

UTILIZING ADVANCES IN ARTIFICIAL INTELLIGENCE (AI) IN EFFORTS TO STUDY ISLAMIC STUDIES WISELY IN Z GENERATION

*¹KHODIJATUL KUBRO, KHODIJAHALKUBRO5@GMAIL.COM

²DWI AMALIA PUTRI, DWIAMALIAPUTRI96@GMAIL.COM

*¹FACULTY OF TARBIYAH AND TEACHER TRAINING, UIN SUNAN KALIJAGA, DAERAH
ISTIMEWA YOGYAKARTA, INDONESIA

²FACULTY OF TARBIYAH AND TEACHER TRAINING, UIN SUNAN KALIJAGA, DAERAH
ISTIMEWA YOGYAKARTA, INDONESIA

1st ICOERESS

(October 16th 2024)

Submission:

(16-10-2024)

Published:

(30-12-2024)

ABSTRACT

This research aims to determine (1) the impact of using artificial intelligence (AI) technology, (2) the use of artificial intelligence (AI) technology, and (3) the obstacles that arise in using artificial intelligence (AI) technology as a means of learning Islamic religion for generation Z. This research is a qualitative descriptive study with the type of literature study. The main data source was obtained from library data and the supporting data source was obtained from the results of a questionnaire on generation Z. The data collection technique used documentation and questionnaire techniques and was analyzed using the Mels and Huberman analysis model including data reduction, presentation of reduction results, and presentation of conclusions. The results of this research show that artificial intelligence (AI) technology has become the latest research topic and is studied in various aspects. (1) The use of artificial intelligence (AI) technology in studying Islamic studies digitally has a dual impact on the spiritual life of generation Z. Artificial intelligence (AI) technology can expand access to religious resources, increase understanding, and strengthen the faith of generation Z. However, its use is excessive or not surveillance can lead to reliance on technology, reduce personal interactions with clergy, and cloud spiritual experiences. (2) The use of artificial intelligence (AI) technology in Islamic religious learning is not as a main reference source, but as a supporting tool, a tool. Through artificial intelligence (AI) technology, generation Z can receive religious knowledge efficiently. In using artificial intelligence (AI) as a means of learning about Islam, generation Z needs to have a wise and critical attitude in evaluating and applying information. (3) Obstacles in using artificial intelligence (AI) technology include internal obstacles where generation Z becomes dependent on technology and external obstacles such as lack of accurate religious information and limited access to technology. These obstacles need to be considered in order to support the Islamic learning process in generation Z.

Keywords: *Artificial Intelligence (AI), Generation Z, Islamic Studies*

BACKGROUND

In an era marked by rapid progress in information and communication technology, digitalization has penetrated almost every aspect of human life (Rahman & Nuryana, 2019). One of the greatest discoveries of this century is artificial intelligence (AI) (Sidabutar & Munthe, 2022). According to research conducted by UBS, the popular chatbot developed by OpenAI reached 100 million monthly active users in January, just two months after its release. This rapid growth makes it the consumer application with the highest growth rate ever recorded in history (Liputan6.com, 2023).

Technological development is inevitable. Along with technological advances, human civilization also develops (Budihardjo, 2020). Generation Z currently has the flexibility to study Islam in various places and times through various means. They not only rely on ulama as the only source of

religious knowledge, but can also take advantage of technological advances such as smartphones and the very sophisticated internet.

Advances in artificial intelligence (AI) technology have made it possible to use robots as religious teachers who are starting to replace the role of human preachers (SINDOnews.com, 2023). Muslim communities, including generation Z, increasingly rely on technology to obtain religious information and fulfill their spiritual needs. By using digital devices such as smartphones, applications, and social media, they can access religious knowledge, participate in religious activities, and interact with Muslim communities around the world (Ghofur, 2019).

Religion plays a significant role in shaping human personality through instilling spiritual values, beliefs and the practice of worship. This produces individuals who are obedient and diligent in carrying out religious values. Adherence to religion not only shapes an individual's personality, but also influences his lifestyle, creating a life full of calm and order. Religion encourages its followers to implement religious teachings and doctrines in all aspects of life to achieve salvation. Religion has an important role in regulating various aspects of life and encouraging humans towards the common good (Nurazizah, Rukajat, & Ramdhani, 2022).

Although the development of information and communication technology, including artificial intelligence (AI), has had a positive impact in facilitating access to religious information, new challenges have also emerged that must be faced (Putra, 2019). In this context, this research aims to discuss how developments in artificial intelligence (AI) technology influence the way generation Z learns about Islam digitally. Through the application of artificial intelligence (AI) technology in religious learning, this research seeks to identify positive impacts, changes in religious practices, and obstacles that may arise in the use of this technology.

This research has several objectives. First, to evaluate the impact of using artificial intelligence (AI) technology in studying the Islamic religion digitally on the spiritual life of generation Z. Second, to analyze the use of artificial intelligence (AI) technology in generation Z in studying the Islamic religion digitally. Third, to identify obstacles in using artificial intelligence (AI) technology as a means of learning Islamic religion for generation Z.

