

## The Integration of Deep Learning into Islamic Education to Strengthen the Religiosity of Muslim Students at Lirung Inpres Public Elementary School within the Framework of Islamic Education

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| Keywords                                                                  | Abstract                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Deep Learning; Islamic Religious Education; Religiosity; Muslim Minority. | Islamic Religious Education (Pendidikan Agama Islam [PAI]) in Muslim-minority areas requires a pedagogical approach that fosters students' understanding, internalization, and application of Islamic teachings. This study examined the integration of Deep Learning as a pedagogical approach rather than as computer technology or artificial intelligence, emphasizing mindful, meaningful, and joyful learning. The novelty of the study lies in linking this pedagogical approach to the development of Muslim students' religiosity in a minority context. Specifically, the study analyzed the implementation of PAI instruction, students' religiosity, the approach's impact on each dimension of religiosity and Islamic identity, and the factors supporting and constraining its implementation. This study employed a qualitative approach using an intrinsic case study design. Informants were selected through purposive sampling and included the principal, the PAI teacher, and Muslim students. Data were collected through interviews, observations, and document analysis and were analyzed using the Miles and Huberman interactive model, consisting of data reduction, data display, conclusion drawing, and verification. The trustworthiness of the data was enhanced through source and method triangulation, member checking, and the use of reference materials. The findings showed that: (1) PAI instruction integrated mindful, meaningful, and joyful learning through reflective questions, connections to students' lived experiences, stories, videos, quizzes, games, and reflective activities; (2) students' religiosity was reflected in the dimensions of religious belief, worship practices, religious experience, religious knowledge, and religious behavior; (3) the approach strengthened students' beliefs, promoted consistent worship practices, fostered positive religious experiences, enhanced religious knowledge, encouraged religious behavior, and reinforced students' confidence in maintaining their Islamic identity; and (4) implementation was supported by the principal's leadership, parental support, teacher competence, learning media, worship facilities, a tolerant school environment, and students' enthusiasm, but was constrained by unreliable electricity, limited internet access, inadequate facilities, variations in students' religious competence, limited parental guidance at home, and the challenges associated with the Muslim-minority context. |

### INTRODUCTION

Islamic Religious Education (Pendidikan Agama Islam [PAI]) aims to instill and develop religious values as the foundation for students' character development (Al-Baihaqi et al., 2024). These values provide the basis for nurturing students with noble character, integrity, and the ability to adapt to social change. Instilling religious values from an early age is essential

because childhood represents a critical period in the development of attitudes, habits, and patterns of thinking that often persist into adulthood. According to Zakiah Daradjat, Islamic Religious Education promotes the holistic development of students by strengthening their faith, worship, and moral character (Bahrozi & Abd Aziz, 2025; Dedi & Defirono, 2024; Ramadhan et al., 2025; Yuliyanti & Salim, 2025). Accordingly, PAI plays a central role in shaping students' religious attitudes and behaviors as reflected in their daily lives (Fadhlullah, 2021).

This perspective is consistent with Law No. 20 of 2003 on the National Education System, particularly its emphasis on achieving the goals of national education (Kosim et al., 2023; Romlah et al., 2024; Sakban & Sundawa, 2023). Article 3 states that education aims to develop learners who believe in and are devoted to God Almighty, possess noble character, are knowledgeable and competent, and demonstrate responsibility as citizens. Thus, Zakiah Daradjat's educational philosophy aligns with the objectives of Indonesia's national education system by emphasizing the development of religious character as the foundation of students' holistic personal development (Abdullah, 2022). Through effective PAI instruction, students are expected not only to acquire religious knowledge but also to develop religious awareness, moral character, and the ability to practice Islamic teachings in everyday life.

Despite these objectives, the implementation of PAI in schools continues to face several challenges. Instruction often emphasizes cognitive achievement, such as memorizing Qur'anic verses, prayers, and religious concepts, without sufficiently promoting deeper understanding, internalization, and application of Islamic values. Consequently, although students may demonstrate theoretical knowledge, they are not always able to relate Islamic teachings to their lived experiences. As a result, religious values are not consistently internalized through worship, reflective awareness, or behavior that reflects *akhlaq*.

These challenges highlight the need for a pedagogical approach that enables students to move beyond the acquisition of knowledge toward understanding, experiencing, and practicing Islamic teachings. One such approach is Deep Learning. In this study, Deep Learning refers not to computer technology, artificial intelligence, or digital applications but to a pedagogical approach that emphasizes mindful, meaningful, and joyful learning. Through this approach, students are encouraged to think critically, reflect on their experiences, connect PAI content with everyday life, and experience religious learning as meaningful, engaging, and personally relevant.

