

ISLAMIC RELIGIOUS EDUCATION LEARNING STRATEGIES BASED ON AI TECHNOLOGY TO IMPROVE ISLAMIC UNDERSTANDING AND CHARACTER IN THE SOCIETY 5.0 ERA

Raihanah¹, Siti Fajrianti², Khuzaini³, Syahrial Shaddiq⁴

Universitas Islam Kalimantan Muhammad Arsyad Al-Banjari Banjarmasin, Indonesia^{1,2,3}

Universitas Lambung Mangkurat Banjarmasin, Indonesia⁴

Email: raihanah498@gmail.com¹, fajrianti9534@gmail.com², khuzainiuniska1@gmail.com³, syahrial.s@ulm.ac.id⁴

Keywords

Islamic Religious Education, Learning Strategy, Artificial Intelligence, Islamic Character, Understanding of Material.

Abstract

The rapid development of artificial intelligence (AI) technology has opened up new opportunities in education in the 5.0 era, including in Islamic Religious Education teaching. However, the application of this technology still faces challenges in upholding the moral and spiritual values at the core of religious education. This study aims to analyze the implementation of AI based learning strategies in Islamic Religious Education subjects and their impact on students' understanding of Islamic material and forming Islamic characters. The method used in this research is a literature review with a qualitative descriptive approach, which examines various relevant literature sources from previous research. The results show that using AI, such as Islamic chatbots, adaptive self learning, and AR/VR technology, can improve the quality of learning, the effectiveness of students' understanding of religious material, and the internalization of moral values. However, the use of AI must be controlled to avoid diminishing the role of teachers as moral role models and to maintain the emphasis on Islamic principles in the learning process. AI can effectively strengthen Islamic education in the digital age with the right strategy.

1. INTRODUCTION

To prevent duplication of research, several previous studies are presented below. Research conducted by (Anggraeni, 2025) showed that Islamic chatbots can increase learning motivation, provide rapid access to Islamic knowledge, and help personalize Islamic Religious Education learning. However, challenges such as content accuracy, ethical use, and teacher readiness to utilize this technology are also important highlights.

Research conducted by (Hadziq et al., 2024) concluded that Artificial intelligence (AI) plays a crucial role in improving the quality of learning, particularly through personalizing teaching materials, accelerating automated assessment processes, and

providing interactive and relevant learning content. Furthermore, AI can be utilized to reinforce Islamic values by presenting contextualized, character-building-oriented materials. However, various obstacles remain, such as low levels of digital literacy among educators, limited technological resources, and ethical issues related to personal data protection and potential bias in algorithmic systems. To address these challenges, this study recommends enhancing teachers' digital competencies, developing ethical regulations governing the use of AI, and providing adequate technological infrastructure. If managed wisely, AI technology has the potential to become a powerful supporting tool in developing contextual Islamic Religious Education learning that is responsive to changing times and remains grounded in Islamic values.

“The results of this study (Syafitri et al., 2024), intelligence (AI) in Islamic education at SMPN 2 Tigo Nagari has had a significant impact despite several challenges. The use of AI in teaching the Quran and Hadith has improved student understanding of Islamic teachings, with AI facilitating interactive learning and exploration of the meaning of complex verses. However, several obstacles remain that need to be addressed, such as ethical issues in the use of technology, concerns about personal data protection, and low levels of teacher participation and understanding regarding the use of AI. On the other hand, the implementation of AI has had significant positive impacts, including increased student understanding of the material, personalized learning, the growth of student creativity, and increased efficiency in the management of educational institutions. Furthermore, AI technology provides a more engaging and interactive learning environment, thus motivating students to be more active in learning. Integrating technologies such as Virtual Reality (VR) and Augmented Reality (AR) also enriches students' learning experiences contextually, particularly in understanding Islamic values more realistically and deeply.”

“Meanwhile, research findings (Fahrudin et al., 2024) indicate that the application of artificial intelligence (AI) technology, such as educational chatbots and adaptive learning platforms, can increase active student participation, accelerate feedback, and support more efficient communication between students and educators. However, several challenges remain, such as limited technological infrastructure in some educational institutions and adequate training for teachers to integrate AI optimally. Through this research, it is hoped that educators and policymakers will gain a deeper

understanding of strategies for utilizing AI to strengthen student interaction in Islamic Religious Education learning.”

Based on several relevant studies outlined above, what distinguishes this study is that it applies artificial intelligence (AI) technology as a learning strategy in Islamic Religious Education. It is hoped that integrating AI into the learning strategy will improve students' understanding of the material and develop Islamic character, which is the Islamic Religious Education subject's primary goal.