This research is expected to provide benefits both from a theoretical and practical perspective. From a theoretical perspective, this research can form the basis for further research and development in this area, thereby developing more effective methods and approaches in utilizing artificial intelligence (AI) technology to facilitate in-depth understanding of religion. The practical benefit lies in the application of artificial intelligence (AI) technology in understanding religion, which is expected to help in developing the spiritual awareness of generation Z. Through applications, platforms, or chatbots supported by artificial intelligence (AI), generation Z can obtain guidance, advice, or worship practices that can help strengthen their spiritual bond. With the help of technology, generation Z can more easily carry out their worship and deepen their understanding of religion.

This research will integrate various concepts such as digitalization, technological developments, artificial intelligence (AI), Islamic studies, and the characteristics of generation Z to discuss the impact, changes, and obstacles to the use of artificial intelligence (AI) technology in understanding religion. Thus, this research will provide a deeper understanding of the role of technology in the transformation of Islam in the digital era.

This research explores three main focuses. First, in the context of Islamic studies, Islamic studies is an effort to understand aspects of Islam, including normative studies consisting of interpretation of Al-Qur'an, hadith, fiqh and kalam sciences, as well as non-normative studies which view Islam as a phenomenon. factual and religious teachings that continue to develop. This study involves diverse perspectives from Muslim and non-Muslim scholars. Furthermore, the research discusses artificial intelligence (AI) as the implementation of intelligence in computer systems that are capable of processing information automatically and behaving like humans, allowing machines to execute tasks with human-like performance. Finally, the research explores Generation Z, a group of individuals born between 1997-2012, who grew up in the digital era, tend to be digitally active, and rely

more on the internet in social and educational aspects, and have a preference for instant gratification in digital interactions.

This research compares the results with previous research which examined the idea of ChatGPT in Christian Religious Education (Pantan, 2023). Although both studies examine artificial intelligence (AI) products, this research focuses on the use of artificial intelligence (AI) products in the context of Islamic religious studies, which is different from Pantan's (2023) research which focuses on Christianity.

RESEARCH METHOD

Approaches and Types of Research Procedures

This research uses a qualitative approach with two types based on patterns. First, based on the data collection technique used, this type of research is library research with a narrative review model. Literature study or library research is research that uses library sources to obtain data (Zed, 2008). Through this type, researchers summarize, compare and evaluate theories obtained from books, journals, news and various other library sources that are relevant to the research topic. In this research, literature study is used to discuss the progress of artificial intelligence (AI) in generation Z, especially in studying Islamic studies.

Second, based on the results presentation technique, this type of research is descriptive analysis. This method is used to solve a problem from the researcher's perspective through the process of describing, depicting, explaining and analyzing the situation and conditions of a problem object (Sugiyono, 2014). This method is carried out based on the results of literature studies or literature reviews that are relevant and supporting.

Data Source

The data sources used in this study are divided into two, namely primary and secondary. The primary data source used comes from literature that discusses the progress of artificial intelligence (AI) in efforts to study Islam in generation Z. The secondary data source for this writing was obtained from other literature that supports and is relevant to the problems that are the object of research study as well as the results of the generation Z questionnaire.

Data Collection Technique

This research uses two (2) techniques in the data collection process, including documentation techniques and questionnaires. The first technique is documentation. As research uses library study methods, it is important to use documentation techniques to search for data. Documentation is the process of searching for information about a particular topic or variable through notes, books, papers, articles, journals and other sources (Sari & Asmendri, 2020). The documentation method is the main thing in this research to summarize the data obtained so that we can find the use of advances in artificial intelligence (AI) in generation Z in studying Islam.

The steps in collecting this data refer to the library research theory expressed by Zed (2008). The steps used are a) determining general ideas regarding the research topic, b) looking for supporting data, c) emphasizing the focus of the research, d) searching for and finding the references needed and grouping these references, e) reading and making research notes, f) reviewing and expanding reference sources, and g) regrouping the references used and starting to create a research report.

This technical procedure is carried out using the Google Scholar page, GARUDA (Digital Reference Garba), and the Publish or Perish application with the keywords artificial intelligence (AI), education, and Islam. The articles used as a literature review for this research come from international, nationally accredited and non-accredited journals, proceedings, theses or theses from 2019-2023. The validation and review process involves several criteria, including the availability of journals that can be accessed for free via Open Journal Systems (OJS), the quality of the research methodology used in the article, good data presentation and discussion, availability of sufficient data for analysis, up-to-date references and relevant. The results of this data collection are presented in table form.

The second data collection technique is a questionnaire. The questionnaire technique is used to obtain information in the form of written questions and answers between researchers and respondents. The questionnaire method is applied by providing questionnaires to respondents, which contain questions prepared by researchers. The results of this questionnaire data are presented in the form of a description. This questionnaire was given to generation Z, whether they have used artificial intelligence (AI) technology in studying Islamic studies or those who have not. This questionnaire was given to find out the use process and obstacles encountered while studying Islamic studies with artificial intelligence (AI). The use of a questionnaire in this research is to strengthen the results of the literature study that has been used by comparing it with the conditions experienced by generation Z.

