THE USE OF CHATGPT IN IMPROVING THE CRITICAL THINKING SKILLS OF ISLAMIC EDUCATION GRADUATES IN ISLAMIC UNIVERSITIES

RESEARCH ARTICLE

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Abstract
The development of ChatGPT is increasingly being used by educational institutions. ChatGPT presents ready-to-use information so that students sometimes do not analyze and question its accuracy, this has the potential to damage critical thinking skills due to dependence on technology. This study aimed to determine the use of ChatGPT in improving the critical thinking skills of graduates of Islamic religious education at Islamic universities. This study used a qualitative method with a case study approach. Data collection was conducted at Walisongo State Islamic University, Semarang through in-depth interviews, observations, and documentation studies. This study showed that the use of ChatGPT in Islamic Religious Education lectures had succeeded in supporting students in improving their critical thinking skills based on Paul and Elder's indicators. ChatGPT functions as a tool to facilitate interactive discussions between lecturers and students. ChatGPT was used as a source of additional information, enriching students' understanding of concepts and theories in Islamic religious studies. ChatGPT helped in generating new ideas and expanding the perspectives and references used in academic and research assignments. This study made a significant contribution in the context of using ChatGPT to improve the critical thinking skills of prospective Islamic education graduates.

Keywords: ChatGPT, Critical Thinking, Islamic Education

Introduction

The use of ChatGPT in Indonesia shows a significant trend, based on a survey conducted by Populix in April 2023. This survey involved 530 respondents from workers and entrepreneurs out of a total of 1,014 respondents. The results show that the majority of respondents, i.e. 40%, use AI applications more than once a month. Furthermore, 27% of respondents use the app once a month,

while 11% use it every two months. The survey was conducted online and included a balanced proportion of women and men, 50% each. The majority of respondents came from the island of Java (76%), followed by Sumatra (14%), and other islands (10%). Survey respondents consisted of the age group of 17-55 years, with the dominance of the age group of 17-25 years (51%), followed by the age group of 26-35 years (33%). This data reflects the high adoption of AI technology among workers and entrepreneurs in Indonesia, especially on the island of Java, as well as among the younger generation (Vignesh, Pradeep, & Ravindran, 2023). This high use of ChatGPT suggests that AI is increasingly becoming an integral part of everyday life, aiding in various aspects of work and business (Cribben & Zeinali, 2023). In Islamic universities, the adoption of AI technology such as ChatGPT can be a very useful tool to develop the critical thinking skills of Islamic education scholars (Aithal & Aithal, 2023). By utilizing AI, students can access a wide range of information and learning resources, practice asking in-depth questions, and evaluate different perspectives (S. Aithal & Aithal, 2023). This will support them in structuring better arguments and improving the quality of critical thinking that is essential in religious studies and education (Khairatun Hisan & Miftahul Amri, 2023).

The existing literature shows that research on ChatGPT focuses more on the opportunities and challenges presented by this technology in education in general (Rejeb, Rejeb, Appolloni, Treiblmaier, & Iranmanesh, 2024). For example, Adeshola and Adepoju (2023) in "The opportunities and challenges of ChatGPT in education" discuss widely the potential and obstacles in the application of ChatGPT in the educational environment (Adeshola & Adepoju, 2023). Lo (2023) in "What is the impact of ChatGPT on education? A rapid review of the literature" reviews the impact of ChatGPT on education, while Grassini (2023) in "Shaping the future of education: exploring the potential and consequences of AI and ChatPT in educational settings" explores the consequences and potential of AI in educational settings. Rahman and Watanabe (2023) in "ChatGPT for education and research: Opportunities, threats, and strategies" also discuss the opportunities threats and strategies associated with the use of ChatGPT in education and research. While these studies provide valuable insights, studies specifically addressing the influence of ChatGPT on critical thinking skills are still rare, especially in the context of Islamic education scholars (Rahman & Watanobe, 2023). This narrower focus, especially one looking at how reliance on technology can affect analytical and critical skills among Islamic pedagogical scholars, is still very limited in the existing literature.

