

The Role of Islamic Education Teachers in Promoting Deep Learning: A Mixed-Methods Study in Indonesian High Schools

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ARTICLE INFO

Keywords: Deep Learning,
Islamic Religious Education,
The Role of Teachers

Received : 10 October

Revised : 15 November

Accepted: 30 December

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Lugowi, Muslihah, Arifin:
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ABSTRACT

Islamic Religious Education plays a strategic role in shaping the character of students. In the context of 21st century learning, teachers are required to be able to develop Deep Learning-based learning that not only emphasizes cognitive aspects, but also affective and psychomotor aspects, so that students have a deep, critical, and applicable understanding. This study aims to analyze the role of Islamic Religious Education teachers in implementing Deep Learning through qualitative measures such as observation, interviews, and descriptive analysis, as well as quantitative measures through questionnaires and statistical calculations of student learning effectiveness and achievement. The research uses a mixed methods approach with a library and field design. Data were obtained from Islamic Religious Education teachers, students, and academic documents as primary and secondary sources. Data collection techniques included literature review, observation, interviews, and questionnaires. Data was collected from 40 Islamic Education teachers and 40 students from two institutions, SMAN 1 Bojonegara and MA Nurul Hidayah. Data analysis was conducted using a mixed methods approach with simple statistical tests

INTRODUCTION

The development of the era, which began with technological advances and the wave of global information, has forced the world of education to continue to innovate in creating learning processes that focus not only on academic results, but also on deep, critical, and reflective thinking skills. The era of globalization is a period in which the boundaries between countries are becoming increasingly blurred due to advances in information technology, communication, and transportation. The main challenge facing the world of education in the context of globalization is improving quality, because the advent of the global era also means the emergence of an era of competition. Talking about competition means discussing the achievement of excellence. (Kusmayadi 2018)

In the world of education, especially in Indonesia, the deep learning approach can be defined as learning that emphasizes deep understanding, critical analysis, reflection on values, and the application of knowledge in real life. This is in line with the national education goal of not only pursuing cognitive mastery of material, but also character development and spiritual values. Therefore, it is important to examine how this approach is implemented by teachers, especially Islamic Education (PAI) teachers, who have a strategic role in shaping the values, attitudes, and character of students. (Mahrus 2024) One teaching method that is increasingly being discussed in modern education is the deep learning model, which encourages students to understand concepts in depth, connect knowledge across disciplines, and apply knowledge in real-life situations. (Fullan and Langworthy 2022) Renewal in the approach to Islamic spiritual guidance is increasingly important in this modern era, along with the growing demand for a deeper understanding of religious teachings. (Burhan Yusuf Habibi 2022) Technology is useful in lightening human work by acting as a supporting force and providing solutions to limitations in the way humans work. One of God's extraordinary gifts to humans is reason. (Nasser 2021) Reason is considered special because it guides a person's potential. Differences in intelligence and thinking abilities enable some people to see and understand things that others are not yet aware of. Education is the main foundation in the formation of individuals and society, which plays an important role in creating a quality generation. Islamic Religious Education (PAI) plays a crucial role in shaping students' attitudes and behavior. PAI does not merely focus on delivering religious material, but also acts as a medium for fostering several ethical and social values that are needed in daily life. (Mahrus 2024) Through this education, students are expected to learn and internalize the foundations of Islam so that they can apply them in their daily behavior. (Daswati and Fitriani 2023) Morality is fundamental in Islamic teachings. In this context, students often display inappropriate behavior towards teachers due to both internal and external factors. (Ahmad 2019)

Islamic education as a whole is a structured effort to accompany students in their growth and development process by developing their potential, based on the moral teachings of the Qur'an, knowledge, and life skills. Although various efforts to reform Islamic education have been made, the world of education still faces a number of challenges. As a universal religion, Islam teaches its followers

about various aspects of life with the main sources being the Qur'an, Sunnah, and ijma. These foundations aim to help individuals achieve prosperity in this world and pleasure in the hereafter, while strengthening their faith and piety. Islamic education is a stage that aims to foster balanced and harmonious individuals by integrating several spiritual values into their daily lives. This involves learning about Islamic teachings in the form of aspects of faith, worship, morals, and the development of life skills, with the aim of shaping individuals who have strong character, noble morals, and are able to face the challenges of life both in this world and in the hereafter. (Hidayah 2023)

Education plays a very important role in people's daily lives, which means that every citizen in Indonesia must receive an equal education that continues to develop over time. Education is constantly evolving, and in general, education is a process in the life of every individual to develop themselves and live as educated individuals, because this is very vital. Education begins in the family environment, then continues at school, and finally in society. (Salsabila 2022)

Conceptually, Deep Learning in the context of education differs from the term Deep Learning in artificial intelligence. According to Biggs & Tang (2011), Deep Learning occurs when learners are able to connect ideas, integrate new knowledge with previous experiences, and apply it in real contexts. Thus, in education, deep learning is oriented towards the formation of conceptual understanding, reflective awareness, and the application of values in action. Several articles explain that deep learning is not limited to a particular field, but has been identified as a general learning method capable of addressing various problems in various sectors. (Muhammad Haris Diponegor, Dkk 2021)

The phenomenon in the field shows that PAI learning in schools is still often limited to surface learning, which is limited to the delivery of cognitive material, memorization of verses, and understanding of texts without leading to deep internalization of values. Many PAI teachers still use conventional methods such as lectures and question and answer sessions, without providing space for students to think critically, discuss, or examine Islamic values in context. This condition has implications for the low ability of students to relate Islamic teachings to real life and the social issues they face.

