

## Innovation in islamic education evaluation through kahoot application based on artificial intelligence

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Received: 13-04-2025

Revised: 24-05-2025

Accepted: 21-06-2025

### KATAKUNCI

Artificial Intelligence;  
Islamic Education Evaluation;  
Kahoot Application.

### ABSTRAK

The purpose of this article is to examine the model of integrating Artificial Intelligence (AI) in the evaluation of Islamic Religious Education (PAI), particularly through the use of the Kahoot application. In today's digital era, AI opens up innovative opportunities to create a more interactive, real-time, and engaging evaluation process for students. This article explores how the integration of AI into quiz-based platforms such as Kahoot can enhance the effectiveness of PAI learning assessments, deepen students' understanding of Islamic material, and encourage active participation in the learning process. The research method used is a literature review, which involves analyzing various relevant academic sources. The findings indicate that the use of AI in Kahoot-based evaluations not only facilitates teachers in monitoring learning achievements accurately and efficiently but also fosters an adaptive, collaborative, and data-driven learning environment. This digital-based evaluation allows students to learn according to their individual abilities and interests, while teachers benefit from instant feedback to develop more targeted teaching strategies.

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## Introduction

In today's era of digital technology and information, the integration of Artificial Intelligence (AI) has emerged as an innovative solution to enhance the quality and effectiveness of evaluation in Islamic Religious Education (PAI). The use of AI in the evaluation process not only enriches teaching methods but also creates new opportunities to develop assessment systems that are more accurate, interactive, and engaging. One concrete example of this integration is the use of the Kahoot application, which combines the concept of gamification with AI's ability to analyze students' responses in real time. AI, which refers to a machine's capacity to mimic human intelligence, enables evaluations to be more personalized, adaptive, and data-driven. In this context, Kahoot can be utilized to design assessment questions tailored to each student's level of understanding, while simultaneously providing instant feedback to teachers.

Through the integration of AI in Kahoot, the system can identify concepts in Islamic Religious Education (PAI) that students have not yet mastered and automatically adjust the format of subsequent evaluations, making the learning process more focused and efficient. This innovation has also proven to improve students' concentration due to its individualized and responsive evaluation approach. However, challenges remain, particularly in maintaining character values such as honesty, responsibility, and critical thinking when using technology.

Therefore, it is essential for educators, parents, and policymakers to supervise and guide students in using AI-based learning media wisely and ethically.

Overall, the integration of artificial intelligence into PAI evaluation through the Kahoot application is not merely the adoption of modern technology, but a strategic step toward enhancing the quality of Islamic religious education in line with contemporary developments. With the right approach, AI-based evaluation can help shape a generation that excels not only in religious knowledge but also in the responsible and ethical use of technology.

## Method

This research is a type of library research, which is conducted by analyzing written literature such as books and scientific journals as the primary sources. The research uses a qualitative approach, which emphasizes the analysis of pre-existing data (Fastabiqu Khairad, Melinda Noer, and Muhammad Refdinal, 2020). The method employed in this study is descriptive analysis to explain the integration of artificial intelligence in Islamic Religious Education (PAI) learning. As a library research, the materials are collected and sourced from various literature relevant to the research topic. The collected data are then selected according to the research focus, analyzed, and subsequently conclusions are drawn and aligned with the issues addressed. The significance of the research problem is then determined, followed by organizing the literature systematically to facilitate the selection of accurate, relevant, and valid sources.

## Results and Discussion

### Artificial Intelligence in Enhancing Human Resources

The advancement of the industrial era 4.0 presents unique challenges for today's education sector, including Islamic education. Teachers of Islamic Religious Education must inevitably prepare themselves to face increasingly complex challenges (Mustopa, Ahyani, & Hapidin, 2021). This complexity must be accompanied by adequate capabilities possessed by teachers as well as all components of society. Therefore, society must be educated, as education is an inseparable part of human life. The Encyclopedia Britannica defines Artificial Intelligence as a branch of computer science that represents knowledge predominantly using symbols rather than numbers and processes information based on heuristic methods or a set of rules (Devianto et al., 2020). Why do we need to study Artificial Intelligence? AI has the capacity to influence every aspect of our lives; the AI field attempts to understand patterns and behaviors of entities (Devianto et al., 2020).

