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TEACHERS' PERCEPTIONS OF THE IMPLEMENTATION OF THE DEEP LEARNING APPROACH IN ISLAMIC RELIGIOUS EDUCATION AND CHARACTER EDUCATION COURSES AT PALEMBANG STATE HIGH SCHOOL 1

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Abstract
This study aims to analyze teachers' perceptions of the concepts and principles of the deep learning approach, their understanding and experience in implementing it through the use of digital technology, as well as the obstacles and solutions in Islamic Religious Education and Character (PAIBP) learning at SMA Negeri 1 Palembang. The method used is qualitative with a case study approach. Research subjects were selected purposively, namely PAIBP teachers. Data were collected through non-participant observation, in-depth interviews, and documentation of learning tools and school policies. Data analysis was carried out through reduction, presentation, and conclusion drawing, with validity testing through source and technique triangulation. The results show that teachers have positive perceptions of deep learning as an approach that emphasizes deep understanding, reflection, and internalization of values, although the depth of understanding varies among teachers. Implementation was carried out systematically through problem-based planning, reflective discussions, projects, and authentic assessment. AI was utilized for religious case analysis and enriching students' perspectives; Kahoot and Gimkit were used as interactive formative evaluation tools; while audiovisual media presented real learning contexts. Technology integration supports meaningful, mindful, and joyful learning. The impact is evident in the increased student engagement, critical thinking, and religious awareness. Obstacles include digital literacy limitations, limited training, and cognitive evaluation orientation, which are addressed through strengthening MGMP forums, authentic assessment, technology-based reflection, and continuous training.
Keywords: Teacher Perception, Deep Learning Approach, Islamic Religious Education and Character

Abstrak
Penelitian ini bertujuan menganalisis persepsi guru terhadap konsep dan prinsip pendekatan deep learning, pemahaman serta pengalaman implementasinya melalui pemanfaatan teknologi digital, serta kendala dan solusi dalam pembelajaran PAIBP di SMA Negeri 1 Palembang. Metode yang digunakan adalah kualitatif dengan pendekatan studi kasus. Subjek penelitian dipilih secara purposif, yaitu guru PAIBP. Data dikumpulkan melalui observasi nonpartisipan, wawancara mendalam, dan dokumentasi perangkat pembelajaran serta kebijakan sekolah. Analisis data dilakukan melalui reduksi, penyajian, dan penarikan kesimpulan, dengan uji keabsahan melalui triangulasi

sumber dan teknik. Hasil penelitian menunjukkan bahwa guru memiliki persepsi positif terhadap deep learning sebagai pembelajaran yang menekankan pemahaman mendalam, refleksi, dan internalisasi nilai, meskipun kedalaman pemahaman bervariasi. Implementasi dilakukan secara sistematis melalui perencanaan berbasis masalah, diskusi reflektif, proyek, dan asesmen autentik. Pemanfaatan AI digunakan untuk analisis kasus keagamaan dan memperkaya perspektif siswa; Kahoot dan Gimkit dimanfaatkan sebagai evaluasi formatif interaktif; sedangkan media audiovisual menghadirkan konteks nyata pembelajaran. Integrasi teknologi mendukung meaningful, mindful, dan joyful learning. Dampaknya terlihat pada peningkatan keterlibatan, berpikir kritis, dan kesadaran religius siswa. Kendala meliputi literasi digital, pelatihan terbatas, dan orientasi evaluasi kognitif, yang diatasi melalui penguatan MGMP, asesmen autentik, refleksi berbasis teknologi, serta pelatihan berkelanjutan.
Kata Kunci: *Persepsi Guru, Pendekatan Deep Learning, Pendidikan Agama Islam dan Budi Pekerti.*

INTRODUCTION

Education in Indonesia is currently undergoing a significant transformation to adapt to the dynamics and demands of the 21st century. 21st-century competencies—such as critical thinking, creativity, and collaboration skills—are increasingly emphasized and integrated into the learning process. Consequently, a more innovative and transformative approach to learning is needed—one that not only focuses on curriculum development but also involves reformulating learning strategies to create an educational process that is more relevant, adaptive, and responsive to the needs of the times (Akhmad Jufriadi, et al. al. 2022, p. 39). As the primary instrument in the educational process, the learning approach determines how material is delivered, received, and understood by students

One approach that is currently receiving increased attention is the deep learning approach; this approach not only emphasizes a deep understanding of the material but also encourages students to think critically and reflectively and to connect knowledge to real-life contexts. The deep learning approach is a concept proposed by the Minister of Primary and Secondary Education, Prof. Dr. Abdul Mu'ti, M.Ed., as a relevant learning strategy to address the challenges of modern education (Deny & Abdan, 2025a, p. 870). Although the term has been in use since 1976, the deep learning approach in education has the potential to enhance learning effectiveness through the innovative use of technology—not merely as a tool, but as a means to broaden students' ways of thinking and deepen their understanding (Siti Rabiatul et al., 2025, p. 2341).

