



## **ARTIFICIAL INTELLIGENCE ON ISLAMIC CLASSICAL SCIENTIFIC STUDIES IN THE 21<sup>ST</sup> CENTURY: CHALLENGES AND EXPECTATIONS**

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### **Abstract**

The 21<sup>st</sup> century has witnessed a transformative wave of technological advancements, with artificial intelligence at its forefront. This study explores artificial intelligence in Islamic classical scientific studies in the 21<sup>st</sup> century since the development of artificial intelligence has developed broadly. Besides, this study was also exploring the challenges and expectations associated with the development of artificial intelligence. This study used descriptive qualitative study which used instruments like depth-interview and documentation. Artificial intelligence has emerged as a powerful tool that holds the potential to revolutionize research methodologies, data analysis, and problem-solving across diverse scientific disciplines. The challenge of artificial intelligence in Islamic classical scientific studies was giving prior knowledge to those who wanted to get new knowledge. Artificial intelligence could help translate and analyze historical materials, personalize learning, and improve research. However, the expectations of faculty members were Artificial intelligence and Islamic classical scientific studies would make historical knowledge more accessible, engaging, and relevant or not to 21st-century experts and students in this ever-changing context. Besides, artificial intelligence shouldn't be considered as a replacement for human researchers but rather as a tool to aid and augment.

**Keywords:** *Artificial Intelligence, Islamic Classical Scientific Studies, Challenges and Expectations.*

### **INTRODUCTION**

In the ever-evolving landscape of scientific inquiry, the 21<sup>st</sup> century stands as an era marked by an extraordinary convergence of two formidable forces, those are Islamic classical scientific studies and artificial intelligence (Taufik, 2020). The amalgamation of these forces has ushered in a new era of research, where algorithms, data-driven insights, and machine learning algorithms are reshaping the way approach and comprehend the natural world (Shamdi et al., 2022). The stage for a comprehensive exploration of the intricate relationship between artificial intelligence and Islamic classical scientific studies. It delves into the challenges that researchers and scholars grapple with as they embark on this transformative journey, while simultaneously raising expectations regarding the immense potential artificial intelligence holds in advancing our understanding of the universe (Gazali et al., 2020). In the pages that follow, we navigate the complexities and

promises of this fusion, shedding light on how artificial intelligence is reshaping Islamic classical scientific paradigms and redefining the future of scientific research (Ziaee, 2012).

The 21<sup>st</sup> century has ushered in an era of unprecedented technological advancements, reshaping the landscape of education across the globe. As artificial intelligence continues to redefine various facets of our lives, it has also emerged as a potent tool with the potential to revolutionize educational practices. Within this transformative context, the integration of artificial intelligence into Islamic education presents both immense promise and a unique set of challenges. In this exploration, we delve into the intricate interplay between artificial intelligence and Islamic education, shedding light on the challenges that educators, institutions, and society at large must confront as they navigate this uncharted terrain.

The title, "challenges and prospects of integrating artificial intelligence into Islamic Education in the 21<sup>st</sup> Century," encapsulates the central theme of this discussion. It signifies the dual nature of this integration, where the prospects for enhanced learning experiences, broader access to Islamic knowledge, and personalized pedagogies coexist with challenges that touch upon ethics, cultural considerations, and the preservation of traditional teaching methodologies. In the pages that follow, we embark on a journey to understand how artificial intelligence is reshaping the landscape of Islamic education, explore the unique challenges it brings, and contemplate the future of a dynamic field that seeks to harmonize age-old traditions with cutting-edge technology. As we navigate this terrain, we aim to offer insights into how educators, policymakers, and society as a whole can effectively harness the potential of artificial intelligence to enrich Islamic education while preserving its essential values and principles.

Based on the problems stated above, the research questions in this study are:

- 1) How is the artificial intelligence on Islamic classical scientific studies in the 21<sup>st</sup> century?;
- 2) What are the challenges and expectations associated with the development of artificial intelligence in Islamic classical scientific studies?

## **METHOD**

The purpose of this research was to outline the challenges posed by artificial intelligence to Islamic classical scientific studies in the twenty-first century, as well as the expectations of faculty members at an Islamic private institution in Indonesia. The goals were achieved through the use of a descriptive methodology that included semi-structured interviews (Quayson, 2022). The researchers were able to depict, illustrate, and describe faculty members' in-depth understanding of the phenomenon under study, the development of artificial intelligence in Islamic classical scientific studies in the twenty-first century (Yin, 2014). This method accurately portrayed the challenges and expectations of faculty members in the development of Artificial Intelligence on Islamic Classical Scientific Studies in the 21st Century in the current research setting.