According to Mulianingsih (2020) in Kirana (2020), AI in education shows that artificial intelligence has developed rapidly and is widely used, for example in state-owned companies, universities, and public administration. AI cannot simply replace the role of humans in industry; rather, its role is to support the performance of human resources. Therefore, it is necessary to develop aspects of human resources that AI cannot fulfill, one of which is the improvement of soft skills. Artificial intelligence is a continuously evolving new technology that can also be used to enhance human skills in the digital transformation era in Indonesia, a country experiencing rapid growth. In transitioning to Society 5.0, people's lives are expected to become more comfortable and sustainable, as society can receive products and services in the right amount and at the right time. Human resources (HR) are key to facing the digital transformation era. Industry 4.0 and Society 5.0 rely on technological advancements, requiring Indonesia to prepare capable and reliable human resources. Therefore, Indonesia must prepare high-quality human resources who are able to utilize technology to its fullest potential (Devianto et al., 2020).

One application of artificial intelligence is the development of technology that can replace the role of customer service representatives who cannot operate 24 hours a day; this can be handled by AI through chatbot technology, which can automatically and accurately answer questions (Devianto et al., 2020).

The integration of Artificial Intelligence in Islamic Religious Education (PAI) learning is not merely the adoption of technology but also an effort to enrich students' learning experiences and improve the quality of Islamic religious education. By optimally utilizing the potential of AI, PAI learning can become more dynamic, interactive, and aligned with technological developments, thereby fostering a generation of students with deep religious understanding relevant to the present era.

In line with the challenges of the 21st century, as discussed in the Journal of Education and Islamic Studies on the transformation of Islamic knowledge and education for an ideal 21st-century context, the skills needed to face these challenges are known as the 4Cs: critical thinking, collaboration, communication, and creativity (Adib, 2022). These skills must be mastered by students to withstand the waves of the 21st century. In addition, to design resilient learning, it is also essential to consider the characteristics of 21st-century learning: problem-solving, communication and collaboration, information, media, and technology skills, as well as the ability to use and manage information, analyze media, and produce media products (Adib, 2022).

### **Integrating the Use of Artificial Intelligence through the Kahoot Application in Islamic Religious Education (PAI) Learning**

The development of information technology greatly influences various aspects of human life. Ultimately, all sectors must be able to adapt and adjust to this progress in order to remain relevant and continue to develop in line with the times, making it easier to acquire knowledge, maintain social connections, and generate income (Baihaki, 2020).

Artificial intelligence technology has broken boundaries that were once considered impossible. In an era where technology is an integral part of everyday life, integrating artificial intelligence into the teaching of Islamic Religious Education opens the door to a more interactive, personalized, and meaningful future for education. Future PAI teachers will no longer teach solely with a blackboard; instead, they will teach with the support of AI systems and serve as facilitators and motivators for students in the learning process. As Syamsul Kurniawan states in his article, in the 21st century, the phenomenon of disruption has shifted the role of teachers in the learning process—from being the primary source of knowledge and the center of learning to acting as facilitators, mediators, and motivators in education (Kurniawan, 2019).



**Figure 1.** Image of the Kahoot Application

This figure illustrates the interface of the Kahoot application used as an interactive learning tool during the evaluation process. With its simple and visually appealing design, Kahoot enables both teachers and students to participate in real-time quizzes in a fun and competitive format. Features such as automatic score calculation, time-limited questions, and dynamic graphics enhance students' motivation and engagement in learning. Moreover, Kahoot allows teachers to obtain immediate feedback on students' understanding, making the evaluation

process more effective and allowing for timely improvements in teaching and learning. Overall, Figure 1 demonstrates how the Kahoot application can serve as a valuable tool to create an interactive and responsive learning environment.

