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# Utilization of Artificial Intelligence (AI) in Learning Islamic Religious Education at SMP IT Bina Ilmi Palembang

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## ARTICLE INFO

## A B S T R A C T

This study was motivated by the development of technology, especially Artificial Intelligence (AI), which began to be integrated into Islamic Religious Education (PAI) learning. Traditionally, PAI learning is often conducted using the lecture method, which has limitations in providing interactivity and personalization. Therefore, this study aims to examine the utilization of AI technology in improving the effectiveness of Islamic Education learning at Bina Ilmi IT Junior High School Palembang. This study used a qualitative approach with descriptive method, where data were collected through observation and in-depth interviews with PAI subject teachers. The results showed that the application of AI in PAI learning was able to have a significant impact on improving students' understanding of the material taught. Teachers utilize AI to provide more interactive materials, data-based learning evaluations, and learning tailored to students' individual needs. Furthermore, the integration of AI not only improves learning effectiveness, but also encourages students to be more active and motivated in understanding Islamic values. This study contributes to understanding how technology can support the transformation of traditional learning methods to be more modern, relevant, and adaptive to the needs of today's digital generation.

## 1. Introduction

Religious Education (PAI) plays a vital role in shaping the nation's character through the cultivation of spiritual, moral, and ethical values. However, in this digital era, PAI faces significant challenges in maintaining its relevance amidst technological developments and changes in the mindset of the younger generation (Rifah et al., 2024). Based on interviews with PAI teachers at Bina Ilmi IT Junior High School Palembang, one of the main challenges is the difficulty in delivering material effectively and efficiently to students. The traditional lecture method, although often used, is no longer sufficient to attract the attention of students who have become accustomed to digital technology.

The digital era presents both opportunities and challenges for the world of education, including in PAI learning. On the one hand, technology enables new approaches that are more interactive and contextual. But on the other hand, if not utilized wisely, technology can reduce the depth of students' understanding of religious values. One innovation that is currently a global conversation is the utilization of Artificial Intelligence (AI). In education, AI offers a great opportunity to improve learning effectiveness by presenting adaptive, personalized, and data-driven methods (Wasehudin et al., 2024).

The rapid development of digitalization has changed the way young people learn, think and interact. Today's students are accustomed to quick access to information through digital devices, but often lack a deep understanding of the content they consume. In the context of PAI, this is a challenge in itself. PAI teachers are required to not only deliver material informatively but also be able to create meaningful and relevant learning experiences. According to R. Nurhayati et al. (2024) globalization increase ingly challenges the relevance of religious education in the midst of popular culture and materialism values that often dominate. PAI which actually teaches universal moral values, must be able to adapt to the needs of the times without losing its essence. This requires innovation in learning methods, including the integration of digital technology that supports the delivery of material in a creative and interesting way (Luqmi et al., 2024).

Based on research conducted by Nirwani & Priyanto (2024) AI is proven to be able to improve the efficiency and quality of PAI learning. However, they also emphasized the importance of using AI wisely so as not to cause mistakes in conveying religious values. This is in line with the findings of Astuti et al. (2024) who underlined that the use of technology in religious education must remain oriented to the spiritual and moral essence. In line with research conducted by Fikri et al. (2024), AI can assist teachers in structuring teaching materials, evaluating student understanding, and even developing more effective learning strategies. However, they also noted that the successful integration of AI in PAI depends heavily on the readiness of teachers, curriculum, and technological infrastructure (Astuti et al., 2024).

This study seeks to make a unique contribution in understanding and developing the utilization of AI in PAI learning. In contrast to previous studies that mostly discuss educational technology in general, this study focuses on: The research was conducted in SMP IT Bina Ilmi Palembang, which provides a specific picture of the challenges and opportunities of AI implementation in PAI learning at the secondary school level. This study not only explores the potential of technology but also analyzes the role of teachers, curriculum, and environmental factors in supporting the successful implementation of AI.

The digital era brings not only challenges but also great opportunities for the transformation of PAI learning. By utilizing AI technology wisely and effectively, religious education can be more relevant, adaptive, and engaging for the digital generation. However, the success of this technology integration is highly dependent on the readiness of teachers, students, and the education system as a

whole. This research seeks to answer that need by presenting insights, analysis, and strategic guidelines for optimizing the use of AI in PAI learning (Ayyubi et al.,2024).

