

## THE ROLE OF ARTIFICIAL INTELLIGENCE IN EDUCATION

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**ABSTRACT** The rapid development of Artificial Intelligence (AI) has significantly transformed educational practices and learning environments worldwide. This community engagement program aimed to provide counseling, mentoring, and educational assistance for students from Indonesian migrant worker families in Thailand regarding the role and benefits of AI in education. The beneficiaries of the VIII International PKM activity were 56 at the Thamislam Foundation School. The activities employed lectures, focus group discussions, consultations, and mentoring sessions. The materials emphasized the role of AI in supporting the development of 21st-century skills, including critical thinking, creativity, problem-solving, communication, and digital literacy. Participants were also introduced to ethical considerations, digital responsibility, and strategies to minimize the negative impacts of AI exposure in educational contexts. The results demonstrated increased participants' understanding of AI utilization in learning activities and improved awareness regarding ethical and responsible AI practices. Furthermore, participants showed greater ability to integrate AI tools effectively into their learning processes and daily educational activities. The mentoring activities also encouraged participants to develop more adaptive learning strategies despite their limited educational facilities. This community engagement program indicates that AI literacy education and mentoring are essential in supporting students from migrant worker families in adapting to digital-era educational demands and improving their future educational opportunities.

**KEYWORDS:** *Artificial Intelligence; Counseling; Digital Literacy; Education; Students*

### 1. INTRODUCTION

The emergence of Artificial Intelligence (AI) has significantly transformed the educational ecosystem. The acceleration of digital transformation in education has been marked by the increasing integration of AI into learning practices and educational management systems. AI no longer functions

merely as a technical support tool; rather, it has the potential to reshape cognitive processes, pedagogical interactions, and literacy practices among students. In contemporary education, AI plays a strategic role when positioned as a medium that supports critical thinking and higher-order literacy rather than solely as an instrument for automating learning processes.

The target participants of this community engagement program were students from Indonesian migrant worker families in Thailand. Many of these students experience limitations in educational access, learning resources, and technological literacy. Preliminary observations and interviews revealed that most participants had limited understanding regarding the appropriate use of AI in educational activities. Although they had been exposed to digital technologies, many of them had not optimally utilized AI to support their learning processes and develop 21st-century competencies.

Recent studies have demonstrated that AI can support adaptive learning, improve student engagement, and enhance critical thinking skills when integrated appropriately into pedagogical practices (Holmes et al., 2022; Kohnke et al., 2023; Zhai et al., 2021). AI-based technologies, such as intelligent tutoring systems, learning analytics, and generative AI applications, provide opportunities for students to engage in reflective learning, contextual problem-solving, and collaborative knowledge construction. Furthermore, AI contributes to the development of digital literacy and critical literacy, which are increasingly important in the digital era.

Theoretically, the development of critical thinking is rooted in constructivist and educational pragmatist traditions that position learners as active subjects in constructing meaning through dialogue, reflection, and problem-solving (Dewey, 1933; Ennis, 2011). In literacy education, AI expands literacy practices beyond reading and writing skills toward critical literacy and digital literacy, enabling students to interpret and critically analyze information within various social and cultural contexts (Gee, 2015).

However, the implementation of AI in education also presents significant challenges, including algorithmic bias, ethical concerns, unequal access to technology, and excessive dependence on digital systems (Selwyn, 2019). Without adequate guidance, students may misuse AI technologies or become exposed to inappropriate digital content that negatively affects their educational development. Ethical considerations regarding privacy, data protection, and responsible AI usage have therefore become increasingly important in educational contexts.

Previous community empowerment activities related to digital literacy have primarily focused on basic technological skills, while limited attention has been given to AI literacy and ethical AI utilization among children of migrant worker families. Therefore, this community engagement program aimed to provide educational counseling, mentoring, and consultation regarding the role of AI in education, particularly in supporting the development of 21st-century skills and improving

students' learning capacities.

This program also emphasized active participation and interaction with participants through discussions, consultations, and mentoring sessions. Through these activities, participants were encouraged to share their experiences, learning difficulties, and perceptions regarding AI utilization in educational activities. The program is expected to improve participants' understanding of AI literacy and enable them to utilize AI technologies wisely, ethically, and effectively to support their educational success in the future.