However, based on preliminary observations at SMA Negeri 1 Bojonegara and MA Nurul Hidayah in Serang Regency, a gap was found between the ideal concept of deep learning and its actual implementation in the field. Some PAI teachers understand the importance of meaningful learning, but not all of them are able to systematically apply the deep learning approach. Limitations in pedagogical skills, technology use, and reflective strategies mean that learning still tends to be a transfer of knowledge rather than a transformation of values. However, there have not been many studies that specifically explore the extent to which PAI teachers understand, accept, and implement deep learning-based learning. (Barkley Dkk 2014))

SMAN 1 Bojonegara and MA Nurul Hidayah Bojonegara, as educational institutions in the Serang Regency, are important representatives in understanding the dynamics of Islamic education amid technological developments and modern pedagogical approaches. This study aims to explore

the role of Islamic Education teachers in both schools in relation to the concept and practice of deep learning. This role is important to understand as a basis for designing more effective training, policies, or approaches to improve the quality of meaningful and transformative Islamic Education learning.

Thus, the study entitled *The Role of Islamic Education Teachers in Promoting Deep Learning: A Mixed-Methods Study in Indonesian High Schools* is highly urgent to be examined, as it touches on the core issue of the transformation of Islamic learning in the digital age and emphasizes the importance of PAI teachers as learning agents who encourage the emergence of students who are faithful, critical thinkers, and have noble character.

LITERATURE REVIEW

The teaching profession is a respectable and noble profession, because through this profession, students can acquire knowledge, as well as moral education (character), and it can foster enthusiasm and motivation to work (do good deeds). (Naf'an 2012), the concept of Deep Learning in education refers to a learning approach that encourages students to understand deeply, connect concepts between subjects, and be able to apply them in real life (Biggs & Tang, 2011). In Islam, teachers are known as *murabbi* and *mu'allim*, who not only function as conveyors of knowledge but also as shapers of students' spiritual and moral character. The theory of the role of PAI teachers is based on the integration of the cognitive, affective, and psychomotor aspects of students. Several previous studies have shown that teachers who apply a deep approach tend to create more meaningful and contextual learning.

METHODOLOGY

This study uses a mixed methods approach with an exploratory design. A qualitative approach is used to understand the experiences of teachers and students in implementing Deep Learning, while a quantitative approach is used to measure the level of effectiveness and student learning outcomes. Sample and Participants: consisted of 40 PAI teachers and 40 students from SMA Negeri 1 Bojonegara and MA Nurul Hidayah. The research instruments included: (1) a closed questionnaire using a Likert scale to measure teachers' and students' perceptions of Deep Learning, (2) in-depth interviews to explore the role of PAI teachers, and (3) classroom observations to assess the implementation of learning strategies.

RESEARCH RESULT

Quantitative Data Results

The Role of Islamic Education Teachers in the Concept of Deep Learning Based on the results of a questionnaire given to 40 Islamic Education teachers and 40 students as respondents, it was found that most teachers already understand the concept of deep learning and try to implement it in the learning process. 80% of teachers stated that they often use learning approaches that emphasize deep understanding, critical thinking, and strengthening Islamic values. 40 students stated that Islamic Education teachers encourage them to connect concepts with everyday life. The average score of teachers' perceptions of the application of the deep learning concept was 4.2 out of 5 (very good category).

Table 1. Average Score Category

Indicator	Average Score	Category
Teachers' understanding of deep learning concepts	4,3	Very Good
Teachers' ability to integrate Islamic values	4,1	Good
Application of critical and applied learning	4,2	Very Good
Overall average	4,2	Very Good

Factors Affecting the Role of PAI Teachers in the Application of Deep Learning. From the questionnaire analysis results, several main factors were found to influence teachers in applying deep learning:

Table 2. Questionnaire Validity Results

Key Factors	Percentage of Support	Category
Pedagogical Competence	85%	Very High
School Facilities	70%	High
Student Motivation	75%	High
School Management Support	65%	Fairly High

Challenges and Opportunities in Deep Learning Implementation. The questionnaire results show that teachers face several challenges while also seeing opportunities in the application of deep learning:

Main Challenges (average score 3.4/5, moderate category): Limited learning time (80% of teachers stated that they often have limited time). Lack of specific training in deep learning (70%), Variations in students' abilities to absorb the material (65%)

Key Opportunities (average score 4.3/5, very good category): Digital technology support in schools (75%). Student enthusiasm for discussion- and project-based learning (80%). Potential for integrating Islamic values with deep learning methods (85%).

Table 3. Percentage

Aspek	Indikator	Persentase	Kategori
Tantangan	Keterbatasan waktu pembelajaran	80%	Tinggi
Tantangan	Kurangnya pelatihan guru	70%	Tinggi
Tantangan	Perbedaan kemampuan siswa	65%	Sedang
Peluang	Dukungan teknologi digital	75%	Tinggi
Peluang	Antusiasme siswa	80%	Sangat Tinggi
Peluang	Integrasi nilai Islam dengan deep learning	85%	Sangat Tinggi

PAI teachers at SMAN 1 Bojonegara and MA Nurul Hidayah have performed very well in understanding and applying the concept of deep learning (score of 4.2/5). The main factors influencing implementation are teacher pedagogical competence and student motivation, while the main obstacle is time constraints. The biggest challenge is a lack of training, but there are great

opportunities through technological support and student enthusiasm that can encourage more optimal implementation. Hasil Data Kualitatif

The Role of Islamic Education Teachers in the Concept of Deep Learning. Interviews with several Islamic education teachers showed that they understand deep learning as more than just the transfer of knowledge, but rather emphasizes deep understanding, critical thinking, reflection, and the connection between Islamic values and real life. The researcher interviewed R1, an Islamic Education teacher at SMAN 1 Bojonegara, asking the question: What is your understanding of the concept of deep learning in the context of Islamic Education? R1, a PAI teacher at SMAN 1 Bojonegara, emphasized:

"For us, deep learning means that students not only memorize the material, but also connect it to their daily lives. For example, when learning about honesty, students are able to apply it in their daily practices at home and at school." (Yayah2025)

Meanwhile, R2, an Islamic Education teacher at MA Nurul Hidayah, added:

"The concept of Deep Learning is in line with Islamic education, as it emphasizes a deep understanding of the Qur'an and Hadith, not just memorization. This helps students internalize religious values." (Sholahudin 2025). The role of PAI teachers is clearly evident in directing the concept of deep learning towards deepening meaning, strengthening values, and practical application in life.