The study is expected to be a practical guide for PAI teachers in utilizing AI to create a more effective, interactive, and meaningful learning experience. This study aims to: (1) analyze the potential of artificial intelligence in PAI learning at Bina Ilmi Junior High School Palembang, (2) analyze the challenges and the role of teachers in implementing artificial intelligence technology in the PAI teaching process at Bina Ilmi Junior High School Palembang. The benefits of this research are to add academic insights related to the utilization of AI in PAI learning and provide guidance for teachers in using AI to improve learning effectiveness.

## 2.     Methodology

This research uses a qualitative approach with a case study method to provide an in-depth analysis of the utilization of Artificial Intelligence (AI) in learning Islamic Religious Education (PAI) at Bina Ilmi IT Junior High School Palembang. This method was chosen to comprehensively explore how AI technology is applied in learning, its impact on the learning process, and the challenges faced. The subject of the research involves Islamic Education subject teachers, while the object of the research is the implementation of AI technology in Islamic Education learning at Bina Ilmi IT Junior High School Palembang. The research also integrates various perspectives, including the experiences of students and principals, to provide a holistic view of the implementation of this technology.

The research was conducted in a classroom environment that has used AI technology as part of the PAI learning process. Data collection techniques included participatory observation to directly record learning activities, in-depth interviews with teachers, students, and principals to understand their experiences and perceptions, and document analysis related to policies and lesson plans that utilize AI. Data triangulation was used to ensure the validity and reliability of the research results.

Data analysis was conducted using a descriptive-qualitative approach with steps: (1) Data collection through various techniques, such as observation, interviews, and documentation; (2) Data reduction to filter information relevant to the research focus; (3) Data presentation in the form of descriptive narratives and visualizations, such as concept maps or analysis matrices; and (4) Drawing conclusions based on emerging patterns and findings, complemented by practical recommendations for the development of AI-based learning in the context of Islamic education (Humaeroh, 2023). For more details on the research method can be seen in the table 1.

Table 1. Research Methode

| Aspects of Research Methods | Explanation |
|---|---|
| Population | All PAI teachers and students at SMP IT Bina Ilmi Palembang |
| Sample | PAI teachers who have used AI in learning, students who have participated in learning using AI, and the school principal. |
| Sampling Technique | Purposive sampling |
| Validity | Obtained through triangulation of data from various sources (observation, interview, documentation) and checking with key informants. |
| Reliability | Obtained through repetition of observations and interviews, and checking between researchers. |

## 3.     Results and Discussion

### *Artificial Intelligence (AI)*

Intelligence comes from the Latin intelligo which means "I understand". So the meaning of intelligo in Latin means proficiency in understanding and carrying out activities. Artificial in English means something made or produced by humans that takes place naturally, especially natural artificial intelligence. While Intelligence means competence to gain and implement knowledge and skills (Najib, 2024). Artificial intelligence, also known as Artificial Intelligence, is a technology that is developing dramatically. AI shows the ability of computer technology to follow human intelligence in various dimensions, including decision making, logic, natural language structuring, and even learning from experience Artificial Intelligence is the skill of computers in following human activities and doing work that requires human proficiency (Ashshiddiqi et al., 2024).

According to Sukmawati (2024), AI is a combination of computer science and data to follow human mindset procedures, as a problem solver, and provide responses. The purpose of AI application is to utilize the knowledge gained in order to overcome increasingly complex problems.

### *Learning Islamic Religious Education (PAI)*

Learning comes from the word "ajar" which means guidelines that are contributed to others to be understood and practiced then added the prefix "pe" and given the suffix "an" to form the word "learning", which means systems, actions, and methods in teaching something so that students are motivated to learn (Trianggara et al., 2024). Learning is a systematic interaction of students with teachers and sources of knowledge in educational institutions. Learning is the help that teachers contribute so that students can gain knowledge, skills, habits, and attitudes and ideologies in learners (Suraijiah et al., 2023).

Islamic Religious Education (PAI) is based on two important words: "education" and "Islam". According to Plato, education is the process of developing students' abilities, so that they have the morals and intelligence to find the ultimate truth. Education is the process of educating humans to have a good attitude in every action (Najib, 2024).

The national education system from the Constitution No.20 of 2003 reveals that education means a conscious struggle that is prepared to build a learning atmosphere and learning procedures for students actively in making their potential so that they have spiritual religion, self-control, behavior, intellectual, noble character, and skills needed by themselves, the people, nation and state.