Responding to this phenomenon, this study aims to examine the use of ChatGPT in improving the critical thinking skills of undergraduate students of Islamic Religious Education in Islamic universities, focusing on three main aspects. First, this study will identify various forms of use of ChatGPT in Islamic Religious Education lectures, such as in interactive discussions, task completion, and paper preparation. Second, this study will analyze how the use of ChatGPT can support students' critical thinking skills, including in the aspects of analysis, evaluation, and information synthesis. Third, this study will evaluate the implications of the use of ChatGPT on improving students' critical thinking skills, especially in reflective thinking and decision-making based on in-depth analysis (Triwulandari & U.S, 2022). This research was conducted at Walisongo State Islamic University because this university has a strong commitment to educational innovation and the development of students' critical skills, and has integrated technology in its learning process. In addition, as one of the leading Islamic universities in Indonesia, UIN Walisongo has a relevant curriculum and adequate resources to support this research, so that the results can make a significant contribution to the development of Islamic education in general.

The phenomenon of using ChatGPT in improving the critical thinking skills of undergraduate students of Islamic Education in Islamic universities deserves to be researched with p and explain the concepts taught. Additionally, ChatGPT allows for deeper testing and exploration of the assumptions underlying students' thinking, as well as helping them understand the consequences of arguments or decisions through the implications given. Different perspectives can be explored through the dialogue facilitated by this technology, thus providing opportunities for students to develop critical thinking skills comprehensively and systematically. Using Paul and Elder's theories as an analytical framework, this research will reveal how ChatGPT can support and improve the critical thinking skills of Islamic Education students, making it a very relevant and important topic to study in Islamic universities.

Literature Review

The theoretical framework of this study focuses on the use of ChatGPT in improving the critical thinking skills of Islamic education graduates at Islamic universities. The main foundation of this study is the Social Constructivism theory (Vygotsky, 1978), which emphasizes that learning is a social process that occurs through interaction. In this context, ChatGPT functions as a technological tool that facilitates students' interaction with various ideas and information, thus supporting discussion-based learning and the development of critical thinking skills. In addition, the Information Processing theory (Atkinson & Shiffrin, 1968) is relevant in explaining how humans receive, process, and store information. ChatGPT helps students organize information with a dialogic structure, thus supporting the systematic analysis and evaluation of information, which is the core of critical thinking. Finally, the Critical Thinking Skills theory (Paul & Elder, 2008) is used to define critical thinking as an active, disciplined process of understanding, analyzing, and disseminating information to reach rational conclusions. This third theory forms the conceptual foundation of this study, which aims to explore the effectiveness of ChatGPT in supporting the development of critical thinking skills of Islamic education graduates. Several previous studies have examined the use of ChatGPT and its effect on critical thinking skills, including the following:

First, research conducted by Osman, M. G. (2024) with the title "The Role of ChatGPT in Improving Higher Education Performance" which examines the role of ChatGPT in improving the performance of higher education. How the integration of ChatGPT and other AI technologies in higher education has great potential to change the learning landscape. With the results of the university using a proactive and ethical approach in using ChatGPT (Osman & Kesmonds, 2024).

Second, research conducted by Brovko Anastasiya (2024) entitled "The impact of ChatGPT on student cognitive function" with research on the possibility of educators using neural networks using the example of ChatGPT for the development of cognitive activities by understanding how ChatGPT works will allow educators to identify limitations in using chatbots and artificial intelligence technology. This research uses methods of analysis, synthesis, generalization, comparison, and other methods (Anastasiya, 2024).

Third, Huallpa, Jorge Jinchuña, at, all (2023) with a study entitled "Exploring the ethical considerations of using ChatGPT in university education" which examines the moral dilemma of incorporating ChatGPT into higher education, focusing on situations in Latin American higher education institutions. This research looks at how AI systems and chatbots can complement human

knowledge and judgment, as well as their potential shortcomings. The results show that the integration of ChatGPT is quite accessible and has quite positive social attitudes (Huallpa et al., 2023).