The integration of Deep Learning into PAI instruction, as conceptualized in this study, refers to embedding its principles throughout the instructional process, including lesson planning, classroom interaction, reflective questioning, connecting learning materials with students' experiences, creating a positive learning environment, and reinforcing values through reflection. Accordingly, integration extends beyond the use of diverse teaching methods or instructional media by aligning the principles of mindful, meaningful, and joyful learning with the objectives of PAI, thereby facilitating the internalization of religious values rather than mere memorization.

The importance of implementing this approach becomes even more evident in the context of SD Negeri Inpres Lirung (Lirung Inpres Public Elementary School). The school is located in Lirung District, Talaud Islands Regency, a region characterized by religious diversity in which Muslims constitute a minority. The school serves students from various religious backgrounds. Based on preliminary school data, SD Negeri Inpres Lirung has 168 students, of

whom 48 are Muslim. Since 2018, the school has employed a PAI teacher to provide religious education for Muslim students.

Being located in a Muslim-minority area presents distinctive challenges in fostering students' religiosity. Muslim students encounter limited environmental support for religious practice and are influenced by broader social interactions that may affect their behavior, communication patterns, daily habits, and commitment to their Islamic identity. Without consistent reinforcement of Islamic values from an early age, students may become more vulnerable to shifts in religious beliefs and practices. Therefore, PAI instruction should extend beyond the transmission of religious knowledge by providing a supportive environment that enables students to understand Islamic teachings, internalize religious values, practice worship according to their developmental level, cultivate good moral character, and maintain confidence in their Islamic identity within a pluralistic society.

Several previous studies have examined the application of the Deep Learning approach in PAI instruction. Hilya Adzani investigated the implementation of Deep Learning to enhance students' understanding of PAI at SMPN 1 Waru Sidoarjo. Although relevant, the study primarily focused on instructional planning, implementation, evaluation, and students' cognitive understanding. Similarly, Prenty Mariani examined the implementation of Deep Learning by PAI teachers at SMAN 03 Lebong, emphasizing lesson planning, teaching module development, and teachers' application of the three principles of Deep Learning. However, the study did not investigate its influence on students' religiosity.

Another study by Nadya Laa Tansa Laila examined the implementation of the Deep Learning approach in Akidah Akhlak instruction at MIM Teladan, Magelang City. That study focused specifically on teacher implementation within the Akidah Akhlak subject, whereas the present study examines PAI instruction and its relationship to Muslim students' religiosity. Farhan Maulana discussed the concepts of mindful, meaningful, and joyful learning in PAI and character education from a conceptual perspective but did not examine their influence on students' religiosity. Likewise, Febby Saldini explored meaningful learning in PAI instruction without specifically investigating its contribution to the development of religiosity among Muslim students in minority settings.

The existing literature indicates that previous studies have generally concentrated on students' cognitive development, teachers' instructional competencies, lesson planning, or the classroom implementation of Deep Learning. To the best of the authors' knowledge, no previous study has specifically examined the integration of Deep Learning into PAI instruction in relation to the five dimensions of Muslim students' religiosity in minority settings based on the framework proposed by Glock and Stark. This gap provides the foundation for the present study because religiosity encompasses not only religious knowledge but also religious belief, worship practices, religious experience, religious knowledge, and behavioral consequences in everyday life.

Unlike previous studies, this research offers two principal contributions. First, it applies Glock and Stark's multidimensional framework of religiosity to examine the influence of PAI instruction on five dimensions of students' religiosity: religious belief, religious practice, religious experience, religious knowledge, and religious behavior. Second, it was conducted in the distinctive context of SD Negeri Inpres Lirung, where fostering students' religiosity presents greater challenges than in Muslim-majority schools. In addition, this study draws upon

Vygotsky's theory of social constructivism to explain how students' understanding and religiosity develop through social interaction, teacher guidance, learning experiences, and the surrounding sociocultural environment.

This study is significant because it examines how the integration of Deep Learning into PAI instruction influences the religiosity of Muslim students at SD Negeri Inpres Lirung. Its significance is heightened by the educational challenges faced in Muslim-minority contexts, where maintaining Islamic identity within a pluralistic environment requires instructional approaches that are both meaningful and contextually relevant. The findings are expected to provide insights into PAI instructional strategies that strengthen students' religious understanding while fostering religious experience, worship practices, moral character, and confidence in maintaining their Islamic identity. Furthermore, the study is expected to contribute to the development of PAI practices that are more contextual, relevant, and responsive to the educational needs of Muslim students living in minority communities.

## **METHOD**

This study employed a qualitative approach using an intrinsic case study design to examine the integration of Deep Learning into Islamic Religious Education (Pendidikan Agama Islam [PAI]) instruction and its role in strengthening the religiosity of Muslim students in a Muslim-minority context. The intrinsic case study design was selected because it enabled an in-depth exploration of the unique characteristics of SD Negeri Inpres Lirung, a public elementary school located in a Muslim-minority community (Moleong, 2017).