In general, Islamic education can be interpreted as all procedures carried out consciously to educate, build, and direct and share human fitran and potential in all aspects, both physically and spiritually based on the values of Islamic teachings to achieve a happy life in the world and the hereafter by carrying out the function of human beings as servants of Allah and khalifah Allah (Priamono et al., 2024).

From the view of M. Yusuf al-Qardawhi, that Islamic education is the process of educating the whole person, which includes his mind and heart, his spirit and body, morals and skills (Purwanto et al., 2023). according to Hasan Langgulung, Islamic education is a process of fostering the next generation, transferring knowledge and Islamic values adapted to the work of human beings to do good and harvest the results in the afterlife (Musyafaah, 2023).

Islamic education is different from Western education. Western education focuses on indications that consider the positives and negatives. While Islamic education is everything that is based on the word of God in the Qur'an as the first origin of Islamic education. As Islamic education must be based on the Qur'an as well as the necessity to follow the hadiths of the Prophet Muhammad (Nuriyati, 2024).

### *Utilization of AI in Islamic Religious Education Learning at Bina Ilmi Junior High School Palembang*

The sophistication of Artificial Intelligence (AI) is widely utilized in learning Islamic education in Indonesia. The sophistication of Artificial Intelligence (AI) is widely utilized in Islamic Education learning in Indonesia. AI technology and algorithms are utilized to develop innovative and effective learning methods. The purpose of this approach is to utilize advances in AI technology to enhance the learning experience of students in the context of Islamic belief education (Iftanti et al., 2023). The application of AI in the world of education in order to be able to help the teaching and learning process more innovative and effective, namely:

Firstly, visual mentors are platforms that are used to understand something through video feeds that contain images and sound. These platforms typically include data collection and labeling, image processing, feature extraction, and training. Through visual mentors, students can understand the subject matter

through the video, this can help educators to show learning materials and quizzes to students to make learning more effective and efficient (Novanti & Saputri, 2024).

Second, Voice Assistant. One of the AI intelligence technologies is voice assistants, such as Google Assistant, Siri and Cortana, and others. This can help PAI teachers to teach Qur'anic knowledge, tajweed, makharijul huruf (how to pronounce letters using sahih), and recite Qur'anic verses with sahih.

Third, Presentation Translator, also known as presentation translator, can be used to present a text from various languages into the desired language. Learners who feel unfamiliar with the Arabic language when reciting the Qur'an can translate the Arabic language to understand the meaning contained in the Qur'an. This AI can improve their understanding and their ability to follow the reading (Mutaqin et al., 2023).

The use of Artificial Intelligence (AI) in global education, especially in learning Islamic beliefs, is increasingly in demand. AI provides great potential for increasing the effectiveness and efficiency of learning, but also has challenges that must be faced in applying AI to learning Islamic belief education at Bina Ilmi Palembang IT Junior High School.

### *AI Potential in Islamic Education Learning*

Based on what will happen, the researcher's interview used the PAI teacher at Bina Ilmi IT Junior High School. he explained that the potential in utilizing AI to improve students' understanding of PAI material in various ways, as follows.

     a.     Personalized learning, meaning that AI can analyze student data, such as test results and interactions with learning platforms, to understand the needs and learning styles of individual students. AI technology can help create customized learning materials using individual needs, so that learners can learn more effectively (Humaeroh, 2024).

     b.     Improved access to information, AI can provide students with easy and quick access to various resources related to Islamic religious education, such as learning videos, PPTs, and digital books. AI-based learning platforms can provide relevant and interesting content, and as a result, students are more motivated to learn (Suhendi et al., 2024).

     c.     Increasing interaction and motivation, AI can create an interactive and engaging learning environment, such as through educational games, simulations, and games that can answer students' questions. These more engaging interactions can increase students' learning motivation and help them understand Islamic education concepts better (Iftanti et al., 2023).

     d.     More effective evaluation and feedback, Ai can assist teachers in evaluating student understanding more quickly and accurately. AI systems can analyze students' answers in exams or assignments, provide personalized feedback, and identify areas for improvement (Luqmi et al., 2024).