Data Analysis Technique

This research analyzes the results using an interactive analysis model from the figures Mels and Huberman as a technical reference. The model consists of three (3) stages, starting after the research data has been collected. The data analysis stage begins with the researcher carrying out data reduction by sorting all the data collected, then presenting the data resulting from the reduction process, and finally presenting the conclusion in the form of a descriptive analysis regarding the use of advances in artificial intelligence (AI) in an effort to study Islamic studies in generation Z (Sugiyono, 2014).

RESEARCH FINDINGS

Result of Articles Review

Table 1. Result of Articles Review

Identity Article	Review Results
Tjahyanti, L. P. A. S., Saputra, P. S., & Gitakarma, M. S. (2022). Peran Artificial Intelligence (AI) untuk Mendukung Pembelajaran di Masa Pandemi Covid-19. <i>Jurnal Komputer dan Teknologi Sains (KOMTEKS)</i> , 1(1), 15–21.	This article discusses artificial intelligence (AI) which allows human jobs and roles to be replaced, but can also provide new jobs such as data scientists. In the field of education, artificial intelligence (AI) can be applied as a tool for virtual mentors, voice assistants, intelligent content, presentation translators, global courses, automated assessments, and personalized learning.
Nawi, A., Yaakob, M. F. M., Hussin, Z., Muhaiyuddin, N. D. M., Samuri, M. A. A., & Tamuri, Ab. H. (2021). Keperluan Garis Panduan dan Etika Islam dalam Penyelidikan Kecerdasan Buatan. <i>Journal of Fatwa Management & Research</i> , 26(2), 280–297.	This article discusses the impact and potential use of artificial intelligence (AI) on humans. Artificial intelligence (AI) has been widely used in developing countries in various fields, such as health, economics and finance, aviation, automotive and education. However, the use of artificial intelligence (AI) can also be a threat because it is exploited for terrorist activities, identity fraud and detrimental data collection. Therefore, artificial intelligence (AI) experts from both the European Commission and the UN are preparing policies, controls and regulations related to artificial intelligence (AI) research with collaboration from various scientific disciplines and perspectives, including Islam.
Zulrahman, M. F., & Syahputra, H. (2023). Pemanfaatan Artificial intelligence Markup Language (AIML) dan Latent Semantic Analysis (LSA) dalam Pengembangan Chatbot E-Education. <i>Journal of Information Technology and Computer Science</i>	This article discusses the use of Artificial Intelligence Markup Language (AIML) and Latent Semantic Analysis (LSA) in developing e-learning chatbots to provide positive results. Chatbots developed using AIML and LSA can respond correctly to user input, even for questions containing abbreviations and typos. Chatbot accuracy reaches 100%. The study also found that the use of models and patterns in AIML plays an important role in matching queries and achieving appropriate results. However, AIML's limitation is its

(INTECOMS), 6(1), 36–43.
doi:

[10.31539/intecom.v6i1.545](https://doi.org/10.31539/intecom.v6i1.545)

9

ability to provide answers that only refer to one meaning in the database, although variations in answers are still possible.

Manongga, D., Rahardja, U., Sembiring, I., Lutfiani, N., & Yadila, A. B. (2022). Dampak Kecerdasan Buatan Bagi Pendidikan. *ADI Bisnis Digital Interdisiplin Jurnal*, 3(2), 41–55. doi: [10.34306/abdi.v3i2.792](https://doi.org/10.34306/abdi.v3i2.792)

This article examines the impact of artificial intelligence (AI) in the educational context, with a focus on the evaluation of its implementation and impact in pedagogical, administrative and academic aspects. Uses of artificial intelligence (AI) in educational settings have included computer hardware, software, online learning platforms, and the use of robots as trainers or tutors. In this case, artificial intelligence (AI) increases the effectiveness and efficiency of pedagogues, which improves the quality of teaching. Additionally, artificial intelligence (AI) provides a better learning experience for students by tailoring learning resources to individual needs and abilities. Overall, artificial intelligence (AI) is having a major impact in the fields of management, teaching and learning, both in the education sector and in personal learning situations.

Wahyuningtyas, E. (2021). *Rancang Bangun Game Edukasi Agama Islam Untuk Anak Menggunakan Artificial intelligence* (Diploma Thesis). Politeknik Negeri Jember, Jember.

The article offers ideas for using artificial intelligence (AI) in the development of Islamic educational games as an interesting and effective alternative in facilitating Islamic learning for children. In this article, it is explained that artificial intelligence (AI) will be implemented in an educational game in the form of a hijaiyah puzzle game, where children will sort the hijaiyah letters so that they are arranged correctly. The aim of making this educational game is to apply information technology to children in using games as a tool to support learning about Islam.

Rahadiantino, L. (2022). Implementasi Pembelajaran Artificial intelligence Bagi Siswa Sekolah Dasar di Kota Batu, Malang, Jawa Timur. *Jurnal Inovasi Pendidikan dan Pembelajaran Sekolah Dasar*, 6(1). doi: [10.24036/jippsd.v6i1.115857](https://doi.org/10.24036/jippsd.v6i1.115857)

This article explains the need to develop artificial intelligence (AI) designs to support the education system to facilitate understanding of lessons in class and facilitate interaction between students and teachers. In the article, three learning platforms are mentioned that are used as learning media, namely Duolingo, Khan Academy, and Kejarcita. During the implementation of educational development activities using artificial intelligence (AI), it was found that students tended to learn faster and felt happy exploring new things.