### **Participants**

The current study involved six Indonesian faculty members from one of the Islamic Private colleges in Indonesia who are experienced in the development of artificial intelligence. The participants voluntarily participated upon invitation and were purposively selected based on some criteria such as having teaching experience in using artificial intelligence (Merriam, S. B., & Tisdell, 2017).

### **Data Collection**

To gather the required data, a semi-structured interview was employed with all participants. There were two seven questions asking the participants about the challenges and their expectations of artificial intelligence in Islamic Classical Scientific Studies in the 21<sup>st</sup> Century. Besides, the participants were informed that they were free to respond to the questions both in English and Indonesian, depending on their preferences. In addition, the fundamental benefit of this technique of data gathering is that it encourages the interviewer to think creatively and ask insightful questions (Harding, 2018). So, the interviewer has some direction, but can still go off on tangents if necessary. To ensure reliability, the researcher conducting the interviews also took notes during the conversations.

## **Data Analysis**

Adapting sequential explanatory techniques was used to examine the semi-structured interview data (Creswell, 2014). First, the interview data were examined. Second, the researcher categorized the data following the significant themes indicated in the research questions, i.e., the challenges and expectations of Artificial Intelligence in Islamic classical scientific studies in the 21<sup>st</sup> Century. Thirdly, the researcher coded, evaluated, analyzed, and integrated the developing themes that led to the final results of data analysis, and then used (missing item) as a foundation for conclusions (Daniel, 2016).

## **Trustworthiness**

To confirm the reliability of the obtained data, participants of the study were asked to check the completeness and accuracy of the interview transcript to ensure that it accurately reflected the meaning and intent of the subject's contribution (El Imane, 2013).

## **RESULT AND DISCUSSION**

In this part of the study, the researcher will discuss the outcomes of a study that was conducted regarding the artificial intelligence that was encountered by the faculty members at one of the Islamic private universities. The participants as well as the expectations they had for their experience with artificial intelligence. After we have finished presenting our findings, we will continue on to the next part of the study, which is the discussion portion. In this part of the research, we will provide a comprehensive explanation of the challenges that the faculty members are now experiencing.

The majority of participants were familiar with artificial intelligence. They were aware that the year 2020 would see the birth of artificial intelligence. The purpose of artificial intelligence is to, to the best of its knowledge and abilities, deliver replies to questions that are not only helpful but also correct. The efficacy of artificial intelligence and other AI models is contingent on how individuals and organizations choose to accept and make use of the tools in issue. This is especially true for the artificial intelligence models themselves. These tools were designed to help with a wide variety of tasks that need to be done.

The term "artificial intelligence" (AI) refers to a type of technology that can be implemented in a number of different contexts. As a result, attitudes towards AI can range widely, based not only on how the technology is utilized but also on the points of view of various individuals and organizations. Yes, they did make use of artificial intelligence when browsing through the documents, but they still need to filter all of the items that the artificial intelligence provided. The development of artificial intelligence is required in order to improve both the reference quality and the word density of the text. A few of the respondents mentioned that they were familiar with artificial intelligence, but they did not make use of this information as a foundational piece of prior knowledge to further their understanding.

The majority of them do not feel concerned about the progress being made in artificial intelligence as a result of the fact that they have a greater understanding of Islamic traditional scientific studies than the materials contained in the textbook. Still, they are of the opinion that Islamic classical scientific studies require additional research, and because of this, individuals need to be ready to engage in as well as investigate Islamic classical scientific studies.

Artificial Intelligence has the potential to yield significant and transformative effects on students engaged in the study of Islamic traditional scientific sciences, encompassing both positive outcomes and implications. There are several potential impacts that artificial intelligence may have on the field of education.

First, access to resources: students who are studying Islamic classical scientific studies now have access to a great amount of digital resources, which include historical texts, research papers, and academic articles, thanks to search engines and recommendation systems that are powered by artificial intelligence. Second, research assistance: artificial intelligence can aid students in conducting research on Islamic classical scientific themes by discovering relevant sources, summarizing texts, and offering data analysis tools. This can be done in the context of performing research on Islamic classical scientific topics. Third, tools for collaboration: artificial intelligence has the potential to make it possible for students and researchers in different geographic areas to work together by providing virtual tools for collaboration, which will in turn facilitate the sharing of ideas and information. Fourth, natural language processing: Students can

benefit from a better understanding of difficult classical works with the assistance of natural language processing tools driven by artificial intelligence. These tools can provide annotations, explanations, and context for difficult portions of the text.