### *Teachers' Challenges and Roles in Utilizing AI in Islamic Education Learning*

Although it has great potential in improving understanding of PAI learning. The use of AI in PAI learning at Bina Ilmi Palembang IT junior high school also faces several challenges, as follows:

a.  The lack of preparation for mastery of infrastructure and internet access, the utilization of AI technology requires careful preparation and ability to infrastructure, IT, human resources and others. therefore the work of a teacher in preparing infrastructure is fundamental to the successful utilization of Ai in PAI learning at Bina Ilmi IT Junior High School, because with careful preparation, a teacher can participate significantly in innovating the Islamic education system in the digital era (Wasehudin et al., 2024).

b.  The existence of many contents that are not relevant to the teachings and curriculum of Islamic education, AI technology provides information that is increasingly global. With this sophistication, students can access the various content they want, therefore the role of the teacher is not only to teach students to integrate technology, but must guide students to be able to integrate AI technology in accordance with the Islamic education curriculum and Islamic values, and not deviate from Islamic teachings (Mambu et al., 2023).

c.  Problems of interaction in the process of learning in the classroom, The digital era does provide convenience for everyone who is a member of an educational institution, but the presence of AI also has a negative impact that affects the interaction between students and teachers. Of course, the role of the teacher as an educator must be able to establish good interactions with students, so that harmony is maintained in the educational process (Qomariyah, 2023).

d.  Data privacy and ethics issues, a teacher has an obligation to keep student data safe and confidential. The role of teachers in the utilization of AI is to teach ethics in the use of AI. This means that AI can be used to seek knowledge universally, not to make student assignments instantly without studying the material provided, so that there is no misunderstanding in filtering incoming information and knowledge (Farida & Makbul, 2024).

The utilization of Artificial Intelligence (AI) in Islamic Religious Education (PAI) learning at Bina Ilmi Junior High School Palembang shows great potential in creating innovative and effective learning methods. AI technologies, such as visual mentor, voice assistant, and presentation translator, have been utilized to enhance students' learning experience by providing more interactive and relevant ways. For example, visual mentors make it easier for students to understand the material through video shows that combine images and sound, which is in line with the findings of  Fikri et al. (2024) showing that technology-based visualization improves students' absorption of abstract concepts. In addition, voice assistants, such as Google Assistant or Siri, can help students learn tajweed and makharijul huruf in a valid manner, which was also confirmed by Novanti & Saputri (2024) where this technology improved the accuracy of Qur'anic

recitation. Presentation translators also play an important role in helping students understand Arabic better, especially in understanding the content of the Qur'an (Rifah et al., 2024).

The potential of AI in PAI learning also includes the ability to personalize learning, easier access to information, increased interaction, and more effective evaluation. AI is able to analyze student data to tailor materials to their individual needs, making the learning process more efficient (Fitri Sarinda et al., 2023). In addition, AI-based platforms provide engaging educational content, such as learning videos and digital books, which encourage students to be more motivated in learning. In terms of interaction, the features of AI-based educational games and simulations allow students to learn in a more engaging environment, supporting Astuti et al. (2024) research which revealed that interactive elements are important for students. Ayyubi et al. (2024) who revealed that interactive elements of AI can increase students' interest in learning.

However, the implementation of AI also faces challenges, such as infrastructure limitations, content that does not fit the curriculum, decreased direct interaction between students and teachers, and data privacy issues. Infrastructure limitations, such as uneven internet access and lack of adequate technological devices, are the main barriers to AI utilization (Nasikin et al., 2024). In addition, the presence of irrelevant global content demands the role of teachers in filtering information and ensuring its consistency with the PAI curriculum and Islamic values (Priamono et al., 2024). Direct interaction between students and teachers can also be affected by the use of AI, so the role of the teacher as a mediator in maintaining the harmony of the learning process remains very important. Finally, student data privacy is a crucial issue, so teachers need to educate students about the ethical use of technology and keep their data safe (Parhan et al., 2024).

Thus, the utilization of AI in PAI learning at Bina Ilmi Junior High School Palembang not only opens up opportunities to create more effective learning methods, but also requires readiness in facing technological challenges so that the application of AI can be carried out optimally and in accordance with Islamic educational values.

## 4. Conclusion

Artificial Intelligence has great potential in PAI learning by personalizing materials according to student needs, improving access to information, creating interactive learning environments, and accelerating evaluation and feedback. AI integration can make PAI learning more effective, engaging, and efficient, thus promoting student understanding and motivation to learn. The main challenges for teachers in utilizing AI include infrastructure readiness, content relevance, classroom interaction, and data privacy and ethics. Teachers play a crucial role in preparing adequate infrastructure and ensuring AI is used in accordance with Islamic values and the PAI curriculum. They must also guide students to utilize

AI wisely, maintain harmonious interactions in the classroom, and teach ethical use of technology.

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