The implementation of deep learning in education is based on three fundamental elements: *meaningful learning, mindful learning, and joyful learning,* which collectively form a deep, reflective, and enjoyable learning process (Artha Mahindra et al., 2024, p. 108). These three elements serve as a crucial framework for creating a holistic and enjoyable learning process. Meaningful learning emphasizes the integration of new knowledge with prior learning experiences. Mindful learning fosters students' metacognitive awareness during the learning process. Meanwhile, joyful learning ensures the creation of a positive and motivating learning environment. These three elements

complement one another and are relevant for application in education—including Islamic Religious Education—to create a learning experience that is comprehensive, meaningful, and has a long-term impact.

The deep learning approach is highly relevant to Islamic Religious Education and Character Education (PAIBP), which play a strategic role in shaping students' character, morality, and spirituality as an integral part of national educational goals. Amid the rapid development of digital technology, PAIBP instruction still faces a major challenge in the form of the use of inappropriate methods, which make the learning process less engaging and fail to have a profound impact (Prayetno, 2025). Furthermore, PAIBP is often taught in isolation without linking religious values to other subjects or real-life contexts. As a result, students tend to view it as a mere formality that emphasizes rote memorization and rituals, rather than as a guide for life in the face of the changing times (Selvia, 2024).

This situation is exacerbated by limitations in teachers' perceptions and readiness to design, implement, and evaluate deep learning approaches. These barriers include a lack of conceptual understanding, insufficient professional training and mentoring, and low integration of digital technology to support interactive and collaborative learning (Astuti, 2023). Teachers are also still accustomed to conventional, teacher-centered approaches, while time constraints and administrative burdens make it difficult to implement deep learning, which requires exploration, projects, and reflection. Therefore, teachers' perceptions regarding conceptual understanding, readiness, benefits, and implementation challenges are crucial to the success of adopting the deep learning approach (Salsabila, et al., 2022).

The deep learning approach is crucial to implement because it fosters the six key learning competencies (6C): Character, Citizenship, Collaboration, Communication, Creativity, and Critical Thinking. Its implementation boosts learning motivation, hones higher-order thinking skills, and provides real-time feedback, making the learning process more effective and meaningful. Teachers' understanding of the concepts and application of deep learning is a critical factor in supporting successful learning; understanding this approach allows them to leverage artificial intelligence-based technology to create deep, interactive, personalized, and adaptive learning experiences tailored to students' needs (Sutarto et al., 2025)

In the context of PAIBP, teachers' understanding and experience with this technology are highly relevant for guiding students to correctly understand the meaning and pronunciation of Qur'anic verses and Hadith in accordance with the rules of tajwid. Thus, teachers' understanding of deep learning helps them optimize technology-based assessment processes through automatic and accurate analysis of student learning outcomes, enabling teachers to adjust learning strategies to meet students' needs. Thus, teachers' mastery of deep learning implementation plays a significant role in improving the quality of PAIBP learning and creating a more effective, contextual, and meaningful learning experience (Saridudin, 2025)

The perceptions of Islamic Religious Education and Character Education teachers regarding the implementation of the deep learning approach indicate that the majority of teachers have recognized the importance of creating meaningful and in-depth learning processes through students' active engagement. Teachers understand that deep learning emphasizes the development of students' critical, analytical, and reflective thinking skills, particularly in internalizing Islamic values and character education. However, this level of understanding is still influenced by teachers' experience, the availability of training, and the support of technological resources that facilitate the digital learning process. Improving digital literacy and mastery of technology-based pedagogy are key to the successful implementation of deep learning in the Islamic Religious Education and Character Education (PAIBP) subject

The main advantage of the deep learning approach lies in its ability to provide personalized learning through the use of intelligent algorithms. This technology can analyze various aspects of students—such as learning progress, learning styles, comprehension levels, and individual characteristics—to then present material tailored to each student's needs and abilities (Syafaruddin & Yunus, 2024). This approach not only focuses on cognitive aspects but also holds great potential for personalizing spiritual guidance. By analyzing students' thought patterns, backgrounds, personal challenges, and psychological conditions, algorithms can help educators convey religious values in a more contextual, relevant, and individualized manner (Serly et al., 2025).