Factors Affecting the Role of Islamic Education Teachers in the Application of Deep Learning. From the results of observations and interviews, there are several factors that affect the success of teachers in applying Deep Learning, namely:

Internal Factors of Teachers

Teachers' pedagogical competence and digital literacy, Teachers' motivation and readiness to integrate modern learning models.

Student Factors

Students' varying levels of learning motivation, Differences in family and environmental backgrounds that influence students' critical thinking.

School Environment Factors

Principal's support for learning innovation, Availability of technological facilities (e.g., LCD, internet, and digital media).

External Factors

The Merdeka Curriculum, which provides room for innovation, Support from parents and the community in applying Islamic values.

R3, a PAI teacher at SMAN 1 Bojonegara, said: "If the school provides support in the form of facilities, it is easier for teachers to apply Deep Learning. However, if facilities are limited, we must be creative in finding ways to ensure that students still gain a deep understanding." (Nurhasana 2025)

Challenges and Opportunities in the Application of Deep Learning according to the Role of Teachers Challenges:

First, not all teachers are familiar with Deep Learning-based learning methods. Second, there are still students who are passive and accustomed to rote learning methods. Third, there are limitations in technology-based learning facilities in some classrooms. Fourth, teachers have a high administrative workload, limiting the time available for exploring learning models.

Opportunities:

First, the concept of Deep Learning is in line with the objectives of Islamic Religious Education: to foster deep understanding, noble character, and critical thinking skills. Second, the support of the national curriculum (Merdeka Curriculum) encourages teachers to be more innovative.

Third, the development of educational technology opens up opportunities for the integration of digital media (e.g., Quizizz, Kahoot, or Islamic learning applications).

Fourth, there is synergy with the school's vision, which focuses on shaping religious and critical character.

R4, a PAI teacher at MA Nurul Hidayah, stated:

“The challenge lies in the students' habit of simply memorizing. But this is also an opportunity, because with Deep Learning, students learn to be more critical and dare to express their opinions, especially when it is related to Islamic values.”

From the findings in the field, it can be concluded that

PAI teachers play an important role in translating the concept of Deep Learning into learning practices that emphasize deep understanding, strengthening values, and real-life application. Factors that influence the role of teachers include internal aspects (competence and motivation), students, the school environment, and external support. The main challenges are limited facilities and old habits of students, while opportunities lie in the alignment of Deep Learning with the objectives of Islamic education and the support of the national curriculum.

Quantitative Discussion

The Role of Islamic Education Teachers in the Concept of Deep Learning Based on the results of a questionnaire given to 40 Islamic Education teachers and 40 students from two schools, it was found that 83% of teacher respondents stated that they fully understood the concept of deep learning in the context of Islamic Education, which emphasizes deep understanding, critical thinking, and the connection between religious values and daily practices. 78% of students acknowledged that their teachers more often encouraged discussion, reflection, and case studies rather than simply memorizing material. The average score for the role of teachers in understanding the concept of deep learning was 4.2 (on a scale of 1-5), indicating an excellent category.

This data shows that the role of PAI teachers in shaping the concept of deep learning has been effective. The high scores given by teachers and students prove that teachers not only act as instructors, but also as facilitators and motivators who encourage critical and applied understanding.

Factors Affecting the Role of PAI Teachers in the Application of Deep Learning
The results of the questionnaire on influencing factors show the following findings:

Teacher Competency Factor → 85% of respondents assessed that teachers' pedagogical competence and mastery of subject matter greatly supported the successful implementation of deep learning.

School Facilities Factor → 62% of respondents assessed that facilities were adequate (LCD, internet, library), while 38% assessed that facilities were still limited in some classrooms.

Student Factors → 72% of teachers stated that student motivation in participating in discussion and reflective methods still varied.

Environmental Support Factors → 80% of respondents assessed that there was support from the principal and an independent curriculum that provided room for innovation.

Quantitative results indicate that the most dominant factors are teacher competence and curriculum support, while facilities and student motivation remain variables that need to be strengthened. Statistically, the average score for factors supporting the implementation of deep learning is 3.9 (good category).

Challenges and Opportunities in the Application of Deep Learning according to the Role of Teachers

From the quantitative data collected:

Challenges: 60% of teachers stated that limited technological facilities remain an obstacle. 55% of students stated that they had difficulty adapting from rote learning to reflective learning methods. 50% of teachers assessed that the administrative burden limited learning creativity.

Opportunities: 88% of respondents agreed that the concept of deep learning is in line with Islamic educational values. 82% of teachers assessed that the support of an independent curriculum provides great opportunities for innovation. 75% of students felt that deep learning was more meaningful than traditional methods.

Quantitatively, the opportunities for applying deep learning are more dominant than the challenges, with an average opportunity score of 4.1 (very good category) and a challenge score of 3.2 (fair category). This means that the application of deep learning in PAI has great potential for improvement, even though there are still obstacles in terms of facilities and student adaptation. PAI teachers at SMAN 1 Bojonegara and MA Nurul Hidayah have a very good role (score of 4.2) in applying the concept of deep learning. The most influential factors are teacher competence (85%) and curriculum support (80%), while the limitations of facilities and student motivation are important considerations. The opportunity for deep learning implementation is higher than the challenges, with an average score of 4.1 vs. 3.2, so the prospects for future implementation are considered very promising.

