

IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE IN ISLAMIC RELIGIOUS EDUCATION LEARNING AT SDN SI SUMUT

Suci Alhafizha Nasution¹

¹Universitas Muhammadiyah Sumatera Utara

^{*1}email: sucialhafizha@gmail.com

Abstract: In recent decades, advances in information and communication technology have changed many aspects of human life. The implementation of AI in Islamic Religious Education learning at SDN Si Sumut also faces its own challenges. The use of AI in Islamic religious learning too can help teachers manage class And monitor development student . Investigation This use design study qualitative , a steps that result in a data in the form of descriptive , in the form of sentence written , individual And behavior behavior seen , In study this , researcher will do observation And interview against 3 subjects in study this , including head school , language teacher Indonesia And order business at SDN Si Sumut AI can help make learning more interesting And efficient , which is promising innovation For education , technology This more Good used in school with facility complete . AI can simplify learning , especially For concepts abstract in PAI Implementation of Artificial Intelligence (AI) in learning Islamic Religious Education (PAI) at SDN Si Sumut own potential big For increase effectiveness learning.application technology This Still face various obstacles , including infrastructure that has not been adequate , low literacy technology among teachers, as well limitations support policy . With the right approach , AI can become tool important in modernization Islamic Religious Education learning at the level school base

Keywords: *Artificial Intelligence, Islamic Religious Education, Primary School*

Introduction

In recent decades, advances in information and communication technology have changed many aspects of human life, including education, technology that continues to develop offers various ways to improve the quality of learning (Taruklimbong & Sihotang, 2023). One example is the application of artificial intelligence (AI). Artificial intelligence is a branch of computer science that aims to create systems that are similar to humans in terms of thinking, learning, and making decisions (Zakiyah et al, 2024). In the world of education, artificial intelligence not only functions as a tool, but also has the ability to change students' paradigms about what they learn (Sulaeman et al, 2024). Islamic Religious Education (PAI) in Indonesia has a strategic task to shape students' character and morals.

The purpose of Islamic religious education in elementary schools, especially at SDN Si Sumut, is to instill Islamic values, spirituality, and noble morals in children from an early age. However, many problems often hinder the PAI learning process, including time limits, monotonous teaching methods, and lack of supporting resources. In situations like this, the use of AI helps improve the learning experience and overcome various obstacles (Zahra & Zailani, 2024).

PAI learning with AI can be more unique and interesting. This technology allows the creation of a customizable learning platform, where teaching materials can be adjusted to the needs and abilities of each student. AI can also help with more objective learning

evaluations, provide real-time feedback, and create an interactive learning environment (Suyitno, 2024). PAI teachers at SDN Si Sumut can use this technology to improve their learning process and help students better understand and internalize Islamic principles.

In addition, the government's efforts to improve digital literacy and the quality of national education are in line with the use of AI in PAI learning. Information technology is an important part of the independent curriculum designed by the Ministry of Education, Culture, Research, and Technology. One of the important skills needed by students to face challenges around the world is critical thinking, problem solving, and creativity, all of which can be assisted by artificial intelligence technology (Triyanto, 2020).

However, the implementation of AI in Islamic Religious Education learning at SDN Si Sumut also faces its own challenges. Limited technological infrastructure is a major problem, especially in areas that still experience limitations in internet access and supporting devices. In addition, the success of using AI depends on the readiness of teachers. Teachers must be educated on how AI works, how to incorporate it into the learning process, and how to effectively manage interactions between themselves and students.

On the other hand, the application of AI in Islamic Religious Education learning also raises ethical and theological questions. As a branch of science that aims to teach religious values, Islamic Religious Education has a deep spiritual dimension and cannot be completely replaced by technology (Harahap & Zailani, 2024). Therefore, it is very important to ensure that the use of AI in Islamic Religious Education learning remains focused on the humanistic aspect, where direct interaction between teachers and students remains the most important thing (Amalia et al, 2024). AI should function as a tool that supports the role of teachers, not as a substitute.