Fourth, research conducted by Ying Guo and Daniel Lee (3023) at Georgia Gwinnett College to explore the use of ChatGPT to foster critical thinking skills in higher education. This study applied ChatGPT-based activities in an introductory chemistry course. The results showed that there was a significant increase in students' confidence to ask deep questions, analyze information, and understand complex concepts. A survey was conducted to find the data then to determine the statistical significance between the data before and after the survey, the Mann-Whitney nonparametric test was used with the significance level set at 0.05. In addition, Spearman's rank correlation was used to assess the correlation between the various critical thinking skills measured in the survey instrument.

Methodology

Research design and approach of the study

In obtaining the results of this study, a qualitative method with a case study approach was used to analyze the use of ChatGPT in improving the critical thinking skills of Islamic Education scholars in Islamic universities (Murdiyanto, 2020). The case study approach was chosen because it allows for an in-depth and comprehensive exploration of the phenomenon of using ChatGPT in a specific context, namely at Walisongo State Islamic University. The data in this study was collected through in-depth interviews, observations, surveys, and documentation. In-depth interviews are used to explore student and lecturer experiences, views, and perceptions regarding the use of ChatGPT, providing rich and detailed insights. Observations were made to see firsthand how ChatGPT is used in the learning process, providing context and concrete examples of interactions that occur. The survey was used to collect supporting quantitative data from a large number of respondents, providing an overview of the perception and use of ChatGPT.

Research site and participants

This study was conducted at the Faculty of Tarbiyah and Keguruan Sciences, Islamic Religious Education Study Program, State Islamic University (UIN) Walisongo Semarang, because this faculty and study program is a relevant center to study the use of ChatGPT in improving critical thinking skills among undergraduate students of Islamic Religious Education. UIN Walisongo Semarang has a strong tradition of Islamic education that is integrated with technological developments, making it an ideal place to explore the interaction between Islamic education and technological innovations such as ChatGPT. Through focusing on respondents who are vulnerable students aged 18-23 years and come from the Islamic Education Study Program. This research can provide a deep insight into how technologies such as ChatGPT can contribute in the context of Islamic religious education. With a research time span from January 2024 to May 2024, this study made it possible to observe the development and impact of ChatGPT usage over a sufficient period of time to gain a comprehensive understanding of the phenomenon in this academic environment. The profile of the respondents is presented in the following table.

Table 1. *Demographic background profile of participants*

No	Initial	Gender	Age	Profile
1.	M1	Female	20	Student
2.	M2	Female	18	Student
3.	M3	Female	21	Student
4.	M4	Female	19	Student
5.	M5	Male	22	Student
6.	M6	Male	23	Student
7.	M7	Male	23	Student

The participants had various characteristics related to their backgrounds. Three participants were male (M5, M6, M7) and four participants were female (M1, M2, M3, M4). All participants in this study were university students with an age range of 18 to 23 years.

Data collection and analysis

This research includes an analysis of learning materials, student assignments, and other academic records, which helps to understand more comprehensively the impact of using ChatGPT (Rijali, 2019). The data collection mechanism involves the preparation of interview and survey instruments, the implementation of classroom observations or learning sessions, and the collection and analysis of related documents. The use of these various techniques ensures data triangulation, increases the validity and reliability of research findings, and provides a deep and holistic understanding of the role of ChatGPT in improving students' critical thinking skills. For this reason, the data triangulation technique is used in this study which involves triangulation of sources, methods, and time. First, source triangulation is carried out by collecting data from various sources such as interviews with students and lecturers, classroom observations, and analysis of documents related to the use of ChatGPT (Rukin, 2022). (Second, triangulation methods are carried out using various approaches in data collection, including interviews, observations, and document analysis, to allow comparison and confirmation of findings. Third, time triangulation was carried out by collecting data at various time points during the research period to understand developments and changes in the use of ChatGPT in improving critical thinking skills. Triangulation techniques are used to improve the validity and reliability of research findings through confirmation from various viewpoints and data sources. Furthermore, to analyze the data, this study adopts the Miles and Huberman method which includes data reduction, data presentation, and conclusion drawn. The collected data is processed by summarizing information from interviews, observations, and documents into relevant categories, then analyzed to identify patterns, themes, and relationships between the variables studied.

