

Artikel Info			
Received: July 11, 2026	Revised: August 25, 2026	Accepted: September 28, 2026	Published: October 30, 2026

Empowerment of Islamic Religious Education Teachers through Generative AI Training for the Development of Islamic Value-Based Learning Media at SMP Negeri 35 Medan

Marhan Hasibuan^{1*}, Muhammad Arif Hidayat²

Institut Jam'iyah Mahmudiyah Langkat^{*1, 2}

^{*1}email: marhan_hasibuan@ijmlangkat.ac.id,

²email: muhammad_arif_hidayat@ijmlangkat.ac.id

Abstract: The development of artificial intelligence (AI) technology, particularly <i>Generative AI</i>, has created new opportunities for developing innovative, interactive, and contextual learning media. However, many Islamic Religious Education (IRE) teachers still have limited competencies in utilizing this technology as a learning medium while maintaining Islamic values. This Community Service Program (PKM) aimed to improve the competence of IRE teachers at SMP Negeri 35 Medan in utilizing <i>Generative AI</i> to develop creative, effective, and Islamic value-based learning media. The program employed a <i>Participatory Action Learning</i> approach consisting of needs identification, educational sessions, practical training, mentoring, and evaluation. The training involved demonstrations and hands-on practice using various <i>Generative AI</i> platforms, including ChatGPT, Canva AI, Gamma AI, and Microsoft Copilot, to develop teaching materials, presentations, assessment questions, and visual learning media based on Islamic values. The results	Abstrak: Perkembangan teknologi kecerdasan buatan (<i>Artificial Intelligence/AI</i>), khususnya <i>Generative AI</i>, membuka peluang baru dalam pengembangan media pembelajaran yang inovatif, interaktif, dan kontekstual. Namun, sebagian guru Pendidikan Agama Islam (PAI) masih menghadapi keterbatasan kompetensi dalam memanfaatkan <i>Generative AI</i> sebagai teknologi pembelajaran yang tetap berlandaskan nilai-nilai Islam. Kegiatan Pengabdian kepada Masyarakat (PKM) ini bertujuan untuk meningkatkan kompetensi guru PAI SMP Negeri 35 Medan dalam memanfaatkan <i>Generative AI</i> untuk menghasilkan media pembelajaran yang kreatif, efektif, dan sesuai dengan prinsip-prinsip pendidikan Islam. Metode pelaksanaan menggunakan pendekatan <i>Participatory Action Learning</i> yang meliputi identifikasi kebutuhan, penyuluhan, pelatihan praktik, pendampingan, dan evaluasi. Pelatihan dilaksanakan melalui demonstrasi dan praktik penggunaan berbagai platform
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indicated an improvement in participants' understanding of *Generative AI*, enhanced skills in developing digital learning media, and increased awareness of the ethical use of AI from an Islamic perspective. The teachers were able to produce learning media that were more engaging, interactive, contextual, and supportive of the implementation of the Merdeka Curriculum. This program contributed positively to improving teachers' digital literacy while strengthening the integration of technology and Islamic values in the IRE learning process.

Keywords: Islamic Religious Education; Generative AI; Learning Media; Digital Literacy; Islamic Values; Teacher Competence.

Generative AI, seperti ChatGPT, Canva AI, Gamma AI, dan Microsoft Copilot, untuk menyusun materi ajar, presentasi, soal evaluasi, dan media visual berbasis nilai-nilai Islam. Hasil kegiatan menunjukkan adanya peningkatan pemahaman peserta terhadap konsep dan pemanfaatan *Generative AI*, peningkatan keterampilan dalam mengembangkan media pembelajaran digital, serta tumbuhnya kesadaran mengenai etika penggunaan AI dalam perspektif Islam. Guru mampu menghasilkan media pembelajaran yang lebih menarik, interaktif, kontekstual, dan mendukung implementasi Kurikulum Merdeka. Kegiatan ini memberikan kontribusi positif terhadap peningkatan literasi digital guru serta memperkuat integrasi teknologi dan nilai-nilai keislaman dalam proses pembelajaran PAI.

Kata Kunci: Pendidikan Agama Islam; Generative AI; Media Pembelajaran; Literasi Digital; Nilai-Nilai Islam; Kompetensi Guru.

