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Artificial Intelligence Literacy among Kindergarten and Elementary School Teachers through Practice-Based Training in Blora

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Abstract

The advancement of artificial intelligence (AI) offers teachers opportunities to enhance their productivity and creativity in supporting educational activities. However, leveraging AI requires conceptual understanding, prompt-engineering skills, proficiency with AI tools, and awareness of responsible technology use. This community service initiative aimed to improve early childhood, kindergarten, and elementary school teachers' understanding and skills in the productive and responsible use of AI. The program involved 50 participants and ran in three stages design, implementation, and evaluation using asynchronous learning via Google Classroom alongside synchronous sessions that included material presentations, educational games, hands-on practice, Q&A, and reflection. Practical activities included using Suno AI to create songs, Gemini Notebook to design educational posters, and exercises in identifying AI-generated content and images. The results showed that all 50 participants (100%) completed the program, meeting the criteria of finishing the course materials, achieving a minimum score of 75 on assignments, and participating in the asynchronous sessions. The initiative provided foundational experience in utilizing AI to support teachers' professional activities productively and responsibly.

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A. Introduction

Advances in artificial intelligence (AI) technology have brought significant changes across various fields, including education (Garzón *et al.*, 2025). AI-based tools give educators opportunities to boost productivity, develop teaching materials, create learning media, and better support professional activities (Roshan *et al.*, 2024). However, utilizing AI in an educational setting requires not only the technical skills to operate the tools but also an understanding of fundamental AI concepts, techniques for crafting instructions or prompts, the ability to evaluate AI outputs, and an awareness of responsible technology use. As key figures in the educational process, teachers need adequate AI literacy to leverage this technology productively while considering ethical aspects, information accuracy, and the potential risks associated with AI-generated content (Lademann *et al.*, 2026). This is particularly relevant for educators at the early childhood (PAUD), kindergarten, and elementary school levels, as they play a crucial role in building students' learning foundations amidst the evolving digital ecosystem.

The need to enhance these competencies drove the implementation of the Central Java Educator (GTK) Education Service Programn in collaboration with education partner Generation Girl through an "Artificial Intelligence" training initiative for representatives of early childhood (PAUD), kindergarten, and elementary school teachers from Blora City. The program involved 50 participants

and utilized a combination of asynchronous and synchronous sessions. During the asynchronous phase, participants joined Google Classroom to study materials covering AI fundamentals, maximizing productivity with AI, the art of prompt engineering, responsible AI use, and staying competitive in the AI era, followed by completing introductory assignments. Subsequently, a synchronous session was held on August 27, 2026, at the SMKN 2 Blora computer laboratory to review the material and practice hands-on. The training approach went beyond mere theoretical instruction, incorporating educational games, demonstrations, practical exercises, Q&A sessions, and reflection. Participants engaged in practical activities such as creating songs with Suno AI and educational posters with Gemini Notebook, exploring various AI tools, distinguishing real from AI-generated photos, and identifying AI-generated content.

This community service activity aims to strengthen early childhood (PAUD), kindergarten, and elementary school teachers' understanding and skills in identifying, using, and responsibly applying artificial intelligence (AI) in educational settings. This initiative addresses several key areas: strengthening understanding of fundamental AI terms and concepts; developing the ability to craft effective prompts; acquiring skills to use AI tools to boost productivity and create educational content; and learning to distinguish and recognize AI-generated content. Beyond basic usage skills, responsible AI use is crucial, as educators must understand this technology's limitations and governing principles to avoid becoming passive users. Consequently, this activity provides a practical learning experience combining instructional materials, games, hands-on practice, discussions, and reflection to help participants gain a comprehensive understanding of AI application. A structured learning framework further supports participant success by requiring completion of coursework on Google Classroom, a minimum score of 75 on introductory assignments, and participation in asynchronous sessions.