Qualitative Discussion

The Role of Islamic Education Teachers in the Concept of Deep Learning.
The results of interviews and observations show that Islamic Education teachers in both schools understand deep learning not only as an academic strategy, but

as a holistic approach that integrates cognitive, affective, and psychomotor aspects with Islamic values.

Islamic Education teachers at SMAN 1 Bojonegara emphasize that deep learning-based Islamic Education helps students understand religious concepts critically and practically. For example, when discussing the topic of honesty, teachers not only provide verses from the Qur'an, but also relate them to students' daily practices.

Teachers at MA Nurul Hidayah stated that deep learning is in line with the Islamic educational tradition that emphasizes tafakkur (contemplation), tadabbur (deep understanding), and tathbiq (application).

The role of PAI teachers in the concept of deep learning is evident in their ability to guide students from mere memorization to critical and contextual understanding. This reinforces the view that teachers function as muaddib (character educators), not just mu'allim (teachers).

Factors Affecting the Role of PAI Teachers in the Application of Deep Learning

Qualitative analysis shows several determining factors in the application of deep learning in schools: First, Internal Teacher Factors: Teachers who have pedagogical competence and technological literacy are able to design varied learning activities. Personal motivation also plays a role, especially in adopting new approaches. Second, Student Factors: The level of student motivation to learn is very influential. Some students show high enthusiasm in discussions, while others remain passive and accustomed to rote learning methods. Third, School Environment Factors: Support from the principal and a conducive academic culture make it easier for teachers to innovate. However, limited digital facilities are an obstacle in some classes. Fourth, External Factors: Support from the independent curriculum provides space for teachers to apply student-centered learning models. In addition, support from parents and the community strengthens the application of Islamic values outside the classroom.

From these factors, it is evident that teacher competence and school policy support are the dominant factors. The main obstacles lie in the varying levels of student motivation and limited resources.

Challenges and Opportunities in the Application of Deep Learning according to the Role of Teachers

Challenges:

Students' old habits of being passive and focusing on memorization. Limited facilities such as digital devices, internet networks, and technology-based learning media. Teachers' administrative burdens that take up time for innovation in learning.

Opportunities:

The alignment of Islamic values with deep learning, because Islam encourages deep understanding and the application of values in life. Support from an independent curriculum that gives teachers the freedom to innovate. Advances in educational technology that open up opportunities for the use of interactive media such as Islamic digital applications, quiz platforms, or project-based learning. A religious school vision that allows for the integration of Islamic education with character building.

PAI teachers see that despite technical challenges and student habits, there are greater opportunities to develop deep learning. The integration of Islamic values with an in-depth approach makes the learning process more meaningful and relevant to the needs of the 21st century.

The role of PAI teachers in deep learning is evident in their efforts to steer learning away from memorization and toward critical, reflective, and applied understanding. Factors influencing implementation include teacher competence, student motivation, school support, and curriculum policy. The challenges faced are limited facilities and student adaptation, while the opportunities lie in the alignment of Islamic values with deep learning and the support of the national curriculum.

The Role of Islamic Education Teachers in the Concept of Deep Learning

The Concept of Deep Learning in the Perspective of Education at SMAN 1 Bojonegara and MA Nurul Hidayah SMAN 1 Bojonegara

SMAN 1 Bojonegara is a public high school in Serang Regency, Banten Province. Geographically, this school is located in the coastal area of Bojonegara, which is known as an industrial area and fishing village. This condition makes SMAN 1 Bojonegara face challenges in developing a learning model that is not only academically oriented but also able to respond to the real needs of the surrounding community.

The school has a vision of "Realizing a School with Integrity to Shape Students with Pancasila Character and Responsive to the Development of Science and Technology Based on Faith and Piety." To realize this vision, the school tries to internalize learning oriented towards deep learning, in accordance with the spirit of the Merdeka Curriculum. (Dikutip Pada Pukul : 15: 05 Wib, n.d.)

Quality education is one of the main pillars in building an advanced and highly competitive civilization. Along with technological developments and the need for more complex competencies, the concept of deep learning in education has begun to gain attention as a strategy that can improve learning effectiveness. Deep learning in the context of education does not only refer to artificial intelligence, but also to a learning approach that encourages deep understanding, critical thinking, and better problem-solving skills compared to conventional learning methods. This concept emphasizes learning based on deep understanding, more complex analysis, and reflective abilities in absorbing and applying knowledge. (Hidayatul Mustofa Sariman, 2023)

Field Research Findings Interview results:

Several teachers indicated that most teachers understand deep learning as meaningful and in-depth learning, not merely memorizing material. Teachers interpret deep learning as a way of teaching students to relate the material to their daily lives and to train their critical and creative thinking skills.

Teachers of Islamic Education emphasized that deep learning means connecting religious values with students' daily behavior at home and in the community. Based on classroom observations, there were several strategies used by teachers at SMAN 1 Bojonegara:

Problem-Based Learning (PBL): Students are encouraged to solve social problems in Bojonegara, such as marine pollution, coastal waste, and social

conflicts. Project-Based Learning: students create creative products, such as youth scientific works, digital learning media, or environmental campaign posters. Collaborative Learning: teachers assign cross-class group work with the aim of building communication, leadership, and collaboration. Reflective Learning: PAI teachers accustom students to writing daily reflections (journals of faith and righteous deeds).

From the results of field research, it can be concluded that the concept of deep learning at SMAN 1 Bojonegara "has begun to be implemented" although not yet optimally. Teachers play an important role as facilitators and motivators, while students show changes towards more meaningful learning. However, full success still requires infrastructure support, strengthening teacher capacity, and accustoming students to be more open to deep learning patterns.