2. RESEARCH METHOD

The type of research used in this study is qualitative. Qualitative research prioritizes an in depth understanding of the phenomenon being studied through the collection and analysis of descriptive, non statistical data (Hamali et al., 2023). This method aims to understand a phenomenon's context, meaning, and complexity from the perspective of the participants or research subjects. Qualitative research collects data through observation, interviews, and document analysis (scientific articles).

The research approach uses descriptive aspects. Descriptive qualitative research aims to describe or explain phenomena or variables systematically and objectively. The descriptive approach provides an accurate and detailed picture of the characteristics, distribution, relationships, or patterns associated with the studied variables, considering the various influencing factors (Hermawan & Amirullah, 2016).

The first stage of this research method is the data collection process. After the data collection stage, the descriptive analysis stage will be conducted, providing a clear, critical, analytical, systematic, and objective picture (Zakariah & Alfriani, 2020). This analysis examines the concept of price from an Islamic economic perspective. Hopefully, this research can serve as an additional reference source and provide a deeper understanding of the research topic.

The data analysis method employed in this study is content analysis, which aims to obtain valid and replicable interpretations based on context. This method involves selecting, comparing, combining, and sorting relevant meanings (Susanto et al., 2022). This analysis aims to gain a deep understanding of the material analyzed in the research, considering the context and related characteristics.

In content analysis, researchers select relevant data, such as texts or documents related to the research topic. This data is then systematically analyzed using

predetermined categories. Researchers filter the information found and identify patterns, themes, or emerging themes from the analyzed data (Riasnugrahani. M. & Analya, 2023). This allows researchers to organize findings according to the research objectives and draw inferences from the data. The content analysis method provides an in depth understanding of the analyzed material, allowing for detailed and structured analysis.

3. RESULTS AND DISCUSSION

Implementing Artificial Intelligence (AI) Based Learning Strategies in Islamic Religious Education

Islamic Religious Education is an effort to provide care and guidance to students to ensure that, upon completing their education, they understand and practice Islamic teachings and adopt them as a way of life. Islamic education is derived from the word “education”, which means to nurture, teach, and protect. In an educational sense, this term describes the ongoing process of nurturing and developing the growth of the human body and talents, thus producing knowledgeable, well behaved individuals capable of upholding cultural values within society. Education is the gradual process of instilling values and knowledge into humans, involving methods and systems for systematically implementing education.

Artificial intelligence (AI) is a branch of computer science that focuses on developing computer systems that exhibit intelligence in various ways. AI is the study of how to build computer systems that can mimic human intelligence. Artificial intelligence is a dynamic field of research within computer science. Artificial intelligence enables machines (computers) to perform tasks with a level of intelligence comparable to that of humans. According to the Encyclopedia Britannica, AI is a branch of computer science that uses symbols to represent knowledge rather than numbers and processes information based on heuristic methods or specific rules (Huda & Suwahyu, 2024).

“Artificial Intelligence (AI) has developed rapidly and is increasingly becoming integral to various sectors, including education. Applying AI to Islamic Religious Education learning can potentially improve the quality of education, expand access to learning, and simplify the teaching process (Mukmin et al., 2024). However, its implementation requires a deep understanding of how this technology can be

effectively applied in Islamic religious education, which is rich in moral and spiritual values. Some practical applications of AI in Islamic Religious Education include (Manongga, 2023):”

1. Self Learning: AI can create learning applications that enable students to learn independently with guidance tailored to their needs. Examples of AI applications in Islamic Religious Education learning include:
 - a. Quran Learning Apps: AI technology can assist students in learning the Quran by providing features such as speech recognition for Tajweed and real time analysis of Quranic recitations. Apps like these can guide students in reading and reciting Quranic verses correctly.
 - b. Hadith and Fiqh Learning: AI can provide platforms that enable students to learn hadith and fiqh interactively. For example, using AI chatbots that can answer questions about fiqh or provide explanations of specific hadith.
 - c. Voice Assistants: Voice assistant technology such as Google Assistant or Siri allows students to search for information about learning materials simply by speaking. This simplifies access to information without reading books or manually searching the internet.
 - d. Augmented Reality (AR) and Virtual Reality (VR): Students can be immersed in a more interactive learning experience using AI based AR and VR technology. For example, students can take virtual tours of historical sites in Islam, such as Mecca and Medina, or witness important events in Islamic history. AR/VR provides a more immersive and enjoyable experience in learning Islam's spiritual and historical aspects.
2. Educational Chatbots or Virtual Assistants for Islamic Religious Education Learning: AI chatbots or virtual assistants can provide guidance and answer students' questions regarding Islamic Religious Education material anytime and anywhere. With NLP (Natural Language Processing) capabilities, chatbots can answer various questions about Islamic teachings, such as Quranic interpretations, Islamic history, or Islamic jurisprudence (fiqh), providing information quickly and accurately.
3. Adaptive and Personalized Learning: AI can make Islamic Religious Education learning more personalized and adaptive. By leveraging data from student interactions with learning platforms, AI can analyze students' strengths and