Budiono notes that in education, the deep learning approach is currently a trending and relevant methodology. However, the reality is that most teachers still have limited knowledge regarding its concepts, strategies, and implementation in the classroom. This situation indicates that teachers' perceptions of deep learning remain varied; while some teachers are beginning to understand the importance of this approach, others still require guidance, training, and reinforcement of their understanding to be able to implement it optimally in the teaching-learning process (Budiono, 2025). Teachers play a crucial role as facilitators who design meaningful learning experiences through discussion, reflection, and practical action (Hendrianty, 2024)

Based on the results of pre-research observations at SMA Negeri 1 Palembang, it was found that the learning process for the subject of Islamic Religious Education and Character Education (PAIBP) has sought to adapt to the demands of 21st-century learning—namely, integrating the deep learning approach, particularly by developing critical, creative, collaborative, and communicative thinking skills. Some teachers have begun to incorporate discussions, project-based assignments, and the use of simple digital media such as PowerPoint and educational videos. However, the implementation of the deep learning approach is still not optimal because most teachers still tend to use conventional methods that focus on one-way delivery of material, resulting in students' participation and active engagement not yet reaching their full potential. (Pre-Research Observation at Palembang State High School No. 1, September 21–22, 2025) Based on an interview with Ms. Yayuk Listian, S.Pd, it was found that although some teachers are

familiar with the concept of deep learning and understand the importance of its application in fostering higher-order thinking skills, its practical implementation remains suboptimal. Some of the challenges faced by teachers include limited understanding of deep learning concepts and strategies, a lack of specialized training and mentoring, and low integration of digital technology into the learning process. This has led to differences in perception among teachers, in terms of readiness, understanding, and practical classroom experience. Therefore, a more in-depth study is needed regarding teachers' perceptions of the implementation of the deep learning approach to identify the supporting and inhibiting factors that influence its success and to formulate strategies for improving the quality of learning in the digital age.

METHOD

This study employs a qualitative method; the researcher presents a detailed and thorough picture of the reality of the situation based on the research findings, presented in narrative form rather than numerical data, conveying insights derived from the interviews and fieldwork conducted (Rukin, 2021, p. 9). The approach used is the case study method. According to Assyakurrohim (2023), a case study is research on the status of the research subject regarding a specific or distinctive phase of their overall personality. This case study approach was employed to gain an in-depth understanding of teachers' perceptions regarding the implementation of the deep learning approach in the Islamic Religious Education and Character Education (PAIBP) course at State Senior High School 1 Palembang.

The research subjects were PAIBP teachers selected through purposive sampling based on their active involvement in lesson planning and delivery. Data were collected through non-participant observation to examine teaching practices and the use of digital technology; in-depth interviews to explore teachers' understanding of deep learning concepts and principles, their implementation experiences, as well as the challenges and solutions encountered; and official documentation in the form of teaching materials, assessment instruments, and school policies. The research procedures included the preparation of instruments, data collection until saturation was reached, interactive data analysis through data reduction, data presentation, and verification or drawing of conclusions, as well as validity testing through triangulation of sources and techniques (Sugiyono, 2018).

The analysis focused on three main aspects: teachers' perceptions of the concepts and principles of deep learning (meaningful, mindful, and joyful learning); their understanding of and experiences with the implementation of digital technology-based PAIBP instruction; and the conceptual, technical, structural, and cultural challenges, along with the reflective solutions implemented by teachers, thereby providing a comprehensive picture of contextual deep learning practices oriented toward the internalization of values and the development of students' religious character.

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RESULTS AND DISCUSSION

After outlining the background of the study, the research theories, and the research methods used, this chapter will discuss the research findings obtained at the study site. The findings will be presented based on interviews, observations, and documentation. As previously explained, this study employed a qualitative research approach; therefore, the researcher collected data by eliciting information based on what the data sources felt, observed, and stated. To gather this data, the researcher employed interviews, observations, and documentation. These methods were necessary to understand teachers' perceptions of the concepts and principles of the deep learning approach in the teaching of Islamic Religious Education and Character Education at State Senior High School 1 Palembang, as well as their understanding and experiences in implementing the deep learning approach through the use of digital technology in these subjects at the same school, and to identify the challenges and solutions faced by teachers in implementing the deep learning approach in the Islamic Religious Education and Character Education courses at SMA Negeri 1 Palembang.

SMA Negeri 1 Palembang has implemented the deep learning approach, which is a learning process that emphasizes meaningful understanding through the holistic integration of intellectual, emotional, sensory, and physical development. This approach encourages students to think critically and reflectively—not merely to memorize—but to understand meaning and connect knowledge with real-life experiences. PAIBP teachers recognize that this approach can enhance students' active engagement in the learning process, foster critical thinking skills, and cultivate a deeper sense of spiritual and moral awareness.