SDN Si Sumut can utilize AI in Islamic Religious Education learning to be the first step towards a more inclusive and quality educational transformation. This school has the potential to be a pilot in integrating AI technology with the Islamic Religious Education curriculum because of its commitment to educational innovation and student development. With the right support from the government, parents, and community, SDN Si Sumut can optimize the benefits of AI to improve the quality of education in its area.

In this digital era, the younger generation must be prepared to face an increasingly complex and dynamic world. Islamic religious education plays an important role in equipping students with moral and spiritual values, which will be the foundation for facing difficulties and challenges in life (Ramadani & Zailani, 2024). AI in Islamic Religious Education learning not only incorporates technology into the classroom but also builds a broad learning ecosystem that focuses on developing human potential as a whole (Ningsih & Zalisman, 2024).

Although technology is only a tool, the main goal of education is to create people who are faithful, knowledgeable, and have good morals. In situations like this, AI can help achieve goals, as long as it is used carefully and responsibly (El Hady & Fauzan, 2024). As a result, to integrate AI into PAI learning at SDN Si Sumut, an in-depth study and a planned approach are needed.

This study not only looks at the potential application of technology, but also examines how it will impact teachers, students, and the education system as a whole,

innovation in Islamic Religious Education must be carried out to meet the needs of the times while maintaining Islamic values (Mawati et al, 2023). The implementation of AI at SDN Si Sumut is a great opportunity to improve the quality of learning. However, to overcome existing problems, all parties must commit together. AI can be an important part of efforts to make Islamic education relevant, flexible, and future-oriented if used properly.

The use of AI in Islamic religious learning can also help teachers manage classes and monitor student progress. By using an AI-based system, teachers can easily identify students who have difficulty understanding the material, and AI can also assist in analyzing learning data, helping teachers make better decisions about what to teach students (Soegiarto et al, 2023). By using this technology, it is hoped that students will get a more enjoyable and effective learning experience, as well as a deeper understanding of Islamic teachings. In addition, teachers will get support in the teaching process, allowing them to focus more on building students' character and morals.

Collaboration between schools, government, and other educational institutions is essential to create a broad scope for the use of AI in learning (Sugiono, 2024). In addition, teachers need sufficient training and assistance to integrate technology into learning. In addition, the technological infrastructure in schools also needs to be considered, including the availability of software and hardware that supports the use of AI in learning.

Therefore, there needs to be a balance between the use of technology and pedagogical approaches based on religious values because technology must be used as a tool to support and strengthen students' understanding of religious principles (Nasution, 2024). Therefore, the application of artificial intelligence in Islamic religious education learning at SDN Si Sumut can run smoothly and produce optimal results for all parties involved

Research conducted by Shabila et al (2024) shows that despite adequate internet and hardware facilities, the use of AI is very low. Teachers are poorly trained to utilize AI effectively, meaning they prefer to use conventional methods such as lectures and small group discussions. Furthermore, research conducted by Kustandi & Darmawan (2020) The results of the study show that despite adequate internet and hardware facilities, the use of AI is very low. Teachers are poorly trained to utilize AI effectively, meaning they prefer to use conventional methods such as lectures and small group discussions.

Research conducted by Sanjaya (2024) explains that data shows that because the principal's main focus is on meeting basic educational needs, the principal does not consider purchasing AI technology. As a result, teachers are not encouraged to try or learn AI, and its use is almost invisible in the learning process. Research by Ahmad & Rahayu (2024) explains that the lack of training and socialization, teachers do not believe in using AI for Islamic Religious Education learning. Shohibatul (2024) explains the results study show that the majority of teachers have very knowledge limited about AI and How use it . They more choose using simple media like video or picture in Islamic Religious Education learning .