The study was conducted at SD Negeri Inpres Lirung in Lirung District, Talaud Islands Regency, North Sulawesi, Indonesia. The school was selected because it is situated in a Muslim-minority area within one of Indonesia's frontier, outermost, and disadvantaged (3T) regions, providing a distinctive context for examining the integration of Deep Learning into PAI instruction.

The primary informants consisted of the principal, the PAI teacher, and Muslim students who participated in PAI instruction and religious development activities at the school. Documentary data were obtained from school records, including the curriculum, instructional modules, and school activity programs. Additional secondary sources included books, scholarly articles, and previous studies related to Deep Learning in PAI instruction and the religiosity of Muslim students in minority contexts.

Data were collected through semi-structured interviews, passive participant observation, and document analysis. Semi-structured interviews provided flexibility to explore emerging issues while maintaining alignment with the research objectives. Observations were conducted without the researcher's direct involvement in school activities. Documentary evidence, including teacher reports, activity records, and school religious programs, was analyzed to corroborate the interview and observation findings.

Data were analyzed using the Miles and Huberman interactive model, which consisted of data reduction, data display, conclusion drawing, and verification. The analysis included data transcription, coding, theme development, and interpretation of the findings using Deep Learning as the pedagogical framework and Glock and Stark's theory of religiosity as the analytical framework.

## **RESULTS AND DISCUSSION**

### **Implementation of Deep Learning-Based Islamic Religious Education (PAI)**

The implementation of deep learning-based Islamic Religious Education (PAI) at Lirung Impres Public Elementary School is carried out through the application of three main principles: mindful learning, meaningful learning, and joyful learning. Based on the results of data reduction and categorization from interviews, observations, and documentation, these three principles appear to be integrated into lesson planning, classroom implementation, the use of learning strategies, and the fostering of students' religiosity.

During the planning stage, PAI teachers develop teaching modules oriented toward deep learning. Teachers explained that the primary focus of instruction is to build students' understanding and ability to apply religious material in their daily lives. The PAI teacher stated, "When creating teaching modules, I don't just look at the material that needs to be covered; I also think about how students can understand and put that material into practice" (PAI Teacher, G-01, 06/08/2026). This statement was reinforced by the principal, who explained that every lesson plan is reviewed before being used in the classroom. The principal stated, "Lesson plans are usually prepared one day before the lesson takes place and are reviewed by the principal" (Principal, K-01, June 9, 2026). Observation results showed that teachers explained the learning objectives and conducted activities in accordance with the prepared teaching modules, while documentation indicated supervision of the teaching modules and PAI learning materials based on deep learning.

The application of mindful learning principles is evident through various activities that encourage awareness, reflection, and critical thinking. Teachers always begin lessons with a prayer, provide motivation, communicate learning objectives, and then pose reflective questions related to students' experiences. An Islamic Education teacher stated, "I always motivate the children to recognize their responsibilities. Learning isn't about getting good grades, but about wanting to improve oneself" (PAI Teacher, G-01, June 8, 2026).

The students confirmed this experience. One student said, "When we have Islamic Education class, the teacher often asks about our activities at home. Sometimes he asks who has prayed the Fajr prayer or who helps their parents" (Student S-01, 06/09/2026). Another student added, "The teacher often asks us questions at the beginning of class. For example, he asks if we've ever fought with a friend or lied to our parents" (Student S-02, 06/09/2026). Observation results show that the teacher facilitates reflection, reinforces religious values, and encourages students to think critically, while documentation reveals group prayer activities and supervision of learning.

The principle of meaningful learning is applied by connecting PAI material to students' real-life experiences and social lives. The teacher explains, "Alhamdulillah, I very often connect PAI material to students' real lives so that the lessons become meaningful" (PAI Teacher, G-01, 08/06/2026). For schools located in predominantly non-Muslim communities, teachers use students' life experiences as learning material on tolerance and Islamic identity. A teacher explained, "As an example of tolerance since we happen to be in an area with a Christian majority, we discuss how we can coexist without focusing on our differences" (PAI Teacher, G-01, June 8, 2026).

Students have experienced this firsthand. One student said, "When we study religion, the teacher often asks about our experiences. For example, when a friend of a different faith

celebrates a major religious holiday, how do we act as friends?” (Student S-03, June 9, 2026). Another student shared, “When we learn about respecting our parents, the teacher asks if we help our parents at home. I told her that I usually help my mom wash the dishes” (Student S-04, June 8, 2026). Yet another student remarked, “It’s easier for me to understand when the teacher gives examples of things that happen around us. For example, when teaching about honesty” (Student S-05, June 8, 2026). Observations showed that the teacher consistently linked the material to students’ real-life experiences, making the learning more contextual. The documentation also showed activities promoting interfaith tolerance, the use of the hijab as a symbol of Muslim identity, and teaching modules that linked the material to students’ experiences.