Teachers believe that the application of Deep Learning aligns with the characteristics of PAIBP learning, which emphasizes the understanding of values, self-reflection, and the application of Islamic teachings in real life. Therefore, an in-depth study is necessary; this research aims to investigate teachers' perceptions of the concepts and principles of the Deep Learning approach, to understand their knowledge and experiences in implementing this approach, and to identify the challenges and solutions related to the Deep Learning approach.

The informants interviewed by the researcher regarding their understanding of the concepts and principles of the Deep Learning approach in the PAIBP subject were four PAIBP teachers. The informants interviewed to address the research questions regarding their understanding and experiences in implementing the Deep Learning approach numbered 11, consisting of four PAIBP teachers, two teachers from other subjects, and three students. The informants who addressed the challenges and solutions in implementing the deep learning approach in the PAIBP subject included four PAIBP teachers, the curriculum coordinator, and the principal of State Senior High School 1 Palembang.

Teachers' Perceptions of the Concepts and Principles of the Deep Learning Approach in Islamic Religious Education and Character Education at State Senior High School 1 Palembang

The research findings indicate that teachers' perceptions of the concepts and principles of the deep learning approach in the teaching of Islamic Religious Education and Character Education (PAIBP) at State Senior High School 1 Palembang are generally positive, and they accept it as an approach relevant to the objectives of religious education. Teachers view deep learning as a form of instruction that emphasizes deep understanding, active student engagement, linking content to real-life experiences, and reflection to foster awareness and the practice of Islamic values. However, teachers' level of understanding of the concepts and principles of deep learning remains at a general conceptual level.

Some teachers have interpreted the elements of meaningful learning, mindful learning, and joyful learning in an integrated and reflective manner, while others still view them merely as active and enjoyable learning. Thus, it can be concluded that conceptually, teachers accept and evaluate this approach as consistent with the characteristics of PAIBP; however, the implementation of its principles has not yet been fully in-depth or consistent.

More specifically, these findings also reveal variations in the level of internalization of deep learning concepts among teachers. Teachers with a more comprehensive understanding tend to interpret this approach as a transformational strategy that not only changes teaching methods but also shifts the learning paradigm from teacher-centered to a reflective and contextual student-centered approach. They place the process of reflection, the connection of values to students' real-life experiences, and character development at the core of PAIBP learning. Meanwhile, teachers with a more limited understanding tend to focus on the delivery of content and general student engagement without explicitly guiding students toward deeper meaning and metacognitive awareness. This difference indicates that although perceptions of deep learning are generally positive, teachers' conceptual understanding and pedagogical readiness still vary, thereby affecting the quality of implementation in the classroom.

As stated by one PAIBP teacher in an interview conducted by Yayuk Listian, S.Pd.I: "In my opinion, this deep learning approach is very much in line with the objectives of PAIBP because religious education is not limited to rote memorization; rather, it must encourage students to understand, reflect on, and practice Islamic values in their daily lives. Clearly, meaningful learning is achieved by linking the material to students' real-life experiences; mindful learning is fostered through reflection so that students become aware of the meaning of the values they are learning; and joyful learning is promoted by creating a comfortable classroom atmosphere so that students are more open and active. Furthermore, we integrate these principles into our learning objectives, which emphasize not only cognitive aspects but also the development of religious attitudes and practices." In a similar vein, Jemi Listika, S.Pd.I, Gr, stated that: "We recognize that deep learning

is relevant to PAIBP because it helps students deeply understand the meaning of religious teachings, rather than merely passively receiving the material. Furthermore, learning must encompass knowledge, attitudes, and skills in a balanced manner, as well as involve discussions, connections to daily life, and reflective efforts to foster students' spiritual and moral awareness. Nevertheless, we are aware that the application of deep reflection and the development of critical thinking have not always been maximized in every class session and require teacher readiness and sufficient time. Therefore, overall, we as PAIBP teachers accept the concept of deep learning, understand its basic principles, assess its suitability for PAIBP, and at the same time recognize the challenges in its implementation."

Table 1. Teachers' Perceptions of the Concept and Principles of the Deep Learning Approach in Islamic Religious Education and Character Education (PAIBP) at SMA Negeri 1 Palembang

ASPECT	SUMMARY OF INTERVIEW FINDINGS	RESEARCHER'S OVERALL SYNTHESIS
TEACHERS' ATTITUDES AND PERCEPTIONS	Most teachers expressed positive attitudes toward deep learning, considering it aligned with the objectives of PAIBP, which emphasize understanding, internalization, and the practice of Islamic values.	Teachers generally held positive perceptions; however, implementation was adapted to students' characteristics and the nature of the learning content.
UNDERSTANDING OF THE DEEP LEARNING CONCEPT	Deep learning was understood as an approach that emphasizes profound understanding, active student engagement, and connecting learning materials with students' lived experiences.	Teachers' understanding remained at a general conceptual level and was not yet fully grounded in theoretical perspectives.
UNDERSTANDING OF DEEP LEARNING PRINCIPLES	The principles were associated with contextualizing learning materials, promoting active discussions, and encouraging value-based reflection so that students recognize the meaning of Islamic teachings.	The reflective (*mindful*) component was not consistently implemented across all learning sessions.
UNDERSTANDING OF THE ELEMENTS	**Meaningful:** contextualized learning;	Some teachers demonstrated an integrated

