

Optimalisasi ChatGPT sebagai Asisten Guru dalam Penyusunan Modul Ajar dan Asesmen Pendidikan Agama Islam

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Abstract

Advances in artificial intelligence (AI) have brought significant changes to educational practices, including in instructional planning and assessment. One widely used AI technology is ChatGPT, which can help teachers quickly generate adaptive learning materials. However, its application in Islamic Religious Education (IRE) still faces challenges because IRE curriculum not only emphasizes cognitive aspects but also the development of students' character, spirituality, and moral values. This study aims to analyze the optimization of ChatGPT as a teacher's assistant in the development of instructional modules and assessments for Islamic Religious Education through a literature review approach. The study employed a systematic literature review method on national and international articles published between 2022 and 2026. Data were analyzed using content analysis techniques through the processes of reduction, categorization, synthesis, and interpretation. The results of the study indicate that ChatGPT contributes to improving the efficiency of developing teaching modules, aids in differentiated instruction, generates various forms of assessment, helps create authentic assessment rubrics, and supports the implementation of the Merdeka Curriculum. On the other hand, the use of ChatGPT still requires validation by teachers to ensure the material aligns with Islamic values, learning outcomes, and student characteristics. This study offers a conceptual model of collaboration between AI and teacher professionalism.

Keywords: ChatGPT, Artificial Intelligence, Teaching Modules, Assessment, Islamic Religious Education

INTRODUCTION

The rapid development of digital technology has driven significant transformations in various aspects of life, including education. Industry 4.0 and Society 5.0 have introduced various technological innovations that have shifted the learning paradigm from conventional approaches toward learning that is more adaptive, collaborative, and technology-based. One of the rapidly developing innovations is Artificial Intelligence (AI), or artificial intelligence, which is capable of assisting humans in completing various tasks more effectively and efficiently. In the context of education, AI is not only utilized as a learning medium but has also begun to play a role in supporting teachers' professional tasks, ranging from the development of learning tools and teaching materials to the implementation of learning assessment. UNESCO (2023) emphasizes that the use of AI in education has significant potential to improve learning quality through material personalization, increased academic administrative efficiency, and the provision of more accessible learning resources. Nevertheless, the implementation of AI in education must also consider ethical aspects, transparency, and the role of teachers as the primary decision-makers in the learning process.

One form of generative AI implementation that has developed rapidly is ChatGPT, a Large

Language Model (LLM) developed by OpenAI. ChatGPT is capable of generating natural language text based on instructions or prompts provided by users and can therefore be utilized in various educational activities, such as developing teaching modules, designing lesson plans, generating assessment questions, creating assessment rubrics, designing learning projects, and providing feedback on students' learning outcomes. These capabilities make ChatGPT an innovation with considerable potential to support teachers' productivity in carrying out their professional responsibilities. Kasneci et al. (2023) explain that generative AI can help teachers reduce their administrative workload, thereby providing them with more time to focus on pedagogical activities that require direct interaction with students. Thus, ChatGPT is not intended to replace the role of teachers but rather to function as an assistant that supports the effectiveness of the learning process.

In Indonesia, the implementation of the Merdeka Curriculum provides teachers with greater opportunities to develop student-centered learning through the preparation of teaching modules that are flexible, contextual, and aligned with the characteristics of the learning environment. Teachers are also required to develop diagnostic, formative, and summative assessments capable of comprehensively measuring students' competency achievement. These demands require creativity, pedagogical competence, and considerable time, particularly in designing high-quality learning tools. In practice, many teachers continue to face challenges, including a high administrative workload, limited time, a lack of references, and insufficient utilization of digital technology in developing teaching modules and assessments. This condition indicates the need for innovation that can assist teachers in improving work efficiency without compromising the quality of the learning process.

In the context of Islamic Religious Education (PAI), the development of teaching modules and assessments has distinctive characteristics compared with other subjects. PAI learning is not only aimed at improving students' mastery of religious knowledge but also at developing character, spirituality, noble morals, and the application of Islamic values in everyday life. Therefore, PAI teaching modules should integrate knowledge, skills, and attitudes in a balanced manner in accordance with the established learning outcomes. Similarly, assessment in PAI should not only measure cognitive abilities but also assess students' affective and psychomotor development through various forms of authentic assessment. The utilization of ChatGPT in developing PAI learning tools therefore offers considerable opportunities to improve teachers' work effectiveness. However, the outputs generated by ChatGPT still require a validation process to ensure that the materials are consistent with the Qur'an, Hadith, principles of Islamic education, and students' characteristics.