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Artificial intelligence (AI) technology has pushed boundaries that were once thought impossible. In an era where technology is an integral part of everyday life (Luqmi et al., 2024), integrating AI into Islamic Religious Education (PAI) instruction opens the door to a future of learning that is more interactive, personalized, and meaningful. Future PAI teachers will not only teach using the blackboard but will also leverage AI systems, acting as facilitators and motivators for students during the learning process. This aligns with what Syamsul Kurniawan stated in his article: in the 21st century, the phenomenon of disruption has shifted the teacher's role from being the sole source of knowledge to being a facilitator, mediator, and motivator in the learning process (Kurniawan, 2019).

Kahoot is a quiz-based application available for Android or computer platforms. It supports students' visual demonstrations during learning, making the process highly effective. Visual learning is preferred by students because information can be presented in the form of images, diagrams, videos, and more. Kahoot is a web-based platform that can be used to create quizzes and simple games. This platform offers various features, including online quizzes, discussions, jumbles, and surveys.

The features available on the Kahoot platform allow students to explore concepts about themselves and their environment, especially those related to daily life. Kahoot is an innovative and creative learning media tool within the context of Learning 4.0, as it encourages students to creatively answer questions with unique displays and answer choices. Using Kahoot can increase student engagement and boost their motivation to learn (Wasyik & Syafi'i, 2021). Additionally, the platform is free and makes it easier for teachers to conduct quizzes or tests without having to dictate in front of the class, and students do not need to write their answers on paper as usual. Teachers simply provide an access link and display the questions or exam material via laptop or smartphone, while students submit their answers using their own mobile phones. During the quiz, the Kahoot page immediately shows whether the answer is correct or incorrect, along with the highest scores based on the students who answered the fastest and most accurately.

Certain requirements must be met for the interactive Kahoot quiz to run effectively, including the availability of electricity, laptops, mobile phones, and a stable internet connection. The use of the Kahoot platform in learning, especially in PAI classes, is expected to provide a different learning experience so that students become more interactive and their academic achievement improves.

The advantages of the Kahoot application include:

1. Presenting answer options in various colors that directly connect to each student's smartphone, allowing them to select answers to the given questions. The answer choices are represented by images and colors.
2. Each question has a time limit, training students to think quickly and accurately, as scoring is based not only on correctness but also on response speed, which increases students' focus on the questions.
3. After answering each question, Kahoot immediately displays which students answered the fastest and most accurately.
4. Each student's score is available in the "Reports" menu, which provides an analysis of each student's answers per question, making it easy for teachers to evaluate students' performance.

5. Kahoot's quiz feature offers multiple options, such as inserting images, videos, or music to stimulate students' interest and thinking in solving quizzes.
6. It encourages students to be more active and motivated.

**The use of the Kahoot application as a learning medium is expected to build students' motivation to learn and increase their focus and attention in PAI classes.**

When students enter the classroom, they will not only meet a human teacher but also an intelligent AI assistant. Using natural language processing, the AI assistant can answer students' questions, provide in-depth explanations of Quranic verses, and guide discussions about religious values. Voice recognition technology allows students to ask questions verbally and receive quick responses. Furthermore, when students want to understand the historical context of an Islamic event, they can give voice commands, and the AI will provide the answers.

Intelligent chatbot assistants are becoming part of the education world. They can help students identify learning problems, understand their meaning confidently, and offer guidance outside of school hours. PAI teachers are not just instructors but also spiritual mentors who can understand students' doubts or confusion, provide personal advice, recommend books to address students' questions, and foster strong individual relationships. The AI system continuously monitors students' progress to understand each individual's strengths and weaknesses, helping teachers design personalized curricula. Students who grasp a concept quickly but need extra support in other areas will receive the necessary assistance.