## **2. METHOD**

This community engagement program was conducted on Sunday, April 21, 2026, at Thamislam Foundation School, Tahiland, in collaboration with the Indonesian Embassy and the NGO Sharing. The activity was part of the International Community Service Program VIII organized by Universitas Veteran Bangun Nusantara. The theme of the event was "Empowering Community and Students/Teachers of Kampung Indonesia Nonthaburi through Multidisciplinary Education and Cross-Cultural Collaboration"

The beneficiaries of this program consisted of 56 participants, including students from Indonesian migrant worker families and several migrant workers residing in Thailand. The participants were primarily elementary and secondary school students who experienced limited educational facilities and restricted access to technology-based learning support.

Prior to the implementation of the program, a preliminary survey was conducted to identify participants' understanding of AI utilization in educational activities. Data were collected through interviews, observations, and documentation. The findings revealed that many participants had minimal knowledge regarding the benefits, ethical use, and potential risks of AI in education. Most participants had used digital technology in daily activities but lacked understanding of how AI could support learning processes effectively and responsibly.

The implementation of the community engagement program employed several methods, including lectures, focus group discussions (FGDs), consultations, and mentoring activities. The lecture sessions introduced participants to the concepts, benefits, and challenges of AI in education. The materials covered the role of AI in developing 21st-century skills, such as critical thinking, creativity, problem-solving, communication, and digital literacy.

The FGD sessions allowed participants to discuss their experiences and perceptions regarding AI utilization in educational contexts. During these sessions, participants actively shared learning difficulties, digital experiences, and challenges encountered in accessing educational technologies. The consultation and mentoring sessions provided opportunities for participants to receive direct

guidance regarding effective and ethical AI utilization in supporting learning activities.

The program involved four lecturers serving as facilitators and instructors. Each team member was assigned specific responsibilities, as presented in Table 1.

Table 1. Community Engagement Team and Responsibilities

No.	Name	Position	Responsibilities
1	Prof. Dr. Farida Nugrahani, M.Hum.	Team Leader and Keynote Speaker	Delivered the main educational materials, supervised the implementation of the program, and provided mentoring and consultation sessions for participants.
2	Dr. Mukti Widayati, M.Hum.	Team Member and FGD Chairperson	Facilitated focus group discussions and guided consultation activities during mentoring sessions.
3	Dr. Wahyu Dini Septiari, M.Pd.	Team Member and Moderator	Coordinated and moderated the overall activities, including lectures, FGDs, consultations, and mentoring sessions.
4	dr. Aisya Fikritama Aditya, Sp.A.	Team Member and Educational Consultant	Provided consultations and mentoring related to educational and child development aspects associated with AI utilization in learning activities.

The effectiveness of the program was evaluated through participants' responses, observations during activities, and reflective discussions conducted after the mentoring sessions. The expected outcomes included increased AI literacy, improved understanding of ethical AI utilization, and enhanced participant readiness to utilize AI technologies effectively in supporting educational achievement.

### 3. RESULT AND DISCUSSION

#### 3.1 Initial Conditions of Participants Before the Program

The preliminary survey and observations indicated that most participants had limited understanding regarding Artificial Intelligence (AI) and its application in educational activities. Participants generally associated AI only with entertainment applications and social media platforms. Although many participants had previously used smartphones and internet-based applications, they lacked awareness regarding how AI technologies could support educational development and learning achievement.

Most participants also demonstrated limited understanding regarding ethical AI utilization, digital literacy, information verification, and the risks associated with excessive dependence on digital technology. Furthermore, several participants admitted difficulties in accessing effective learning resources and educational support due to limitations in facilities and educational environments.

The findings confirmed the necessity of implementing educational counseling and mentoring activities related to AI literacy for students from Indonesian migrant worker families in Thailand.

### **3.2 Implementation of Educational Counseling and Mentoring Activities**

The educational counseling and mentoring activities were implemented through lectures, focus group discussions (FGDs), consultations, and interactive mentoring sessions. The lecture sessions focused on introducing participants to the concepts, functions, benefits, and challenges of AI in educational contexts.