The application of the principle of joyful learning is evident through the use of various teaching methods that encourage active student participation and create a pleasant learning atmosphere. The teacher explained, “I always use teaching aids or teaching methods depending on the material and the students’ circumstances” (Islamic Education Teacher, G-01, June 8, 2026). The teacher also added, “Elementary school students usually get bored quickly if lessons consist only of lectures. That’s why I often encourage them to discuss, play quizzes, tell stories about the prophets, or form small groups so they can be more active” (Islamic Education Teacher, G-01, June 8, 2026).

The students share this experience. One student said, “I enjoy learning religion because the teacher often tells stories about the prophets and sometimes gives us quizzes. If I answer correctly, I get praise from the teacher” (Student S-08, 09/06/2026). Another student remarked, “I like learning religion because we often have discussions and play guessing games. So we don’t get sleepy” (Student S-07, June 9, 2026). One student also explained, “When we study religion, we’re often divided into groups for discussions. The teacher shows us a video to watch. After that, each group presents the results of their discussion in front of the class” (Student S-09, June 9, 2026). Observation results show that the teacher uses group discussions, question-and-answer sessions, games, and provides opportunities for students to express their opinions. Documentation shows the use of a projector, Smart TV, quiz games, and group learning activities.

The observation findings indicate that a pleasant learning atmosphere does not entirely depend on the use of digital media. Teachers are able to create a warm learning environment through storytelling, simple games, discussions, praise, and close communication with students. This environment persists even though the Talaud Islands region often experiences limited electricity and internet access. Thus, the key elements of joyful learning are determined more by the teacher’s pedagogical ability to foster active engagement, a sense of comfort, and meaningful learning experiences than by the use of technology alone.

In addition to classroom learning, the implementation of deep learning is reinforced through various school-based religious programs. An Islamic Education teacher explained, “Programs that have become routine activities for Muslim students include the BTQ, which is held at the mosque by Islamic Education teachers after every Maghrib prayer, and special supplementary lessons following the congregational Zuhr prayer in the Islamic Studies room” (Islamic Education Teacher, G-01, June 8, 2026). The teacher also mentioned that the school had previously organized an Islamic religious quiz competition as part of fostering students’ religiosity. Observations and documentation revealed activities such as Quran recitation,

congregational prayers, group prayers, calligraphy competitions, and various other religious activities that support the strengthening of Muslim students' religiosity.

The implementation of deep learning-based Islamic Education instruction is supported by the availability of learning materials, facilities for worship, support from the principal and parents, and a tolerant school environment. The principal stated, "We support Islamic Education teachers in conducting instruction that is appropriate for the students' circumstances" (Principal, K-01, June 9, 2026). The PAI teacher added, "The school has projectors and Smart TVs; I always try to use them to display interactive media or media tailored to the conditions during instruction" (PAI Teacher, G-01, June 8, 2026). The teacher also explained the support received from parents: "Alhamdulillah, we have the support of parents; they bought us a carpet, and they also set up a place for wudu" (PAI Teacher, G-01, June 8, 2026). Nevertheless, the implementation of learning still faces challenges in the form of limited facilities, power outages, internet connection disruptions, and the fact that some students live far from the mosque. These various challenges are overcome by adjusting teaching strategies to the actual conditions on the ground.

The results of the analysis comparing ideal conditions (*dasain*) and actual implementation (*dassolen*) show that most learning components were implemented as planned. The differences found primarily involved adjustments to student characteristics, facility and infrastructure conditions, and the school environment in a Muslim-minority area. These adjustments represent the teachers' pedagogical adaptations to ensure that the principles of mindful learning, meaningful learning, and joyful learning could still be optimally applied according to the students' needs.

### **Religiosity of Muslim Students in a Muslim-Minority Area**

The religiosity of Muslim students at SD Negeri Inpres Lirung was analyzed based on the five dimensions of religiosity proposed by Glock & Stark, namely belief, religious practice, religious experience, religious knowledge, and consequences or practice. The results of interviews, observations, and documentation show that all five dimensions have developed among the students, although the level of development varies according to family background, social environment, and the circumstances of Muslim students living in a minority area.

In the dimension of belief, most students are already familiar with the fundamentals of Islamic creed, such as the pillars of faith (*rukun iman*), the shahada, and belief in Allah SWT. The Islamic Education teacher explained, "Generally speaking, the children are already familiar with the fundamentals of faith such as belief in Allah, the angels, the divine scriptures, the prophets, the Day of Judgment, and qada and qadar and are able to recite the shahada" (Islamic Education Teacher, G-01, 06/08/2026). One student said, "I first learned about Allah from my parents, sir. But it's my religious education teacher who explains things in more detail at school" (Student S-11, June 10, 2026). Another student said, "I learned about Allah SWT from religious education classes at school, because my parents are converts" (Student S-15, 09/06/2026).