A number of previous studies have demonstrated the considerable potential of ChatGPT in supporting educational transformation. Kasneci et al. (2023) examined the opportunities and challenges of using ChatGPT in education in general, emphasizing the benefits of AI for learning efficiency and the development of teaching materials. Lo (2023) focused more specifically on the use of ChatGPT in language learning and higher education, while Zhai (2023) explained how generative AI has the potential to transform teaching and learning processes through personalized learning and the automation of various academic activities. Other studies have primarily discussed teachers' perceptions of AI use, the ethics of ChatGPT utilization, and the effectiveness of AI in generating learning materials in general. Nevertheless, these studies tend to focus on education in a broad sense and have paid limited attention to the distinctive characteristics of Islamic Religious Education, which encompasses more complex spiritual, moral, and character-building dimensions.

Based on a review of these studies, a research gap can be identified that requires further investigation. Most previous studies have only discussed the utilization of ChatGPT for developing learning materials or improving teachers' work efficiency in general, without specifically relating it to the needs of developing teaching modules based on the Merdeka Curriculum and authentic assessment in Islamic Religious Education. In addition, previous research has paid limited attention to how outputs generated by ChatGPT need to be validated based on teachers' pedagogical competence and their alignment with Islamic values so that they can continue to achieve learning objectives emphasizing students' character and moral development. Therefore, there remains an opportunity for research that integrates the utilization of generative AI with PAI teachers' professionalism in designing high-quality and effective learning tools while maintaining adherence to the principles of Islamic education.

Based on this research gap, this study offers a novelty in the form of a conceptual synthesis concerning the optimization of ChatGPT as an AI Teaching Assistant in developing Islamic Religious Education teaching modules and assessments by integrating three main aspects: the development of teaching modules based on the Merdeka Curriculum, the preparation of authentic assessments encompassing

diagnostic, formative, and summative assessments, and a validation process conducted by teachers based on pedagogical competence and Islamic values. Unlike previous studies that generally emphasize the use of ChatGPT merely as a tool for assisting in the preparation of learning materials, this study positions ChatGPT as a collaborative partner for teachers in supporting the overall learning planning process without eliminating the teacher's role as the primary decision-maker. Through a literature review approach, this study aims to comprehensively analyze how ChatGPT can be optimized as a teacher assistant in developing Islamic Religious Education teaching modules and assessments, thereby producing an AI utilization model that is effective, adaptive, ethical, and relevant to the implementation of the Merdeka Curriculum and the strengthening of students' character.

METHOD

This study employed a qualitative approach using the Systematic Literature Review (SLR) method to examine the use of ChatGPT as a teacher assistant in developing teaching modules and assessments for Islamic Religious Education (PAI). Secondary data were collected from reputable national and international journals, conference proceedings, scholarly books, and official documents published between 2022 and 2026 through Scopus, Web of Science, ERIC, ScienceDirect, SpringerLink, Google Scholar, Garuda, and DOAJ. The literature search used keywords such as ChatGPT, Artificial Intelligence, AI in Education, Teaching Module, Assessment, Islamic Education, and Islamic Religious Education, combined with Boolean operators (AND and OR). The selection process included literature identification, screening based on inclusion and exclusion criteria, full-text review, data extraction, and synthesis. Articles were included if they discussed ChatGPT or AI in education, were available in full text, published during 2022–2026, and were relevant to learning tools or assessment, while non-peer-reviewed articles, irrelevant studies, opinions, and news reports were excluded. Data were analyzed using content analysis through data reduction, presentation, thematic categorization, and conclusion drawing to identify patterns, similarities, differences, and research trends. Source triangulation was also conducted by comparing findings from national and international literature to strengthen the validity and credibility of the resulting synthesis.