weaknesses and tailor learning materials and methods to suit individual needs. For example, AI can provide recommendations for additional materials for students struggling to understand a particular topic. AI can be used to develop recommendation systems that help students find materials most relevant to their interests and needs. For example, learning platforms like Khan Academy use algorithms to recommend learning videos based on students' abilities.

Implementing AI in Islamic Religious Education learning has great potential to transform how we teach and learn Islamic teachings. With the appropriate use of technology, such as self paced learning apps, chatbots, automated assessment systems, and AR/VR technology, AI can improve the quality, accessibility, and personalization of Islamic education. AI based Islamic education should enrich students' spiritual and intellectual experiences, not replace the human interaction at the heart of Islamic education (Rizwar et al., 2024).

The Impact of Artificial Intelligence (AI) Based Learning Strategies on Improving Understanding of Islamic Religious Education Material and Islamic Character

The synergy between Islamic religious education and artificial intelligence (AI) significantly improves religious understanding. Students in educational programs incorporating AI consistently experience an improved understanding of religious concepts and morality. Using AI in adaptive learning, curriculum personalization, and virtual tutors has helped students deepen their knowledge of Islam. The results of this study indicate that the use of AI in Islamic religious education can help address some of the challenges often faced in religious instruction. AI's ability to provide personalized learning helps students with varying levels of understanding grow efficiently. Furthermore, the presence of virtual tutors, who are ready to assist students by answering their questions about religion, increases student interaction and participation in learning (Clarisy & Rachman, 2023).

According to the study (Anggraeni, 2025), students indicated an improved understanding of Islamic concepts, which were deemed easier to understand thanks to contextual language close to their daily lives. Adapting language style and delivering communicative material also supports a more effective internalization of Islamic values. This demonstrates that the use of technology based learning media, particularly Islamic chatbots, provides motivational stimulation and contributes to improving students' cognitive understanding. Furthermore, according to research conducted by (Syafitri et

al., 2024) , the application of AI in Quranic teaching at SMPN 2 Tigo Nagari significantly increased students' understanding of the sacred text. The AI system can identify verses often considered difficult and present them in a more accessible way. This allows students to explore their meaning and practical applications in greater depth. The use of AI to deconstruct the historical context of the Hadith through natural language analysis opens new avenues of knowledge for students. AI can present relevant contextual information to help students understand the meaning and purpose behind each Hadith. This improves students' understanding and fosters their curiosity about the historical context.

In addition, research results (Fatun Nisa et al., 2025) also show that the integration of AI in Islamic religious education has increased the efficiency and accessibility of education. Artificial intelligence (AI) can be applied in Islamic religious education in several ways, such as: First, assisting teaching and learning: AI can assist teachers in developing curriculum, determining appropriate teaching methods, and providing student feedback. In addition, AI can also help students understand the subject matter by providing explanations that are easier to understand. Second, increasing AI efficiency can help reduce teachers' workload by providing administrative tasks such as correcting assignments and exams and creating reports on teaching and learning activities. Third, improving the quality of learning: AI can help by providing appropriate subject matter recommendations for each student based on their abilities and interests. Fourth, increasing student participation: AI can help increase student participation in learning by providing fast and accurate feedback and motivating students to study harder. Moreover, fifth, improving the learning experience: AI can help improve the student learning experience by providing access to more diverse and interactive learning resources, such as learning videos, simulations, and learning games. This helps disseminate Islamic knowledge to a broad audience, including those with geographical limitations. In the context of globalization and technological advancements, it is important to understand that accessibility and flexibility are key factors in Islamic religious education. The integration of AI helps provide online Islamic religious materials accessible to students worldwide. This also reduces geographic and socioeconomic barriers that may hinder access to Islamic religious education.