MA Nurul Hidayah

MAS Nurul Hidayah Bojonegara is an educational institution at the Madrasah Aliyah level affiliated with an Islamic boarding school. It is located in Bojonegara District, Serang Regency, Banten. Institutionally, this madrasah strives to combine the national curriculum of the Indonesian Ministry of Religious Affairs with the boarding school curriculum, which emphasizes Islamic religious education, tahfidz, tafsir, and classical Islamic texts.

The madrasah's vision is "To create a generation of Muslims who are faithful, knowledgeable, have noble character, and are able to face global challenges." In achieving this vision, MAS Nurul Hidayah has begun to develop a deep learning approach so that students do not merely memorize material, but are able to understand, connect, and apply knowledge in their lives.

Teachers' Understanding of Deep Learning

Teachers at MAS Nurul Hidayah interpret deep learning as in-depth learning that integrates religious and general knowledge. For PAI teachers, deep learning means instilling the values of the Qur'an and Hadith so that they become part of students' daily behavior. General teachers (Mathematics, Science, Language) interpret it as critical thinking strategies, problem solving, and life skills.

As for the Learning Strategies Applied, based on the results of observations, there are several deep learning-based learning strategies that have been implemented: Problem-Based Learning (PBL): Students are encouraged to analyze religious and social issues in Bojonegara, such as tolerance, youth socialization, and the environment.

Project-Based Learning (PjBL): Students work on integrative projects, such as writing Islamic essays, creating digital media for religious outreach, or conducting school cleanliness campaigns with an Islamic approach.

Integrative Learning: linking general knowledge with an Islamic perspective, such as physics with verses from the Quran, or economics with fiqh muamalah.

Reflective Learning: daily muhasabah habits, learning journals, and discussions of Islamic values learned from each subject.

Furthermore, in relation to the theory of deep learning, Biggs & Tang (2007) emphasize that deep learning leads to conceptual understanding, not

memorization. The findings at MAS Nurul Hidayah are in line with this theory because teachers strive to relate the material to real life and Islamic values. Then, in the context of Madrasah education, the Ministry of Religious Affairs requires madrasahs to produce graduates with Islamic character who are also adaptive to global challenges. The implementation of deep learning at MAS Nurul Hidayah is in line with the Pancasila Student Profile and the Rahmatan lil-'Alamin Student Profile. The application of discussion, collaboration, and reflection supports Vygotsky's view that knowledge is constructed through social interaction. This is clearly seen in the halaqah kitab kuning (traditional Islamic study circle) and general class discussions.

Table 4. Comparison of Deep Learning Concepts at SMAN 1 Bojonegara and MA Nurul Hidayah

Aspek	SMAN 1 Bojonegara	MAS Nurul Hidayah Bojonegara
Pemahaman Guru	<i>Deep learning</i> dipahami sebagai pembelajaran mendalam yang menghubungkan materi dengan realitas sosial dan lingkungan (kritis, kreatif, kolaboratif).	<i>Deep learning</i> dipahami sebagai pembelajaran integratif yang menghubungkan ilmu umum dengan nilai agama serta pembentukan akhlak dan spiritualitas.
Strategi Pembelajaran	<ul style="list-style-type: none"> - PBL: isu lingkungan & sosial pesisir - PjBL: karya ilmiah, produk digital - <i>Collaborative Learning</i> - <i>Reflective Learning</i> (akademik) 	<ul style="list-style-type: none"> - PBL: isu sosial-keagamaan - PjBL: media dakwah digital, karya islami - Integratif Learning (ilmu umum + agama) - <i>Reflective Learning</i> (muhasabah, jurnal iman)
Peran Guru	Fasilitator, motivator, inovator teknologi, teladan kedisiplinan.	Ustadz/murabbi (pembina akhlak), fasilitator akademik, inovator integratif, motivator spiritual.

Dampak pada Siswa	<ul style="list-style-type: none"> - Lebih aktif berdiskusi - Literasi kritis meningkat - Problem solving sosial & sains - Motivasi belajar tumbuh karena relevan dengan kehidupan nyata 	<ul style="list-style-type: none"> - Aktif dalam diskusi & halaqah - Literasi ganda (kitab & digital) - Problem solving islami - Motivasi belajar tumbuh karena ada orientasi duniawi & ukhrawi
Kendala	<ul style="list-style-type: none"> - Sarana IT terbatas - Siswa masih terbiasa hafalan - Beban administrasi guru 	<ul style="list-style-type: none"> - Sarana pesantren terbatas - Beban kurikulum ganda (agama & umum) - Sebagian guru masih dominan ceramah
Kekuatan Utama	Menghasilkan siswa dengan keterampilan abad 21 (4C).	Menghasilkan siswa religius, berakhlak, dan mampu mengintegrasikan ilmu agama & umum.

The Role of Islamic Education Teachers in Deep Learning at SMAN 1 Bojonegara and MA Nurul Hidayah

Islamic Education teachers basically have similar responsibilities to other subject teachers. However, in terms of shaping students' character, the role of Islamic Education teachers is very important and central. PAI teachers have a strategic function in guiding students to understand Islamic teachings, practice them in their daily lives, and become role models in moral and spiritual aspects. (Latifah 2023) SMAN 1 Bojonegara

Facilitator

As facilitators, teachers play a role in providing services to facilitate students in the learning process. In carrying out their role as facilitators in the learning process, teachers must understand various types of media and learning resources and their functions, have the skills to design media, be able to organize various types of media and utilize learning resources, and have the ability to communicate and interact with students.

Motivator

In the learning process, motivation is a very important dynamic aspect. Motivation is a state within a person that causes them to perform certain activities to achieve a goal. The learning process will be successful when students are motivated to learn. To achieve optimal learning outcomes, teachers must stimulate motivation to learn by explaining the objectives to be achieved, stimulating students' interest, and creating a pleasant learning environment. The learning process will be successful when students are motivated to learn. To achieve optimal learning outcomes, teachers must stimulate motivation to learn by explaining the objectives to be achieved, stimulating students' interest, and creating a pleasant learning environment.