The PAI teacher also explained that fostering religious faith poses challenges for some students from families with different religious backgrounds. The teacher said, "There were students from mixed-religion families who initially participated in PAI classes. However, after their parents divorced and they went to live with their mother, who had reverted to her previous religion, these students no longer attended PAI classes" (PAI Teacher, G-01, 06/08/2026). The

teacher also added that there were two students from mixed-faith families who continued to attend PAI classes at their father's request, even though they lived with their mother, who had reverted to her previous religion, consequently fostering their faith required extra attention. Observation results show that the majority of students are able to recite the shahada and demonstrate faith in Islamic teachings, while documentation indicates that matters of faith constitute an important part of the PAI teaching modules.

In the dimension of religious practice, students have been accustomed to performing various forms of worship, such as praying, praying in congregation, reading the Qur'an, and participating in BTQ activities. The PAI teacher explained, "When it comes to religious practice, the children's abilities vary. Some are already accustomed to praying the five daily prayers and reciting the Qur'an at home, but others still need to be reminded frequently" (PAI Teacher, G-01, 06/08/2026). One student said, "I usually pray when my parents or teacher remind me. As for praying, I often say a prayer before meals" (Student S-14, 09/06/2026). Another student said, "I used to rarely recite the Qur'an. Now I go to the mosque more often because the teacher frequently encourages us to learn to recite the Qur'an" (Student S-06, 09/06/2026). The observation results show that the majority of students actively participate in group prayers, congregational prayers, and school religious activities, although there are still some students who are not yet consistent due to family circumstances or the distance of their homes from the mosque. The documentation also shows activities such as reading the Qur'an with the Islamic Education teacher, congregational prayers, and the practice of prayer at school.

The dimension of religious experience is evident in the students' sense of comfort and pride in expressing their Islamic identity within the school environment. A PAI teacher explained, "Muslim students have also begun to feel accustomed to and comfortable wearing the hijab to school because of the school's support, which grants them the freedom to practice their religion according to their beliefs" (PAI Teacher, G-01, 06/08/2026). One student said, "I'm happy that there's now a prayer room at school" (Student S-01, June 8, 2026). Another student added, "I'm happy that there's now a special study room for Muslim students. We also use that room to pray the Duha prayer together with friends" (Student S-02, June 9, 2026). Observation results show that students participate in Islamic Education (PAI) lessons with enthusiasm, express remorse when they make mistakes, and strive to correct their behavior. Documentation shows various religious activities, such as group prayers, congregational prayers, and other religious activities that strengthen students' religious experiences.

In terms of religious knowledge, students have an understanding of the basic materials of Islamic Religious Education acquired through classroom instruction and school-based religious activities. The Islamic Religious Education teacher explained, "Most students already understand the basic material taught in Islamic Religious Education, such as the pillars of faith, the pillars of Islam, daily prayers, the stories of the prophets, and virtuous character" (Islamic Religious Education Teacher, G-01, 06/08/2026). The teacher also explained that there are supplementary lessons for female students who have reached puberty on topics such as fiqh, menstruation, covering one's aurat, and social etiquette in accordance with Islamic teachings. One student said, "I like learning to read the Qur'an the most, because it helps me recite more fluently and teaches me the correct way to read" (Student S-11, 09/06/2026). Another student shared, "I like the lessons on the stories of the prophets the most, sir, because the stories are interesting and there are many lessons we can learn from them" (Student S-12, June 9, 2026).

One student also mentioned, “There was also an Islamic religious quiz competition held once” (Student S-07, 09/06/2026). The observation results showed that most students were able to answer the teacher’s questions regarding Islamic Education (PAI) material, while the documentation revealed the presence of Quran recitation (BTQ) activities, calligraphy contests, religious knowledge quizzes, the use of instructional media, and teaching modules that support the enhancement of religious knowledge.

In the dimension of consequences or practice, Islamic values are beginning to be reflected in students’ daily behavior. An Islamic Education teacher explained, “I see that most students have already gotten into the habit of greeting others, respecting teachers, and apologizing when they make a mistake” (Islamic Education Teacher, G-01, 06/08/2026). One student said, “I often show respect to friends of different religions, sir. Our teacher teaches us not to discriminate against our friends and to always live in harmony” (Student S-01, 09/06/2026). Another student shared, “I used to lack the confidence to wear a hijab to school, sir. Now I’m brave enough” (Student S-03, June 9, 2026). The same student also said, “Now I rarely use harsh language; I try to speak more kindly to my friends” (Student S-03, June 9, 2026). Observation results show that students respect their teachers, maintain good relationships with friends of different faiths, and are able to collaborate in discussions and group activities. Documentation also highlights practices of interfaith tolerance and student collaboration in various learning activities.