Results

This study explores the practice of the use of ChatGPT in improving the critical thinking skills of islamic education graduates in Islamic universities. The analysis reveals three main themes: (i) the

use of ChatGPT in Islamic religious education, (ii) the use of ChatGPT can support the critical thinking skills of Islamic education students, and (iii) implications of the use of ChatGPT on the critical thinking ability of Islamic education students in Islamic universities.

The Use of ChatGPT in Islamic Religious Education

The use of ChatGPT in lectures majoring in Islamic Religious Education offers a variety of interesting potentials. First, ChatGPT can be used as a tool to facilitate interactive discussions between lecturers and students, as well as between fellow students, thereby expanding the space for dialogue in understanding and interpreting religious texts. Additionally, ChatGPT can be used as a quick and easily accessible source of additional information, enriching students' understanding of various concepts and theories in Islamic religious studies. Furthermore, in the context of writing academic assignments, ChatGPT can serve as a tool to generate new ideas, expand the scope of references, and provide constructive feedback for improving the quality of writing. However, it should be noted that the use of ChatGPT also has the potential to pose challenges, such as the accuracy of the information and the role of lecturers in supervising and directing the use of the technology to remain by learning objectives. Thus, the integration of ChatGPT in Islamic Religious Education majors requires a careful and planned approach to maximize its benefits while overcoming potential risks that arise.

Informants M1 and M2 stated that ChatGPT offers the potential as an innovative tool for facilitating interactive discussions in the context of religious studies. With a wide range of language generation capabilities, ChatGPT can act as a mediator that expands the space for dialogue between lecturers and students, as well as between fellow students, in understanding and interpreting religious texts. Through dynamic interactions, students can ask questions, express thoughts, and share their perspectives on religious concepts. Lecturers, as facilitators, can use ChatGPT to stimulate in-depth discussions, provide additional explanations, and direct students' thinking in a more critical and reflective direction. In addition, the use of ChatGPT also allows students to collaborate and exchange ideas more effectively, resulting in a deeper understanding through joint comparisons and analysis. Thus, the use of ChatGPT in this context not only expands access to religious knowledge but also improves the quality of academic dialogue and collective understanding of religious teachings. "In the context of doing academic assignments, ChatGPT can be a solid tool for giving new ideas, adding references, and providing feedback that is useful for improving the quality of writing (said informant 1, informant M2 added). In addition, if our writing still needs improvement, ChatGPT can give constructive suggestions. In essence, using ChatGPT in doing academic assignments can make the process easier and the results are maximized".

Based on the data obtained, ChatGPT offers the potential as an innovative tool for facilitating interactive discussions in the context of religious studies. With a wide range of language generation capabilities, ChatGPT can act as a mediator that expands the space for dialogue between lecturers and students, as well as between fellow students, in understanding and interpreting religious texts. Through dynamic interactions, students can ask questions, express thoughts, and share their perspectives on religious concepts. Meanwhile, lecturers, as facilitators, can use ChatGPT to stimulate in-depth discussions, provide additional explanations, and direct students' thinking in a more critical and reflective direction. In addition, the use of ChatGPT also allows students to collaborate and exchange ideas more effectively, resulting in a deeper understanding through joint comparisons and analysis.

Thus, the use of ChatGPT in this context not only expands access to religious knowledge but also improves the quality of academic dialogue and collective understanding of religious teachings.

The use of ChatGPT can support the critical thinking skills of Islamic education students