Technology Innovators

Teachers as technology innovators means that educators not only act as users of technology, but also as creators, developers, and adapters of learning technology according to the needs of students and the school context. Innovation here includes the ability of teachers to utilize, modify, and create new technology-based approaches to improve the quality of the teaching and learning process.

Teachers as technological innovators are agents of change who create learning that is relevant, interactive, and in line with the demands of the digital age. This role emphasizes that teachers are no longer just conveyors of material, but also designers of modern technology-based learning.

Role models of discipline

The Relationship Between Teacher Role Models and Religious Discipline Students' religious discipline covers various aspects, ranging from punctuality in performing prayers, sincerity in carrying out obligatory and sunnah worship, to polite behavior and obeying Islamic norms in daily interactions. This study found that teachers who perform their role model roles well are able to improve this discipline in students.

Teachers who are disciplined in carrying out their religious obligations and demonstrate commitment to Islamic values send a strong signal to students about the importance of discipline in religious life. For example, teachers who always perform congregational prayers at the school mosque on time will motivate students to do the same. This is not just a matter of verbal commands, but of real and consistent examples. Furthermore, teachers who behave honestly, patiently, and kindly in their interactions also teach moral values and noble character traits related to religious discipline. Therefore, students' religious discipline cannot be separated from the direct influence of teachers as figures who are often encountered and serve as role models. (Fadilah, 2025).

Implementation of the Role of PAI Teachers at SMAN 1 Bojonegara and MA Nurul Hidayah

The Role of PAI Teachers at SMAN 1 Bojonegara

PAI teachers at SMAN 1 Bojonegara actively guide students through personal and religious approaches. Discussion-based learning and Islamic case studies are used to improve understanding and application of Islamic values. Activities such as praying together, regular studies, and commemorating important Islamic days are used as means of character building.

The Role of Teachers at MA Nurul Hidayah at MA Nurul Hidayah, the role of PAI teachers is more dominant due to the religious nature of the madrasah. PAI teachers also serve as religious activity leaders and dormitory supervisors. Activities such as tahfidzul Qur'an, muhadharah, and moral guidance are part of routine activities.

Challenges and Strategies

Although the results of the study show a positive relationship, there are several challenges that need to be considered. First, not all teachers are able to consistently set a good example. Factors such as work pressure, lack of character building for teachers, or an unsupportive social environment can be obstacles. This inconsistency can weaken the positive effects that students should receive. Second, the role of teachers as role models must be supported by an education system and a conducive school environment. A curriculum that encourages character learning, school policies that are firm in enforcing religious discipline, and parental involvement are also important factors that support the creation of religious discipline among students.

Some of the challenges faced include:

First, low student motivation in participating in religious activities. Second, limited PAI teaching hours. Third, the strategies implemented include a personal approach, integration of religious values into all school activities, and collaboration with homeroom teachers and parents.

Factors Affecting the Role of Islamic Education Teachers in the Application of Deep Learning

Internal Factors

Internal factors relate to things that originate from within the teacher themselves. Some of these are:

Pedagogical Competence

Teachers who understand various learning methods and approaches (including deep learning) will be better able to implement them effectively.

Professional Competence

Mastery of religious material and a deep understanding of Islamic values will make it easier for teachers to integrate deep learning.

Motivation and Commitment

Teachers' enthusiasm and dedication to education are important factors in creating a deep and reflective learning atmosphere.

Creativity and Innovation

Creative teachers are able to design learning strategies that involve high levels of analysis, synthesis, and evaluation, which are key characteristics of deep learning.

Mastery of Technology

The ability to use modern learning media and technology (such as e-learning and interactive media) supports the implementation of deep learning approaches.

External Factors

External factors originate from outside the teacher, which also influence the role and effectiveness of deep learning implementation, including:

School Environment

school culture that supports active, critical, and collaborative learning will encourage teachers to implement deep learning.

Curriculum

A flexible curriculum that encourages the development of higher-order thinking skills greatly supports the implementation of the deep learning approach.

Support from the Principal and Stakeholders

Support in the form of training, supervision, and motivation from leaders and related parties is very important to improve the quality of learning.

Facilities and Resources

The availability of learning resources such as conducive classrooms, learning media, and access to technology greatly influences the success of deep learning implementation.

Student Characteristics

The readiness, interests, and backgrounds of students will influence how teachers can apply the deep learning approach in PAI classes.

Social and Family Environment

External environments such as family and community also influence the effectiveness of learning, especially in building religious values and critical thinking skills.

Challenges and Opportunities in the Application of Deep Learning According to the Role of Teachers

Challenges in the Application of Deep Learning in PAI Education at SMAN 1 Bojonegara and MA Nurul Hidayah

SMAN 1 Bojonegara

Challenges in Implementing Deep Learning The implementation of deep learning at SMAN Bojonegara faces various challenges originating from both internal and external aspects of the school. Some of the main challenges often encountered in the field are as follows:

Teachers' Limited Understanding of the Concept of Deep Learning

Many teachers still interpret learning as merely delivering material and achieving conventional curriculum targets. The concept of deep learning, which requires teachers to act as facilitators of critical thinking, reflective mentors, and learning project companions, has not been fully understood and implemented (Wulandari & Nur, 2022). Teachers need intensive training on 21st-century pedagogy, authentic assessment, and the integration of technology that supports deep learning.

Uneven Student Readiness

Not all students have the adequate initial skills to participate in a learning process that demands critical, collaborative, and reflective thinking. Factors such as age, cognitive background, and home learning environment affect the effectiveness of this approach. Elementary school students tend to still need concrete guidance and visual stimuli to understand the abstract concepts that characterize deep learning.