By utilizing Artificial Intelligence (AI) in Islamic Religious Education learning at SDN Si Sumut, there is a great opportunity to create education that is more adaptive, interesting, and relevant to the needs of today's students. However, the low implementation of AI shows the need for improved infrastructure, teacher training, and commitment from all parties to support this transformation. With a planned and collaborative approach, AI can be a catalyst for more innovative Islamic Religious Education learning without eliminating the essence of Islamic values.

Literature Review

A. Understanding Artificial Intelligence

Artificial Intelligence (AI) is a branch of computer science that aims to create systems capable of performing tasks that normally require human intelligence, such as decision-making, speech recognition, and learning (Erina & Zein, 2023). According to Erina & Zein (2023) AI includes the ability to learn, understand, and adapt. In the context of education, AI enables personalization of learning based on student needs.

In the mid-20th century, artificial intelligence began to develop. This was marked by the early work of Alan Turing and his tests. Machine learning and deep learning emerged along with the rapid development of AI. The development of learning analytics and intelligent tutoring systems are some examples of AI applications in education that began to be used in the 2000s (Paat et al, 2024).

Artificial intelligence, or AI, is a subfield of computer science that focuses on the development of systems and technologies that can mimic or imitate human intelligence. AI can be defined as "the science and engineering of making intelligent machines, especially computer programs" and encompasses a variety of techniques and methods that enable machines to perform tasks that normally require human intelligence, such as problem solving, pattern recognition, learning, and decision making. Narrow AI has the ability to perform specific tasks, and general AI has the ability to understand and learn from experience in a variety of situations (Kushariyadi et al, 2024).

1. Implementation of Artificial Intelligence in Education

Artificial Intelligence has been used in various fields of education, such as (Anas & Zakir, 2024):

a. Adaptive learning

Students' unique abilities and needs can be tailored to learning materials through AI systems.

b. Intelligent learning system

AI helps students understand difficult concepts in real-time through personalized tutoring.

c. Learning analytics

Artificial intelligence technology analyzes student data to find errors and provide solutions.

2. Artificial Intelligence in Learning Islamic education

According to Qomaruzzaman , A. (2024). In Islamic religious education (PAI), artificial intelligence is used to

a. Interactive media development

Chatbots and artificial intelligence-based applications to answer students' religious questions

b. Learning evaluation

AI automatically assesses students' understanding of Islamic Religious Education material.

c. Instilling Islamic values

AI is able to convey stories or hadiths in an interesting and interactive way.

3. Challenge Implementation of Artificial Intelligence

Although AI has a lot of potential, there are many challenges to its implementation.

a. Limitations Infrastructure

Incorporating AI into PAI curriculum to increase learning relevance

b. Teacher Readiness

Teacher readiness is needed to be able to adapt to curriculum creation through AI.

c. Improvement Digital Literacy

Helping teachers and students understand and utilize artificial intelligence technologies.

While AI offers many benefits, there are also challenges and ethical issues that need to be addressed. One of the main challenges is the issue of privacy and data security. The use of AI often involves the collection and analysis of personal data, which can pose a risk of privacy violations. There are also concerns about bias in AI algorithms, where decisions made by machines can be influenced by unrepresentative or discriminatory data. Another

ethical issue is the impact of AI on jobs. With increasing automation, many jobs are at risk of being lost, which can lead to economic and social instability.

Method

This research uses a qualitative research design. A. Muri Yusuf (2014) explains from the definition of a qualitative approach, a step that produces descriptive data, in the form of written sentences, individuals and observed behavior. In study This , the researcher will conduct observations and interviews with 3 subjects in this study, including the principal, Indonesian language teacher and administration at SDN Si Sumut. There are several ways that researchers can do in analyzing data, starting from the data reduction process, data presentation, to drawing conclusions .