(MEANINGFUL, MINDFUL, JOYFUL)	**Mindful:** awareness and reflection; **Joyful:** a pleasant, engaging, and supportive learning atmosphere.	understanding of the three elements, while others focused primarily on student engagement and creating an enjoyable classroom environment.
INTERPRETATION OF DEEP LEARNING IN PAIBP	Deep learning was perceived as an instructional approach that fosters a balanced development of knowledge, attitudes, and religious practices.	The approach was considered well suited to the goal of developing students into well-rounded Muslims with strong character.
INTEGRATION INTO LEARNING OBJECTIVES	Teachers attempted to connect learning materials with students' real-life experiences while fostering positive attitudes and behaviors.	Not all teachers systematically incorporated critical reflection into their instructional objectives.
IMPLEMENTATION OF THE ELEMENTS IN THE CLASSROOM	The **meaningful** and **joyful** elements were frequently implemented through classroom discussions and contextual examples.	The **mindful** dimension, particularly deep reflection and metacognitive activities, had not yet been fully optimized.
COMPATIBILITY WITH PAIBP	Most teachers believed that deep learning aligns well with the characteristics of PAIBP, particularly its emphasis on character and moral development.	Some teachers continued to prioritize mastery of core subject content over reflective and transformative learning processes.
STRENGTHS AND LIMITATIONS	**Strengths:** enhances student engagement, motivation, critical thinking, and character development. **Limitations:** requires sufficient instructional time as well as teacher and student readiness.	Although the approach is considered effective, its successful implementation depends on teachers' pedagogical competence and effective classroom time management.

Based on Table 1, it can be concluded that teachers' perceptions of the concepts and principles of the deep learning approach in the teaching of Islamic Religious Education and Character Education (PAIBP) at State Senior High School 1 Palembang are generally positive and supportive. Teachers view this approach as aligned with the objectives of

PAIBP, which emphasize not only cognitive aspects but also the development of attitudes, the internalization of values, and the practice of religious values in daily life.

Deep learning is understood as a form of learning that fosters deep understanding, active student engagement, and the connection of course material to real-world experiences. However, the depth of teachers' understanding of the principles of deep learning still varies. Some teachers have understood and applied the elements of meaningful learning, mindful learning, and joyful learning in an integrated manner, particularly through contextual discussions and the creation of a comfortable learning atmosphere. However, the aspect of mindful learning—in the form of deep reflection and metacognitive awareness—has not yet been consistently applied in every learning session. Overall, these findings indicate that the deep learning approach is considered relevant and promising in supporting the objectives of the PAIBP program, particularly in enhancing student engagement, motivation, and character development. Nevertheless, its implementation still requires strengthening in the areas of critical reflection, teachers' pedagogical readiness, and learning time management to ensure that the in-depth exploration of material remains optimal and focused.

Classroom observations also revealed that PAIBP teaching practices have incorporated elements of deep learning, particularly in the areas of meaningful and joyful learning through discussions, question-and-answer sessions, and the use of examples contextualized to students' lives. Students appeared more engaged when the material was linked to their daily experiences, and the classroom atmosphere tended to be conducive to learning and communication. However, regarding mindful learning—specifically deep reflection activities and the development of students' metacognitive awareness—these elements were not consistently evident across all sessions. Some lessons still focused primarily on delivering content and reinforcing cognitive understanding. This suggests that, while teachers have conceptually accepted and understood the concept of deep learning, its implementation remains gradual and does not yet fully reflect the depth of the approach's principles in their entirety.