### **The Impact of Deep Learning Integration on the Dimensions of Religiousness and Identity Among Muslim Students**

The integration of deep learning into Islamic Religious Education has had an impact on the development of Muslim students’ religiosity at SD Negeri Inpres Lirung. In terms of belief, students are not only memorizing concepts of faith but are beginning to understand the meaning of faith in their daily lives. An Islamic Education teacher stated, “Generally speaking, the children are already familiar with the basics of faith, such as believing in Allah, the angels, the scriptures of Allah, the prophets, the Day of Judgment, and qada and qadar” (Islamic Education Teacher, G-01, 06/08/2026). One student also said, “I learned about Allah SWT from religious education classes at school, because my parents are converts” (Student S-03, 09/06/2026). Observation results show that students are able to recite the shahada and understand the fundamentals of faith, while documentation indicates that faith-related material is a central component of the curriculum.

In the dimension of religious practice, instruction encourages the development of habits such as praying, performing the five daily prayers, reciting the Quran, and participating in Quranic studies (BTQ) activities. The PAI teacher explained, “Children’s abilities vary. Some are already accustomed to praying the five daily prayers and reciting the Quran at home, but others still need to be reminded frequently” (Islamic Education Teacher, G-01, June 8, 2026). One student shared, “I used to rarely recite the Quran. Now I go to the mosque more often because the teacher frequently encourages us to learn to recite the Qur’an” (Student S-06, June 9, 2026). Observations and documentation show that students have become accustomed to participating in prayers, congregational prayers, and reciting the Qur’an.

In terms of religious experience and religious knowledge, students demonstrated a sense of comfort in practicing Islamic teachings as well as an improved understanding of Islamic Education (PAI) material. The PAI teacher explained, “Muslim students have also begun to

feel accustomed to and comfortable wearing the hijab to school” (PAI Teacher, G-01, June 8, 2026), while one student said, “I’m happy because there’s now a special study room for Muslim students” (Student S-07, June 9, 2026). Teachers also noted that most students have understood the pillars of faith, the pillars of Islam, daily prayers, stories of the prophets, and virtuous character. One student remarked, “I like the lessons on the stories of the prophets the most because there are many lessons to learn from them” (Student S-01, 09/06/2026). Observations showed that students actively participated in lessons and were able to answer the teacher’s questions.

In the dimension of consequences or practice, Islamic values are beginning to manifest in daily behavior. The Islamic Education teacher stated, “Most students have started to get into the habit of saying ‘salam,’ respecting teachers, apologizing, and helping their friends” (Islamic Education Teacher, G-01, June 8, 2026). One student said, “Now I rarely use harsh language; I try to speak more politely to my friends” (Student S-03, 09/06/2026), while another student stated, “Our teacher teaches us not to discriminate against our classmates and to always live in harmony” (Student S-01, June 8, 2026). Observations show that students are able to cooperate, respect teachers, and value classmates of different religions. Overall, the integration of deep learning not only strengthens the five dimensions of religiosity but also boosts students’ confidence in expressing their Islamic identity through religious practices, wearing the hijab, and demonstrating tolerance in a Muslim-minority environment.

### **Factors Supporting and Hindering the Integration of Deep Learning**

The results of interviews, observations, and documentation indicate that the implementation of deep learning-based Islamic Religious Education (PAI) at SD Negeri Inpres Lirung is influenced by various supporting and hindering factors. These factors stem from internal elements related to teachers and students, as well as external elements that include support from the school and parents, facilities and infrastructure, technical conditions, and the characteristics of the school environment in a Muslim-minority area. Collectively, these factors influence the sustainability of applying the principles of mindful learning, meaningful learning, and joyful learning in PAI instruction.

Supportive factors stemming from internal elements are evident in the competencies, creativity, and commitment of PAI teachers in developing engaging lessons, as well as their ability to build positive relationships with students. The principal explained, “Mr. Amin is a civil servant teacher who is certified, creative, and active; moreover, he is one of the leading teachers in the Talaud Islands” (Principal, K-01, June 8, 2026). The principal also added, “Mr. Amin is a teacher who always carries out his duties with great enthusiasm” (Principal, K-01, June 8, 2026). This assessment aligns with the students’ experiences. One student said, “Mr. Amin is a friendly and fun teacher who has many creative ideas to keep us interested in learning” (Student S-03, June 9, 2026). The teacher’s creativity in managing the learning process fosters student enthusiasm throughout the learning process. One student remarked, “I enjoy attending PAI class because sometimes the teacher gives us quizzes or games. When there’s a quiz, we get really motivated to learn” (Student S-01, June 9, 2026). Observation results show that students actively participate in discussions, group work, question-and-answer sessions, and various learning activities. A warm relationship between teachers and students is also evident during the learning process, creating a more open, communicative, and enjoyable learning atmosphere.