Fifth, artificial intelligence can assist in the analysis of historical data connected to Islamic classical scientific studies, which can help researchers unearth new insights and patterns in the area. Data analysis artificial intelligence can assist in the analysis of historical data linked to Islamic classical scientific studies.

However, it is essential to remember that although artificial intelligence is capable of providing helpful assistance and resources, it should not replace the conventional approaches to learning Islamic classical scientific topics; rather, it should serve as a supplement to those techniques. Artificial intelligence should be utilized as a tool to assist learning and study rather than as a replacement for human academics and educators. This is because human expertise, interpretation, and cultural understanding are still essential in this sector. When incorporating artificial intelligence into the investigation of Islamic traditional scientific fields, one should pay particular attention to a number of ethical challenges, including problems involving bias and issues of cultural sensitivity.

Numerous disciplines, including astronomy, mathematics, medicine, and philosophy, have benefited from the challenges of the artificial intelligence on Islamic classical scientific study. Human inquiry, creativity, and reflection within the framework of Islamic civilization led to these advancements. The cultural, historical, philosophical, and ethical expertise that humans contribute to their studies makes artificial intelligence a powerful tool for researchers and scholars, but it cannot replace humans in these roles. Additionally, artificial intelligence on Islamic classical scientific studies is giving the prior knowledge. Artificial intelligence has the potential to contribute significantly to various domains, including the translation and analysis of historical documents, personalized learning, and research enhancement. Furthermore, scientists frequently engage in deep thinking when they ask fundamental questions, form hypotheses, plan experiments, and decipher their findings. While artificial intelligence has the potential to automate some components of the research process, it cannot yet replace human researchers' comprehensive approach to scientific inquiry. Finally, artificial intelligence can be an invaluable tool for the study of science, including Islamic traditional science, by

automating menial activities and facilitating data analysis. However, artificial intelligence will never be able to take the place of human ingenuity, curiosity, ethics, and the wider cultural and historical context that researchers bring to their studies. Instead than seeing artificial intelligence as a threat to human researchers, it should be considered as a tool to help them.

The expectations of the development of artificial intelligence in Islamic classical scientific studies requires caution and careful thought. When implementing artificial intelligence in this setting, it is important to be cognizant of any ethical and cultural backlash. In addition, artificial intelligence shouldn't be considered as a replacement for human researchers but rather as a tool to aid and augment them. Human academics and researchers still have the upper hand when it comes to knowledge and understanding. Collaboration between artificial intelligence professionals and scholars in the field, as well as a dedication to preserving and promoting this valuable heritage of knowledge, will be crucial to the development and integration of artificial intelligence into Islamic traditional scientific studies.

## **CONCLUSION**

Based on the data acquired, it can be concluded that artificial intelligence is not scary anymore because of many faculty members of private Islamic Colleges. In the 21<sup>st</sup> century, integrating artificial intelligence into Islamic classical scientific studies brings obstacles and great expectations. This confluence of tradition and technology could change historical Islamic sciences. A concise conclusion highlights essential points: the challenges of artificial intelligence in Islamic classical scientific studies is giving the prior knowledge for those who want to get new knowledge. Artificial intelligence can help translate and analyze historical materials, personalize learning, and improve research. It can cross linguistic and geographical gaps, making valuable knowledge more accessible worldwide. Artificial intelligence driven language learning systems can also improve language proficiency, which is essential for interpreting classical works.

However, the expectations of faculty members were to preserve cultural values and beliefs that artificial intelligence should support human academics and educators, highlighting the relevance of the human touch in education and research. As artificial

intelligence advances, Islamic classical scientific studies educators, researchers, and technology developers must work together to maximize its potential. Realizing artificial intelligence's full benefits requires using it to improve learning and research while conserving tradition. Artificial intelligence and Islamic classical scientific studies will make historical knowledge more accessible, engaging, and can be relevant or not to 21<sup>st</sup> century experts and students in this ever changing context. Besides, artificial intelligence shouldn't be considered as a replacement for human researchers but rather as a tool to aid and augment. For further research, it would be better to have a study by combining the artificial intelligence and its relationship of the developments of the Islamic studies in its context.

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