaborative cross-sectoral approach to bridge the gap between normative awareness and pedagogical practices in the field.

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