In the education sector of the Society 5.0 era, it is possible that students or university learners may interact directly with robots specially designed to replace teachers or be controlled remotely by educators. It is not impossible for teaching and learning to occur anytime and anywhere, with or without a physical teacher present (Faulinda Ely et al., 2020). Rapid advancements in information technology are expected to contribute significantly to developing new learning models and leveraging technological progress in teaching and learning activities. This aims to facilitate the delivery of Islamic Religious Education to students. Of course, this must be supported by human resources—in this case, PAI teachers—who are competent in their roles as educators and adequately skilled in science and technology (Rusdiana, 2014).

The integration of PAI with technology utilization in the Society 5.0 era enables the explanation of Islamic education materials to be supported by technology. In this highly modern world, students do not want to passively receive or absorb religious lessons dogmatically. Instead, they will critically question whether the Islamic education material presented aligns with real-life situations (Rusdiana, 2014). For example, when discussing the Ka'bah, teachers can create an immersive experience using educational media or Google Street View (Google Maps) without having to travel to Mecca. What is most important here is that PAI teachers must not make technology the primary focus but rather act as technology-based educators, in line with the Society 5.0 concept—human-centered life with technology as support, not the core.

PAI teachers must be more experienced and selective in utilizing information technology. Teachers should not only implement advanced digital technology in learning but also remain mindful of simple technologies, as not all schools in Indonesia have adequate learning facilities. Therefore, teachers are expected to be more creative and innovative in their teaching methods.

However, amidst all these innovations, moral and religious ethics must remain a guiding principle. Technology is not a substitute for religious teachings but a partner that enriches students' religious experiences. With this approach, teachers continue to support students in their learning process (Nugroho et al., 2024), supported by AI that integrates technology and spirituality. Thus, integrating Artificial Intelligence into Islamic Religious Education can be an innovative way to enhance teaching and learning effectiveness. By integrating AI into PAI learning, schools can create a more dynamic, personalized, and effective learning environment for students while deepening their understanding of Islamic education.

As quoted from an article by Danny Manongga et al., teaching and education have become key areas that have witnessed the introduction of AI systems (Aldwinarta et al., 2024). The advancement of AI has facilitated the implementation of various systems that have proven to



be highly effective educational resources (Manongga et al., 2020).

| No. | Category    | Tasks Performed by AI                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Management  | - Perform administrative tasks faster than instructors, including grading exams and providing feedback.- Determine individual learning preferences and styles to create personalized lesson plans.- Assist educators with data-driven decision-making and work processes.- Provide timely and immediate feedback and interact directly with students.                                                                           |
| 2   | Instruction | - Predict how many students will exceed expectations in projects and activities and estimate dropout risks.- Review curricula and educational resources to recommend customized content.- Enable learning beyond the classroom and advanced learning to promote collaboration.- Adapt teaching methods for each student based on personal information.- Allow teachers to develop individual lesson programs for every student. |
| 3   | Education   | - Identify students' learning gaps and address them early in the training process.- Tailor college learning options to student needs.- Predict each student's career path by gathering and analyzing research data.- Recognize students' learning status and apply intelligent adaptive interventions.                                                                                                                          |

Table 1. The Impact of Artificial Intelligence on Education

This table presents a comprehensive overview of the multifaceted impact of Artificial Intelligence (AI) on education, categorized into Management, Instruction, and Education. In the Management category, AI streamlines administrative tasks such as grading and feedback, while also personalizing learning by identifying individual preferences and aiding educators in data-driven decisions. Under Instruction, AI enhances predictive capabilities by forecasting student performance and dropout risks, recommending tailored curricula, and supporting collaborative and adaptive learning methods that cater to each student's unique needs. Meanwhile, in the Education category, AI plays a crucial role in early identification of learning gaps, customizing higher education options, predicting career trajectories, and implementing intelligent adaptive interventions based on continuous assessment of students' learning status. Collectively, these functions illustrate how AI can transform educational processes by increasing efficiency, personalization, and responsiveness to individual learner needs.

According to Ismail Razi Al-Faruqi's Perspective (in Technology According to Islamic Views), he outlines the following steps:

1. Integrating the Islamic education system, eliminating the dichotomy between general and Islamic education.
2. Enhancing the Islamic vision by strengthening Islamic identity through two stages: requiring the study of Islamic civilization history and the Islamization of knowledge.
3. Addressing methodological issues by reaffirming the principles of Islamic knowledge.