Results and Discussion

The increasingly developing Artificial Intelligence (AI) technology has entered many things, such as education. In today's era of computers and the internet, artificial intelligence has many opportunities to improve the quality of learning, including in the field of Islamic Religious Education (PAI). However, this technology is still difficult to apply in elementary schools. The most important thing is infrastructure readiness, technological literacy, and policy support. The results of research on the use of AI in PAI learning at SDN Si Sumut are discussed. It discusses the perspectives, experiences, and difficulties faced by principals, teachers, and administrative staff when using this technology.

This study investigates the use of AI in Islamic Religious Education (PAI) learning at SDN Si Sumut. Data were collected through interviews with the principal, Indonesian language teachers, and administrative staff. All informants provided different perspectives based on their own experiences and their roles in supporting educational activities at school.

a. How view You about the use of AI in learning at SDN Si Sumut ?

According to Mr. Z as the principal, he explained

“ According to the principal, AI can help make learning more interesting and efficient, which is a promising innovation for education, including PAI. However, he stated that schools are currently facing major problems, especially in terms of providing sufficient infrastructure. In addition, the principals said that the use of AI must be adjusted to religious norms and local needs ”.

Then according to Mrs. N as an Indonesian language teacher, she explained

“Although AI is an interesting idea, its implementation in elementary schools, especially in SDN Si Sumut, is still far from ideal. He believes that this technology is better used in schools with complete facilities. The teacher stated that intensive training is very important to improve teachers' understanding of the use of AI”

Then according to Mrs. R as the administration, she explained

“I gave him a practical response. He acknowledged that AI could help make administration and learning more efficient, but because of the school's limited resources, he felt that the use of AI was not a priority at this time. He also felt that the use of AI would require a major change in the culture and learning habits of elementary schools.”

b. How AI can help Islamic Religious Education learning in schools ?

According to Mr. Z as the principal, he explained

“ The principal believes that AI can help Islamic Religious Education learning by using various interactive media, such as Islamic story simulations or videos that teach morals and worship. He emphasized how important it is for teachers to ensure that AI content remains in accordance with Islamic values.”

Then according to Mrs. N as an Indonesian language teacher, she explained

“ AI can help students with visual learning styles understand Islamic Religious Education material. For example, interactive illustrations about the pillars of Islam and faith or stories of the prophets can be displayed with this technology. However, he also reminded that teachers must continue to supervise students so that they do not rely entirely on technology.”

Next, Mrs. R, as the administration, explained

“AI can simplify learning, especially for abstract concepts in Islamic Religious Education. For example, AI can help explain the meaning of prayer or spiritual values in a more contextual way. However, he also emphasized that elementary school students may need further instruction on how to use this technology.”

c. What constraint main issues faced in AI implementation ?

According to Mr. Z as the principal, he explained

“ The principal stated that the main obstacle is the lack of adequate infrastructure. He also highlighted that schools still face challenges in providing basic technological devices such as computers or tablets needed to run AI-based systems. In addition, budget constraints are also a major obstacle ”

Then according to Mrs. N as an Indonesian language teacher, she explained

“ One of the biggest obstacles is that teachers do not understand the technology. He believes that many teachers, including himself, are not ready to use AI because they do not receive practical instruction and training. In addition, he said that students at the elementary level may have difficulty adapting to new technology without intensive assistance .”

Next, Mrs. R, as the administration, explained

“The biggest limitation is the lack of a stable internet connection. In addition, he stated that another obstacle is the lack of awareness and understanding of schools about the importance of AI”

d. How support party school to AI technology ?

According to Mr. Z as the principal, he explained

“ The principal explained that the school is generally supportive of the use of technology, but the current focus is on basic technology such as projectors or computer-based learning applications. He acknowledged that, because the school has to prioritize other more important needs, there is little support for specific AI. ”

Then according to Mrs. N as an Indonesian language teacher, she explained

“Technology support is still general and not specific to AI. He said that before schools use AI in learning, teachers must improve their digital literacy”

Next, Mrs. R, as the administration, explained

“Although the school wants to use technology, it is only in the administrative area. He argues that special initiatives are needed to incorporate technology into learning, including the use of artificial intelligence.”

e. What steps that can be taken taken For increase AI implementation ?