Understanding and Experiences in Implementing the Deep Learning Approach Through the Use of Digital Technology in Islamic Religious Education and Character Education at State High School 1 Palembang

The research findings indicate that the understanding and experiences in implementing a digital technology-based deep learning approach in PAIBP instruction at State High School 1 Palembang are moving in a constructive direction and developing gradually. PAIBP teachers no longer view learning as a rote knowledge-transfer process but rather as a process of deepening the meaning of Islamic teachings through case analysis, reflection on values, and linking the material to students' real lives. The formulation of learning objectives has shifted toward higher-order thinking skills (HOTS), the internalization of faith and moral values, and character development. Digital technologies such as AI, Kahoot, Gimkit, instructional videos, and digital devotional books are not

used merely as entertainment or for cognitive assessment, but are directed toward serving as tools for conceptual exploration, strengthening analytical skills, and facilitating reflection. The implementation of the elements of meaningful, mindful, and joyful learning is evident in contextual learning strategies, reflective discussions, case-based formative assessments, and interactive activities that enhance student engagement. Institutionally, this approach also receives support from the curriculum department and school leadership through supervision, mentoring, and alignment with the Merdeka Curriculum. The impact is evident in increased student engagement, the courage to express opinions, the ability to analyze religious values, and changes in students' religious attitudes and sense of responsibility in daily life.

These findings are reinforced by a statement from a PAIBP teacher (Yayuk Listian, S.Pd.I), who emphasized that "In my view, when formulating learning objectives based on deep learning, the goal is not merely for students to be able to explain the material, but to be able to reflect on and internalize the values of Islamic teachings in their daily lives. AI and digital devotional books are utilized to analyze real-world cases and monitor the development of students' attitudes. According to her, learning becomes more reflective, and students are more aware of the meaning of the values they are learning."

From the perspective of the General Subject Teacher (Fachriansyah Masbie, M.Pd., Gr), who stated, "From my observations, PAIBP instruction is now more dialogic and contextual. Additionally, PAIBP teachers have effectively integrated deep learning principles, particularly in fostering critical and reflective thinking through discussions of real-world cases and the use of Kahoot, Gimkit, and AI. Based on my observations as well, students not only understand religious material but are beginning to demonstrate the internalization of values in their attitudes and behavior.

Furthermore, the Deputy Head of the Curriculum Division (Dra. Yanna Sanova, M.Pd) stated that "Yes, the implementation of deep learning in the PAIBP subject is aligned with the spirit of the Merdeka Curriculum." Teachers are encouraged to design learning objectives that are not only cognitive but also foster character development and reflection on values. Based on the results of her supervision, she observed an improvement in the quality of learning, particularly in terms of students' active engagement and the use of digital technology as a tool for exploration—not as a substitute for the teacher's role."

Meanwhile, from the perspective of one of the students (Andika Apriyando), he stated that "What we're experiencing in the PAIBP learning process now feels more meaningful and less monotonous. Furthermore, the use of AI helps us understand real-world cases, while Kahoot and Gimkit make learning more challenging yet still enjoyable. We feel that learning is no longer just about memorizing theory, but helps us understand and apply values such as honesty and responsibility in our daily lives.

These four informants comprehensively represent all aspects of the research questions, ranging from the formulation of objectives, learning strategies, the appropriateness of

deep learning elements, implementation experiences, reflections and follow-up, to the impact on the quality of learning and the development of students' character.

Table 2. Description of Findings on Teachers' Understanding and Implementation Experiences of the Technology-Integrated Deep Learning Approach in Islamic Religious Education and Character Education (PAIBP)

NO.	DESCRIBED ASPECT	DESCRIPTION OF FINDINGS
1	**PAIBP Teachers' Conceptual Understanding**	Teachers understood deep learning as an instructional approach that emphasizes a deeper understanding of Islamic teachings, reflection, and the internalization of values in everyday life.
2	**Perceptions of Teachers from Other Subject Areas**	Teachers from other subject areas perceived the implementation as moving toward active, reflective, and digitally supported learning.
3	**Perceptions of the Vice Principal for Curriculum and the Principal**	School leaders viewed the implementation as aligned with the *Merdeka Curriculum* and supported it through institutional policies and academic supervision.
4	**Instructional Strategies and Learning Activities**	The instructional strategies included case studies, classroom discussions, problem-based learning, reflective activities, and technology-supported analytical assessments.
5	**Meaningful Learning**	Learning materials were connected to students' real-life experiences, making instruction contextual and relevant.
6	**Mindful Learning**	Teachers encouraged reflection through digital journals, evaluative discussions, and *muhasabah* (self-reflection on values).
7	**Joyful Learning**	Interactive learning activities utilized **Kahoot!**, **Gimkit**, instructional videos, and Learning Management Systems (LMS) to create an engaging and participatory classroom environment.
8	**Instructional Planning**	Lesson modules were designed to incorporate Higher-Order Thinking Skills (HOTS), reflective practices, and technology integration from the planning stage onward.
9	**Implementation Experiences**	Classroom interactions became more dialogic, with students demonstrating greater participation and critical engagement with the learning materials.
10	**Reflection and Follow-up**	Teachers conducted regular evaluations of the effectiveness of instructional media and teaching strategies to improve future learning.
11	**Impact on Students**	The implementation contributed to increased student engagement, stronger awareness of religious values, and greater responsibility among students.