AI also enables more effective monitoring and evaluation of student progress. Teachers can easily track individual development, identify areas requiring more

attention, and provide more focused feedback. This helps students achieve a deeper understanding of religion. Furthermore, AI enables a more proactive approach to monitoring student progress. With data obtained through AI, teachers can respond quickly to student difficulties and provide more effective support. This creates a more responsive and results focused learning environment (Sudirman et al., 2025).

Artificial intelligence (AI) based learning strategies significantly improve students' Islamic character when designed and implemented appropriately in the context of Islamic education. AI enables adaptive, personalized, and interactive learning. With this technology, learning materials on morals and Islamic values can be tailored to each student's needs and level of understanding, enabling them to reflect on and internalize Islamic teachings more deeply. AI systems can also automatically recommend relevant Islamic content based on students' learning behavior and interests, encouraging their engagement in understanding and practicing values such as honesty, responsibility, empathy, and etiquette (Masuroh & Mardani, 2025).

AI also opens opportunities to integrate Islamic character education through engaging and contextual media. For example, through a chatbot designed as a virtual teacher with an Islamic character, students can discuss noble morals, exemplary stories of the Prophet, or everyday ethics in real time. With this approach, Islamic values are conveyed cognitively and through dialogic simulations that engage students' affective side. This facilitates instilling Islamic character in their lives, as AI can instill values with a personal and humanistic approach. Furthermore, using AI in character assessment has a significant impact. Through a digital behavior analysis system, teachers can monitor students' consistency in activities based on Islamic values, such as punctuality, cooperation in Islamic group projects, and honesty in online assignments. This data serves as an objective basis for teachers to provide guidance and character development. Thus, Islamic character formation is no longer a one way process but an open, reflective, and evidence based process (Fitriani, 2024).

However, it is important to emphasize that AI is merely a tool, not a substitute for the role of teachers or educators in instilling Islamic character. AI should be used to support the educational process, maintaining the teacher as the primary role model and guide for spiritual values. Therefore, the success of AI based learning strategies in enhancing understanding of Islamic material and character development depends heavily on the integrity of the content, the values instilled, and the sensitivity in aligning

technology with Islamic principles. If AI is used wisely and purposefully, it can be a strategic partner in shaping a generation of intellectually intelligent and morally virtuous Muslims.

Opportunities, Challenges, and Strategies for Overcoming Challenges in Implementing Artificial Intelligence (AI) Based Learning Strategies in Islamic Religious Education

Artificial intelligence (AI) technology in Islamic religious education presents challenges and opportunities that must be considered. One key challenge is how religion can adapt to the increasingly dominant role of AI in society while maintaining its authenticity and values. Second, reliance on AI technology can result in students losing the ability to reflect and think critically independently, which are essential aspects of Islamic religious education. Third, privacy policy is a concern because the collection and use of student data by AI systems can raise concerns about the privacy and security of students' data. Furthermore, philosophical and theological questions about human nature, the purpose of life, and Islamic values arise that may conflict with the potential of AI, making it crucial to ensure that the use of AI does not violate Islamic teachings. Furthermore, teachers must convey a correct and balanced understanding of AI and teach how to use it according to Islamic principles (Fitriani, 2024).

Meanwhile, opportunities are emerging for using AI in Islamic religious education. One of these is increasing the effectiveness and efficiency of learning. AI can enhance the effectiveness and efficiency of learning by helping teachers convey information instantly and provide appropriate answers. AI systems enable more effective personalized learning by allowing students to learn at their own pace and learning style. Furthermore, AI technology enables the development of more innovative and adaptive curricula tailored to the needs and challenges of the modern era. Furthermore, implementing AI in Islamic religious learning can open access to Islamic education globally and open opportunities for further research on how this technology can effectively enhance students' religious understanding and spirituality. By addressing existing challenges and capitalizing on these opportunities, AI technology in Islamic religious learning can be an effective tool for enhancing the understanding and application of religious values in daily life (Masuroh & Mardani, 2025).

