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Artificial Intelligence in Islamic Religious Education: A PRISMA-Based Review and the SEI-CHAT Framework

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Abstract

Although Artificial Intelligence (AI) has been rapidly integrated into contemporary education, little scholarly attention has been paid to its implications on the epistemological, theological, and cultural foundations of Islamic Religious Education (IRE). This study aims to systematically analyze the implementation patterns, effects, and challenges of AI on IRE learning in the digital age. This study was conducted through a Systematic Literature Review (SLR) method by using Publish or Perish software to retrieve relevant articles from Scopus, Web of Science, Semantic Scholar, and Google Scholar databases on 01 August 2025, using the Boolean search query: ("Islamic Education" OR "Islamic Religious Education") AND ("Artificial Intelligence" OR "AI") AND ("Learning" OR "Digital Learning"). This study found that, overall, AI was used to facilitate personalized learning, feedback, and adaptive digital learning platforms, promoting students' engagement in IRE learning. However, its potential effectiveness was dependent on pedagogical considerations, teachers' digital literacy, and institutions' readiness. This study identified challenges related to its implementation, including ethical considerations, tensions between algorithmic knowledge and religious authority, and technological disparities. This study introduces a new theoretical framework, namely, the Sixth-Element Islamic Cultural-Historical Activity Theory (SEI-CHAT) with a normative-epistemological element, focusing on the relationship between Naqli-Aqli knowledge.

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INTRODUCTION

The rapid development of Artificial Intelligence (AI) has led to a debate on its ability to replace some pedagogical roles played by teachers within an educational context, as it has been observed to have the ability to automate roles such as assessment, feedback, and instruction support (Akem et al., 2025; Relmasira & Donaldson, 2025; Zainuddin et al., 2025). Conversely, other researchers have observed that, rather than replacing teachers, AI has been able to expand its capabilities to ensure effective learning processes (Mahmudulhassan et al., 2024; Rafida et al., 2024; Siregar et al., 2025). Roll & Wylie, (2016) in an Islamic Religious Education context, this debate becomes even more complex, as it is not only focused on providing knowledge but is also focused on promoting appropriate values, ethics, spirituality, and culture, as informed by religious

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norms and traditions. Therefore, Islamic Religious Education innovation and development must consider appropriate measures that ensure an epistemological balance between appropriate technological advancements and appropriate religious norms (Pham & Sampson, 2022). This calls for a collaborative and evolutionary learning system, involving teachers, technology, and community culture, for an effective and sustainable educational innovation (Chen et al., 2022). This perspective, therefore, portrays AI not only as a tool but as a transformative element, capable of transforming the relationship between teachers, learners, and knowledge within the contemporary Islamic Religious Education context.

Kamalov et al., (2023) reveal that the birth of artificial intelligence will become a new paradigm in personalized learning processes, thereby encouraging dynamic learning while still upholding ethical principles as a boundary against potential misuse in education (Nguyen et al., 2023). Abulibdeh et al., (2024) provide an example of AI chatbots such as ChatGPT that have attracted all elements of society, including the world of education. Nevertheless, concerns remain regarding the ethical misuse of such technology (Holmes & Porayska-Pomsta, 2023; Huang, 2023; Murad et al., 2024; Wang et al., 2024), thus requiring sustainable learning strategies through curriculum redesign and assessment tools of evaluation that align with the challenges of the digital learning ecosystem (Mao et al., 2024). In line with Paek & Kim, (2021) this, the presence of AI marks the starting point of transformation in the world of education by prioritizing sustainability, innovation, creativity, and strong ethical commitment (Fitria, 2023), through the revision of educational goals and the restructuring of content depth (García-Peñalvo, 2023).

The aforementioned developments also apply to the Islamic education process, although one of the real challenges is balancing the integration of technology with Islamic education, particularly in positioning AI within a student-centered work environment, developing the curriculum, and supporting it with a flexible framework without sacrificing Islamic values (Mahmudulhassan et al., 2024; Ahmad et al., 2025). This is supported by the studies, Setiawan et al., (2025) which prove that the application of AI technology in learning processes provides interactive, adaptive, and effective solutions that can improve the quality of learning (Mohamad & Ismail, 2024). In addition, there is a significant transformation of the learning process in Islamic Religious Education (As'ad, 2021; Idris et al., 2022; Norman et al., 2025) where AI optimally assists in creating learning innovations and adaptations, providing feedback to students, and helping them comprehend complex concepts of learning.

Several studies' findings prove that the application of AI technology is becoming increasingly inevitable within the framework of modern learning processes. Therefore, it is considered essential to develop ethical boundaries of AI applications to ensure that innovation is aligned with learning and ethical goals (Sulaiman et al., 2024). AI-based tools, such as ChatGPT, are being applied in learning processes at the level of Islamic Religious Education to assist the interactive learning process and increase the level of accessibility of digital learning environments (Kahfi et al., 2025; Salim & Habibi, 2025). The integration of AI in Islamic education should also be grounded in the fundamental principles of Islam to avoid undermining the ethical and spiritual dimension of the learning process. The development of the AI system has also involved Islamic scholars, educators, and experts in digital technology to ensure the epistemological and ethical foundations of the AI system are in line with Islamic principles (Hidayatullah et al., 2025; Meriyati et al., 2025). From the pedagogical dimension, AI-based systems have also been increasingly used to support the assessment and content delivery of the learning process to make it more conducive for cognitive engagement and character development of the students (Ilma'Nun et al., 2025; Zubairi & Nurdin, 2022).

The role of AI is to serve as a dialogic partner for teachers and students (Mustoip et al., 2024; Salim & Aditya, 2025). The integration of AI in Islamic Religious Education is the integration of computational systems and knowledge that is sacred, normative, and theological in nature. AI provides opportunities for the development of Islamic Religious Education while grounded in the principles of Sharia and the objectives of Maqāṣid Al-Sharī'ah. Although discussions on the use of AI in education are becoming more prominent, the scientific literature has yet to explore its use in Islamic Religious Education, its effects, and its challenges. This study aims to address this research question through a systematic literature review, focusing on analyzing the pattern of use, effects, and challenges of AI use in Islamic Religious Education in the digital age. The contribution of this

study is its ability to present a structured body of knowledge on the use of AI in Islamic Religious Education, identifying its dominant pattern and challenges, and providing a conceptual perspective on its relationship with the foundations of Islamic Religious Education.