Ririh, K. R., Laili, N., Wicaksono, A., & Tsurayya, S. (2020). Studi Komparasi dan Analisis Swot pada Implementasi Kecerdasan Buatan (Artificial Intelligence) di Indonesia. *Jurnal Teknik Industri*, 15(2), 122–133.

This article conducts a comparative study and SWOT analysis regarding the implementation of artificial intelligence (AI). Based on the results of the comparison and SWOT analysis, increasing company effectiveness and efficiency is the main factor driving a high level of artificial intelligence (AI) implementation. However, it should be noted that the implementation and development of artificial intelligence (AI) technology can be less than optimal if it is not paid attention to in detail or is not integrated well with other technologies, such as food technology and others.

Hidayat, R., Rahardyanto, S., & Hardjita, P. W. (2020). Survey Paper: Tantangan dan Peluang Kecerdasan Buatan dalam Bidang Islam, Qur'an dan Hadits. *Prosiding Konferensi Integrasi Interkoneksi Islam dan Sains*,

This article reviews various applications, techniques and methods related to artificial intelligence (AI), and argues that there is a great opportunity for researchers to continue and develop the application of artificial intelligence (AI) in the fields of Islam, Al-Qur'an and Hadith. This article also highlights that sources of Islamic legal texts and knowledge still have potential that has not been fully exploited. This is a challenge and opportunity for researchers to contribute to the development of artificial intelligence (AI) and apply technical

2, 343–346. Diambil dari <http://sunankalijaga.org/prosiding/index.php/kiiis/article/view/421>

knowledge and methods in this field. In this effort, coordination between researchers with similar interests in topics, cases and datasets is expected to lead to the realization of a system that is developed jointly and sustainably.

Misnawati. (2023). ChatGPT: Keuntungan, Risiko, dan Penggunaan Bijak Dalam Era Kecerdasan Buatan. *Prosiding Seminar Nasional Pendidikan, Bahasa, Sastra, Seni, Dan Budaya*, 2(1), 54–67.

This article examines the benefits of artificial intelligence (AI) technology, including its ability to make decisions quickly and accurately based on data. However, the article also mentions some risks associated with this technology, such as information security and the potential for mass replacement of human jobs. To reduce risks and maximize benefits, it is important to use artificial intelligence (AI) technology wisely. Recommended steps include paying attention to ethics in developing artificial intelligence (AI), maintaining the confidentiality of user information and personal space, avoiding discrimination in decision making, reducing the impact of mass replacement of human jobs, and maintaining the security of artificial intelligence (AI) systems.

Saihu, M. (2021). Al-Qur'an and The Need for Islamic Education to Artificial Intelligence. *Mumtaz: Jurnal Studi Al-Qur'an Dan Keislaman*, 5(2), 18–31. doi: [10.36671/mumtaz.v3i2.45](https://doi.org/10.36671/mumtaz.v3i2.45)

This article discusses the importance of concrete steps in education in the 4.0 era, such as developing critical thinking and interpersonal communication skills, adapting the curriculum to technological developments, and utilizing artificial intelligence (AI) as an attractive educational visualization. Even though technology can help practical aspects of Islamic education, the role of teachers remains important in instilling educational values and goals.

Karim, A. R., & Sugianto, H. (2023). Measuring The Future Needs of Islami Education Through The Role of Artificial Intelligence. *Proceeding of International Conference on Education, Society and Humanity*, 1(1), 861–870.

This article reveals the future needs of Islamic education through the role of artificial intelligence. This research shows that artificial intelligence (AI) has a significant role in the teaching, learning, and administration of Islamic education. Apart from that, this research also describes the paradigm of educators and students in Islamic education through the role of artificial intelligence (AI), where students act as recipients, collaborators and leaders in learning.

Hamruni, & Suwartini, S. (2022). Artificial Intelligence in Global Islamic Education. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 27(6), 39–49.

This article explores the application of artificial intelligence (AI) in Islamic education in various countries. Artificial intelligence (AI) has bright prospects in personalizing Islamic learning, supporting students with special needs, updating communication patterns in education, helping school management, preventing school dropouts, improving evaluation skills, and increasing readiness to face new innovations. Ethically, the application of artificial intelligence (AI) is considered compatible with the principles of Islamic morality as long as it pays attention to trustworthy artificial intelligence (AI) principles such as beneficence, non-maleficence, autonomy, justice and explanation.