In addition to internal factors, there are various external supporting factors that strengthen the implementation of deep learning-based instruction. Support from the principal is one of the most important factors. The principal stated, “We support PAI teachers in implementing instruction that is tailored to the students’ needs” (Principal, K-01, June 8, 2026). This support is manifested through the provision of learning facilities, granting teachers the freedom to develop instructional innovations, and supporting various religious programs at the school. The PAI teacher also explained that parental support has a significant impact on the success of fostering students’ religiosity. The teacher stated, “My most important source of support is the enthusiasm of students’ parents to advance Islamic religious education” (PAI Teacher, G-01, June 8, 2026).

The teacher also added, “Alhamdulillah, the school always supports us whenever we create a program related to improving the quality of PAI instruction” (PAI Teacher, G-01, June 8, 2026). In addition, the teacher stated, “Alhamdulillah, the students are always enthusiastic whenever we create a program related to improving the quality of PAI instruction” (PAI Teacher, G-01, June 8, 2026). Observations revealed that the religious education classroom, learning materials, and places of worship are utilized optimally despite the simple facilities. Documentation shows the use of projectors, Smart TVs, congregational prayer activities, group prayers, and an atmosphere of interfaith tolerance that supports the learning process.

In addition to various supporting factors, the implementation of deep learning-based instruction also faces technical obstacles that significantly impact the learning process. The PAI teacher explained, “The most common challenges we face in implementing deep learning-based instruction are issues with electricity and the internet connection” (PAI Teacher, G-01, June 8, 2026). The teacher also added, “Power outages occur frequently and cause the internet connection to fail immediately” (Islamic Education Teacher, G-01, June 8, 2026). These conditions prevent digital media such as projectors and Smart TVs from being used to their full potential.

The principal explained that the school has made efforts to address these challenges by providing a backup power source. The principal stated, “To address power outages, the school has provided a generator that can be used when power outages occur” (Principal, K-01, June 8, 2026). Observations indicate that limitations in certain facilities remain a challenge in the implementation of learning and religious activities. Documentation of the use of projectors and Smart TVs also shows that digital media are highly dependent on stable electricity and internet connectivity.

Another challenge relates to limited learning facilities and time. The Islamic Education teacher explained that at the start of the program, there was no dedicated space for Muslim students, so the teacher, together with the principal and parents, converted a room that had previously been used as a storage room. The teacher stated, “There used to be no dedicated learning space, but with the support of the students’ parents and the principal, I repurposed a room that had previously been a storage room and arranged it to serve as both a learning space and a place of worship” (Islamic Education Teacher, G-01, 06/08/2026). The teacher also explained the limitations of learning resources, saying, “I rely on the internet to download supplementary religious books” (Islamic Education Teacher, G-01, 08/06/2026). Observations revealed that limited class time prevented religious education from being conducted to its fullest extent during regular school hours, so the teacher utilized various supplementary

activities outside of formal instruction. Documentation shows that the classroom, which also serves as a prayer room, is used as a hub for various religious activities for Muslim students.

Another hindering factor stems from the environment of the Muslim minority and the students' family backgrounds. The PAI teacher explained, "Some students live far from a mosque, making it difficult for them to attend TPA activities or study the Quran regularly" (PAI Teacher, G-01, June 8, 2026). In addition, the teacher also noted that there are students from families of converts or families with different religious backgrounds, so the process of religious guidance requires a more intensive approach. One student said, "There are also students from families of converts who are still in the process of learning to understand Islamic teachings" (Student S-01, 09/06/2026). Observations revealed that some students struggled to participate in regular Quran recitation activities due to the distance between their homes and the mosque, as well as limited religious guidance at home. Differences in Quran reading proficiency among students were also evident during the learning process. Documentation of Quran reading lessons showed that the teacher provided additional guidance to students who were still struggling so that their Quran reading skills could develop gradually.

These findings indicate that the success of integrating deep learning into Islamic Education (PAI) is not only determined by teachers' ability to manage the learning process but is also influenced by support from the school and parents, student enthusiasm, the availability of learning resources, and the social and religious conditions in the surrounding community. Furthermore, infrastructure limitations, geographical conditions, environments with Muslim minorities, and variations in family backgrounds present challenges that must be addressed through collaboration among schools, teachers, parents, and the community so that deep learning-based instruction can be implemented optimally and sustainably.