A. Introduction

The development of the Industrial Revolution 5.0 has brought significant changes to the field of education, particularly in the utilization of digital technology as a learning tool. One of the rapidly developing innovations is Artificial Intelligence (AI), particularly Generative AI, which is capable of automatically generating various forms of content, including text, images, videos, presentations, and learning assessments. The utilization of this technology provides significant opportunities for teachers to improve the quality of the teaching and learning process by presenting materials that are more engaging, adaptive, and interactive (Adiyono et al., 2025).

Digital transformation in education requires teachers to possess adequate digital literacy competencies. Teachers are no longer merely information providers but also facilitators who are capable of integrating technology into the learning process. Such competencies have become an indicator of teacher professionalism in the digital era, as 21st-century learning emphasizes technological proficiency, creativity, communication, collaboration, and critical thinking skills (Wang et al., 2024).

In Islamic Religious Education (IRE), the use of innovative learning media plays an important role in increasing students' learning motivation. Subjects such as *aqidah*, *akhlak*, *fiqh*, Islamic history, and the Qur'an and Hadith require learning approaches capable of providing contextual learning experiences so that Islamic values can be understood more deeply and applied in everyday life. Nevertheless, various studies indicate that the utilization of digital technology in IRE learning remains relatively low. Many teachers still rely on lecture-based methods and basic presentation media, making the learning process less engaging for students who belong to the digital generation. In addition, teachers' limited competence in using AI-based applications is one of the factors hindering learning innovation (Kasneci et al., n.d.).

Generative AI offers various conveniences in the preparation of learning materials and instructional tools. Teachers can utilize this technology to develop teaching modules, create Higher Order Thinking Skills (HOTS)-based questions, generate Islamic learning illustrations, produce instructional videos, and prepare diagnostic assessments more efficiently without compromising the quality of learning content when used appropriately. However, the use of Generative AI in IRE learning must continue to consider ethical aspects, information validity, and conformity with Islamic values. Teachers need to be able to verify AI-generated outputs to prevent the dissemination of inaccurate information or content that contradicts Islamic teachings (Fajri et al., n.d.).

SMP Negeri 35 Medan is one of the schools that continues to strive to improve the quality of learning through the utilization of digital technology. Based on initial

observations and discussions with Islamic Religious Education teachers, it was found that most teachers had never participated in specialized training on the use of Generative AI for developing learning media. Some teachers were only familiar with AI as an information-searching tool without understanding its potential applications in the learning process. Another challenge faced by teachers is the limited time available to develop creative learning materials. Preparing presentation materials, visual media, assessment questions, and learning modules requires considerable time, which often leads teachers to use the same learning media every academic year. Through this community service program, the implementation team provided comprehensive training on the use of various Generative AI platforms that can assist teachers in developing learning media effectively, efficiently, and in accordance with the characteristics of Islamic Religious Education (Bozkurt et al., 2021).

The training also emphasized the importance of ethical AI use from an Islamic perspective, including academic honesty, information validation, respect for copyright, and responsibility in using technology wisely. Thus, the utilization of AI not only improves the quality of learning but also strengthens students' character based on Islamic values.

The rapid development of digital technology during the Industrial Revolution 4.0 and Society 5.0 has brought fundamental changes to various aspects of life, including education. Digital transformation has encouraged a paradigm shift in learning from teacher-centered learning to student-centered learning. In this context, teachers are required not only to master pedagogical and professional competencies but also to possess adequate digital literacy skills to utilize technology as a means of creating more effective, innovative, and meaningful learning experiences. The emergence of Artificial Intelligence (AI) technology has further accelerated this transformation by providing various solutions that can assist teachers in designing, implementing, and evaluating the learning process (Dwivedi et al., 2023).

One of the AI developments receiving significant attention in education is Generative Artificial Intelligence (Generative AI). This technology is capable of generating various types of content, including text, images, audio, videos, presentations, and learning assessment instruments automatically based on user-provided prompts. Various platforms, such as ChatGPT, Canva AI, Gamma AI, Microsoft Copilot, and Gemini, have been utilized by educators to accelerate the preparation of teaching modules, learning media, assessment questions, and presentation materials. The utilization of Generative AI provides opportunities for teachers to improve work efficiency while producing learning materials that are more creative, interactive, and aligned with the needs of 21st-century learners (Aravantinos et al., 2026).