Developing an action plan such as mastering scientific disciplines, mastering the Islamic intellectual heritage, building Islamic relevance for each area of study or field of modern research, finding ways to create a creative synthesis between Islamic heritage and modern knowledge, and directing Islamic thought towards the right path, namely sunatullah (Hidayat et al., 2022).

**Utilization of Information Technology in Islamic Religious Education (PAI)**

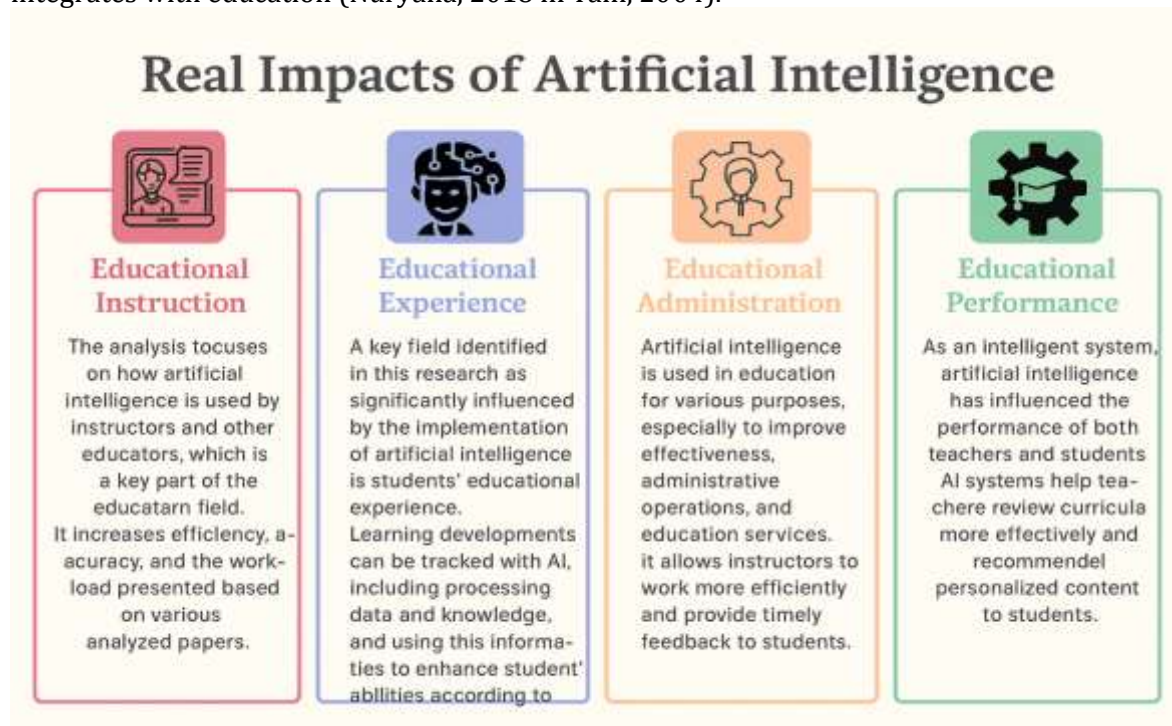
The long journey of Islamic education has significantly shaped the dynamics of Islamic education models in various regions, especially in Indonesia, where Islamic education has absorbed the momentum of upheaval and reform from other parts of the Muslim world. This

influence has had a considerable impact, bringing about changes both ideologically and practically (Nuryana, 2018 in Rahman, 2016).

The conventional learning system in schools today is believed to be less effective, as concepts of brain capability, intelligence, and creativity have developed rapidly alongside advances in technology and communication. This progress influences efforts to address the weaknesses and shortcomings of conventional learning systems. In the conventional system, the transfer of knowledge relies mainly on the blackboard, classrooms are managed statically, and the teacher is the sole expert information source. There must be awareness of the need for change and renewal in Islamic Religious Education, encouraging every teacher to continually develop their competencies, as many innovations need to be created and implemented in PAI teaching (Nuryana, 2018).