Mulianingsih, F., Anwar, K., Shintasiwi, F. A., & Rahma, A. J. (2020). Artificial Intellegence dengan Pembentukan Nilai dan Karakter di Bidang Pendidikan. *IJTIMAIYA: Journal of Social Science*

This article discusses artificial intelligence (AI) as a branch of computer science that aims to develop machines with the ability to think and behave like humans, such as speech recognition, problem solving, learning and planning. The application of artificial intelligence (AI) in education has an influence on the formation of students' values and character, both related to students and non-students, which can broaden ways of thinking and open new perspectives. Although artificial intelligence (AI) can make things easier for students and provide holistic and visual learning support, it

Teaching, 4(2), 148–154. doi: [10.21043/ji.v4i2.8625](https://doi.org/10.21043/ji.v4i2.8625) is important to remember that the presence of artificial intelligence (AI) does not always guarantee ethical interactions with technology. Therefore, direct training and teaching is still needed to lead and guide students in using artificial intelligence (AI) technology wisely.

Wiranto, E. B., & Suwartini, S. (2023). Artificial Intelligence and Trustworthy Principles in Global Islamic Education. *Ushuluddin International Conference (USICON)*, 6, 64–87. This article explores the application of artificial intelligence (AI) in Islamic education in various countries. Literature studies found that artificial intelligence (AI) has been used in various aspects of Islamic education, such as administration, language learning, tahfiz Al-Qur'an, and research. The application of artificial intelligence (AI) is considered to be in accordance with Islamic ethical principles. This article provides a comprehensive overview of the influence and prospects of artificial intelligence (AI) in Islamic education.

Zahara, S. L., Azkia, Z. U., & Chusni, M. M. (2023). Implementasi Teknologi Artificial Intelligence (AI) dalam Bidang Pendidikan. *Jurnal Penelitian Sains dan Pendidikan (JPSP)*, 3(1), 15–20. <https://doi.org/10.23971/jpsp.v3i1.4022> This article examines the implementation of artificial intelligence (AI) technology in the field of education and provides an understanding of its benefits for educators. The implementation of artificial intelligence (AI) technology in education brings convenience in various aspects, especially in the administrative field. In this case, artificial intelligence (AI) technology can help educators determine final grades based on predetermined weights and assessments, so that the assessment process becomes more efficient. Apart from that, artificial intelligence (AI) technology also plays an important role in creating more active and interactive learning, by providing more personalized solutions and recommendations to teachers and students. Thus, the implementation of artificial intelligence (AI) technology can increase the efficiency and effectiveness of learning in the educational context.

These articles imply that the development and application of artificial intelligence in education has great potential to improve the quality of education, but needs to be accompanied by attention to ethical aspects and appropriate training. In detail, the results of the review of the 15 journals above can be written as follows,

1. Artificial intelligence (AI) has played an important role in various aspects of human life, including education. The use of AI in education has enabled greater efficiency and effectiveness in teaching and learning.
2. The application of artificial intelligence (AI) in Islamic education has great potential to increase the personalization of learning, support students with special needs, and renew communication patterns in education.
3. The use of artificial intelligence (AI) in Islamic educational games is an interesting alternative to facilitate Islamic learning for children.
4. While artificial intelligence (AI) provides great benefits in education, it is important to be aware of the ethics and training required to ensure ethical interactions with the technology.
5. The implementation of artificial intelligence (AI) in Islamic education in various countries has had a positive impact and is considered in accordance with Islamic ethical principles.
6. Artificial intelligence (AI) technology makes administrative aspects of education easier, such as assessment and learning that is more active and interactive.

DISCUSSION

The Impact of Using Artificial Intelligence (AI) Technology in Studying Islam Digitally on the Spiritual Life of Generation Z

The use of artificial intelligence (AI) technology in all areas of life is a solution that makes a major contribution to the continuity of the wheel of life (Farwati, Salsabila, Navira, & Sutabri, 2023). Especially in Islamic life, the use of artificial intelligence (AI) technology in digital Islamic studies has both positive and negative impacts on the spiritual life of generation Z.

The positive impact of using artificial intelligence (AI) technology in digital Islamic studies is the possibility of expanding access to religious materials practically and easily through digital platforms. Generation Z can quickly and efficiently access religious resources, including Al-Qur'an, hadith and other Islamic literature, and obtain more detailed explanations and interpretations. This can help increase their understanding of Islamic teachings and strengthen their faith and spiritual life.

Based on the answers given in the questionnaire, the use of artificial intelligence (AI) technology in Islamic digital learning has a positive impact on generation Z. They can easily find clear information and get new ideas through artificial intelligence (AI) chats such as ChatGPT. Artificial intelligence (AI) technology also helps recall the important history of Islam, making the study of religion more interesting and expanding generation Z's knowledge.

The use of artificial intelligence (AI) technology in studying Islam also has a negative impact. Excessive use or without proper supervision can cause generation Z to rely on technology as the main source of religious knowledge. This can reduce their interactions with ulama, religious teachers, and religious communities which are important in forming a holistic and in-depth understanding of religion. Apart from that, the presence of artificial intelligence (AI) technology also has the potential to obscure spiritual experiences and reduce the sense of personal involvement in religious practices that involve social and community interactions. Apart from that, the use of artificial intelligence (AI) technology can make generation Z lazy and less aware of the real impact of studying religion.