METHOD

The method employed in this study is the Systematic Literature Review (Bukhari & Wathan, 2022; Wang et al., 2024), a process of analyzing previously published research data with a specific focus on the research questions. This study centers on three questions: 1) How is AI implemented in the learning of Islamic religious education in the digital era? 2) How is the impact of the application of AI on Islamic religious education learning? and 3) What challenges arise in implementing AI in the learning of Islamic religious education? To ensure controlled, accurate, and relevant data while avoiding irrelevant results, the researcher optimized the search process using Boolean operators. The Boolean model applied consists of three main keyword columns: ("Islamic Education" OR "Islamic Religious Education") AND ("Artificial Intelligence" OR "AI") AND ("Learning" OR "Digital Learning"). The search was conducted using Publish or Perish version 8 in the keyword column. The search was conducted in an integrated manner with a span of 2020–2025, in four global databases: Scopus, Web of Science (WoS), Semantic Scholar, and Google Scholar. The findings were subsequently analyzed using the PRISMA framework, which involves identification, evaluation, and interpretation based on the research questions.

Inclusion and Exclusion Criteria

In this study, the researcher applied inclusion and exclusion criteria as boundaries to maintain data accuracy and credibility, and to minimize researcher bias (Arif et al., 2025). The five inclusion criteria are as follows. First, articles must be published on topics directly relevant to the research questions: 1) How is AI implemented in the learning of Islamic religious education in the digital era? 2) How is the impact of the application of AI on Islamic religious education learning? and 3) What are the challenges in implementing AI in the learning of Islamic religious education? Second, only studies published within the last five years (2020–2025) were included. Third, articles must have undergone peer review, be published in scientific journals, and be available in full text. Although Google Scholar and Semantic Scholar index various types of academic outputs, peer-review status was independently verified during the screening stage by checking each journal's official website and indexing credentials. Only articles published in journals with a clearly stated peer-review process were included, while non-peer-reviewed sources were excluded. Fourth, the language selected is English only. Fifth, data retrieval was performed exclusively using the third-party application Publish or Perish version 8 with the Boolean query ("Islamic Education" OR "Islamic Religious Education") AND ("Artificial Intelligence" OR "AI") AND ("Learning" OR "Digital Learning") across Scopus, WoS, Semantic Scholar, and Google Scholar.

Accordingly, the exclusion criteria comprise five points: first, articles not aligned with the specified topics were excluded. Second, studies outside the 2020–2025 timeframe were excluded. Third, publications other than peer-reviewed journal articles (e.g., proceedings, conference papers, blogs, etc.) were removed. Fourth, articles in languages other than English were excluded from analysis. Fifth, no manual searches were conducted directly against global databases, but manual verification is still necessary to strengthen methodological rigor (Scopus, WoS, Semantic Scholar, and Google Scholar).

Data Screening

The data search process using Publish or Perish version 8 across the four global databases Scopus, WoS, Semantic Scholar, and Google Scholar was carried out on 01 August 2025. The results are presented in Table 1.

Table 1. Search Results Data via Publish or Perish

Keywords (model Boolean)	Year article published	Database search	Count
("Islamic Education" OR "Islamic Religious Education") AND ("Artificial Intelligence" OR "AI") AND ("Learning" OR "Digital Learning")	2020-2025	Scopus	9
		WOS	5
		Semantic Scholar	121
		Google Scholar	386
Total			521

From the overall search results above, a total of 521 articles were retrieved. The researcher then performed classification using the Zotero application. After completing the classification process in accordance with the inclusion and exclusion criteria, the researcher exported the data in RIS format. Subsequently, the researcher conducted a visualization based on the classified data using the VOSviewer application. The visualization results from VOSviewer are presented in Figure 1.

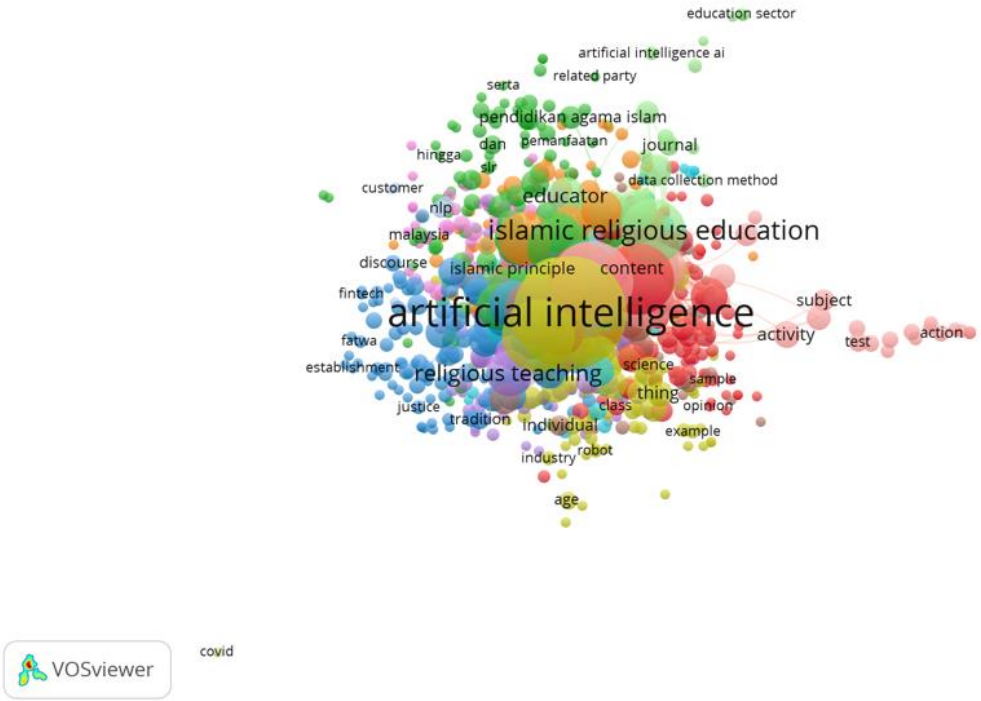

Figure 1. AI Connectivity Data and Islamic Religious Education

From Figure 1, it is evident that there is a fairly strong interconnection among various research findings, particularly regarding the presence of AI, which is closely linked to Islamic religious education, as well as its relation to educators/teachers, religious learning processes, and the content of Islamic religious education.