This activity is expected to benefit both participants and the advancement of technology-based educational practices. For teachers, the activity helps build AI literacy and skills, enabling them to use technology to boost productivity and creativity in teaching and learning. Proficiency in prompt engineering, using AI tools to create educational materials, and the ability to recognize AI-generated content should help teachers adapt to technological shifts while developing instruction that remains relevant. For educational institutions, improving teacher competence in AI use can be a foundational step toward fostering a digital literacy culture that is both adaptive and responsible. Meanwhile, for the organizers and implementers of this community service initiative, the activity provides valuable experience in designing and executing an AI training model that integrates asynchronous learning, face-to-face sessions, hands-on practice, educational games, and reflection. Thus, this initiative aims not merely to introduce AI technology, but also to build teachers' ability to understand, experiment with, evaluate, and use AI productively and responsibly to support educational activities.

B. Methods

This community service initiative was carried out in three main stages: activity design, implementation, and evaluation. These stages were systematically structured to ensure the program not only provided a conceptual understanding of Artificial Intelligence (AI) but also offered participants practical experience in using various AI tools productively and responsibly (Oktaviano *et al.*, 2026). The activity targeted 50 representatives comprising early childhood education (PAUD), kindergarten, and elementary school teachers from Blora City. The activity used a combination of asynchronous and synchronous learning and involved the Central Java Province BBGTK and the Generasi Muda Berkarya Foundation (Generation Girl)

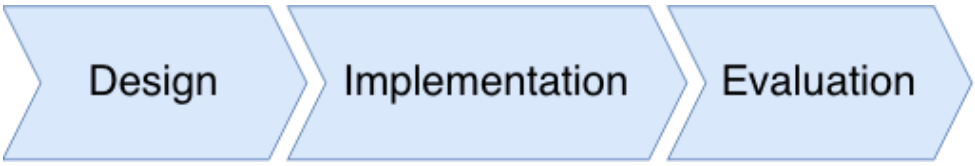


Figure 1. Method Flow

The design phase involved structuring activities to enhance participants' competence in understanding and using AI technology. This phase encompassed identifying the target audience, developing course materials, preparing learning resources, and establishing mechanisms for both asynchronous and synchronous learning. The curriculum covered topics such as an introduction to AI, using AI to boost productivity, prompt engineering, responsible AI use, and preparing for the evolution of AI technology. In addition to conceptual content, the program incorporated practical activities and educational games to foster a more interactive learning experience. The program also used trainers and facilitators to support content delivery and practical exercises. During implementation, Oktavia Citra Resmi Rachmawati served as the trainer, Kevin Ilham Apriandy acted as the facilitator, and Zahra Ismi Hanifah served as operational staff from Generation Girl.