Currently, many teachers still rely monotonously on lectures as an all-purpose method to deliver lessons—including Islamic Religious Education teachers. Teachers deliver material at the front of the class, and whether students enjoy it or not, they are expected to listen. Consequently, students often feel bored with the subject. This is evident when students become sleepy, chat with friends, frequently ask to leave the classroom, doodle, or engage in unrelated activities. Given the crucial role of Islamic Religious Education in schools, it must not be a mere formality but should have meaning for students. One way to achieve this is through innovative teaching methods. As mentioned in an article by Zalik Nuryana, one form of innovative learning is PAI learning based on Information and Communication Technology (ICT) or simply information technology (Nuryana, 2018).

In principle, the use of technology is not prohibited in Islam; in fact, it is encouraged as long as it serves goodness and public benefit. Outside of these boundaries—especially if it leads to sin, wasting time, gossip, neglecting priorities and duties, disregarding true values, or encouraging exploitation and crime—it is not permitted. Interestingly, Ahmad Yani points out that in education, the transfer of knowledge is not the ultimate goal; education is also responsible for shaping students' character. Therefore, the use of information technology should align with its nature and purpose, not merely follow trends. This awareness cannot be conveyed solely through technology but must be reinforced through direct, face-to-face discussion. This means the teacher's role remains vitally important even as technology integrates with education (Nuryana, 2018 in Yani, 2004).



**Figure 2.** Image from the Journal "The Impact of Artificial Intelligence on Education"

This figure illustrates the multifaceted impacts of artificial intelligence on various aspects of education, including instruction, student experience, administrative efficiency, and overall educational performance. The figure highlights how AI optimizes teaching methods, personalizes learning pathways, and streamlines administrative tasks, allowing educators to focus more on meaningful student engagement. By automating routine processes and providing data-driven insights, AI empowers teachers and institutions to identify students' strengths and weaknesses more accurately and respond with targeted interventions. This visual representation emphasizes that the integration of AI is not limited to technical automation but extends to transforming the educational environment into a more dynamic, adaptive, and student-centered ecosystem. Ultimately, the figure underscores the potential of AI to elevate educational quality and to prepare students to thrive in a technology-driven era while maintaining the role of teachers as essential guides and mentors.

## Conclusion

The integration of artificial intelligence in the evaluation of Islamic Religious Education (PAI) through the Kahoot application offers great opportunities to enhance the quality of assessment processes in a more effective, interactive, and engaging way. This innovation enables teachers to conduct real-time evaluations, provide instant feedback, and tailor questions to suit students' needs and levels of understanding. However, to implement it optimally, serious attention must be paid to technical aspects, ethical use of technology, and teacher readiness through adequate training. AI-based evaluation, particularly with the support of platforms like Kahoot, is not merely the application of technology but a strategic step to enrich students' learning and assessment experiences. If used wisely, this integration will make PAI evaluation more adaptive, responsive, and aligned with contemporary demands. Therefore, it is expected to produce a generation that not only deeply understands Islamic teachings but is also capable of engaging with technological advancements guided by strong Islamic values.