PRISMA Analysis

Based on the data obtained from the search process using the Publish or Perish application and subsequent classification using Zotero, the researcher conducted data analysis employing the PRISMA framework to ensure the results are valid and detailed (Plakias et al., 2025; Wati et al., 2025). The complete analysis process is illustrated in Figure 2.

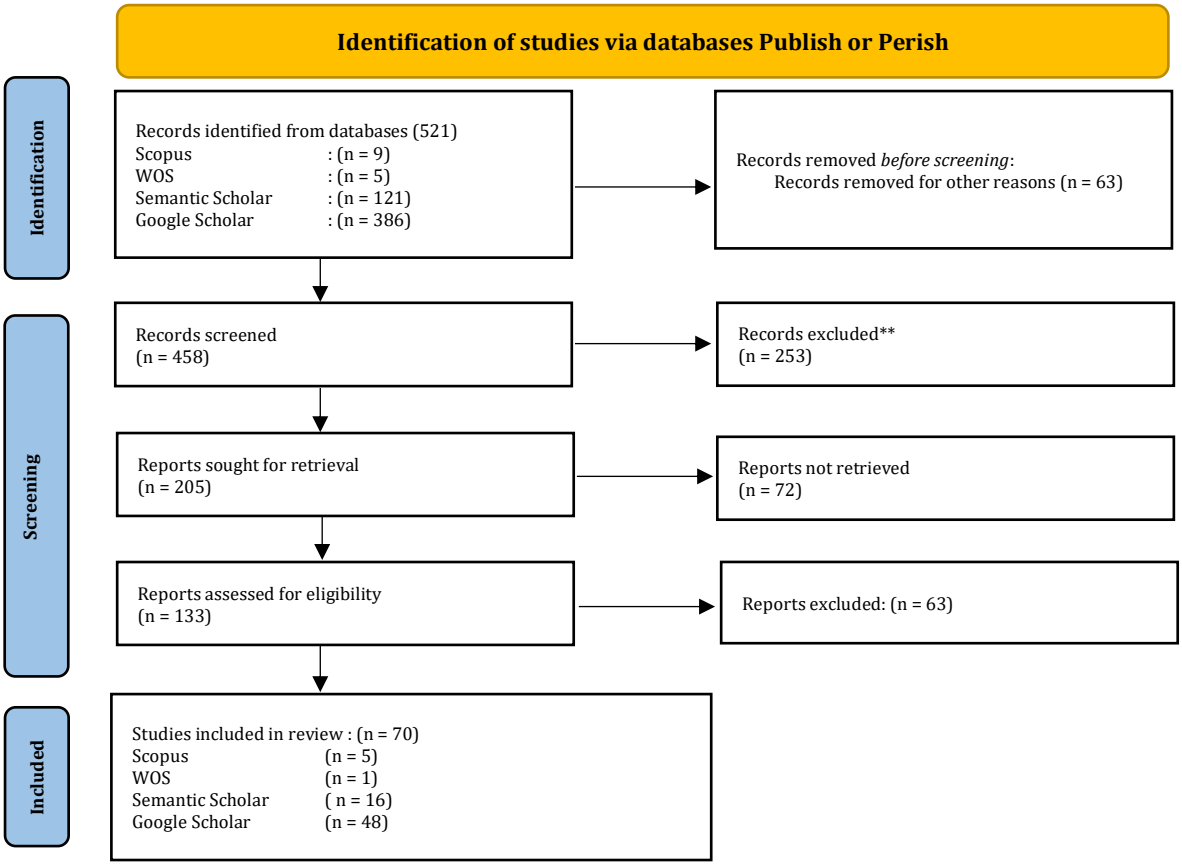

Figure 2. PRISMA Flow Diagram

Based on the data analysis, there are two notes in the data deletion process, as shown in the data below. First, category Records removed for other reasons (n = 63): refers to studies excluded during the preliminary screening due to clearly defined criteria, including duplicate records (n = 21), non-English publications (n = 14), non-peer-reviewed outputs such as conference papers, theses, and book chapters (n = 18), and articles deemed irrelevant to the focus on Islamic Education and Artificial Intelligence in learning contexts based on title and abstract screening (n = 10). Second, reports not retrieved (n = 72) indicate studies for which full-text access could not be obtained despite meeting initial relevance criteria. These were primarily excluded due to paywall restrictions without institutional access (n = 39), unavailable or inaccessible full texts on journal websites (n = 21), and broken or inactive links in the indexing databases (n = 12). Since full-text availability was a mandatory inclusion criterion, these reports were excluded to ensure analytical rigor and consistency in the systematic review process.

RESULTS AND DISCUSSION

Implementation of AI in the Learning of Islamic Religious Education in the Digital Era

In the digital era, transformation in learning has become an imperative that educators must realise (Ramdhani & Hakiman, 2025), particularly with the emergence of AI serving as a strategic opportunity for advancing Islamic education (Jamalullel & Nasehudin, 2025), by developing engaging learning experiences while preserving authentic Islamic values (Zuhriyeh et al., 2025). Raihanah et al., (2025) revealed that implementing AI in Islamic religious education offers numerous positive potentials, ranging from reliable Islamic information sources, adaptive and interactive learning tailored to students' needs, to contextually relevant materials (Hendra et al., 2025). Hayuningsih, (2024) explains the results of a study using descriptive statistical analysis of the implications of using Artificial Intelligence for improving student learning outcomes in Islamic religious education, reaching 87.22%. This demonstrates that AI can serve as an effective alternative for enhancing student outcomes in Islamic religious education (Hikmah, 2024).

At the planning stage of AI-based Islamic religious education (Salim & Aditya, 2025), teachers develop lesson plans that include objectives, content, media, models, methods, and evaluations aligned with students' needs (Huda et al., 2024; Nasikin et al., 2024). Additionally, teachers utilise AI to quickly and accurately prepare credible and effective learning materials (Pandia et al., 2024; Saiddaeni, 2024). In line with Santoso et al., (2024) AI, it maximally supports Islamic religious education teachers in lesson planning by simplifying the creation of personally relevant content, providing broad accessibility, and enabling flexible implementation with optimal results (Ilma'Nun et al., 2025).