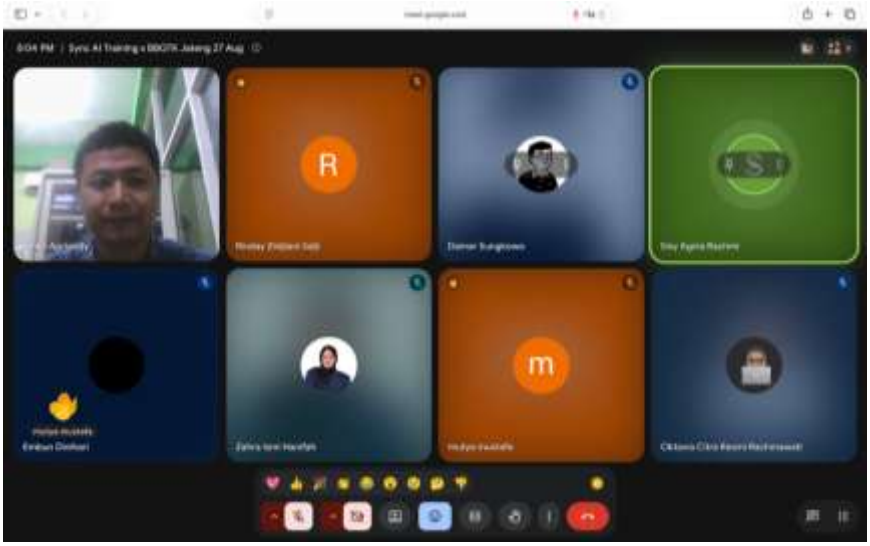


Figure 2. Online meeting for preparing the asynchronous learning activities

The implementation phase consisted of two types of activities: asynchronous and synchronous sessions. In the asynchronous session, participants were directed to join a Google Classroom containing AI-related learning materials. Participants studied the material independently, covering topics such as an introduction to AI, maximizing productivity with AI, the art of prompt engineering, responsible AI usage, and staying competitive in the AI era. Participants were also required to complete a preliminary assignment. Subsequently, the synchronous session was held on Thursday, August 27, 2026, from 09:00 to 12:00 WIB at the SMKN 2 Blora computer laboratory. This session reviewed the material and provided hands-on practice. The activities included an opening, introductions and an overview of AI terminology, an AI vs. non-AI identification game, an explanation of prompting techniques, interactive games, practical exercises in creating songs using Suno AI and educational posters using Gemini Notebook, an introduction to various AI tools, practice in distinguishing between real and AI-generated photos, a discussion on identifying AI-generated content, an outline of the "golden rules" for AI usage, a Q&A session, reflection, and the closing.

The evaluation phase ensures participants complete the learning sequence and meet the program's competency standards. The evaluation team monitors material completion on Google Classroom, assesses pre-class assignments, and tracks participation in asynchronous learning sessions. Participants are deemed to have met the completion requirements if they have finished the materials available on Google Classroom, completed the pre-class assignment with a minimum score of 75, and participated in the asynchronous sessions. In addition to task-based evaluation, synchronous activities include Q&A and reflection sessions to gauge participants' understanding, experiences, and responses regarding the provided material and practices. Thus, the evaluation process aims to assess participant engagement while ensuring adherence to the designed learning stages.

C. Result and Discussion

This community service initiative, centered on artificial intelligence, was carried out through the Central Java Educator (GTK) Education Service Program in partnership with Generation Girl. The activity reflects a collaboration between an educational institution and a partner organization committed to strengthening educators' ability to navigate the evolution of digital technology specifically artificial intelligence (AI). This partnership was instrumental to the program's implementation, as it clearly divided roles among the organizers, the implementation team, and the participants. The program was designed to go beyond one-way instruction; it offered participants opportunities for independent study through asynchronous sessions alongside hands-on practice through synchronous sessions.

The event also shows an effort to integrate technology-based learning with teachers' practical needs. The material goes beyond a basic introduction to AI concepts; it focuses on helping participants understand the many ways AI can support productivity and content creation. The curriculum covers AI fundamentals, maximizing productivity with AI, the art of prompt engineering, responsible AI usage, and strategies for staying competitive in the AI era. This structure lets participants build their understanding progressively starting with an introduction to the technology, learning how to issue instructions to AI, and experimenting with various tools, and ending with an understanding of the principles of responsible AI use.

A team of a trainer, a facilitator, and operational staff supported the activity. Oktavia Citra Resmi Rachmawati a lecturer at Tamansiswa International Polytechnic and an IT practitioner served as the trainer, delivering the material and leading the training sessions. Her role was crucial, as the AI content required explaining concepts in a way that was accessible to participants with backgrounds in early childhood education (PAUD), kindergarten, and elementary school. The material was presented through a blend of explanations, games, demonstrations, hands-on practice, Q&A sessions, and reflection, ensuring that participants not only received theoretical information but also gained direct experience interacting with AI technology.