## References

- Adib, Afiqu. M. 2022. "Transformasi Keilmuan dan Pendidikan Agama Islam Yang Ideal di Abad 21 Perspektif Rahmah El Yunusiah." *Jurnal RISALAH*. Vol.8, No.2
- Aldwinarta, F. H., Nurdiana, R., & Sulistina, O. (2024). Media Pembelajaran Berbasis AI Chatbot pada Materi Termokimia di SMA Apakah Dibutuhkan? *Jurnal Inovasi Pendidikan Kimia*, 18(1), 1–6. <https://doi.org/10.15294/jipk.v18i1.49044>
- Arini Kumala Sari and Winda Trisnawati, "Integrasi Keterampilan Abad 21 Dalam Modul Sociolinguistics: Keterampilan 4C (Collaboration, Communication, Critical Thinking, Dan Creativity)," *Jurnal Muara Pendidikan* 4, no. 2 (2019)
- Baihaki, Egi Sukma. (2020). "Jurnal Islam dalam merespons era digital: Tantangan menjaga komunikasi umat beragama di Indonesia. vol.3, no.2
- F. Mulianingsih, Khoirul Anwar, Fitri Amalia Shintasiwi & Anggi Jazilatur Rahma. (2020) Artificial Intelligence dengan Pembentukan Nilai dan Karakter di Bidang Pendidikan. *Jurnal Ijtimaia*, vol.4 no.2
- Faulinda Ely Nastiti, Aghni Rizqi Ni'mal 'Abdu (2020), *Kesiapan Pendidikan Indonesia Menghadapi era society 5.0*, *Jurnal Kajian Teknologi Pendidikan*, 5 (1)
- I Wayan Redhana, "Mengembangkan Keterampilan Abad Ke-21 Dalam Pembelajaran Kimia," *Jurnal Inovasi Pendidikan Kimia* 13, no. 1 (2019)
- Ian Hidayat, 2022. "Teknologi menurut pandangan Islam" *Jurnal KIIIES*. Vol.1.
- Khairad, Fastabiqul, Melinda Noer, and Muhammad Refdinal (2020). "Jurnal Agrifo • Vol. 5 • No. 1 • April 2020." *Agrifo* 5, no. 1: 1–12.
- Luqmi, F. Z., Patimah, S., Pahrudin, A., & Rohmatika, R. V. (2024). Artificial Intelligent in the Development of Islamic Education Learning in the Digital Age : A Literature Review Analysis. *TADRIB: Jurnal Pendidikan Agama Islam*, 10(1), 303–312.
- Manongga, D dkk, (2020). "Jurnal Dampak kecerdasan buatan bagi pendidikan" 2020.



- Mustopa, Mustopa, Hisam Ahyani, and Ahmad Hapidin (2021). "Ideologi Dan Spirit Sistem Pendidikan Tinggi Islam Indonesia Era Industri 4.0 Dan Relevansinya Dengan Pencegahan Radikalisme." *Al-Fikru: Jurnal Ilmiah* 15, no. 1
- Nugroho, R. P., Soepriyanto, Y., & Wedi, A. (2024). Development of Learning Management System with Gamification Approach for Project-Based Learning. *JTP - Jurnal Teknologi Pendidikan*, 26(3), 794–806. <https://doi.org/10.21009/jtp.v26i3.40873>
- Rubinl, R. (2023). Penerapan Artificial Intelligence pada pembelajaran Pendidikan Agama Islam. *AL-MANAR: Jurnal Komunikasi dan Pendidikan Islam*, 12(2), 79-89.
- Rusdiana, A. (2014). Integrasi Pendidikan Agama Islam dengan Sains dan Teknologi. *Istek*, 8 (2), 123-143.
- Syamsul Kurniawan, 2019. "Tantangan Abad 21 Bagi Madrasah di Indonesia" *Jurnal INTIZAR*. vol.25.No1
- Wasyik, T., & Syafi'i, I. (2021). Implementasi Pembelajaran Kontekstual (Contextual Teaching and Learning) Di Luar Kelas Era Covid-19 Madrasah Aliyah Bilingual Krian Sidoarjo. *Ta'allum: Jurnal Pendidikan Islam*, 9(1), 1–29. <https://doi.org/10.21274/taalum.2021.9.1.1-29>
- Yudo Devianto & Saruni Dwiasnati (2020). " Kerangka Kerja Sistem Kecerdasan Buatan Dalam Meningkatkan Kompetensi Sumber Daya Manusia Indonesia. *Jurnal Telekomunikasi dan Komputer*. Vol.10, no.1
- Zalik Nuryana, 2018. "Jurnal Pemanfaatan teknologi informasi dalam pendidikan Agama Islam.