During the implementation phase, teachers utilize a variety of AI-supported tools and learning models to enhance the effectiveness of Islamic Religious Education in digital environments. The most frequently reported category involves generative AI tools, particularly ChatGPT-based learning methods used to facilitate dialogic learning, question–answer interaction, and conceptual explanation in Islamic studies classrooms (Putri et al., 2024; Salim & Habibi, 2025), Another widely discussed category includes AI-supported learning applications, such as AI-powered Al-Qur'an learning platforms and applications for Hadith and Fiqh learning that assist students in accessing religious knowledge more efficiently (Bakri, 2024; Mustoip et al., 2024; Raihanah et al., 2025; Zulkifli et al., 2024),

In addition, several studies highlight the use of AI-assisted pedagogical systems, including virtual teaching assistants, adaptive learning management systems, and AI-generated assessments that support automated evaluation and personalized learning pathways, particularly for students with diverse learning needs (Anandal et al., 2024). Teachers also integrate AI tools within broader interactive learning models, such as Computer-Based Instruction (CBI), Web-Based Instruction (WBI), and digital social learning environments designed to support adaptive and collaborative learning in the context of Industry 4.0 and Education 4.0 (Abdillah et al., 2025; As'ad, 2021; Kosasih et al., 2024; Saiddaeni, 2024). Immersive technologies such as Augmented Reality (AR) and Virtual Reality (VR) are also discussed as potential tools for enhancing authenticity and experiential learning in Islamic education; however, the evidence for their effectiveness remains limited because this approach is reported in only a small number of studies (Asril et al., 2023). This pattern suggests that current research on AI in Islamic Religious Education is still predominantly focused on generative AI and AI-assisted learning platforms rather than immersive technologies.

These developments align with AI's contribution to assessment in Islamic religious education. Mustoip et al., (2024) noted that AI-based evaluation systems are preferable because they are automated, objective, unbiased, and capable of delivering real-time feedback to students. Hidayatullah et al., (2025) exemplified the use of AI in supporting Al-Qur'an memorization with automatic text analysis, interpretation, and accurate feedback. Consequently, evaluations become more efficient (Mustoip et al., 2024). In contrast, Wedi et al., (2025) utilised websites such as MOSAIC to increase teacher efficiency. Moreover, AI-enabled assessments can provide detailed records and feedback precisely tailored to students' comprehension levels (Kamaludin & Purnama, 2021; Shofiyyah et al., 2024).

The above discussion, therefore, reveals that the emergence of AI technology has created opportunities for deeper access to the knowledge of religion while enhancing the quality of learning. This conforms with the assertion of Chanda (2025), which reveals that AI technology can generate spiritual experiences that are personalized, based on the analysis of individual preferences, beliefs, and modes of worship, for example, a deeper understanding of the sacred texts of the Qur'an through the use of AI technology. The optimization of ChatGPT as a tool for the exploration of knowledge related to Islam, while basing the knowledge on the Qur'an, is one of the notable examples (Darmu'in et al., 2025). The existence of the strengths and weaknesses of AI technology, therefore, is inevitable, especially during this dynamic change in technology. Rather than the weaknesses being seen as negative, Syukri et al., (2025) affirm that technology and the teachings of Islam should not be separated, especially when the negative effects of the technology are optimally mitigated (Ilma'Nun et al., 2025), The above, therefore, presents a critical juncture that can positively integrate the two, which can enrich the curriculum while effectively fostering teachers' professional development (Syahrizal et al., 2024).

In conclusion, the implementation phase, therefore, reveals that the use of AI technology in the teaching of Islamic Religious Education has succeeded in the transition of the learning paradigm

from the conventional teacher-centered approach to an interactive, dynamic, and student-centered approach, which is enriched by the use of diverse modalities, ranging from chatbots, AR/VR, adaptive LMS, and social learning, which can effectively make the abstract and sacred knowledge of the subject more concrete, inclusive, and relevant to the demands of Education 4.0. The integration of AI technology, therefore, in the evaluation of the subject, which is the focus of this discussion, has created revolutionary changes, ranging from the use of the technology in the evaluation of the subject, which is now objective, real-time, and accurate, while basing the evaluation on the accurate analysis of Tajwīd, while aligning the entire process with the ethical teachings of Islam.

Impacts of AI Implementation on the Learning of Islamic Religious Education

The utilization of AI in the teaching of Islamic religious education aims to foster a holistic understanding among students (Raihanah et al., 2025). In this regard, the teacher's role remains pivotal in ensuring the success of learning, from enhancing the effectiveness of planning, implementation, and evaluation to optimizing materials that align with the objectives of Islamic religious education (Asril et al., 2023). Based on the above conditions, the impacts of AI implementation can be identified in two main categories (Fahmi et al., 2021). First, the impact of AI on Islamic religious education learning for teachers, and second, the impact on students (Syukur et al., 2024).

For teachers, the implementation of AI significantly improves efficiency in lesson planning (Ilma'Nun et al., 2025; Nasikin et al., 2024; Pandia et al., 2024; Saiddaeni, 2024; Santoso et al., 2024), enriches teaching methods and media in Islamic religious education, and thereby strengthens teacher professionalism (Amaly et al., 2022; Nasaruddin & Ladiqi, 2023). It enables the creation of engaging materials while effectively boosting student motivation (Asril et al., 2023; Bakri, 2024; Mustoip et al., 2024; Putri et al., 2024). Moreover, teachers can easily prepare accurate assessments, provide objective learning analysis, and deliver timely feedback (Hidayatullah et al., 2025; Mustoip et al., 2024; Shofiyyah et al., 2024; Wedi et al., 2025).

Similar positive effects are observed among students (Asril et al., 2023), where the application of AI actively supports effective comprehension of subject matter (Faizin et al., 2025), thereby enhancing overall learning quality (Bakri, 2024; Hikmah, 2024). For instance, Djazilan et al., (2024) found that AI-integrated Qur'anic learning significantly aids students' understanding. In contrast, Fahmi et al., (2021) developed AI-integrated e-modules for Islamic religious education, making the content more accessible and allowing learning beyond the classroom.