Therefore, it is important for generation Z and society as a whole to utilize artificial intelligence (AI) technology in studying Islam digitally in a balanced manner. Generation Z needs to maintain personal interactions with ulama, religious teachers and religious communities so that their understanding of religion becomes holistic. The use of artificial intelligence (AI) technology should be as an additional knowledge, not the main source, so as not to obscure spiritual experiences and personal involvement in religious practices that involve social interaction.

Use of Artificial Intelligence (AI) Technology in Studying Islam for Generation Z

Artificial intelligence (AI) technology has interesting potential (Rusmiyanto dkk., 2023). Generation Z respondents showed high interest in utilizing mobile applications, AI chatbots, and AI platforms to deepen their understanding of the Islamic religion.

Based on the answers given in the questionnaire, there are several different opinions regarding the use of artificial intelligence (AI) in studying the Islamic religion. Some opinions state that the use of artificial intelligence (AI) can help increase knowledge about the Islamic religion, especially in looking for references, looking for information about Islamic history, looking for verses from Al-Qur'an, or finding Islamic journals. They consider that artificial intelligence (AI) can provide easy access and accurate information if used wisely and checking trusted sources. Apart from that, through artificial intelligence (AI) technology, generation Z can find answers to religious questions without having to bother going to religious figures. That way, the Islamic learning process becomes more efficient.

However, there is also an opinion that states that artificial intelligence (AI) cannot be used as a reference in religion because artificial intelligence (AI) only collects data from the internet and does not have clear scientific knowledge. They emphasized the importance of having a teacher or ustad who has correct religious knowledge and can be used as a guide in studying Islam.

Although the majority of respondents believe that the use of artificial intelligence (AI) can help increase knowledge about the Islamic religion, it is important to consider critical aspects in adopting this technology (Nugraha & Sufanti, 2023). Several respondents emphasized the importance of thoroughness and criticality in using information obtained through artificial intelligence (AI). The use of artificial intelligence (AI) technology, such as mobile applications, AI chatbots, and AI platforms, can provide generation Z with easier and more practical access to studying the Islamic religion.

The use of artificial intelligence (AI) technology is only as a tool and not as a substitute for in-depth understanding and knowledge. Users still need to have a wise and critical attitude in evaluating and applying the information obtained through this technology. The accuracy and reliability of the information presented by artificial intelligence (AI) technology should also be a major concern. Therefore, the use of artificial intelligence (AI) technology in studying the Islamic religion digitally can be a useful tool to overcome the gap in religious knowledge between generation Z and previous generations, but with the caveat that users are still responsible for having a critical attitude in evaluating the information obtained.

Obstacles in Using Artificial Intelligence (AI) Technology as a Means of Islamic Learning for Generation Z

The use of artificial intelligence (AI) technology in learning about Islam in generation Z has not yet run optimally according to the expected goals. This is due to several obstacles that hinder its use. Based on the source, constraints can be divided into two (2), including internal constraints originating from artificial intelligence (AI) users, namely generation Z, and external constraints originating from outside these users.

First, internal constraints. Internal obstacles in the use of artificial intelligence (AI) come from generation Z individuals where they experience dependence on technology. The use of artificial intelligence (AI) can be a valuable tool for learning, but it can also create a dependency on technology. Generation Z is becoming too dependent on AI and losing the ability to learn independently.

This internal obstacle is a challenge for generation Z which must immediately find a solution. One solution is to increase soft skill competencies such as critical thinking, creative, communicative, optimistic, and so on (Zahara, Azkia, & Chusni, 2023). Through these soft skills, generation Z will be able to control the use of artificial intelligence (AI) in their learning and life processes so that they do not become dependent.

Second, external constraints. External constraints come from outside generation Z individuals, either from the artificial intelligence (AI) technology used or the environment. From the aspect of artificial intelligence (AI) technology used, there are several obstacles. The first external obstacle is the lack of accuracy and validity of information.

In general, artificial intelligence (AI) technology can provide various information, both regarding technology, business, health, education, and so on. The information conveyed is also accurate and precise without requiring a long processing time (Misnawati, 2023). However, this has not been fully discovered when artificial intelligence (AI) is used to access Islamic studies.

Several respondents expressed various limitations in terms of Islamic religious information when using artificial intelligence (AI) technology. The limited information found on Islamic teachings that respondents found was related to the writing of Al-Qur'an lafazh and hadith, information on previous religious figures, information on religious books, information on the history of Islam, Islamic studies in local contexts and practices, and sensitive discussions of religion.

Apart from that, respondents also emphasized the need to include material sources in every religious information. Studying Islamic religious studies must refer to teaching sources, such as Al-Qur'an, hadith, and so on. By having complete sources as references, the religious information conveyed will be more valid and accurate and will not deviate from religious teachings.

The second external obstacle is limited access to artificial intelligence (AI) technology. Using artificial intelligence (AI) technology as a medium for studying Islamic studies requires a device that is capable of accessing artificial intelligence (AI). However, there are still many people from generation Z who don't have this device. This is an obstacle experienced by the majority of respondents, such as device problems and an unsupported internet network. As a result, the process of accessing artificial intelligence (AI) becomes hampered or loaded, making it difficult for generation Z to use it as a means of studying Islamic studies.