Figure 3. Opening Session of the Artificial Intelligence Training Program

In addition to the trainer, Kevin Ilham Apriandy, a lecturer at Tamansiswa International Polytechnic, supported the event as the facilitator. The facilitator ensured the learning process ran smoothly, particularly during interactive activities and hands-on practice. In sessions involving the direct use of AI tools, the facilitator helped keep the proceedings aligned with the planned agenda. Meanwhile, Zahra Ismi Hanifah, an undergraduate Psychology student, served as operations staff for Generation Girl. This division of roles shows that the event relied on complementary functions: content delivery, participant guidance, and operational support.

Dividing roles among trainers, facilitators, and operational staff is crucial to successfully running an event with multiple activities. Trainers deliver the learning content and practical exercises; facilitators support participant interaction and guidance; and operational staff manage the event's technical and operational requirements. This structure ensures a more organized workflow, especially since the learning sessions involve various activities that require active participant engagement. Consequently, the event's success depends not only on the material presented but also on effective coordination among the team members as they carry out their respective functions.

The event drew 50 participants, including early childhood education (PAUD), kindergarten, and elementary school teachers from across Blora City. This composition indicates that the activity targeted educators at the early childhood and primary education levels. This target audience aligns with the event's objectives, as advancing AI technology offers teachers opportunities to support various educational activities and enhance productivity in their professional roles. Through this event, participants had the opportunity to understand AI technology not merely as an emerging innovation, but as a practical tool that can be utilized while adhering to principles of responsible use.

The event's participation by 50 individuals highlights the need for AI-related learning among educators. Participants were not merely presented with information; they engaged directly through various games and hands-on activities. This approach fostered a richer learning experience, enabling participants to connect the concepts explained with real-world examples of AI application. Activities such as "AI or Not?", "Which AI Do You Prefer?" and "AI: Myth or Fact?", along with exercises that distinguished between authentic and AI-generated photos, encouraged participants to think critically about the presence and use of AI in daily life.

Learning activities are conducted through two formats: asynchronous and synchronous sessions. In the asynchronous sessions, participants access a Google Classroom set up as the learning platform. The available materials cover an introduction to AI, maximizing productivity with AI, the art of prompt engineering, responsible AI usage, staying ahead in the AI era, and introductory course assignments. The asynchronous model lets participants study the material independently before attending the synchronous sessions, building foundational knowledge that the face-to-face sessions reinforce.

The synchronous session was held on Thursday, 27 August 2026 at 09.00–12.00 WIB at the Computer Laboratory of SMKN 2 Blora. This session refreshed the material and provided practice. The series of activities began with an opening by BBGTK Central Java, then continued with trainers delivering material with support from facilitators. In the initial stage, participants introduced themselves and key AI terms. After that, the activity continued with an AI and non-AI identification game. Using games early on can create an interactive learning atmosphere while inviting participants to identify how widely AI is already present in various digital activities and products.



Figure 4. Trainer delivering AI materials during the asynchronous session

The training then focused on prompting techniques, a crucial skill for interacting with AI tools. Participants were not only introduced to the concept but also engaged in games and practical exercises that made the learning process more hands-on. One such practical activity involved creating a song using Suno AI, which provided a concrete example of AI's ability to generate content based on user instructions. Another activity involved creating an educational poster using Gemini Notebook, allowing participants to gain experience in using AI to support the creation of educational materials or content.



Figure 5. Participants during the practical session of the AI training

In addition to introducing and practicing AI tools, the activity also addressed critical and ethical aspects of AI use. Participants played a "Myth or Fact about AI?" game to discuss different perceptions of the technology. They were also briefly introduced to a range of other AI tools. A key component of the session involved an activity in which participants distinguished between real photos and AI-generated images, followed by a discussion on how to identify AI-generated content. This material was crucial because using AI must be balanced with an understanding of the characteristics and potential

outputs of AI systems. Consequently, participants were encouraged not merely to use technology, but also to develop the awareness needed to evaluate and recognize AI-related content.