The use of ChatGPT can significantly support the critical thinking skills of Islamic education students in various ways. First, ChatGPT can be a tool for exploring and analyzing complex Islamic texts. With their ability to understand and present information systematically, students can more easily parse abstract concepts and form logical arguments. Second, ChatGPT can simulate interactive discussions where students can ask questions, test hypotheses, and receive instant feedback. It stimulates the analytical and evaluative thinking processes that are at the heart of critical thinking. Additionally, with access to multiple perspectives through ChatGPT, students can compare and contrast various views, enriching their insights into religious and social issues in Islam. For example, in studying fiqh, students can discuss differences of opinion between schools, which encourages them to think more critically about the reasons behind each view. Thus, ChatGPT is not only a source of information, but also a partner in the interactive and reflective learning process, which is essential for developing critical thinking skills in the context of Islamic education. As conveyed by the following M3 and M4 informants. "So, ChatGPT can really be a tool for exploring and analyzing complex Islamic texts, can provide detailed explanations about theological concepts, Islamic law (fiqh), Islamic history, and interpretation. More than that, ChatGPT can also be used to support interactive dialogue on Islamic issues and provide a better understanding. But, ChatGPT is just a tool. So, ChatGPT can be a valuable intellectual partner to study and understand Islamic teachings more deeply."

Meanwhile, M5 Informant stated that ChatGPT provides a unique platform for students to explore religious and social issues in Islam. By interacting with a variety of sources, including the views of prominent scholars, diverse interpretations of madhhab, and opinions from the global Muslim community, students can broaden their understanding of the religion. They can ask specific questions and receive answers that cover different points of view, allowing them to see how Islamic teachings can be interpreted in a variety of ways according to cultural and historical contexts. Through interaction with ChatGPT, students not only get information, but are also encouraged to think critically and have dialogue. They can compare arguments, assess their relevance to contemporary contexts, and ultimately form a more comprehensive understanding of these complex issues. The ability to understand and appreciate these differences is key in the development of tolerance, empathy, and understanding of social and religious dynamics in society. "Eh, it turns out that ChatGPT can really be used to simulate discussions on campus. With this sophisticated AI, students can ask questions, try hypotheses, and continue to get instant feedback. ChatGPT can understand the context of student questions and provide relevant and informative answers. The ability to respond quickly and accurately helps students overcome confusion in real time, speed up the learning process, and improve their understanding of the subject matter. So, ChatGPT is not only an efficient learning tool, but also changes the traditional way to gain knowledge, creating a more dynamic and interactive learning environment."

In this regard, according to the M6 informant, the use of ChatGPT in the context of Islamic education in Islamic universities can have interesting implications for students' critical thinking skills.

While ChatGPT can provide quick and broad access to information about Islam, including teachings, history, and scholarly thought, its use can also be challenging for students. There is a risk that students will become passive in checking the correctness of the information provided by ChatGPT without conducting a critical evaluation. This can hinder their ability to develop a deep understanding of the teachings of Islam and the critical thinking skills necessary to analyze and understand the complex context of religion. Therefore, a thoughtful approach to the use of ChatGPT in Islamic Education learning is to combine it with purposeful discussion and teaching that encourages students to develop critical thinking skills, such as analysis of classical texts, debate, and reflective essay writing. Thus, although ChatGPT can be a useful tool, the challenges of using it also need to be watched out for so as not to reduce students' critical thinking skills. "If we use ChatGPT in Islamic education in universities, this can have an interesting impact on students' critical thinking skills. ChatGPT can give quick access to a lot of information about Islam, such as teachings, history, and scholarly thoughts. But, this can also be a challenge for students. There is a risk that they will be too lazy to check the truth of the information given by ChatGPT and not evaluate it critically. This can make it difficult for them to develop a deep understanding of Islamic teachings and critical thinking skills that are essential for analyzing complex contexts in religion. So, we must be wise in using ChatGPT to learn Islamic Education."

Thus, ChatGPT provides a unique platform for students to explore religious and social issues in Islam. By interacting with a variety of sources, including the views of prominent scholars, diverse interpretations of madhhab, and opinions from the global Muslim community, students can broaden their understanding of the religion. They can ask specific questions and receive answers that cover different points of view, allowing them to see how Islamic teachings can be interpreted in a variety of ways according to cultural and historical contexts. Through interaction with ChatGPT, students not only get information but are also encouraged to think critically and have dialogue. They can compare arguments, assess their relevance to contemporary contexts, and ultimately form a more comprehensive understanding of these complex issues. The ability to understand and appreciate these differences is key to the development of tolerance, empathy, and understanding of social and religious dynamics in society.