Various studies have shown that the use of Generative AI in education can improve the quality of the learning process when implemented appropriately and responsibly. AI can assist teachers in developing more personalized learning materials, generating learning illustrations instantly, providing alternative learning strategies, and preparing Higher Order Thinking Skills (HOTS)-based assessments. In addition to improving time efficiency, this technology enables teachers to focus more on character development, interaction with students, and creativity in the teaching and learning process. Therefore, mastery of AI technology is increasingly regarded as an important competency that educators need to possess in the era of digital education (Budak Durmus, 2024).

Despite its various advantages, the implementation of Generative AI in schools still faces several challenges. One of the main obstacles is the low level of teachers' digital literacy, particularly in understanding how AI works, developing effective prompts (*prompt engineering*), and validating information generated by AI systems. Many teachers still perceive AI merely as an information-searching engine, even though the technology has much broader capabilities in supporting the development of learning materials. Furthermore, concerns regarding the potential misuse of AI, plagiarism, and

the dissemination of inaccurate information are also important considerations in its implementation.

From the perspective of Islamic education, the utilization of technology is part of an effort to improve the quality of learning as long as it remains grounded in the values of Islamic law. Islam encourages its followers to utilize knowledge and technology wisely for the benefit of society. Nevertheless, the use of Generative AI must be accompanied by a critical attitude toward verifying generated information, maintaining academic integrity, respecting intellectual property rights, and ensuring that all learning materials continue to refer to the Qur'an, Sunnah, and credible scholarly sources. Thus, AI technology functions as a supporting tool for teacher professionalism rather than as a replacement for the role of educators (Silva et al., 2025).

In addition to limited digital competencies, teachers also face challenges in developing engaging learning media amid increasing educational administrative demands. Preparing teaching modules, presentation materials, assessments, and visual media requires considerable time, resulting in teachers often using the same learning media every academic year. Consequently, the learning process becomes less varied and is not yet fully capable of meeting the learning needs of students who are increasingly familiar with digital technology. This condition demonstrates the need for teacher empowerment programs through practical, applicable, and sustainable training.

As one form of implementing the Three Pillars of Higher Education (*Tri Dharma Perguruan Tinggi*), this community service program was designed to improve the competence of Islamic Religious Education teachers in utilizing Generative AI as an Islamic value-based learning medium. The training focused not only on introducing various AI platforms, such as ChatGPT, Canva AI, Gamma AI, and Microsoft Copilot, but also on providing assistance in developing effective prompts, creating learning materials, designing engaging visual media, and evaluating the quality of AI-generated outputs. Through this approach, teachers are expected to be able to integrate digital

technology appropriately into the learning process without neglecting Islamic values (Goksel & Bozkurt, 2019).

Through this training program, improvements are expected in the digital literacy, creativity, and professionalism of Islamic Religious Education teachers in responding to the challenges of 21st-century education. Teachers are expected to be able to produce more innovative, interactive, and adaptive learning media in response to technological developments, thereby increasing students' learning motivation. In addition, this activity is expected to serve as an initial step toward building a digital learning culture at SMP Negeri 35 Medan, strengthening the implementation of the Merdeka Curriculum, and supporting the development of an educational ecosystem capable of integrating technological advancement with Islamic values in a balanced and sustainable manner.

The objective of this community service program is to improve the competence of Islamic Religious Education teachers in utilizing Generative AI as an Islamic value-based learning medium, enhance teachers' digital literacy, and produce innovative learning media that support the implementation of the Merdeka Curriculum.

B. Method

Location and Implementation Period

The Community Service (PkM) activity was conducted at SMP Negeri 35 Medan, Medan City, North Sumatra, over a period of two days. The implementation consisted of several activities, including the delivery of instructional materials, practical training, mentoring, and evaluation of the training outcomes. The primary target participants were all Islamic Religious Education (PAI) teachers actively teaching at SMP Negeri 35 Medan. In addition to PAI teachers, several teachers from other subject areas also participated as part of an effort to strengthen digital literacy within the school environment. The activity was designed to provide participants with direct experience in understanding and utilizing Generative Artificial Intelligence (Generative AI) as a technology to support the development of learning media.

Implementation Approach

The PkM activity employed the *Participatory Action Learning* (PAL) approach, a community empowerment method that positions participants as active subjects throughout the learning process. This approach enables participants to gain direct learning experiences through practical activities, discussions, reflection, and mentoring. Through this approach, participants not only acquired conceptual knowledge about Generative AI but also had the opportunity to develop and produce learning media that could be directly implemented in the school learning process. The implementation consisted of five main stages: *need assessment*, educational outreach, practical training, mentoring, and monitoring and evaluation.