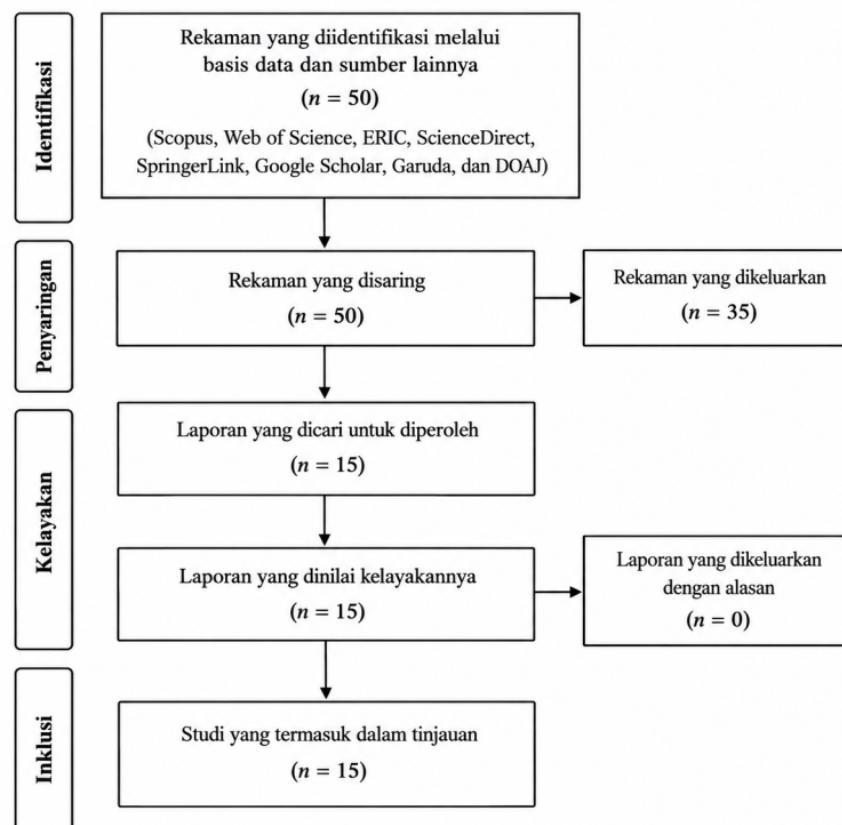


Figure 2. Stages of Content Analysis
Source: Miles, Huberman, & Saldana (2014)

RESULTS AND DISCUSSION

Results

Based on the literature search conducted through the Scopus, Web of Science, ERIC, ScienceDirect, SpringerLink, Google Scholar, Garuda, and Directory of Open Access Journals (DOAJ) databases, a total of 50 articles related to the use of ChatGPT, Artificial Intelligence, teaching modules, learning assessment, and Islamic Religious Education were identified. The articles were subsequently screened based on predetermined inclusion and exclusion criteria, including topic relevance, publication year (2022–2026), availability of full-text manuscripts, and publication quality. The selection process resulted in 15 articles that met all the criteria and were used as the primary sources for analysis. These 15 articles were further analyzed to identify research trends, similarities and differences in findings, and their contributions to optimizing ChatGPT as a teacher assistant in developing teaching modules and assessments for Islamic Religious Education.

The synthesis results indicate that the use of ChatGPT in education has developed significantly as a technology supporting the learning process. Most studies highlight the ability of ChatGPT to assist teachers in developing learning tools, teaching materials, various forms of assessment, and faster and more systematic feedback. In addition to improving the efficiency of learning-tool development, ChatGPT provides alternative learning strategies that are more varied and aligned with students' characteristics and the demands of the Merdeka Curriculum. In the context of Islamic Religious Education, the findings indicate that ChatGPT can be utilized as a teacher assistant in developing teaching modules and assessments. However, all outputs generated by ChatGPT still require teacher validation to ensure their alignment with learning outcomes, Islamic values, and students' characteristics. A summary of the synthesis of the 15 analyzed articles is presented in Table 1.

Table 1. Synthesis of Articles Analyzed in the Literature Review

No	Authors and Year	Research Method	Research Focus	Main Findings	Journal/Source Link
1	Lo (2023)	Rapid Literature Review	Impact of ChatGPT in education	ChatGPT has the potential to assist teachers in developing learning materials, learning activities, and assessment tasks, but supervision is required to ensure information accuracy.	https://www.mdpi.com/2227-7102/13/4/410
2	Kasneci et al. (2023)	Literature Review	Opportunities and challenges of Large Language Models in education	Generative AI can support personalized learning, feedback provision, and teacher work efficiency.	https://www.sciencedirect.com/science/article/pii/S1041608023000195
3	Montenegro-Rueda et al. (2023)	Systematic Review	Implementation of ChatGPT in education	ChatGPT has a positive impact on the learning process, but successful implementation depends on teachers' readiness and competence.	https://www.mdpi.com/2075-5309/12/8/153
4	Tlili et al. (2023)	Literature Review	ChatGPT as an educational chatbot	ChatGPT can serve as a learning companion, but ethical issues, information validity, and academic integrity need to be considered.	https://slejournal.springeropen.com/articles/10.1186/s40561-023-00237-x
5	Cotton, Cotton, & Shipway (2023)	Literature Review	Challenges of ChatGPT in academia	The use of ChatGPT offers opportunities to increase academic productivity but requires clear guidelines for its use.	https://www.tandfonline.com/doi/full/10.1080/14703297.2023.2190148
6	Sallam (2023)	Systematic Review	Use of ChatGPT across various fields	ChatGPT has potential for information provision, learning support, and evaluation, but it still has	https://www.mdpi.com/2227-9032/11/6/887