According to Mr. Z as the principal, he explained

“ To provide devices and training, principals suggested working with external parties, such as technology companies or local governments. They also suggested creating an AI implementation plan that involves everyone in the school. ”

Then according to Mrs. N as an Indonesian language teacher, she explained

“a gradual approach, starting with a simple introduction of technology before moving on to AI. He believes that intensive training and mentoring will help teachers and students adapt to new technologies.”

Next, Mrs. R, as the administration, explained

“ how important strategic planning is that includes procurement of new equipment, infrastructure upgrades, and comprehensive staff training. They also recommend that the program continue to integrate AI in stages.”

The interview results showed that although there is great potential to apply AI in Islamic Religious Education learning at SDN Si Sumut, there are several obstacles, such as limited infrastructure, low technological literacy, and inadequate policy support. All three speakers agreed that, with good planning, artificial intelligence can help make learning more interactive and interesting.

To achieve this transformation successfully, a broad approach is needed that includes improving infrastructure, intensive training for teachers, and increasing technological literacy among students. In addition, successful implementation requires support from the government and external parties. AI can help students understand Islamic principles and support the modernization of education in primary schools if used correctly.

Conclusion

The implementation of Artificial Intelligence (AI) in Islamic Religious Education (PAI) learning at SDN Si Sumut has great potential to increase the effectiveness of learning. AI can present more interactive and interesting methods, helping students understand Islamic values through visual and contextual approaches. However, the implementation of this technology still faces various obstacles, including inadequate infrastructure, low technological literacy among teachers, and limited policy support. Strategic steps are needed, such as intensive training, infrastructure improvement, and cooperation with external parties to overcome these obstacles. With the right approach, AI can be an important tool in modernizing PAI learning at the elementary school level.

Bibliography

- A. Muri Yusuf. 2014. “ Method Study Quantitative , Qualitative & Research Combined ”. Jakarta : prenadamedia group.
- Ahmad, AK, & Rahayu , KM (2024, April). Teachers' Perceptions of Artificial Intelligence in Madrasahs: Between Reception And Challenges . In Proceedings of the National Seminar Education Faculty of Teacher Training and Education , University of Lampung (pp. 411-421).
- Amalia , A., Fahmy , AFR, Sari, NHM, Nugroho , DA, Prabowo , DS, Pujiono , IP, ... & Syukron , AA (2024). Utilization of Learning Media Artificial Intelligence (AI) Based in Schools . NEM Publisher .
- Anas , I., & Zakir , S. (2024). Artificial Intelligence: Solutions Learning in the Digital Era 5.0. J-SAKTI (Journal Science Computer And Informatics) , 8 (1), 35-46.
- Az-zahra , J., & Zailani , Z. (2024). THE ROLE OF THE TEACHER IN IMPROVING ABILITIES Students Reading the Qur'an at Bamrung Islam School Phattalung , Southern Thailand. Atta'dib Journal Islamic Religious Education , 5 (1), 109-124.
- El- Hady , EHF, & M Fauzan Zenrif , M. (2024). Islamic Views on Ethics Intelligence Artificial (Artificial Intelligence) In Life Daily . Nuance : Journal Study Knowledge Islamic Social and Religious Affairs , 21 (2), 84-98.
- Eriana , E.S., & Zein , A. (2023). Artificial Intelligence (AI).
- Harahap , MSA, & Zailani , Z. (2024). Effort Increase Students' Spiritual Intelligence Through Habit Read Quran In School Satit Phatnawitya . Journal Scientific Edunomics , 8 (2).