Implications of the Use of ChatGPT on the critical thinking ability of islamic education students in Islamic universities

The use of ChatGPT in the context of Islamic Education in Islamic universities can have interesting implications for students' critical thinking skills. While ChatGPT can provide quick and broad access to information about Islam, including teachings, history, and scholarly thought, its use can also be challenging for students. There is a risk that students will become passive in checking the correctness of the information provided by ChatGPT without conducting a critical evaluation. This can hinder their ability to develop a deep understanding of the teachings of Islam and the critical thinking skills necessary to analyze and understand the complex context of religion. Therefore, a thoughtful approach to the use of ChatGPT in Islamic Education learning is to combine it with purposeful discussion and teaching that encourages students to develop critical thinking skills, such as analysis of classical texts, debate, and reflective essay writing. Thus, although ChatGPT can be a useful tool, the challenges of using it also need to be watched out for so as not to reduce students' critical

thinking skills. The following is a statement from the M7 informant. "The use of ChatGPT in the context of Islamic Education in Islamic universities can have interesting implications for students' critical thinking skills. By utilizing this technology, students can be faced with various questions and situations that trigger deep reflection related to Islamic teachings, ethics, and their application in daily life. As such, the use of ChatGPT can be an effective tool in improving students' critical thinking skills in the context of Islamic Education, preparing them to face intellectual and spiritual challenges in their lives in the future."

As one Islamic expert said, "While ChatGPT can provide quick and broad access to information about Islam, including teachings, history, and scholarly thought, its use can also be challenging for students." Many college students may rely on ChatGPT as their primary source of information about their religion, but they also need to be aware that the existence of ChatGPT does not always guarantee accuracy or depth of understanding. The main challenge is to ensure that the information provided by ChatGPT has been verified and understood properly, as misunderstandings or misinterpretations can result in a superficial or even incorrect understanding of Islam. The risk that arises is that students can become passive in checking the correctness of the information provided by ChatGPT without conducting adequate critical evaluation. While ChatGPT can provide informative and sometimes insightful information, its tendency to receive such information without critical thinking can result in potentially dangerous dependence. When students do not critically evaluate the information provided, they risk receiving information that is inaccurate, biased, or even detrimental. This can be detrimental to the development of critical, analytical, and problem-solving skills that are important in learning and personal development. Additionally, the tendency to rely on ChatGPT without critically questioning or testing information can also form a less critical and independent mindset, which in turn can hinder the ability to craft strong arguments or make decisions with limited information. Therefore, it is important for students to continue to practice critical evaluation of the information they receive, even when it comes from automated sources such as ChatGPT, to ensure that they develop critical thinking skills. Some participants believed that incorporating cultural practices that included indigenous graphic skills.

Discussion

This study reveals that the use of ChatGPT in Islamic religious education lectures for undergraduate students at Walisongo State Islamic University has several significant forms. First, ChatGPT is used as a tool to facilitate interactive discussions between lecturers and students, thus facilitating the exchange of ideas and views on Islamic religious topics (Shoufan, 2023). Second, ChatGPT is utilized as an additional source of information, allowing students to gain a deeper understanding of various concepts and theories in Islamic religious studies (An, Ouyang, & Zhu, 2023). With broad and fast access to information, students can enrich their knowledge beyond the material taught in the classroom. Third, ChatGPT serves as a tool to generate new ideas, assist students in discovering new perspectives, and expand the scope of references they use in academic and research assignments (Mosaiyebzadeh et al., 2023). The use of ChatGPT not only improves the quality of students' discussions and understanding, but also encourages their creativity and critical thinking. Overall, the integration of ChatGPT in Islamic religious lectures at Walisongo State Islamic University

shows great potential to increase the effectiveness of learning and educational innovation in the digital era.