7	Mhlanga (2023)	Conceptual Review	Artificial Intelligence in education	limitations in terms of accuracy. AI can improve learning effectiveness through automation and support for educational decision-making.	https://doi.org/10.1155/2023/7605075
8	Rudolph, Tan, & Tan (2023)	Conceptual Review	Impact of ChatGPT on higher education	ChatGPT is changing how educators design learning and assessment, requiring pedagogical adaptation.	https://jalt.open-publishing.org/index.php/jalt/article/view/747
9	Zhai (2023)	Literature Review	Generative AI in learning	Generative AI creates opportunities for adaptive learning but still requires human involvement in the educational process.	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4312418
10	Grassini (2023)	Literature Review	Potential and risks of ChatGPT in education	ChatGPT can enhance creativity and learning efficiency, but the risks of dependency and misinformation need to be controlled.	https://www.mdpi.com/2227-7102/13/7/692
11	Rahman & Watanobe (2023)	Literature Review	ChatGPT and educational transformation	AI supports learning through natural language-based interaction and assistance in completing academic tasks.	https://www.mdpi.com/2076-3417/13/9/5783
12	Mertayasa, Yhani, & Saputra	Systematic Literature Review	ChatGPT in educational transformation	ChatGPT supports personalized learning, feedback, and learning innovation but requires AI literacy.	https://jissr.net/index.php/jissr/article/view/213
13	Gao et al. (2023)	Systematic Review	AI in text-based assessment	AI technology has the potential to support evaluation processes and automated feedback in learning.	https://arxiv.org/abs/2308.16151
14	Loos et al. (2023)	Empirical Study	Perceptions of ChatGPT use in education	AI can improve learning efficiency, but users need to understand the limitations of the technology.	https://www.mdpi.com/2075-4698/13/8/196
15	UNESCO (2023)	Policy Report	Guidelines for AI use in education	AI should be used ethically and in a human-centered manner while maintaining teachers as the primary decision-makers in the educational process.	https://www.unesco.org/en/articles/guidance-generative-ai-education-and-research

Based on the synthesis of the literature, the use of ChatGPT in education demonstrates strong potential as a supporting technology for improving teachers' work effectiveness, particularly in developing teaching modules and learning assessments. The findings also indicate that the successful implementation of ChatGPT is determined not only by technological capabilities but also by teachers' pedagogical competence in directing, evaluating, and adapting the outputs generated by AI systems. Therefore, these findings provide a basis for further analysis of ChatGPT's position as a teacher assistant, its potential applications in Islamic Religious Education, and the challenges that need to be considered to ensure that AI utilization remains aligned with educational objectives and Islamic values. The following discussion further examines the implications, contributions, and relevance of ChatGPT use in supporting the professionalism of Islamic Religious Education teachers in the era of digital transformation.

Discussion

Optimization of ChatGPT as a Teacher Assistant in Developing Islamic Religious Education Teaching Modules

The literature findings indicate that ChatGPT has significant potential as a supporting technology to assist teachers in developing Islamic Religious Education (PAI) teaching modules. The use of ChatGPT not only facilitates the generation of learning materials but also helps teachers systematically design various learning components, ranging from formulating learning objectives and designing learning activities to developing teaching materials and preparing learning reflections. This condition demonstrates that generative Artificial Intelligence (AI) can serve as a supporting instrument for improving the effectiveness of learning planning, particularly when teachers face increasingly complex administrative demands in the implementation of the Merdeka Curriculum.

These findings are consistent with Kasneci et al. (2023), who explain that Large Language Models (LLMs) such as ChatGPT have the capacity to assist educators in generating learning ideas, developing materials, providing alternative learning strategies, and supporting personalized learning according to students' needs. However, the use of AI in education still requires human involvement because such technology does not yet possess the ability to comprehensively understand social, cultural, and educational contexts. Therefore, teachers remain the primary actors responsible for determining the appropriateness of learning materials and strategies generated by AI. In the context of Islamic Religious Education, the use of ChatGPT has more complex characteristics than in general subjects. PAI learning is not only intended to improve students' understanding of religious concepts but also to develop spiritual attitudes, morality, and behavior in accordance with Islamic values. Therefore, teaching modules developed with the assistance of ChatGPT must undergo a process of selection and adaptation by teachers so that they do not merely focus on cognitive aspects but also contribute to the development of students' affective dimensions and character. This is consistent with Nata's (2021) view that Islamic education is primarily oriented toward developing individuals who possess knowledge as well as good personality and moral character.