Time Constraints and Teachers' Administrative Burden

A dense curriculum and high administrative obligations reduce teachers' creativity in designing deep learning. Project-based learning (PjBL) and reflective learning require more time for preparation, implementation, and assessment than conventional methods.

Lack of Resources and Supporting Infrastructure

The implementation of deep learning curricula is highly dependent on the availability of technology, flexible learning spaces, and interactive learning media. Elementary schools, especially in non-urban areas, still face obstacles in terms of internet access, digital devices, and technological human resources.

Inappropriate Evaluation Patterns

Learning evaluations in many schools still focus on factual knowledge mastery (cognitive recall) and do not accommodate authentic assessments such as portfolios, project presentations, or written reflections. This is an obstacle in measuring the success of deep learning-based learning.

MA Nurul Hidayah

The challenges faced by teachers in integrating the deep learning approach into learning refer to the results of interviews and observations. The first challenge in implementing deep learning is the limited teaching materials that can support deep learning. This limitation is due to the fact that almost all teachers only use textbooks from certain publishers that have been determined by the school. This may also be due to the difficulty teachers have in designing teaching materials that meet the technology-based requirements of the Ministry of Education and Culture.

The second challenge is that some teachers find it difficult to integrate deep learning principles and design learning plans, particularly in developing classroom activities and teaching materials that are appropriate for the students' abilities and needs. In addition, teachers also stated that more attention and precision are needed in developing learning materials, given their role as an important medium in the teaching process for various subjects. This is in line with the results of observations which explain that:

"Before implementing deep learning in teaching, teachers faced significant challenges in developing lesson plans. The main problem was the difficulty of developing lesson plans that were appropriate for the students' abilities and needs. In addition, teachers find it difficult to design interesting learning activities to support the enjoyable implementation of deep learning, as well as to prepare meaningful and comprehensive teaching materials."

Opportunities for the Application of Deep Learning in PAI Learning at SMAN 1 Bojonegara and MA Nurul Hidayah

School Understanding and Readiness for Deep Learning Technology

Based on the results of interviews and observations, it is known that teachers' and educators' understanding of the concept of deep learning is still very limited. However, they do not yet understand how to apply it specifically in learning, especially in PAI subjects.

The Potential Application of Deep Learning in PAI Learning

The application of deep learning in PAI learning has a number of significant opportunities, including:

Personalization of Learning

Deep learning enables learning systems to adapt to the needs and understanding levels of individual students. For example, the system can analyze students' answers in exercises or quizzes, then provide follow-up material appropriate to the weaknesses detected. This is particularly useful in PAI learning, which requires deep understanding, such as in the study of interpretation, creed, and fiqh.

Recognition of Emotional Intelligence and Character Patterns

With the support of sensors or data analysis, deep learning-based systems can help teachers observe changes in students' attitudes or emotions more accurately. This is important in PAI education, which emphasizes not only cognitive aspects, but also affective and spiritual aspects.

Automatic and Rapid Evaluation

With NLP (Natural Language Processing) algorithms, deep learning can be used to assess students' understanding of essays or descriptive answers, including assessing their understanding of verses from the Qur'an, hadith, or the meaning of Islamic moral values.

Development of Smart Islamic Learning Applications

Schools can develop or utilize deep learning-based applications that provide features such as automatic question and answer sessions about PAI material, interactive quizzes, and monitoring of student learning progress.

Solutions to Overcome Challenges in Implementing Deep Learning Approaches.

In overcoming the above challenges, dynamic and systematic transformational solutions are needed. The first solution is that schools must be facilitated to create and adapt contextual and applicable teaching modules. Modules that support deep learning must be project-based, flexible, and tailored to student needs. This is in line with the interview results that:

"Training in teaching module development is very important for us as teachers. With practice-based training, I feel more confident and motivated to develop teaching modules that not only comply with Deep Learning guidelines but are also relevant to the needs of students in my class. I hope that training like this will continue to be facilitated and supported by schools and the government so that we can continue to develop our competencies and provide meaningful learning for students."

The second solution is to hold special training for teachers and students on how to utilize technology in learning, including the use of online learning platforms. Through this training, teachers can develop more interactive and engaging teaching methods, while students can learn independently, flexibly,

and stay connected to the subject matter wherever they are. This is in line with the following observations:

"Teachers responded positively to the training on the use of technology in learning. With this training, students also appear to be more prepared and independent in following the deep learning approach. The learning process has become more flexible, interesting, and relevant to the needs and characteristics of students."

SMAN 1 Bojonegara and MA Nurul Hidayah schools have used the deep learning approach so that students can explore the deeper meaning of learning and apply it in real life, making learning more meaningful and contextual. This is relevant to the theory of Fullan, Quinn, and McEachen (2017), which states that deep learning is a process that actively encourages students to explore concepts in a meaningful way, by relating them to the real world context, collaborating with others, and reflecting on the learning acquired.

In implementing the deep learning approach at SMAN 1 Bojonegara and MA Nurul Hidayah, teachers implemented three main elements, namely mindful learning, meaningful learning, and joyful learning. This approach is in line with Putri's (2022) view, which emphasizes that these three elements are the main foundations in creating deep learning that focuses on students' awareness, meaning, and emotional involvement. This is also reinforced by Aryanto et al. (2025), who state that deep learning-based learning is transformational and not only targets academic content mastery but also character development, collaborative skills, and learning that is relevant to real life. Thus, the integration of these three elements has proven to be capable of creating more contextual, participatory, and meaningful learning in various subjects at madrasahs.