In addition, this study found that the use of ChatGPT in Islamic Religious Education lectures for undergraduate students at Walisongo State Islamic University greatly supports their critical thinking skills (Pajria, Syamsurizal, Alberida, & Fajrina, 2023). The use of ChatGPT as a tool to explore and analyze complex Islamic texts helps students better understand difficult material (Dempere, Modugu, Hesham, & Ramasamy, 2023). Additionally, ChatGPT simulates interactive discussions that allow students to ask questions and get in-depth and diverse answers, thus enriching their insights into religious and social issues in Islam (Rasul et al., 2023). The implications of the use of ChatGPT on students' critical thinking skills in Islamic universities are significant (Oktaria, Ali, & Putra, 2023). ChatGPT provides quick and broad access to information about Islam, including the teachings, history, and thoughts of scholars. However, its use can also be challenging for students, especially in filtering valid and relevant information. Overall, ChatGPT has the potential to be an effective learning tool in improving the critical thinking skills of Islamic Education students, as long as it is used wisely and supported by guidance from competent lecturers.

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ChatGPT can support the critical thinking skills of Islamic Education students in various ways (Wang & Guo, 2023). As a tool for exploring and analyzing complex Islamic texts, ChatGPT helps students understand and decipher the content of these texts in more depth (Ajevski, Barker, Gilbert, Hardie, & Ryan, 2023). In addition, ChatGPT simulates interactive discussions where students can ask questions and get answers that encourage them to think critically and reflectively (Fithriyah, Sa'dijah, & Sisworo, 2016). ChatGPT also enriches students' insights into religious and social issues in Islam, providing a broad and diverse perspective that encourages critical analysis. The use of ChatGPT in Islamic colleges has important implications for students' critical thinking skills, as it provides quick and broad access to information about Islam, including teachings, history, and scholarly thought. However, the challenge that arises is to ensure that students retain their analytical abilities and do not rely solely on instant answers. Therefore, the use of ChatGPT must be balanced with traditional learning methods that encourage in-depth research and critical discussion, so that students can develop solid and deep critical thinking skills in understanding and applying Islamic teachings in the modern world (Juliyantika & Batubara, 2022).

The suitability of indicators from Paul and Elder's theory of critical thinking in the context of this study shows that the use of ChatGPT in Islamic religious education lectures for undergraduate students at Walisongo State Islamic University is very relevant. ChatGPT is not only used as a tool to facilitate interactive discussions between lecturers and students but is also used as an additional source of information to enrich students' understanding of various concepts and theories in Islamic religious studies (Gu & Ferdaous, 2023). In addition, the role of ChatGPT as a tool to generate new ideas and expand the scope of references also strengthens the implementation of critical thinking in the context of learning (Adiguzel, Kaya, & Cansu, 2023). The study found that the use of ChatGPT corresponds to indicators from Paul and Elder's theory of critical thinking in the context of Islamic Education at Walisongo State Islamic University. ChatGPT is an effective tool for exploring and analyzing complex Islamic texts, as well as simulating interactive discussions where students can ask questions and get answers instantly (Saif et al., 2024). In addition, ChatGPT also enriches students' insights into religious and social issues in Islam. The implications of the use of ChatGPT on the critical thinking skills of Islamic Education students include benefits in increasing quick and broad access to information about Islam, including teachings, history, and scholarly thought (Shaengchart et al., 2023). However, the use of ChatGPT can also be challenging for students, as they need to develop critical skills in evaluating and filtering the information provided by these tools, as well as integrating the knowledge gained with a broader understanding of the Islamic scientific context (Lo, 2023).

The findings in this study show similarities with the Marbun (2023) study. which explains that Critical thinking skills involve the ability to critically analyze information, formulate arguments, and make rational and informed decisions (Marbun & Dunia, 2023). In the context of the use of ChatGPT, the findings by Rusandi, Ahman, Saripah, I., Khairun & Mutmainnah. (2023) asserts that, whether this study shows or nevertheless the findings in this study contradict the opinion that the difference lies in human involvement in interpreting and evaluating the information provided by the model (Rusandi, Ahman, Saripah, Khairun, & Mutmainnah, 2023). This is in line with Guo, & Lee (2023) who said that When using ChatGPT, a person may be more likely to receive information without critically considering or testing its validity, while in the process of thinking critically independently, individuals actively hone their analytical skills by asking critical questions, looking for evidence, and evaluating arguments independently (Guo & Lee, 2023). Therefore, the main difference lies in the ability of humans to critically interpret and use information, rather than simply relying on algorithms like ChatGPT.