Several strategies can be considered to address the challenges in implementing AI technology in Islamic religious learning, including (Clarisya & Rachman, 2023):

1. **Training and Education:** Provide adequate training to teachers and educational staff on using AI technology in Islamic religious learning. They need to understand how to use AI effectively to support learning, as well as how to overcome potential challenges.
2. **Planned Curriculum:** Develop a planned and structured curriculum that integrates AI technology with Islamic teachings in a balanced manner. The curriculum must uphold religious values and principles while leveraging the advantages of AI in learning.
3. **Monitoring and Evaluation:** Conduct continuous monitoring and evaluation of the implementation of AI technology in Islamic learning. This includes identifying emerging issues and adjusting learning strategies as needed.
4. **Partnerships and Collaborations:** Build partnerships and collaborations with AI technology experts, educational institutions, and religious communities to support successful implementation. Leveraging existing knowledge and resources can strengthen the effectiveness of AI technology in Islamic learning.
5. **Policy Setting:** Establish clear and detailed policies regarding the use of AI technology in Islamic learning, including aspects of student data privacy, the ethical use of AI, and the integration of religious values into technology.
6. **Parental and Community Involvement:** Involve parents and the community in implementing AI technology in Islamic learning.

This can help strengthen support and understanding of the role of AI technology in their children's religious education. By implementing this strategy in a planned and sustainable manner, it is hoped that challenges and AI technology's potential for enhancing Islamic religious education effectively and sustainably can be addressed.

4. CONCLUSION

Implementing artificial intelligence (AI) based learning strategies in Islamic Religious Education in the 5.0 era has significantly improved the quality of learning, understanding of religious material, and active student engagement. Various technologies such as educational chatbots, voice assistants, AR/VR based learning, and adaptive AI systems have proven capable of supporting personalized learning processes, providing broad access to information, and adapting teaching materials to individual students' needs. Learning, which was initially conventional, has become more

interactive and contextual, making it easier for students to understand and internalize Islamic values deeply.

The positive impact of implementing AI in Islamic Religious Education learning is not limited to cognitive aspects but also significantly impacts the development of students' Islamic character. AI enables the delivery of moral material in an engaging and humanistic manner through conversation simulations, the reinforcement of spiritual values in digital form, and the monitoring of student behavior oriented towards manners and ethics. With the help of this technology, teachers can conduct objective character assessments while students are motivated to apply Islamic values such as honesty, responsibility, and empathy in their daily lives. This demonstrates that AI can be an effective tool in shaping a generation of Muslims who are not only intellectually intelligent but also morally superior.

While AI based learning strategies in Islamic Religious Education hold significant potential, their implementation still faces challenges such as the risk of technology dependency, data privacy issues, and concerns about dehumanization in religious education. Therefore, the success of AI integration depends heavily on the synergy between technology, educational policies, the active role of teachers, and community and family support. Strategies such as teacher training, developing a balanced curriculum, and collaborating with relevant stakeholders are key to overcoming these challenges. With a targeted and ethical approach, AI can become a strategic tool to enrich Islamic religious education sustainably and meaningfully.

5. REFERENCES

- Anggraeni, T. B. (2025). Integrasi Artificial Intelligence dalam Pembelajaran Pendidikan Agama Islam: Studi Eksploratif pada Model Chatbot Islami di Era Society 5.0. *Journal Of Educational Research And Community Service (JERCS)*, 1(1), 125–131.
- Clarisya, A. S., & Rachman, P. (2023). Dinamika transformasi pendidikan agama islam: Sinergitas artificial intelligence dalam peningkatan pemahaman keagamaan. *Bahtsuna: Jurnal Pendidikan Islam*, 5(2), 122–127. <https://doi.org/10.55210/bahtsuna.v5i1.317>