Stage I. Needs Assessment

The needs assessment stage was conducted to identify the initial level of teachers' competencies in utilizing digital technology, particularly Generative AI. Activities at this stage included observing the implementation of Islamic Religious Education learning, conducting interviews with the principal and PAI teachers, distributing training needs assessment questionnaires, identifying the learning media currently being used, and mapping participants' levels of digital literacy. The results of the needs assessment indicated that most teachers had already utilized digital devices and applications, such as Microsoft PowerPoint and instructional videos, but had not received specific training on the use of Generative AI for developing learning media. Teachers also experienced difficulties in producing engaging and varied learning media due to limited time and digital technology skills (Tlili et al., 2023).

Stage II. Educational Outreach

The educational outreach stage aimed to provide participants with a conceptual understanding of the development of Artificial Intelligence in education. The materials covered the basic concepts of Artificial Intelligence, the development of Generative AI in education, opportunities and challenges in utilizing AI for learning, teachers' digital literacy in the era of Society 5.0, the ethics of AI use from an Islamic perspective,

validation of information generated by AI, copyright, plagiarism, academic integrity, and best practices for using AI in Islamic Religious Education. The materials were delivered through interactive lectures, group discussions, question-and-answer sessions, and demonstrations of various Generative AI platforms. These methods were employed to develop participants' understanding while connecting the learning materials with the actual needs and challenges faced by teachers in the learning process (Mhlanga, n.d.).

Stage III. Practical Training

The practical training stage constituted the core of the community service activity. At this stage, participants engaged in hands-on practice using their respective laptops under the guidance of the implementation team. The training focused on utilizing several Generative AI platforms to develop Islamic Religious Education learning materials and media. ChatGPT training focused on enabling participants to formulate effective prompts through *prompt engineering* to generate various instructional resources, including Learning Outcomes (CP), Learning Objectives (TP), Learning Objective Pathways (ATP), teaching modules, Student Worksheets (LKPD), test blueprints, Higher Order Thinking Skills (HOTS)-based questions, assessment rubrics, Project-Based Learning (PjBL) scenarios, and learning reflection activities.

Furthermore, Canva AI training focused on developing visual learning media, such as digital *da'wah* posters, PAI instructional infographics, learning flashcards, Islamic educational banners, illustrations of the stories of the prophets, and interactive learning media. In the Gamma AI training, participants practiced developing AI-based instructional presentations for various PAI topics, including Aqidah, Fiqh, Islamic Cultural History, Akhlaq, and the Qur'an and Hadith. Meanwhile, Microsoft Copilot training focused on utilizing AI to assist in preparing instructional materials, developing assessment instruments, preparing learning reports, summarizing learning materials, and supporting teachers in completing administrative tasks. All practical activities were conducted systematically and progressively to enable participants to understand the

functions of each platform while developing the skills necessary to use them independently.

An important aspect of the training stage was the integration of Islamic values into the learning media produced. Each developed learning medium was directed to incorporate relevant Qur'anic verses, supporting hadith, *akhlaqul karimah* values, Islamic character education, and reinforcement of the Pancasila Student Profile. Participants were also encouraged to verify Islamic information generated by AI to ensure its consistency with reliable and accountable sources. At the end of the training stage, each participant was required to produce at least one Generative AI-based learning media product tailored to the PAI subject matter they taught.

Stage IV. Mentoring

Following the practical training, participants received direct mentoring from the community service team. The mentoring aimed to assist participants in refining their prompts, improving the quality of their learning media, validating Islamic content, aligning the media with the *Kurikulum Merdeka* (Independent Curriculum), and addressing various technical challenges in utilizing Generative AI. Mentoring was conducted both individually and in groups so that each participant could receive feedback on the products they had developed. Through this process, participants were expected not only to be able to use AI during the training sessions but also to develop learning media independently after the program had been completed.

Stage V. Monitoring and Evaluation

Monitoring and evaluation were conducted to determine the effectiveness of the activity and assess the extent to which participants' competencies improved after completing the training. Knowledge evaluation was conducted through a *pretest* and *posttest*, each consisting of 20 multiple-choice questions covering the concepts of Artificial Intelligence, Generative AI, *prompt engineering*, AI ethics, and the application of AI in education. Improvements in participants' knowledge were analyzed

by comparing the mean *pretest* and *posttest* scores and calculating the percentage increase in competency achievement.