CONCLUSION

The use of artificial intelligence (AI) technology in studying Islamic studies digitally has a dual impact on the spiritual life of generation Z. On the one hand, artificial intelligence (AI) technology will expand access to religious resources, increase understanding, and strengthen the faith of generation Z. However, excessive use or unsupervised can lead to dependence on technology, reduce personal interactions with clergy, and cloud spiritual experiences. The use of artificial intelligence (AI) technology in Islamic religious learning is not as a main reference source, but as a supporting tool, a tool. Through AI technology, generation Z can receive religious knowledge efficiently. In using artificial intelligence (AI) as a means of learning about Islam, generation Z needs to have a wise and critical attitude in evaluating and applying information. The use of artificial intelligence (AI) technology has several obstacles, including internal obstacles where generation Z has become dependent on technology as well as external obstacles such as the lack of accurate religious information and limited access to technology. These obstacles need to be considered in order to support the Islamic learning process in generation Z.

Researchers provide recommendations to several related parties through the research conducted.

1. Readers are advised to increase their understanding of the use of artificial intelligence (AI) technology in studying Islam wisely. In doing so, readers can maximize the benefits of the technology and have a better understanding of the limitations and risks involved. It is important for readers to remain critical in evaluating information obtained through this technology.
2. For future researchers, it is recommended to conduct surveys or field research to obtain a comprehensive understanding of the preferences, needs and challenges faced by generation Z in studying Islam. This can help the development of artificial intelligence (AI) technology that better suits the needs and preferences of generation Z.

REFERENCE

- Budihardjo, A. (2020). Teknologi dan MSDM. *Forum Manajemen*, 33(4). Diambil dari <https://journal.prasetiyamulya.ac.id/journal/index.php/FM/article/view/427>
- Farwati, M., Salsabila, I. T., Navira, K. R., & Sutabri, T. (2023). Analisa Pengaruh Teknologi Artificial Intelligence (AI) dalam Kehidupan Sehari-Hari. *JURSIMA: Jurnal Sistem Informasi dan Manajemen*, 11(1), 39–45.
- Ghofur, A. (2019). Dakwah Islam di Era Milenial. *Dakwatuna: Jurnal Dakwah dan Komunikasi Islam*, 5(2), 136–149. doi: 10.36835/dakwatuna.v5i2.405
- Hamruni, & Suwartini, S. (2022). Artificial Intelligence in Global Islamic Education. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 27(6), 39–49.
- Hidayat, R., Rahardyanto, S., & Hardjita, P. W. (2020). Survey Paper: Tantangan dan Peluang Kecerdasan Buatan dalam Bidang Islam, Qur'an dan Hadits. *Prosiding Konferensi Integrasi Interkoneksi Islam dan Sains*, 2, 343–346. Diambil dari <http://sunankaljaga.org/prosiding/index.php/kiiis/article/view/421>
- Karim, A. R., & Sugianto, H. (2023). Measuring The Future Needs of Islami Education Through The Role of Artificial Intelligence. *Proceeding of International Conference on Education, Society and Humanity*, 1(1), 861–870. Diambil dari <https://ejournal.unuja.ac.id/index.php/icesh/article/view/6006>
- Liputan6.com. (2023, Februari 4). Riset Ungkap ChatGPT OpenAI Punya 100 Juta Pengguna di Januari 2023. Diambil 1 Juli 2023, dari [Liputan6.com](https://liputan6.com) website:

<https://www.liputan6.com/tekno/read/5197530/riset-ungkap-chatgpt-openai-punya-100-juta-pengguna-di-januari-2023>