Beyond content mastery, the integration of AI in Islamic Religious Education has also been reported to enhance students' learning motivation and engagement in digital learning environments (Abdillah et al., 2025; Anandal et al., 2024; Ramdhani & Hakiman, 2025; Sodiq et al., 2024; Zuhriyeh et al., 2025). In addition to strengthening conceptual understanding, AI-supported learning can also respond more effectively to students' learning needs in studying Islamic knowledge within the broader context of the Industry 4.0 era. Several studies further highlight the development of Islamic digital literacy, which refers to students' ability to access, evaluate, and utilize digital information related to Islamic teachings while maintaining ethical awareness and alignment with Islamic values in digital environments (Amaly et al., 2022; As'ad, 2021) Within this framework, personalized AI-based learning environments enable students to explore Islamic knowledge through digital platforms while simultaneously developing critical and responsible digital engagement (Djazilan et al., 2024; Salim & Habibi, 2025). In addition, the integration of AI in Islamic education has been associated with increased learner autonomy and higher levels of student engagement, allowing students to access learning resources and participate in interactive learning processes across flexible temporal and spatial contexts (AN et al., 2025; Jamalullel & Nasehudin, 2025; Kahfi et al., 2025).

From the findings of the studies discussed above, it is obvious that the mutually positive effects of the implementation of AI in the learning of Islamic Religious Education have the potential to work optimally (Pandia et al., 2024; Parlina & Hudaya, 2024). Firstly, for teachers, the implementation of AI promotes professionalism in the entire process of teaching and evaluation. Secondly, for students, the implementation of AI promotes the development of personalized, motivating, independent, and holistic experiences of learning, which is highly relevant to the digital age. This is in line with Bakri (2024). In one of the studies, it is stated that 89.66% of the

participants felt that the implementation of AI in Islamic religious education had a positive impact on the learning outcomes of the students. This is an indication of the potential benefits of the implementation of AI in the pedagogy of teaching and learning. However, there is also the possibility of negative consequences for the students, such as the development of dependency on technology (Muslim, 2024; Nasikin et al., 2024). Therefore, the need to provide the students with knowledge of the importance of ethics in the implementation of AI cannot be overemphasized (Ibrahim et al., 2024).

The integration of AI in Islamic religious education has fundamentally enhanced the role of teachers without replacing their role; rather, AI plays the role of an intelligent assistant to teachers, which greatly increases efficiency and provides numerous opportunities for teachers to be more effective in their role and to be more competent and to be able to concentrate on the spiritual and moral guidance of their students tasks that cannot be replaced by machines or computers. On the other hand, the impact of the implementation of AI in Islamic religious education on students is a transformative learning experience that is characterized by increased knowledge of the subject matter of Islamic religious education, increased motivation and engagement in the subject matter of Islamic religious education, the development of Islamic digital literacy skills among students, and independence in accessing knowledge anywhere and anytime.

Challenges in Implementing AI in the Learning of Islamic Religious Education

The implementation of AI in Islamic religious education is not always smooth and optimal. The dependence on limited internet access, despite its promise of learning without time and spatial constraints, is one of the most significant challenges faced by many teachers and students (Abdillah et al., 2025; Hendra et al., 2025; Jamalullel & Nasehudin, 2025; Raihanah et al., 2025). Data indicate that internet access in Indonesia is dominated by urban areas on Java Island, reaching only 71-72%, whereas rural areas only reach 42-48%. This digital divide has a significant impact on the implementation of AI-supported learning, as it is not uniform across various areas (As'ad, 2021; Hidayatullah et al., 2025; Nasikin et al., 2024). In addition, various challenges are faced during the implementation of AI, one of which is related to the limited ability of Islamic religious education teachers to use AI technologies, as most are not yet proficient in using AI technologies (Amaly et al., 2022; Hasanah et al., 2024; Salim & Aditya, 2025), because teacher readiness is considered the key to successful implementation of AI in Islamic religious education (Djazilan et al., 2024). Moreover, the integration of the curriculum has not been optimized, making it difficult to develop a sustainable learning management system, as mentioned As'ad (2021) and Santoso et al. (2024).

Beyond infrastructure and human resource issues (Hakim & Anggraini, 2023), a substantive challenge lies in maintaining the accuracy of Islamic content when using AI (Sodiq et al., 2024), Teachers must exercise wisdom to ensure that technological integration does not deviate from core Islamic values (Djazilan et al., 2024; Zubairi & Nurdin, 2022). Faizin et al., (2025) Further critique additional concerns related to ethics (Hasanah et al., 2024), trust, and doubts about the validity of AI-generated content in religious doctrine. This aligns with Kahfi et al., (2025) those who stress that ethical issues and the depth of spirituality must remain under strict supervision in accordance with religious principles (Kardi et al., 2023), Consequently, strengthening religious values and ethics must serve as the frontline defense in the use of AI for Islamic religious education (Haidar et al., 2022). As noted by Meriyati et al., (2025) another critical challenge is the involvement of religious stakeholders (religious leaders) in the development and evaluation of AI systems specifically for Islamic religious education, so that Islamic principles can effectively address the challenges of the digital era while preserving traditional values nurtured through direct human interaction.

Raihanah et al. (2025), observe that a major challenge of introducing AI into Islamic religious education is excessive dependence on technology, which can diminish students' critical thinking and analytical abilities. Additionally, Nasir et al., (2025) highlight ongoing concerns regarding data privacy, as the security of student data processed by AI systems cannot yet be fully guaranteed. A detailed classification of these AI challenges is presented in Table 2.

Table 2. Challenges and Implementation of AI in the Learning of Islamic Religious Education

Challenges	Description of Key Challenges	Literature
Infrastructure and Internet Access	Dependence on uneven internet connections (especially in rural areas & outside Java)	Abdillah et al. (2025); Hendra et al. (2025); Jamalullel & Nasehudin (2025); Raihanah et al. (2025); As'ad (2021); Hidayatullah et al. (2025); Nasikin et al. (2024)
Teacher Readiness & Competence	Many Islamic Education teachers are not yet trained/understand how to optimally utilize AI.	Amaly et al. (2022); Hasanah et al. (2024); Salim & Aditya (2025); Djazilan et al. (2024); Hakim & Anggraini (2023)
Curriculum Integration & Learning Management	The Islamic Religious Education curriculum has not fully accommodated AI technology; the difficulty of managing AI-based sustainable learning	As'ad (2021); Santoso et al. (2024)
Accuracy & Authenticity of Islamic Materials	Risk of misinterpretation of the Qur'an, Hadith, and Fiqh by AI; potential deviation from doctrine	Sodiq et al. (2024); Djazilan et al. (2024); Zubairi & Nurdin (2022); Faizin et al. (2025)
Ethics, Validity & Trust	Doubts about the validity of AI content, the ethics of using AI in religious indoctrination, and the loss of spiritual depth	Faizin et al. (2025); Hasanah et al. (2024); Kahfi et al. (2025); Kardi et al. (2023); Haidar et al. (2022)
Technology Dependence & Critical Thinking	Students tend to copy-paste AI answers, reducing analytical and critical thinking skills.	Raihanah et al. (2025); Nasir et al. (2025)
Data Privacy & Security	Students' personal data (Quran recitation recordings, Fiqh questions, etc.) are vulnerable to misuse by AI platforms.	Raihanah et al. (2025); Nasir et al. (2025)
Religious Stakeholder Involvement	Minimal involvement of Islamic scholars, religious figures, MUI, or Islamic mass organizations in the development & validation of AI PAI content	Meriyati et al. (2025); Shofiyyah et al. (2024); Syukri et al. (2025); Muslim (2024)