In addition to knowledge evaluation, participant satisfaction was assessed through a questionnaire covering the quality of the materials, the competence of the trainers, the suitability of the training methods, the benefits of the activity, training facilities, the usefulness of AI in learning, and participants' readiness to implement AI within the school environment (Lo, 2023). Product evaluation was also conducted by assessing participants' ability to produce Generative AI-based learning media that were relevant to PAI subject matter, student characteristics, the *Kurikulum Merdeka*, and Islamic values.

The program was considered successful if it met several indicators: at least 80% of participants attended the entire series of activities; the *posttest* scores increased by a minimum of 20% compared with the *pretest* scores; all participants were able to produce at least one Generative AI-based learning media product; at least 85% of participants expressed satisfaction with the training implementation; and teachers were able to implement AI-based learning media in the Islamic Religious Education learning process. These indicators served as the basis for assessing the achievement of the program objectives and identifying aspects that required further improvement.

Data Analysis

Quantitative data obtained from the *pretest*, *posttest*, and participant satisfaction questionnaires were analyzed using descriptive statistics, including mean scores, percentages, and increases in competency achievement. This analysis was used to determine changes in participants' levels of knowledge and skills after participating in the training. Meanwhile, qualitative data obtained through observation, interviews, documentation, and discussions were analyzed descriptively using the stages of data reduction, data presentation, and conclusion drawing. The results of the quantitative and qualitative analyses were subsequently used to evaluate the success of the program and formulate follow-up recommendations aimed at strengthening the digital literacy of

Islamic Religious Education teachers and ensuring the sustainability of Generative AI utilization as an Islamic values-based learning medium.

C. Results and Discussion

Respondent Characteristics

The Community Service (PkM) activity was attended by 20 teachers from SMP Negeri 35 Medan. All participants took part in the entire series of activities, including the pretest, delivery of instructional materials, practical training in the use of Generative AI, mentoring, and posttest. The characteristics of the respondents based on gender, age, highest educational attainment, and teaching experience are presented in Table 1.

Table 1. Respondent Characteristics of the Training Participants

Characteristics	Category	Number (n)	Percentage (%)
Gender	Male	7	35.0
	Female	13	65.0
Age	25–35 years	5	25.0
	36–45 years	8	40.0
	40–55 years	6	30.0
	>55 years	1	5.0
Educational Background	Bachelor's Degree (S1)	17	85.0
	Master's Degree (S2)	3	15.0
Teaching Experience	<5 years	2	10.0
	5–10 years	6	30.0
	>10 years	12	60.0

Based on Table 1, it can be seen that the majority of participants were female teachers (65%), aged 36–45 years (40%), held a Bachelor's degree (85%), and had more than 10 years of teaching experience (60%). This condition indicates that the participants had substantial teaching experience but still required competency enhancement in the utilization of digital technology, particularly Generative AI.

Pretest and Posttest Results

To determine the effectiveness of the training, all participants were given a pretest before the activity and a posttest after all training materials had been delivered. The evaluation instrument consisted of 20 questions measuring participants' understanding of Artificial Intelligence, Generative AI, prompt engineering, AI usage ethics, and the utilization of AI in Islamic Religious Education learning.

Table 2. Pretest and Posttest Results of Participants

Parameter	Pretest	Posttest
Number of participants	20	20
Minimum score	40	75
Maximum score	80	98
Mean score	58.70	87.60
Standard deviation	9.12	5.84
Mean increase	—	28.90 points
Percentage increase	—	49.23%

The results presented in Table 2 demonstrate an improvement in participants' competencies after completing the training. The mean pretest score of 58.70 increased to 87.60 in the posttest, representing an increase of 28.90 points (49.23%). In addition, the standard deviation of the posttest was lower than that of the pretest, indicating that participants' competencies became more evenly distributed after the training.

Level of Mastery of the Training Materials

In addition to examining the overall scores, an analysis was also conducted on several competency indicators measured throughout the training.

Table 3. Improvement in Participants' Mastery of the Training Materials

Competency Indicator	Pretest (%)	Posttest (%)	Increase (%)
Understanding the concept of Generative AI	52	94	42
Developing effective prompts	40	91	51
Creating learning media using Canva AI	45	93	48
Creating presentations using Gamma AI	38	90	52
Using ChatGPT to develop teaching modules	47	95	48
Understanding AI usage ethics	61	96	35
Integrating Islamic values into AI-based media	58	94	36

Based on Table 3, all competency indicators demonstrated improvement. The highest increases occurred in participants' ability to create presentations using Gamma AI (52%) and develop effective prompts (51%). These findings indicate that prior to the training, most participants were not yet familiar with prompt engineering techniques, whereas after the training, they were able to generate AI outputs that were more relevant to their instructional needs (Miao et al., 2023).