- Manongga, D., Rahardja, U., Sembiring, I., Lutfiani, N., & Yadila, A. B. (2022). Dampak Kecerdasan Buatan Bagi Pendidikan. *ADI Bisnis Digital Interdisiplin Jurnal*, 3(2), 41–55. doi: 10.34306/abdi.v3i2.792
- Misnawati. (2023). ChatGPT: Keuntungan, Risiko, dan Penggunaan Bijak dalam Era Kecerdasan Buatan. *Prosiding Seminar Nasional Pendidikan, Bahasa, Sastra, Seni, dan Budaya (Mateandrau)*, 2(1), 54–67.
- Mulianingsih, F., Anwar, K., Shintasiwi, F. A., & Rahma, A. J. (2020). Artificial Intelligence dengan Pembentukan Nilai dan Karakter di Bidang Pendidikan. *IJTIMAIYA: Journal of Social Science Teaching*, 4(2), 148–154. doi: 10.21043/ji.v4i2.8625
- Nawi, A., Yaakob, M. F. M., Hussin, Z., Muhaiyuddin, N. D. M., Samuri, M. A. A., & Tamuri, Ab. H. (2021). Keperluan Garis Panduan dan Etika Islam dalam Penyelidikan Kecerdasan Buatan. *Journal of Fatwa Management and Research*, 26(2), 280–297. doi: 10.33102/jfatwa.vol26no2.414
- Nugraha, D., & Sufanti, M. (2023). *Isu Terkini dalam Pembelajaran Sastra: Kelimpahan Informasi, Kecerdasan Buatan, dan Literasi Digital*. 8, 64–83. doi: 10.23917/cls.v8i1.22024
- Nurazizah, A., Rukajat, A., & Ramdhani, K. (2022). Peran Pendidikan Agama Islam dalam Membentuk Karakter Siswa di Era Milenial. *PeTeKa*, 5(3), 361–372. doi: 10.31604/ptk.v5i3.361-372
- Pantan, F. (2023). ChatGPT dan Artificial Intelligence: Kekacauan atau Kebangunan Bagi Pendidikan Agama Kristen di Era Postmodern. *Diegesis: Jurnal Teologi*, 8(1), 108–120. doi: 10.46933/DGS.vol8i1108-120
- Putra, P. H. (2019). Tantangan Pendidikan Islam dalam Menghadapi Society 5.0. *Islamika : Jurnal Ilmu-Ilmu Keislaman*, 19(02), 99–110. doi: 10.32939/islamika.v19i02.458
- Rahadiantino, L. (2022). Implementasi Pembelajaran Artificial Intelligence Bagi Siswa Sekolah Dasar di Kota Batu, Malang, Jawa Timur. *Jurnal Inovasi Pendidikan dan Pembelajaran Sekolah Dasar*, 6(1). doi: 10.24036/jippsd.v6i1.115857
- Rahman, A., & Nuryana, Z. (2019). *Pendidikan Islam di Era Revolusi Industri 4.0*. doi: 10.31219/osf.io/8xwp6
- Ririh, K. R., Laili, N., Wicaksono, A., & Tsurayya, S. (2020). Studi Komparasi dan Analisis Swot pada Implementasi Kecerdasan Buatan (Artificial Intelligence) di Indonesia. *Jurnal Teknik Industri*, 15(2), 122–133.
- Rusmiyanto, R., Huriati, N., Fitriani, N., Tyas, N. K., Rofi'i, A., & Sari, M. N. (2023). The Role Of Artificial Intelligence (AI) In Developing English Language Learner's Communication Skills. *Journal on Education*, 6(1), 750–757. doi: 10.31004/joe.v6i1.2990
- Saihu, M. (2021). Al-Qur'an and The Need for Islamic Education to Artificial Intelligence. *Mumtaz: Jurnal Studi Al-Qur'an Dan Keislaman*, 5(2), 18–31. doi: 10.36671/mumtaz.v3i2.45
- Sari, M., & Asmendri, A. (2020). Penelitian Kepustakaan (Library Research) dalam Penelitian Pendidikan IPA. *Natural Science*, 6(1), 41–53. doi: 10.15548/nsc.v6i1.1555
- Sidabutar, H., & Munthe, H. P. (2022). Artificial Intelligence dan Implikasinya Terhadap Tujuan Pembelajaran Pendidikan Agama Kristen. *JMPK: Jurnal Manajemen Pendidikan Kristen*, 2(2), 76–90.
- SINDOnews.com. (2023). Denny JA: Artificial Intelligence Sudah Menjadi Penceramah Agama. Diambil 4 Juli 2023, dari Rmol.id website: <https://politik.rmol.id/read/2023/04/07/569942/denny-ja-artificial-intelligence-sudah-menjadi-penceramah-agama>
- Sugiyono. (2014). *Metode Penelitian Pendidikan Kuantitatif, Kualitatif dan R & D*. Bandung: Alfabeta.

- Tjahyanti, L. P. A. S., Saputra, P. S., & Gitakarma, M. S. (2022). Peran Artificial Intelligence (AI) untuk Mendukung Pembelajaran di Masa Pandemi Covid-19. *Jurnal Komputer dan Teknologi Sains (KOMTEKS)*, 1(1), 15–21.
- Wahyuningtyas, E. (2021). *Rancang Bangun Game Edukasi Agama Islam Untuk Anak Menggunakan Artificial Intelligence* (Diploma Thesis). Politeknik Negeri Jember, Jember.
- Wiranto, E. B., & Suwartini, S. (2023). Artificial Intelligence and Trustworthy Principles in Global Islamic Education. *Ushuluddin International Conference (USICON)*, 6, 64–87. Diambil dari <https://vicon.uin-suka.ac.id/index.php/USICON/article/view/1252>
- Zahara, S. L., Azkia, Z. U., & Chusni, M. M. (2023). Implementasi Teknologi Artificial Intelligence (AI) dalam Bidang Pendidikan. *Jurnal Penelitian Sains dan Pendidikan (JPSP)*, 3(1), 15–20. doi: 10.23971/jpsp.v3i1.4022
- Zed, M. (2008). *Metode Penelitian Kepustakaan*. Jakarta: Yayasan Obor Indonesia.
- Zulrahman, M. F., & Syahputra, H. (2023). Pemanfaatan Artificial Intelligence Markup Language (AIML) dan Latent Semantic Analysis (LSA) dalam Pengembangan Chatbot E-Education. *Journal of Information Technology and Computer Science (INTECOMS)*, 6(1), 36–43. doi: 10.31539/intecom.v6i1.5459