Based on the data in Table 2, it is clear that the implementation of AI in the learning of Islamic religious education brings a range of challenges and impacts, including: inadequate infrastructure, particularly uneven internet access, which causes many learning activities to fall short of their potential when reliant on inconsistent connectivity (Chanda, 2025; Engkizar, Jaafar, Hamzah, et al., 2025). However, teachers' digital readiness and competence are still low, which has resulted in a low and less engaging use of AI tools' capabilities. In addition, the integration of the curriculum has not been fully realized, while the authenticity of the Islamic content is also a concern since AI-generated Qur'anic verses or Hadiths are often found to be different from the original texts or meanings. The question of the authenticity of AI-generated content and the ethics of using AI for religious knowledge are also critical concerns that could affect the spiritual appreciation of the students negatively. Finally, the over-reliance on technology and the resulting lack of critical thinking are critical concerns that could negatively affect the analytical spirit of the students in understanding the Islamic religious education concept. Thus, the active involvement of different stakeholders and Islamic organizations is critical as a solution for developing AI content for Islamic religious education.

The integration of AI in Islamic religious education faces numerous and multifaceted challenges that are also interconnected and could be broadly classified into four critical aspects: Infrastructural Deficits and Digital Access; Deficits in teachers' digital competencies; Curriculum integration; and the question of authenticity of AI-generated content. Theological-epistemological

risks, such as possible inaccuracies, misinterpretations, and loss of authenticity of sacred content of Islam, and ethical-spiritual concerns that include validity concerns, loss of critical thinking skills, over-reliance on technology, data-privacy issues, and the conspicuous absence of involvement of ulama and religious leaders in AI development and validation. These concerns collectively highlight the point that for AI adoption in Islamic religious education to be effective, it cannot be left to technological fixes alone but must be supported by a holistic and Syarīʿah-compliant ethical framework that prioritizes Islamic values and spirituality of stakeholders.

Discussion

The incorporation of AI in the learning of Islamic religious education has emerged as a cornerstone for the optimization of the digital transformation of Islamic education in the current era (Engkizar, Jaafar, Alias, et al., 2025; Zuhriyeh et al., 2025). AI has emerged as a strategic opportunity for reviving the processes of learning that are "engaging," "creative," "innovative," and "adaptive" according to the needs of the times. Secundo et al., (2025) where it was stated that this development also highlights the importance of building an AI-driven innovation ecosystem in the field of education, where the shift from the conventional to full digitalization becomes the main objective. The development of AI was not only meant to be an added tool but also to be the catalyst for the development of an active learning approach through the use of holistic methods to address the challenges of digitalization, including the needs for the future (Kumar et al., 2023), while keeping the human factor in the education (Naseeb, 2024).

The role of the Islamic Religious Education teachers remains critical in the face of epistemological, pedagogical, and moral challenges that need to be well-managed to ensure that AI implementation does not contradict genuine Islamic scholarship principles and values (Tang, 2024). At the implementation level, teachers are expected to plan AI-based lesson plans and strategies to integrate technology with pedagogical objectives and students' needs (Ilma'Nun et al., 2025; Nasikin et al., 2024; Saiddaeni, 2024). In this case, AI is considered a secondary role or a supporting tool that helps teachers in the preparation of learning resources, media selection, and creating creative content for teaching purposes (Liu et al., 2022; Tang, 2024). Van Den Berg & Du Plessis, (2023) Generative AI tools, such as ChatGPT, have also been a subject of discussion in terms of their potential to assist teachers in the preparation of teaching resources and models while also allowing students to access information and knowledge more efficiently. In terms of the socio-cultural theory of learning, the relationship between teachers and AI, and students and AI could be considered a collaborative activity system where teachers and students are considered collective subjects who use technology for different purposes: teachers for creating models and resources, and students for knowledge exploration (Engeström, 2001; Paiva & Bittencourt, 2020)

The advancement of AI can no longer be rejected in educational practice. On the contrary, it constitutes an adaptive and interactive innovation in Islamic religious education learning. Examples include using ChatGPT for religious discussions, AI-powered Qur'an learning applications, Fiqh studies, AR/VR for visualization, and virtual learning tailored for students with special needs (Abdillah et al., 2025; Anandal et al., 2024; Asril et al., 2023; Salim & Aditya, 2025). Younas et al., (2025) argue that the context of Islamic Religious Education (IRE), several AI-based tools identified in the reviewed studies, such as ChatGPT, DeepSeek, Gemini, and Meta AI, are utilized as complementary instructional assistants. These systems are primarily employed to support activities such as generating contextual learning materials, assisting in the interpretation of religious texts, providing formative feedback, and facilitating interactive question-and-answer sessions. Their relevance in IRE lies in their capacity to enhance students' engagement and access to diverse learning resources while remaining subject to ethical guidance, teacher supervision, and data privacy considerations (Ezzaim et al., 2025). This aligns with Holstein et al., (2018)those who assert that AI remains merely a tool that assists teachers, ultimately yielding positive impacts on student understanding. Borrowing from Louis & ElAzab, (2023) teachers is the primary component of learning, students are the next, and AI is positioned solely as a supportive instrument that enhances engagement through algorithms and decisions guided by teachers or students with full ethical consideration.