This study makes a significant contribution in the context of using ChatGPT to improve the critical thinking skills of prospective Islamic education graduates. By leveraging AI technology, prospective scholars can engage in challenging interactive discussions and encourage them to analyze, evaluate, and develop arguments in depth. ChatGPT provides rich and diverse conversation simulations, which help broaden horizons as well as hone critical thinking skills that are crucial in Islamic education.

In addressing the problem of using ChatGPT in Islamic universities, students and lecturers need to take a series of policies and actions. First, awareness of the potential risks and drawbacks of the use of technology in the context of religious education is needed. Students need to be given a deep understanding of the importance of critical thinking and developing their analytical skills, as well as being proactive in questioning and evaluating information obtained from ChatGPT. In addition, lecturers must be actively involved in designing a curriculum that promotes active student engagement

and facilitates critical discussions in the classroom. In addition, there is a need for institutional policies that govern the use of this technology, including training for lecturers on how to use ChatGPT responsibly and promote critical. thinking in the learning process. Cooperation between students, lecturers, and university administration is also important to create a healthy and sustainable learning environment in the midst of this technological advancement.

Conclusion and Implications

This study found that the use of ChatGPT in Islamic Religious Education lectures for undergraduate students at Walisongo State Islamic University has a significant impact in several aspects. First, ChatGPT serves as a tool to facilitate interactive discussions between lecturers and students, facilitating the exchange of ideas and views regarding the Islamic religion. Second, ChatGPT is used as an additional source of information, enriching students' understanding of concepts and theories in Islamic religious studies outside of classroom materials. Third, ChatGPT helps in generating new ideas, expanding perspectives and references used in academic and research assignments. The use of ChatGPT not only improves the quality of student discussion and understanding, but also encourages creativity and critical thinking. The integration of ChatGPT in Islamic religious lectures shows great potential in increasing the effectiveness of learning and educational innovation in the digital era. Additionally, ChatGPT supports students' critical thinking skills by helping them understand complex material and simulating interactive discussions that enrich their insights into religious and social issues in Islam. While providing broad access to information, the use of ChatGPT also poses challenges in filtering out valid and relevant information. Overall, ChatGPT has the potential to be an effective learning tool in improving the critical thinking skills of Islamic Education students, with notes that it must be used wisely and supported by the guidance of competent lecturers

This research makes a significant contribution in the context of the use of ChatGPT to improve critical thinking skills in Islamic education undergraduates in Islamic universities. By exploring the impact of using this technology, this research opens the door to a deeper understanding of how ChatGPT can be used as an effective learning tool in the context of Islamic education. The study also provides a better understanding of the challenges and opportunities that arise when using artificial intelligence in the context of religious education. In addition, the findings of this study can provide valuable insights for policymakers and education practitioners to develop more effective strategies for integrating technology into the Islamic education curriculum. As such, this research not only fills in academic knowledge gaps but also has practical implications that can improve the quality of Islamic education and prepare Islamic education scholars to face complex challenges in an increasingly digitally connected society.

The limitation of research on the use of ChatGPT in improving the critical thinking skills of Islamic education scholars in Islamic universities lies in its limited scope. This research was only conducted in one Islamic university with a limited number of respondents, namely 7 people. As a result, the generalization of the findings becomes limited, and the representation of the broader population in the same context becomes unattainable. For future research, certain steps must be taken to overcome these limitations. First, it is necessary to conduct similar research with a wider scope, involving several Islamic universities to get a better representation of the undergraduate population

of Islamic education. Second, future research should expand the number of respondents to improve statistical confidence and generalize findings. In addition, in designing subsequent research, it is important to pay attention to the variations in teaching methods and educational practices in various Islamic universities. As such, future research may provide more comprehensive insights into the effectiveness of using ChatGPT in improving critical thinking skills among scholars.

Disclosure statement

No potential conflict of interest was reported by the authors.

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