From this perspective, ChatGPT's position in PAI learning is not as a replacement for teachers but as an AI Teaching Assistant that helps strengthen teachers' professional and pedagogical competencies. Teachers remain responsible for determining learning objectives, selecting appropriate materials, verifying the accuracy of religious information, and integrating Islamic values into the learning process. Thus, optimizing ChatGPT requires a collaborative relationship between technological capabilities and human competencies (human-AI collaboration).

The Role of ChatGPT in Developing Islamic Religious Education Assessments

In addition to supporting the development of teaching modules, the findings indicate that ChatGPT contributes to assisting teachers in developing various forms of learning assessment. ChatGPT can be used to generate evaluation questions, develop assessment indicators, create assessment rubrics, and provide alternative forms of evaluation that correspond to learning objectives. These capabilities provide opportunities for teachers to develop more varied assessments that do not focus solely on measuring cognitive abilities.

The use of AI in assessment is consistent with the concept of modern assessment, which emphasizes assessment as an integral part of the learning process (assessment for learning), rather than merely a tool for measuring final outcomes. Black and Wiliam (2018) explain that continuous formative assessment can provide important information for teachers to improve the learning process and help students achieve learning objectives. In this context, ChatGPT can assist teachers in providing various alternative assessment instruments more quickly, allowing teachers to focus more on analyzing students' development.

Nevertheless, the use of ChatGPT in PAI assessment presents particular challenges. Religious learning cannot be fully assessed through text-based instruments or academic questions because it also involves dimensions of attitude, religious practice, and the application of values that require direct observation. Therefore, PAI assessment continues to require teachers' involvement in conducting authentic assessments of students' attitudes and character development. This reinforces Mulyasa's (2021) view that teachers play an important role in designing assessments that are appropriate to students' characteristics and educational objectives.

ChatGPT and the Transformation of Teachers' Roles in the Digital Era

The findings indicate that the emergence of ChatGPT is transforming the role of teachers in the learning process. Teachers no longer function merely as providers of information but increasingly act as learning designers, facilitators, and guides in the responsible use of technology. This transformation is consistent with the paradigm of twenty-first-century education, which positions technology as a support for learning rather than a replacement for human interaction. UNESCO (2023) emphasizes that the use of AI in education should adopt a human-centered AI approach, in which technology supports improvements in educational quality while maintaining human values, ethics, and the professional role of educators. This principle is particularly relevant to PAI learning because Islamic

education emphasizes the relationship between teachers and students as a process of value development, role modeling, and character formation.

Therefore, optimizing ChatGPT requires improvements in teachers' digital literacy. Teachers need to develop the ability to formulate appropriate prompts, evaluate information generated by AI, and integrate technology with suitable pedagogical approaches. Without these competencies, the use of ChatGPT may become merely an automation activity without making a significant contribution to learning quality.

Challenges of Implementing ChatGPT in PAI Learning

Although it offers various benefits, the findings also indicate that the use of ChatGPT in education faces several challenges. First, there is a possibility of inaccurate information or hallucinations, as AI generates responses based on language patterns rather than an actual understanding of the truth of the information. Second, ethical challenges arise concerning originality of work, technological dependence, and students' critical-thinking abilities. Tili et al. (2023) explain that the use of ChatGPT in education should be accompanied by clear policies and guidelines so that the technology can provide maximum benefits without compromising academic integrity. In PAI learning, this challenge becomes even more important because religious information requires valid and accountable sources. Therefore, teachers must verify materials generated by AI by referring to reliable Islamic sources.

CONCLUSION

Based on the literature review findings, it can be concluded that ChatGPT has the potential to function as a teacher assistant in supporting the development of Islamic Religious Education teaching modules and assessments more effectively, systematically, and adaptively in accordance with the demands of the Merdeka Curriculum. ChatGPT can assist teachers in developing learning materials, preparing assessment instruments, and creating innovative alternative learning strategies. However, its use still requires teacher validation and supervision to ensure alignment with learning outcomes, Islamic values, and students' characteristics. Therefore, ChatGPT does not serve as a replacement for teachers but rather as a supporting technology that strengthens teachers' professionalism through collaboration among artificial intelligence, pedagogical competence, and the values of Islamic education.

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