Furthermore, in AI-based implementation of Islamic religious education, evaluation processes play a crucial role. Holstein et al., (2018) Note that AI-enabled assessments deliver real-time results, thereby narrowing the gap between prior abilities and current learning outcomes. AI

consistently demonstrates superior potential in exploring student learning outputs from item generation, instruction design, scoring, result interpretation, test analysis, to objective reporting (Owan et al., 2023), examples include TAM-based assessment (Sánchez-Prieto et al., 2020) and AI-Powered Test Generation & Evaluation via platforms like MOSAIC (Hidayatullah et al., 2025; Mustoip et al., 2024; Shofiyyah et al., 2024).

The foregoing data reveal that AI development in education is progressing rapidly and significantly, including in Islamic religious education. However, from another perspective, AI brings both positive and negative impacts that require teachers to provide optimal guidance at all times. Positive impacts for teachers and students include transforming the learning landscape to be more efficient and effective with deeper content, enabling personalized learning tailored to individual student needs (Singh & Hiran, 2022), and allowing teachers to adaptively select methods, media, and models. In agreement with Faizin et al., (2025), the positive impact on students in Islamic religious education is the cultivation of positive attitudes and independent learning without limitations of time or space. Nevertheless, AI as a tool also carries negative consequences for both teachers and students, such as excessive dependence that diminishes critical thinking (Ju, 2023), reduced teacher–student interaction (Nadim & Di Fuccio, 2025), data privacy vulnerabilities, erosion of ethical values (Wako & Anne, 2022), and persistent algorithmic bias these remain serious concerns in the application of AI to Islamic religious education (Ibrahim et al., 2024; Muslim, 2024; Nasikin et al., 2024).

In the discussion, a significant interconnection among teachers, students, the learning environment, and AI in Islamic religious education emerges. Engeström, (2014) emphasizes six critical triangular elements that must be considered in every AI-mediated learning process within Islamic religious education. These are: First, the subject teachers and students collectively engaged in the learning process (Rogers, 2011). Second, the object authentic and profound Islamic understanding achieved through digital literacy (Amaly et al., 2022; As'ad, 2021). Third, tools AI technologies (e.g., ChatGPT, DeepSeek, Gemini, Blackbox, etc.) are utilized by teachers and students for implementation and evaluation (Asril et al., 2023; Bakri, 2024; Putri et al., 2024; Salim & Aditya, 2025). Fourth, rules ethical guidelines for AI use; Vargas-Murillo et al., (2023), stress that ethics require maintaining objectivity by recognizing AI solely as a supplementary tool (Holmes et al., 2022). Fifth, community formed through partnerships with ulama and Islamic organizations for material analysis and digitalization (Mahrusah, 2025). However, the sixth element that distinguishes this model lies in the dialectical integration of Naqli (revelation-based) and Aqli (rational-empirical) knowledge, which serves as the core epistemological framework within SEI-CHAT. This integration is not merely an additional component but rather a normative foundation that structures, directs, and mediates the entire interaction process among teachers, students, AI technology, and ethical principles in Islamic Religious Education (Mustapha & Malkan, 2025). This element is the decisive key to the success or failure of AI systems in Islamic religious education (ensuring personalized depth of Islamic understanding validated by Ulama/organizations, while Ulama and organizations do not outright reject technological advancement). The detailed composition of the SEI-CHAT elements is presented in Table 3.

Table 3. Development of SEI-CHAT from Engeström's CHAT Framework

CHAT Engeström Element	Implementation	Elemen SEI-CHAT	Implementation
Subject	Teachers as planners and facilitators, students as active learners who interact directly	Subject	Teachers and students are collectively involved in every process of learning Islamic religious education.
Object	Aim for authentic and deep understanding	Object	The goal of authentic and in-depth understanding of Islam through strengthening digital literacy

CHAT Engeström Element	Implementation	Elemen SEI-CHAT	Implementation
Mediating tools	AI and its derivatives as tools in helping the learning process, such as: ChatGPT, Deepseek, Blackbox, Gemini.	Mediating tools	AI technology (e.g., ChatGPT, DeepSeek, Gemini, Blackbox, etc.) used by teachers and students in the implementation of Islamic religious education learning
Rules	Challenges of accuracy, ethics, validity	Rules	The ethical guidelines for the use of AI, emphasize that ethics requires objectivity by recognizing AI solely as a complementary tool.
Community	Very specific division of roles and authority	Community	A community formed through partnerships with Islamic scholars and organizations for material analysis and digitalization.
Not present in original CHAT	-	Integration of dialectical knowledge of Naqli (revelation) and Aqli (rational-empirical)	A process of integrating dialectical knowledge of Naqli (revelation) and Aqli (rational-empirical) as a mediation component.

A detailed expansion of Engeström, (2001, 2014) the framework in the form of the Sixth-Element Islamic Cultural-Historical Activity Theory (SEI-CHAT) is illustrated in Figure 3.

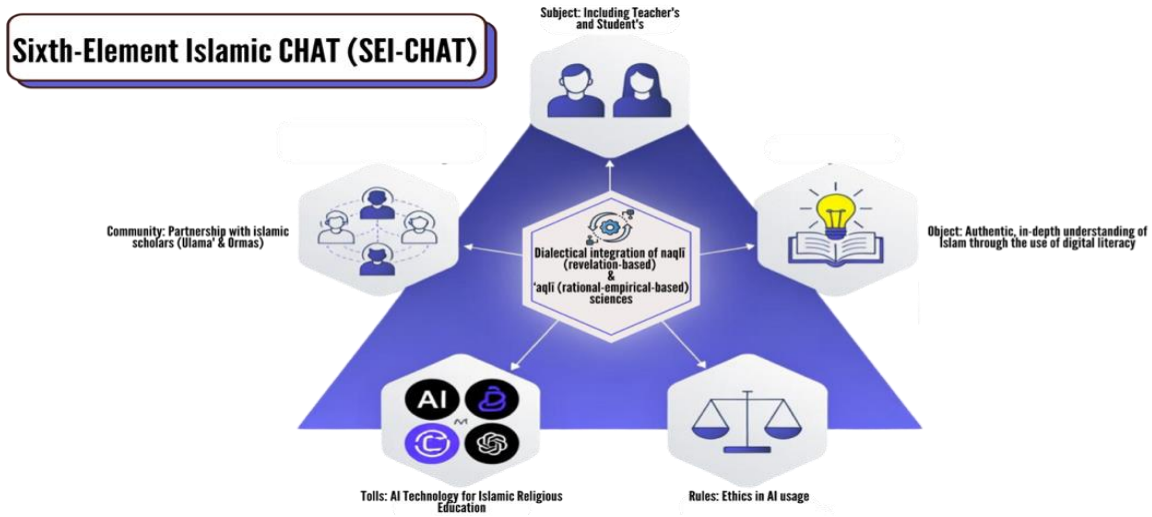

Figure 3. Sixth-Element Islamic Cultural-Historical Activity Theory (SEI-CHAT)