Assessment of Learning Media Products

At the end of the activity, each participant was required to produce one Generative AI-based learning media product relevant to the subject they taught. The products were subsequently assessed using a rubric developed by the community service team.

Table 4. Assessment Results of Learning Media Products

Assessment Aspect	Maximum Score	Mean Score	Category
Content relevance	100	91.5	Excellent
Design creativity	100	89.2	Excellent
Integration of Islamic values	100	94.1	Excellent
Media interactivity	100	88.7	Good
Ease of use	100	92.6	Excellent
Overall mean	100	91.2	Excellent



Figure 1. Community Service Activity

The assessment results indicate that the learning media produced by the participants were of very good quality, with an overall mean score of 91.2. The highest score was obtained for the integration of Islamic values (94.1), indicating that the participants were able to combine AI technology with Islamic Religious Education content without compromising its Islamic substance (Cardona et al., 2023).



Figure 2. The Instructor Explaining Generative AI



Figure 3. Generative AI Learning Mentoring

Participant Satisfaction Level

Satisfaction evaluation was conducted using a five-point Likert scale.

Table 5. Participant Satisfaction with the Training Implementation

Assessment Aspect	Satisfaction Percentage (%)
Relevance of the training materials	96
Competence of the trainers	98
Training methods	95
Practical mentoring	97
Benefits of the training	99
Training facilities	94
Willingness to participate in further training	100
Overall satisfaction	97.0

The participants' satisfaction level reached an average of **97%**, indicating that the training was very well received. Participants reported that the use of Generative AI helped accelerate the preparation of teaching modules, learning media, presentations, and assessment instruments. In addition to improving work efficiency, the training also increased teachers' confidence in integrating digital technology with Islamic values into the learning process (Awaz Ahmed Shaban & Rasan Ismail Ali, 2026).

Overall, the results demonstrate that the Generative AI training had a positive impact on improving the knowledge, skills, and digital literacy of Islamic Religious Education teachers. The increase in pretest–posttest scores, the quality of the learning media products, and the high level of participant satisfaction indicate that the training model implemented was effective in supporting the implementation of innovative technology-based learning in the digital era.

D. Conclusion

The Community Service (PkM) activity in the form of Generative Artificial Intelligence (Generative AI) training for Islamic Religious Education teachers at SMP Negeri 35 Medan successfully improved participants' competencies in utilizing AI technology to develop learning media based on Islamic values. This improvement was

demonstrated by the increase in the mean pretest score from 58.70 to 87.60 in the posttest, indicating an improvement in participants' knowledge and skills after completing the training. The training, which was implemented using the Participatory Action Learning (PAL) approach, provided participants with practical learning experiences through educational sessions, hands-on practice, mentoring, and evaluation. Participants were able to utilize various Generative AI platforms, such as ChatGPT, Canva AI, Gamma AI, and Microsoft Copilot, to develop teaching modules, presentation media, assessment materials, and digital learning media that were more innovative, interactive, and aligned with the characteristics of Islamic Religious Education. The learning media products produced were categorized as very good, demonstrating that AI technology can be optimally utilized to improve the quality of the learning process.

In addition to improving digital literacy, the activity also successfully enhanced participants' understanding of the ethical use of Artificial Intelligence in Islamic education, particularly regarding information validation, academic integrity, respect for copyright, and the importance of integrating Qur'anic values, hadith, and *akhlaqul karimah* into learning media. Thus, the utilization of Generative AI is not solely oriented toward learning efficiency and innovation but also takes into account the moral, spiritual, and professional aspects of teachers.

Based on these results, Generative AI training can serve as an effective strategy for supporting digital transformation in school environments, particularly in Islamic Religious Education. Similar programs are recommended to be implemented continuously with a broader range of participants and complemented by further mentoring on the development of AI-based digital content, adaptive assessment, and evaluation of the implementation of learning media in the classroom. Such efforts are expected to strengthen teachers' competencies in addressing the challenges of 21st-century education while supporting the implementation of the *Kurikulum Merdeka* through innovative, student-centered learning that remains grounded in Islamic values.

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