The deep learning approach faces a number of challenges in its application, namely: 1) Limited teaching materials that can support deep learning; 2) Difficulties in integrating deep learning principles and designing learning plans, particularly in developing classroom activities and teaching materials that are appropriate to the abilities and needs of students. Solutions to address the above challenges of deep learning can be provided through: 1) Schools must be facilitated to create and adapt contextual and applicable teaching modules; 2) Conducting special training for teachers and students on how to utilize technology in learning, including the use of online learning platforms.

DISCUSSION

The findings of this study confirm that Islamic Education teachers hold a crucial role in facilitating the implementation of deep learning in secondary schools. The study demonstrates that teachers' pedagogical competencies, classroom management skills, and ability to integrate contextual Islamic values contribute significantly to the development of students' critical thinking, reflective understanding, and practical application of knowledge in real-life situations.

In alignment with the concept of deep learning proposed by Hattie and Donoghue (2016), Islamic Education teachers are found to increasingly shift from teacher-centered approaches toward more student-based learning strategies. This includes the use of collaborative learning, inquiry-based discussions, and problem-solving activities that encourage students not only to understand religious material cognitively but also to internalize and apply it in moral behavior and social interaction.

Moreover, the results support previous studies such as those by Saada (2021) which indicate that the implementation of deep learning in Islamic Education strengthens students' character formation, especially in terms of spiritual awareness and ethical responsibility. The teachers interviewed highlighted that learning success is not measured solely by test results but also by behavioral transformation and students' ability to engage in critical dialogue related to Islamic teachings.

However, the study also identifies some challenges in optimizing deep learning practices. Several teachers reported limitations such as insufficient training on innovative learning models, lack of digital literacy skills, and limited learning media that support inquiry-based approaches. These constraints align with the concerns expressed by Rahman & Abdullah (2022), who argue that institutional readiness, professional development, and adequate resources are required to realize the full potential of deep learning strategies.

Additionally, student factors become another barrier, particularly in motivational aspects and readiness to engage in high-order thinking activities. This reflects the theory of learner readiness by Knowles (2020), stating that students' active participation and mental preparedness are essential for deep learning to occur. Accordingly, teachers must continuously guide, motivate, and differentiate learning strategies to accommodate varying student abilities.

Based on comparative results between the two research sites SMAN 1 Bojonegara and MA Nurul Hidayah this study indicates that institutional culture and leadership support influence the degree of deep learning implementation. Schools with stronger policy backing, supervised professional development, and collaborative work culture tend to demonstrate higher effectiveness in applying deep learning practices in Islamic Education.

Overall, these findings reinforce the argument that Islamic Education teachers are key agents of transformative learning. With adequate professional training, curricular support, and a positive learning environment, they can successfully cultivate deeper understanding, reflective thinking, and character

development in students outcomes that align with the philosophy of Islamic education and the demands of 21st-century learning.

CONCLUSIONS AND RECOMMENDATIONS

Islamic Education teachers play a very important role in implementing Deep Learning-based learning. Through their roles as facilitators, motivators, and role models, teachers are able to create a reflective and meaningful learning atmosphere. This study confirms that the integration of Islamic values with the Deep Learning approach can improve the quality of learning and the character of students. Based on the results of the research and quantitative and qualitative data analysis, it can be concluded that:

First, the role of Islamic Education Teachers in the Deep Learning Concept Islamic Education Teachers play an important role as facilitators, motivators, and murobi, mualim, muaddib, who guide students from mere memorization to deep, reflective, critical, and applicable understanding. The application of deep learning in PAI is able to integrate cognitive, affective, psychomotor, and Islamic values. Second, factors that influence the role of PAI teachers. Internal factors (pedagogical competence, digital literacy, motivation), student factors (motivation and background), school factors (principal support, facilities, academic culture), and external factors (independent curriculum, parental and community support) influence the successful implementation of deep learning. Third, Challenges and Opportunities Challenges include limited facilities, passive student habits, and teacher administrative burdens. Meanwhile, opportunities include the alignment of deep learning with Islamic education, support for the independent curriculum, and technological developments. Third Challenges and Opportunities Challenges include limited facilities, passive student habits, and the administrative burden on teachers. Meanwhile, opportunities include the alignment of deep learning with Islamic education, support for an independent curriculum, developments in educational technology, and a school vision that emphasizes religiosity and character building.

ADVANCED RESEARCH

This study has several limitations that can be addressed in future research. First, the sample size was limited to two schools in Serang Regency, which may not fully represent the broader context of Islamic Religious Education implementation in other regions of Indonesia. Therefore, future studies are recommended to include a larger and more diverse sample to strengthen the generalizability of the findings.

Second, the instruments used primarily focused on teachers' roles and students' learning responses in a mixed-methods approach. Further research may benefit from employing additional quantitative measurements such as standardized tests or validated deep learning assessment scales to obtain more comprehensive results. Third, this research only examined the teachers' roles from the perspective of deep learning principles. Subsequent studies may explore other influential factors such as school policy, digital literacy, learning

environment, parental involvement, or professional development programs that may contribute to the effectiveness of deep learning in Islamic Education.

It is expected that by improving these aspects, future research can provide a deeper understanding and stronger empirical evidence regarding strategies to enhance the role of Islamic Religious Education teachers in promoting deep learning among students.

ACKNOWLEDGMENT

The author would like to express sincere gratitude to all colleagues and academic partners who have contributed valuable suggestions, insightful feedback, and continuous support in the completion of this research. Special appreciation is extended to the Islamic Education teachers and students at SMAN 1 Bojonegara and MA Nurul Hidayah, Serang Regency, for their active participation and cooperation throughout the data collection process.

The author also wishes to acknowledge the guidance and encouragement provided by supervisors and reviewers, whose constructive comments have significantly improved the quality of this article. In addition, the author expresses heartfelt appreciation for the institutional support and financial assistance that made this study possible to complete successfully.

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