12	**Institutional Impact**	The implementation strengthened a school culture characterized by contextual learning and character-based education.

Table 2 shows that the implementation of a digital technology-based deep learning approach in the teaching of Islamic Religious Education and Character Education (PAIBP) at State Senior High School 1 Palembang proceeded systematically, ranging from teachers' conceptual understanding and the formulation of learning objectives oriented toward the analysis and internalization of values, to learning strategies based on case studies, reflection, and discussion supported by digital technology. The elements of meaningful, mindful, and joyful learning appear to be integrated into classroom practice through linking the material to real life, reinforcing reflection on values, and creating a participatory and interactive learning atmosphere. This implementation not only enhances students' engagement and critical thinking skills but also strengthens their religious awareness and moral responsibility, supported by school policies aligned with the Merdeka Curriculum as part of a pedagogical transformation toward more meaningful and character-based learning.

Classroom observations show that PAIBP instruction based on deep learning through digital technology proceeds in an interactive and participatory manner. Teachers begin lessons with a contextual case study as a discussion starter; students then discuss in groups, search for additional references using digital devices, and present the results of their analysis. The use of Kahoot or Gimkit does not stop at quizzes but continues with reflective discussions of students' answers. Additionally, a shift in classroom dynamics is evident compared to conventional learning. Students are more active in asking questions, expressing opinions, and demonstrating critical thinking regarding the issues discussed. Reflection activities through digital journals or reflection books also reveal self-awareness regarding daily behavior. In general, the learning atmosphere appears more lively, dialogic, and meaningful, indicating that the implementation of a digital technology-based deep learning approach has made a tangible contribution to improving the quality of PAIBP instruction at State High School 1 Palembang

Challenges and Solutions Faced by Teachers in Implementing the Deep Learning Approach in Islamic Religious Education and Character Education at State High School 1 Palembang

The research findings indicate that the main challenges in implementing the deep learning approach in PAIBP instruction at SMA Negeri 1 Palembang lie in three key aspects: teachers' pedagogical readiness, students' readiness and adaptation, and support from the school's systems and facilities. Regarding meaningful learning, challenges arise when digital technologies such as AI, Kahoot, Gimkit, and projectors are not fully designed to foster deeper understanding, potentially reducing them to mere technical activities or entertainment. Regarding mindful learning, students are still in the process of adapting to reflective thinking and consciously documenting their spiritual experiences or moral values. Meanwhile, in terms of joyful learning, challenges arise when a fun atmosphere

risks shifting the focus from understanding the material to mere play. Additionally, limited instructional time, administrative burdens, and unevenly distributed facilities also act as barriers. The solutions developed are gradual and systemic in nature, including strengthening analytical-reflective learning design, fostering a habit of gradual reflection, curriculum flexibility, teacher training, and the optimization of school resources and policies.

Based on an interview with PAIBP teacher Yayuk Listian, S.Pd.I, she stated that "the main challenge lies in the readiness of teachers and students to ensure that learning is truly meaningful, not merely the use of technology. So, what must be emphasized is that AI is only a tool and must not replace the teacher's reflective role. Students also tend to rely on AI, causing them to be less aware of their own thought processes. Her solution is to gradually cultivate reflection through a digital journal and limit AI use to ensure learning remains deep and controlled"

Meanwhile, an interview with general subject teacher Eni Marlina explained that "From what I've observed, incorporating elements like joyful learning through platforms like Kahoot does indeed bring the classroom to life, but the challenge is ensuring that learning remains meaningful and mindful. If not well-designed, students will only focus on the speed of answering. Therefore, follow-up questions based on reasoning and analysis, as well as reflective discussions after quizzes, are essential. If there are network issues, manual discussions are still conducted to ensure the essence of deep learning is not lost."

From the school administration's perspective, the Vice Principal for Curriculum and the Principal, Dra. Yanna Sanova, M.Pd, and Drs. Sugiyono, M.M, stated that "We believe the challenges in implementation lie in the readiness of human resources, facilities, and time constraints within the curriculum. To address this, the school provides flexibility in selecting essential materials so that learning can be explored in depth, encourages authentic assessment, conducts in-service training on deep learning, and creates policies that allow room for innovation without excessive administrative pressure. Support for facilities, such as optimizing projectors and internet access, is also being pursued gradually."

Meanwhile, student representative Andika Apriyando noted that "We find learning enjoyable through digital media, but the stages of meaningful and conscious learning require us to adapt. At first, we as students had difficulty writing reflections or relating the material to our personal experiences, but because our teachers guided us gradually and consistently, we began to get used to thinking more reflectively and understanding the significance of religious values in our daily lives."