Deep learning-based Islamic Religious Education (PAI) in this study demonstrates that the learning process is not only oriented toward mastering the material but also toward fostering reflective, meaningful, and enjoyable understanding. The application of the principles of mindful learning, meaningful learning, and joyful learning encourages students to connect Islamic teachings with their daily experiences, making learning more contextual and easier to internalize (Syafi'i, 2025; Kurniawan, 2025). The ability to connect knowledge with real-world situations is a key characteristic of deep learning (Prawiyogi & Rosalina, 2025). From a social constructivist perspective, teachers act as facilitators through a scaffolding process that helps students construct knowledge based on their experiences and social interactions (Wardani et al., 2023). This view is reinforced by (Astuti et al., 2024), who explain that constructivist learning positions students as active agents in constructing their own knowledge. In school environments in areas with Muslim minority populations, this process simultaneously highlights the school's function as a social system that plays a role in shaping students' character, values, and development (Abdullah, 2022).

Muslim students' religiosity develops through Glock and Stark's five dimensions of religiosity, which include belief, worship practices, religious experiences, religious knowledge, and behavioral consequences. Strengthening religious belief through an understanding of the pillars of faith and the shahada serves as the foundation for the development of worship practices such as prayer, supplication, Quran recitation, and BTQ activities at school (Tohari, 2021). Positive religious experiences also foster a sense of comfort and pride in being Muslim, while contextual learning helps students understand Islamic values more deeply (Afriyanto,

2023). These developments are further reflected in behavioral changes, such as being polite, honest, and tolerant, as well as respecting teachers and peers of different faiths, as explained by (Al-Baihaqi et al., 2024), who note that Islamic Education teachers' strategies play a crucial role in shaping students' religious character.

The integration of deep learning has an impact on strengthening students' religiosity and Islamic identity in Muslim minority communities. The principle of mindful learning enhances awareness of the values of faith, while meaningful learning helps students connect religious material to their daily lives (Syafi'i, 2025; Ramadan et al., 2025). On the other hand, joyful learning creates a comfortable learning atmosphere, thereby increasing students' motivation to learn and their participation in various religious activities (Junita, 2021). These effects are evident in students' growing confidence in expressing their Islamic identity, the establishment of regular worship practices, and the development of religious behavior in daily life.

The implementation of deep learning is influenced by various supporting and hindering factors. Teacher creativity, principal support, parental involvement, and a tolerant school culture are key assets in creating effective learning (Widodo, 2021). Findings (Abdullah, 2022) also confirm that educational success is influenced by the synergy of all components within the education system. Conversely, limited resources, power outages, internet connectivity issues, and the challenges of a minority environment pose obstacles to the implementation of learning. Nevertheless, teachers remain capable of applying deep learning through strategies such as reflection, discussion, modeling, storytelling, and habit formation without relying entirely on digital technology. This approach demonstrates that the essence of deep learning lies in the quality of the learning process, not merely in the use of technology (Syafi'i, 2025).

Therefore, integrating deep learning into Islamic Education (PAI) serves as an effective pedagogical strategy for strengthening the religiosity and identity of Muslim students in minority areas. Learning oriented toward understanding, reflection, and meaningful learning experiences can develop cognitive, affective, spiritual, and behavioral aspects in a balanced manner (Al-Baihaqi et al., 2024; Widodo, 2021). The novelty of this study lies in the finding that deep learning not only improves learning outcomes but also serves as a means of shaping students' Islamic identity through the integration of the principles of mindful learning, meaningful learning, and joyful learning. Therefore, this approach is worthy of development as a PAI learning model in schools with diverse socio-religious characteristics, as it is capable of shaping students who are faithful, possess noble character, are tolerant, and have a strong Islamic identity.

## CONCLUSION

The integration of Deep Learning into Islamic Religious Education (Pendidikan Agama Islam [PAI]) at Lirung Inpres Public Elementary School (SD Negeri Inpres Lirung) was implemented through the principles of mindful, meaningful, and joyful learning, fostering an instructional process that was active, reflective, contextual, and engaging. The application of these principles strengthened students' understanding of PAI while supporting the development of Muslim students' religiosity across the dimensions of religious belief, religious practice, religious experience, religious knowledge, and the application of Islamic values in everyday life. This development was supported by school-based religious programs, the commitment of the principal, teachers, and parents, the availability of instructional resources and worship

facilities, and a supportive school environment. However, the implementation also encountered several challenges, including limited facilities during the initial stages of implementation, electricity outages, limited internet connectivity, variations in students' religious competence, insufficient religious guidance at home, and the predominantly non-Muslim social environment.

The implementation of Deep Learning in PAI contributed positively to improving instructional quality and strengthening the religiosity of Muslim students, particularly in schools located in Muslim-minority areas. Its successful implementation required sustained collaboration among schools, teachers, parents, and students through innovative instructional strategies, strengthened religious programs, and the reinforcement of Islamic values within both the family and school environments. These findings may serve as a reference for developing PAI instructional models that are more active, contextual, and oriented toward religious character development. Future research involving a broader range of schools, educational levels, student populations, and methodological approaches is recommended to further expand understanding of the application of Deep Learning in PAI instruction and its contribution to strengthening students' religiosity.

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