- Kushariyadi , K., Apriyanto , H., Herdiana , Y., Asy'ari , FH, Judijanto , L., Pasrun , YP, & Mardikawati , B. (2024). Artificial Intelligence: Dynamics The Development of AI and Its implementation . PT. Sonpedia Publishing Indonesia.
- Kustandi , C., & Darmawan , D. (2020). Learning Media Development : Concepts & Applications Development of Learning Media for Educators at School And Society . Media tone .
- Mawati , A.T., Hanafiah , H., & Arifudin , O. (2023). Impact changeover curriculum education to participant educate school base . Primary Edu Journal , 1 (1), 69-82.
- Nasution , Y. (2024). Integration Technology in Islamic Religious Education Learning . Journal Knowledge Tarbiyah and Teacher Training , 2 (2), 336-344.
- Ningsih , W., & Zalisman , Z. (2024). Learning Islamic religious education (PAI) in global context . PT. Sonpedia Publishing Indonesia.
- Paat , M., Moku , YB, & Hadi Sutopo , MMSI (2024). Integration of Artificial Intelligence in Problem-Based Learning: An Approach Practical . Topazart .
- Qomaruzzaman , A. (2024). Artificial Intelligence As Assistant Teacher of Islamic Religious Education in Learning . Mauriduna : Journal of Islamic Studies , 5 (2), 704-715.
- Ramadani , I., & Zailani , Z. (2024). Implementation Method Lecture Type Impromptu in Improvement Study Student on Lesson Islamic Religious Education at SMP Negeri 3 Air Batu One Roof . EduInnovation : Journal of Basic Educational Studies , 4 (1), 640-648.
- Sanjaya , R. (Ed.). (2020). 21 Reflection Online Learning In The Modern Era Emergency . SCU Knowledge Media.
- Shabila , M., Widiyanti , I., Yanti , N., Kholilullah , M., Juliansyah , ME, Sauri , MS, & Amalia , IR (2024). Smart Seminar Digital: (Navigate Information and Preventing Misleading Content, Artificial Intelligence (Ai) and the Gap Social) Role Student KKN Yes Sahid Bogor Group 10 In Convey Importance Awake Go digital For Students At Ma Dan. Sahid Serving : Journal Devotion Public Sahid Islamic Institute Bogor , 3 (02), 26-36.
- The Greatest Azhar , A. (2024). Utilization Technology Information and Communication In Learning Islamic Religious Education at SMA N 1 Kawedanan Magetan (Doctoral dissertation, IAIN Ponorogo).
- Soegiarto , I., Hasnah , S., Annas , AN, Sundari , S., & Dhaniswara , E. (2023). Innovation Learning Based on Artificial Intelligence (AI) Technology On School Civil Service in the Revolutionary Era Industry 4.0 And Society 5. O. Innovative: Journal Of Social Science Research , 3 (5), 10546-10555.
- Sugiono , S. (2024). Adoption process generative artificial intelligence technology in world education : Perspective theory diffusion innovation . Journal Education And Culture , 9 (1), 110-133.
- Sulaeman , S., Anggraini , R., Paramansyah , A., Fata, TH, & Judijanto , L. (2024). The Role of Artificial Intelligences As Internal Aids Increase Skills Write Student Islamic Religious Education in the Disruptive Era . Innovative: Journal Of Social Science Research , 4 (1), 5206-5216.
- Suyitno , S. (2024). Training National Online for Compile AI- Based Teaching Modules , Learning Media Interactive And Assessment in Curriculum National . Society: Journal Devotion Society , 3 (5), 306-317.
- Taruklimbong , ESW, & Sihotang , H. (2023). Opportunity And Challenge The use of AI (Artificial Intelligence) in Chemistry Learning . Journal Education Tambusai , 7 (3), 26745-26757.

- Triyanto , T. (2020). Opportunity And challenge education characters in the digital age.
Civics Journal : Study Media Citizenship , 17 (2), 175-184.
- Zakiyah , NU, Ameera , V., Ritonga , AE, Aisah , N., Lingga , SA, & Akmalia , R. (2024).
Use of AI in World Education . Mahira : Journal of Arabic Studies , 4 (1), 1-16.