The facilitators explained how AI technologies could support critical thinking, creativity, communication skills, digital literacy, and problem-solving abilities as essential competencies in 21st-century education. Participants were also introduced to ethical considerations regarding AI utilization, including digital responsibility, data privacy, plagiarism, misinformation, and healthy technology usage.

During the FGD sessions, participants actively shared their experiences in utilizing AI technologies in school assignments and daily activities. Many participants expressed enthusiasm regarding AI-assisted learning applications, particularly those supporting language learning, information searching, and academic assignments. The interactive discussions created opportunities for participants to exchange experiences and develop broader understanding regarding the positive and negative impacts of AI in educational settings.

The mentoring sessions provided participants with practical guidance regarding effective AI utilization in learning processes. Participants learned how to formulate prompts appropriately, evaluate AI-generated information critically, and integrate AI tools responsibly into educational activities.



**Figure 1.** Educational counseling session on the role of AI in education



**Figure 2.** Focus group discussion and mentoring activities with participants

### 3.3 Improvement of participants’ understanding after the program

The implementation of the program demonstrated positive impacts on participants’ understanding regarding AI utilization in education. Participants showed increased awareness regarding the role of AI in supporting learning activities, improving educational achievement, and developing digital competencies. Table 2 presents the comparison of participants’ understanding before and after the implementation of the mentoring activities.

**Table 2.** Participants’ Understanding Before and After the Mentoring Program

<b>Indicator</b>	<b>Before Program</b>	<b>After Program</b>
Understanding of AI in education	Low	Good
Awareness of ethical AI utilization	Limited	Improved
Ability to use AI for learning activities	Minimal	Moderate to high
Digital literacy awareness	Limited	Improved
Understanding of AI risks and challenges	Low	Good

The mentoring activities significantly improved participants’ awareness regarding responsible AI utilization. Participants became more capable of distinguishing between constructive educational usage and inappropriate digital behavior. They also demonstrated greater confidence in utilizing AI technologies to support school assignments and independent learning activities.

These findings are consistent with previous studies emphasizing that AI can support adaptive learning, critical thinking, and digital literacy development when integrated appropriately into pedagogical practices (Holmes et al., 2022; Zhai et al., 2021).

### **3.4 Community Participation and Program Impacts**

Community participation during the implementation of the program was highly positive. Participants actively engaged in discussions, consultations, and mentoring activities. The involvement of educational institutions, the Indonesian Embassy, and community organizations strengthened the implementation and effectiveness of the program.

The mentoring activities also encouraged participants to become more adaptive toward digital transformation in education. Despite limited educational facilities, participants demonstrated strong motivation to improve their learning processes through ethical and responsible AI utilization.

The implementation of this program indicates that AI literacy education can become an important strategy in supporting educational empowerment among vulnerable communities, particularly students from migrant worker families. The integration of AI literacy into community engagement activities may contribute positively to educational equity and digital inclusion in the future.

## **4. CONCLUSION**

Artificial Intelligence (AI) has a strategic role in supporting educational transformation and the development of 21st-century skills. The implementation of this community engagement program demonstrated that counseling, mentoring, and consultation activities regarding AI literacy significantly improved participants' understanding of the benefits, challenges, and ethical utilization of AI in educational contexts.

The program successfully enhanced participants' awareness regarding the role of AI in supporting critical thinking, creativity, communication, digital literacy, and independent learning. Participants also developed greater understanding of responsible AI usage and the importance of critically evaluating digital information.

The mentoring activities indicated that students from Indonesian migrant worker families require continuous educational assistance and digital literacy support to adapt effectively to technological developments in education. Despite limitations in educational facilities, participants demonstrated strong enthusiasm and motivation to utilize AI technologies for improving their learning processes and educational achievement.

Therefore, sustainable AI literacy programs and community empowerment activities are highly recommended to support educational equity and prepare students for future digital challenges. Educational institutions, communities, and policymakers should collaborate to ensure that AI integration in education remains ethical, inclusive, and human-centered.

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## CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest related to this study and community engagement program. This study did not receive specific grants from funding agencies in the public, commercial, or non-profit sectors.

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