The session also addressed responsible AI use through the "Golden Rules of AI Usage," complementing the technical training previously provided to participants. AI in education should be viewed as a tool to support teachers' work; therefore, its use requires careful consideration and responsibility from the user. After presenting all material and practical exercises, the event concluded with a Q&A session and a reflection period. The Q&A session allowed participants to ask questions and seek clarification on topics they did not fully understand, while the reflection session gave participants a final opportunity to look back on the learning experiences gained during the event.

The results indicate that all 50 participants successfully passed and qualified for a certificate. Participant completion was based on established criteria: completing the materials available on Google Classroom, finishing the introductory assignment with a minimum score of 75, and participating in the asynchronous sessions. The fact that all participants met these criteria shows that everyone successfully completed the designed learning program. Consequently, the completion rate reached 100%, meaning every participant met the requirements to receive a certificate.

The 100% completion rate serves as a key indicator of the program's successful implementation. Participants not only engaged in synchronous activities but also completed asynchronous learning modules and assignments required for graduation. This demonstrates that a hybrid model—combining independent study with live instruction—is a viable approach for designing AI training for teachers. Asynchronous sessions build foundational knowledge, while synchronous sessions reinforce the material and support practical application. This combination creates a more structured learning process, as participants build the necessary content knowledge before moving to hands-on practice and direct interaction.

In terms of substance, the activity provides a learning experience that covers knowledge, skills, and awareness of AI use. The knowledge component is delivered through an introduction to AI concepts and terminology, along with material on AI developments. Skill development is fostered through prompt engineering exercises and hands-on practice with tools such as Suno AI and Gemini Notebook. Meanwhile, awareness regarding technology usage is addressed through content on responsible AI, the "Golden Rules" of AI use, and activities focused on identifying AI-generated content and images. Integrating these three aspects is crucial because AI competence for educators requires more than the ability to use tools; it also requires understanding how to apply the technology appropriately in professional activities.

The fact that all participants met the completion criteria demonstrates that the activity achieved its established administrative and learning objectives. Participants who completed the course materials, met the minimum assignment score requirements, and attended the mandatory sessions are eligible to receive a certificate confirming program completion. Issuing these certificates recognizes participants' engagement throughout the program. In the context of educator competency development, the certificate also documents that participants completed a learning program on literacy and the use of AI.

Overall, the results indicate that artificial intelligence training for early childhood, kindergarten, and elementary school teachers in Blora City can be successfully conducted using a learning approach that combines independent study, refresher sessions, hands-on practice, educational games, discussions, and reflection. Support from the organizers and a clear division of roles among trainers, facilitators, and operational staff ensured the activity was well structured. Regarding outcomes, all 50 participants met the completion criteria and qualified for certification. These results show that the

program achieved its objective of providing AI training to participants as planned. However, the completion results primarily reflect participation and program fulfillment; to more robustly measure improvements in participants' AI competencies, future iterations of the program could include a follow-up evaluation comparing pre- and post-training capabilities.

D. Conclusion

A community service initiative part of the Central Java Educator (GTK) Educational Services Program and conducted in partnership with Generation Girl successfully delivered a session on "Artificial Intelligence" to 50 teacher representatives from early childhood education (PAUD), kindergarten, and elementary schools across Blora City. The program utilized a blend of asynchronous and synchronous sessions, covering topics such as an introduction to AI, leveraging AI for productivity, prompt engineering, responsible AI usage, and hands-on practice with various AI tools. Trainers, facilitators, and operational staff supported delivery, using a mix of instructional methods, educational games, practical exercises, Q&A sessions, and reflection.

The results show that all 50 participants (100%) completed the program and qualified for a certificate by meeting the established criteria: completing the course materials on Google Classroom, scoring at least 75 on the introductory assignment, and participating in the asynchronous sessions. The activity gave participants an understanding of fundamental concepts and practical experience using AI productively and responsibly. This success shows that the program achieved its objectives and built a foundation of AI competence to support participants' professional activities in education.

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