- Fahrudin, R., Sollikhin, R., & Masruroh, A. (2024). Inovasi Pembelajaran Pendidikan Agama Islam Melalui Teknologi Artificial Intelligence Untuk Meningkatkan Interaksi Siswa. *Mauriduna: Journal of Islamic Studies*, 5(1), 79–91. <https://doi.org/10.37274/mauriduna.v5i1.1298>
- Fatun Nisa, S., Br Ginting, F., & Dwi Ananda, A. (2025). Kurikulum Pendidikan Agama Islam Adaptif untuk Menyongsong Era Artificial Intelligence. *Journal of Innovative Research*, 02, 311–325. <https://ziaresearch.or.id/index.php/mesada>
- Fitriani, A. D. (2024). Implementasi Teknologi AI (Artificial Intelligence) Pada Pembelajaran Pendidikan Agama Islam. *Jurnal Pendidikan Dan Pengajaran*, 3(2), 70–84. <http://e-journal.staibanisaleh.ac.id/index.php/wildan/index>
- Hadziq, M., Havifah, D. A., & Badriyah, L. (2024). Transformasi Pendidikan Agama Islam di Era Digital: Peran Artificial Intelligence (AI) dalam Memperkuat Nilai-nilai Islami. *Mauriduna: Journal of Islamic Studies*, 5(2), 801–827. <https://doi.org/10.37274/mauriduna.v5i2.1293>
- Hafiz, A., Mu'ti, A., & Amirrachman, A. (2024). Pengembangan Media Pembelajaran Agama Islam Berbasis Kecerdasan Buatan: Perspektif Pendidikan Agama Islam. *Mauriduna: Journal of Islamic Studies*, 5(1), 56–63. <https://doi.org/10.37274/mauriduna.v5i1.1070>
- Hamali, R. S., Riswanto, A., Zafar, T. S., & Handoko, Y. (2023). *Metodologi Penelitian Manajemen: Pedoman Praktis Untuk Penelitian \& Penulisan Karya Ilmiah Ilmu Manajemen*. Surabaya: PT. Sonpedia Publishing Indonesia.
- Hermawan, S., & Amirullah, A. (2016). *Metode penelitian bisnis pendekatan kuantitatif \& kualitatif*. Malang: Media Nusa Creative.
- Huda, M., & Suwahyu, I. (2024). Peran Artificial Intelligence (AI) Dalam Pembelajaran Pendidikan Agama Islam. *Referensi Islamika: Jurnal Studi Islam*, 2(2), 53–61.
- Manongga, D. (2023). *Kecerdasan Buatan Bagi Pendidikan: Peluang dan Tantangan*. Surabaya: Penerbit Maju Bersama.
- Masuroh, I. S., & Mardani, D. A. (2025). Artificial Intelligence Dan Pendidikan Pendidikan Islam: Pendekatan Etis Implementatif. *Integratif: Jurnal Magister Pendidikan Agama Islam*, 6(1), 85–101.
- Mukmin, M., Suharman, S., & Riadi, A. (2024). *Metode Pembelajaran PAI Berbasis Artificial Intelligence di Era Society 5.0. . Medan: Yayasan Kita Menulis*.
- Riasnugrahani, M., & Analya, P. (2023). *Buku Ajar: Metode Penelitian Kualitatif*. Jakarta:

Ideas Publishing.

- Rizwar, M. F. N., Muttaqien, F., & Noor, M. I. (2024). Strategi Implementasi Kecerdasan Buatan untuk Memperkuat Pendidikan Islam pada Generasi Z di Indonesia. *Journal Islamic Education*, 3(1), 132–144. <https://maryamsejahtera.com/index.php/Education/index>
- Rofiq Sofa, A., Anam, K., Ramadhani, K., Hasan, M., Hasan Shodiqil Amin, M., & Helmi, M. (2025). Pengembangan Penilaian Pembelajaran Pendidikan Agama Islam Berbasis Turnitin, Scribo AI, dan ChatGPT di Pesantren Raudlatul Hasaniyah: Implementasi dan Strategi pada Siswa Madrasah Aliyah. *Indonesian Research Journal on Education*, 5(2), 775–781. <https://irje.org/index.php/irje>
- Sofa, A. R., Sukandarman, Hidayatingsih, N., Qomariyah, N., Al Fausi, S., & Syaifullah. (2025). Pengembangan Penilaian Pembelajaran Pendidikan Agama Islam Berbasis Google Form, Goreact dan Emotion AI di SMP Negeri 2 Sumberasih Kabupaten Probolinggo. *Indonesian Research Journal on Education*, 5(2), 955–966.
- Sudirman, Kumalasari, I., Hidayat siregar, T., & Hasanah Lubis, L. (2025). Persepsi Guru Pendidikan Agama Islam Terhadap Implementasi Kecerdasan Buatan Dalam Proses Pembelajaran. *Jurnal Tarbiyah Bil Qalam*, 9(1), 1–10.
- Susanto, C., Leonora, H., & Meiden, C. (2022). Content Analysis Method: Analisis Prinsip Isi dan Prinsip Kualitas Laporan Keberlanjutan. *Ekonomis: Journal of Economics and Business*, 6(2), 619–625.
- Syafitri, A., Efriyanti, L., & Devi, I. (2024). The Role of Artificial Intelligence in Encouraging Innovation and Creativity in Islamic Education. *Nizham Jurnal Studi Keislaman*, 12(1), 1–10. <https://e-journal.metrouniv.ac.id/index.php/nizham>
- Zakariah, M. A., & Alfriani, V. (2020). Metodologi Penelitian Kualitatif, Kuantitatif, Mix Method, Research and Developmen. *Sulawesi Tenggara: Yayasan Pondok Pesantren Al Mawaddah Warrahmah Kolaka*.