Table 3. Synthesis of Findings for Research Question III: Challenges and Solutions in Implementing the Deep Learning Approach in Islamic Religious Education and Character Education (PAIBP)

NO.	ASPECT	CHALLENGES IDENTIFIED	SOLUTIONS IMPLEMENTED

1	**Teacher Readiness**	Not all teachers were prepared to design learning experiences that are **meaningful, mindful, and joyful**. In addition, the use of artificial intelligence (AI) may risk replacing students' reflective thinking processes.	Limiting AI to a supportive role, strengthening analytical and higher-order thinking tasks, fostering gradual reflective practices, and encouraging teachers to participate in professional development and share best practices.
2	**Student Readiness and Adaptation**	Students were not yet accustomed to reflective thinking or connecting learning materials with their personal experiences, and some remained passive during instruction.	Providing gradual scaffolding, using guiding questions, facilitating reflective discussions, and promoting collaborative group work.
3	**Balancing Joyful and Meaningful Learning**	Digital learning media made lessons more engaging but sometimes shifted students' focus toward games and speed rather than meaningful understanding.	Incorporating reasoning-based questions, conducting post-quiz discussions, and connecting learning activities with Islamic values.
4	**Time Constraints**	Deep learning requires sufficient time for reflection, while instructional time is limited.	Prioritizing essential content and focusing on the in-depth development of core competencies.
5	**Authentic Assessment**	Assessing students' thinking processes and attitudes requires greater accuracy and additional time.	Utilizing reflective journals, digital good-deeds (*amal*) logs, and gradually implementing analysis-based assessment strategies.
6	**Infrastructure and Facilities**	Internet connectivity and access to digital devices were uneven, and the digital competencies of school personnel varied.	Optimizing available facilities, providing **In-House Training (IHT)**, and strengthening institutional support through innovation-oriented policies.
7	**Policy Support**	Administrative workloads had the potential to hinder instructional innovation.	Providing greater opportunities for pedagogical innovation, reducing unnecessary administrative burdens, and strengthening teacher collaboration.

Based on Table 3, the research findings indicate that the challenges in implementing deep learning in PAIBP instruction are multidimensional, encompassing teachers' pedagogical

readiness, student adaptation, time constraints, the complexity of authentic assessment, and support from school resources and policies. Nevertheless, the implemented solutions are systemic and phased, both at the classroom level—through strengthening reflective and analytical instructional design—and at the institutional level—through curriculum flexibility, teacher training, facility optimization, and managerial support. These findings confirm that the success of deep learning depends not only on technology but also on teachers' pedagogical control and institutional commitment to creating meaningful, mindful, and enjoyable learning experiences.

Observation results show that in teaching practice, teachers consciously strive to balance the three elements of deep learning. When using Kahoot or Gimkit, teachers do not stop at the game itself but follow up with discussions and reflective questions. When using videos projected on a screen, teachers pause the video at specific points to prompt analysis of moral values. Digital character education books are used as tools for reflection, although time constraints pose a challenge to conducting in-depth assessments. Overall, a gradual adaptation process is evident among both teachers and students, with learning increasingly shifting from mere digital activities toward more reflective, contextual, and character-building learning.

CONCLUSION

Overall, the results of the study at SMA Negeri 1 Palembang indicate that PAIBP teachers' perceptions of the deep learning approach fall into the positive category and align with the goals of religious education in fostering faith, piety, and noble character through the integration of cognitive, affective, and psychomotor domains. Teachers interpret deep learning as a form of learning that emphasizes deep understanding, critical reflection, and the internalization of Islamic values in real life, rather than mere memorization. Learning is directed toward active engagement, collaboration, problem-solving, and a meaningful, mindful, and joyful learning environment that is contextual. Its implementation through the use of digital technology indicates a paradigm shift toward more reflective and transformative learning. The use of AI, interactive quizzes, and audiovisual media serves as pedagogical tools to strengthen analysis, evaluation, and the internalization of values. The process is carried out systematically, starting from planning, through problem-based activities and collaborative projects, to authentic assessments that evaluate thinking processes and the development of religious attitudes. The impact is evident in increased student participation, confidence in expressing opinions, critical thinking skills, and religious awareness. However, implementation still faces challenges such as disparities in conceptual understanding, limited digital literacy, a lack of ongoing training, and suboptimal system support. As a solution, teachers are strengthening collaboration through MGMPs, developing authentic assessments, and participating in training and workshops to enhance their pedagogical and digital competencies. Therefore, a commitment from schools is needed to provide policies, facilities, and ongoing guidance so that deep learning truly becomes a consistent, systematic PAIBP learning culture oriented toward fostering adaptive religious character in the digital age.

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