Based on Figure 3, the six elements forming the triangle demonstrate that Engeström, (2014) Cultural-Historical Activity Theory (CHAT) serves as the initial foundation for preserving the sustainable implementation of AI in the learning of Islamic religious education in the digital era. However, the distinguishing feature lies in the dialectical integration process between Naqli knowledge (revealed sources such as the Qur'an, Sunnah, Tafsir, Ijma', Qiyas, etc.), which must possess a verified chain of transmission (Sanad) and be validated by qualified Ulama in their respective fields (Faizin et al., 2025; Mustapha & Malkan, 2025; Syukri et al., 2025), and Aqli knowledge (rational-empirical), where AI emerges as an efficient human-made tool. The successful integration of these two dimensions ultimately determines the overall effectiveness of the learning system.

The process of implementing AI in Islamic religious education does not always run smoothly due to various challenges that still exist. Among these challenges are the lack of infrastructure and internet connectivity. Fletcher et al., (2007) point out that it is essential to ensure proper distribution of the learning process. In addition, teachers' willingness to apply AI in the process of teaching also presents a critical issue that needs attention. This includes developing teachers' digital competence (Arif et al., 2025); without this, other challenges like curriculum integration and AI-based management of the learning process will be derailed. This is due to the future of education being characterized by flexible and inclusive learning approaches that are tailored to suit the students' needs (Ejjami, 2024).

The challenges of implementing AI in Islamic religious education also encompass the issue of the accuracy of the Islamic content. This includes the possibility of misinterpreting the Quran, Hadith, and Fiqh by AI systems. In addition, it may also lead to deviations in religious teachings (Faizin et al., 2025; George et al., 2024; Sodiq et al., 2024; Zubairi & Nurdin, 2022). Other challenges that have been identified in the process of implementing AI in Islamic religious education are ethics, content validity, privacy, and security. To resolve this issue, it is essential to have proper mechanisms in place. This involves policymakers Stahl & Wright (2018), especially the Indonesian Ulema Council (MUI) or other Muslim institutions. Nasir et al., (2025) also present a different perspective. This perspective indicates that the main problem with AI at the individual level is overdependency on AI in problem-solving. This will affect critical and analytical thinking Shah & Asad, (2024) , and also point out that one of the effects of AI in the future will be dependency. This will ultimately lead to a lack of space for critical thinking among students.

LIMITATIONS

However, there are some limitations in the present study. Firstly, the present study is based on a limited number of 70 articles retrieved from four major academic online platforms. Even though the coverage of the two databases, Scopus and Web of Science, is mostly focused on peer-reviewed journals, the peer-review status of the journals in the Google Scholar and Semantic Scholar databases cannot be assumed. Instead, the peer-review status of the journals was independently verified through the website of the journals during the screening of the articles to ensure the inclusion of only articles published in peer-reviewed scholarly journals. Secondly, the present study is based on only three research questions. This might have limited the scope of the analysis. Lastly, the present study is based on the nature of a systematic literature review. Therefore, the findings of the present study need to be empirically validated in the real world through field observations and in-depth interviews with teachers and students. Moreover, the present study did not assess the quality of the articles or the potential bias of the articles. This might have influenced the reliability of the findings. Therefore, the present study opens wide opportunities for future research, especially to empirically validate the proposed Sixth Element Islamic Cultural-Historical Activity Theory (SEI-CHAT) framework in the real world of Islamic Religious Education (IRE) in various contexts such as schools, madrasah, Islamic boarding schools, and non-formal Islamic learning environments.

CONCLUSION

The application of AI in the learning of Islamic religious education in the digital age is such that it can optimally assist teachers in all aspects of their work, from planning and formulating objectives, materials, media, methods, and evaluations according to the needs of the students, to execution through contextual and adaptive methods, media, and models of learning, and finally to objective and real-time evaluations and assessments for accurate and personalized feedback to the students. As may be deduced from the aforementioned, the positive impacts of the application of AI on the learning of Islamic religious education include efficiency and quality in the planning of the teachers, richness of methods, media, and models of learning, and accuracy and objectivity of assessments and evaluations, all of which contribute to the professionalism of the teachers. For the students, the positive impacts of the application of AI on their learning of Islamic religious education include ease of understanding, motivation and engagement, flexibility and adaptability, and independence without constraints of time and space. Each of these aspects is also beset by

challenges and issues that remain to be addressed as ongoing issues in the application of Islamic religious education; these include issues of infrastructure and internet connection, teacher competency and proficiency, integration of the curriculum, accuracy and depth of Islamic religious education content, ethics and values, validity of the content of the Islamic religious education, data privacy and protection, and overdependence on technology and loss of critical thinking skills of the students. The theoretical contribution of this study is the development of Engeström's Cultural Historical Activity Theory (CHAT), which is now urgently called for due to the convergence of the application of AI and the context of Islamic religious education, a phenomenon that may trigger epistemological, theological, and cultural contradictions and conflicts. Consequently, the development of the Sixth Element Islamic Cultural-Historical Activity Theory (SEI-CHAT) for AI-based Islamic religious education provides a protective mechanism against bias in understanding Islam. Although this study has limitations in that it is a systematic literature review and addresses only three research questions, it opens the door for future studies, particularly field studies in the university setting or pesantren/non-formal learning settings, to assess the long-term effect of AI on the development of noble character in students from the perspective of the Sixth Element Islamic Cultural-Historical Activity Theory (SEI-CHAT).

AUTHOR CONTRIBUTIONS

MA conceptualized the study, designed the methodology, led the systematic literature review process, conducted formal analysis, curated and visualized the data, wrote the original draft, performed major review and editing, and supervised the overall project. MKNAA contributed to conceptualization, validation, formal analysis, and funding acquisition. HH supported methodology development, software application, data curation, and visualization. YF and BVR assisted in investigation, data curation, and initial draft writing, while MZ provided additional validation, formal analysis, and supervisory input. All authors reviewed, edited, and approved the final manuscript.

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