

Strengthening Digital Literacy through Ethical Education on the Use of Artificial Intelligence and Fact Verification for Students

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<p>Keywords: Digital Literacy, Artificial Intelligence, AI Ethics, Fact Verification, Community Service.</p>	Abstract
<p>Submitted: dy/mn/year</p> <p>Revised: dy/mn/year</p> <p>Accepted: dy/mn/year</p>	<p>The rapid development of Artificial Intelligence (AI) has significantly influenced students' learning activities and access to information. However, the increasing use of AI also raises challenges related to information accuracy, ethical use, and digital responsibility. This community service program aimed to strengthen digital literacy through ethical education on the use of AI and fact verification practices among students at SMK Negeri 5 Palopo. The activity employed a participatory educational approach consisting of presentations, interactive discussions, and practical fact-checking exercises. Students were introduced to digital literacy concepts, ethical AI utilization, information credibility assessment, and misinformation identification. The results showed improved student awareness regarding responsible AI use, fact verification, and academic integrity. Participants demonstrated better understanding of evaluating digital information critically before using or sharing it. The program contributed to strengthening digital literacy competencies and promoting responsible digital citizenship among students.</p>
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INTRODUCTION

The rapid development of digital technology has transformed the way students access information, communicate, and complete academic tasks (Oktafia dkk. 2025). Artificial Intelligence (AI) has become one of the most widely used technologies in education, offering various benefits such as information retrieval, content generation, personalized learning support, and problem-solving assistance (Manuaba dkk. 2024). The increasing accessibility of AI tools provides students with opportunities to improve learning efficiency and expand their knowledge. However, the widespread use of AI also

presents challenges related to information accuracy, ethical use, academic integrity, and digital responsibility (Nisa 2024).

Many students utilize AI-generated content without adequately evaluating the reliability of information sources (Judijanto dkk. 2025). The ease of obtaining instant answers can encourage dependency on technology and reduce critical thinking skills if not accompanied by proper digital literacy competencies. In addition, the circulation of misinformation and disinformation on digital platforms has become a significant concern, particularly among young people who frequently consume information through social media and online networks. These conditions highlight the importance of strengthening students' ability to verify information and use AI responsibly.

Digital literacy is no longer limited to the ability to operate digital devices but also includes critical evaluation of information, ethical participation in digital environments, and responsible use of emerging technologies. (Ilomäki dkk. 2023) Ethical education regarding AI use is essential to help students understand the benefits, limitations, and potential risks associated with AI-generated content. Fact verification skills are equally important to ensure that students can distinguish credible information from misleading or inaccurate content before using or sharing it.

Students at SMK Negeri 5 Palopo are increasingly exposed to various digital technologies and Artificial Intelligence applications in their learning activities. The use of AI-based tools has become more common among students for completing assignments, searching for information, and supporting academic work. However, not all students fully understand the ethical aspects of AI utilization and the importance of verifying information obtained from digital sources. This condition indicates the need for educational activities that can strengthen digital literacy, critical thinking, and responsible technology use among students.

Several studies have emphasized that digital literacy programs contribute significantly to improving critical thinking, information evaluation, and responsible technology use among students (Singh 2025). Educational interventions that combine digital literacy, ethical awareness, and fact-checking practices have been shown to increase students' readiness to navigate complex digital environments. Community-based educational activities can play a strategic role in providing practical knowledge and fostering positive digital behavior among students (Rakuasa dkk. 2024). Based on these considerations, a community service program was conducted to strengthen students' digital literacy through ethical education on the use of Artificial Intelligence and fact verification practices. The program aimed to increase students' understanding of responsible AI utilization, develop critical evaluation skills toward digital information, and promote ethical behavior in the digital environment.

COMMUNITY SERVICE METHODS

This community service activity was conducted at SMK Negeri 5 Palopo and involved students as the primary participants. The program aimed to strengthen students' digital literacy through ethical education on the use of Artificial Intelligence (AI) and fact verification practices. A participatory educational approach was employed to encourage active student involvement throughout the activity.

The implementation of the program consisted of several stages. The first stage was preparation, which included coordination with the school, identification of students' needs related to digital literacy, and preparation of educational materials (Betín de la Hoz dkk. 2023). The second stage involved the delivery of educational sessions through presentations and interactive discussions on the concepts of digital literacy, ethical AI utilization, risks of misinformation, and the importance of fact verification. Real-life examples were used to help students understand the benefits and limitations of AI technologies in educational settings (Alshahrani dan Qureshi 2024). The next stage focused on practical activities. Students were guided to identify AI-generated

information, evaluate the credibility of digital sources, and practice simple fact-checking techniques using available online verification tools.

The effectiveness of the activity was observed through participants’ engagement, responses during discussions, and their ability to distinguish reliable information from misleading content (Pennycook dkk. 2021). The outputs of this community service program included increased awareness of ethical AI use, improved understanding of digital literacy principles, and enhanced fact-verification skills among students. These outcomes are expected to support responsible technology use and strengthen students’ readiness to navigate digital information environments.

RESULTS AND DISCUSSION

The community service program was successfully implemented at SMK Negeri 5 Palopo with the participation of students from various grade levels. The activity focused on strengthening digital literacy through education on the ethical use of Artificial Intelligence (AI) and fact verification practices. Students showed high enthusiasm throughout the program, particularly during discussions on AI applications and the identification of misinformation in digital media.

The educational session introduced students to the concept of digital literacy, ethical considerations in AI utilization, and techniques for verifying information obtained from online sources. Many participants initially viewed AI only as a tool for generating answers and completing assignments. After the educational intervention, students demonstrated a better understanding of the importance of using AI responsibly, evaluating information sources, and maintaining academic integrity.

Table 1. Student Responses to the Digital Literacy Education Program at SMK Negeri 5 Palopo

Indicator	Before Activity	After Activity
Understanding of AI Ethics	Low	High
Awareness of Fact Verification	Moderate	High
Ability to Identify Hoaxes	Moderate	High
Understanding of Responsible AI Use	Low	High

The results indicate an improvement in students’ understanding of ethical AI use and fact verification. Participants became more aware that information generated by AI should not be accepted without critical evaluation. Students also learned practical methods to verify information through trusted digital sources before sharing or utilizing it for academic purposes.



Figure 1. Interactive Discussion on Ethical AI Use and Fact Verification.

The discussion sessions revealed that many students frequently use AI-based applications for completing school assignments. However, several participants admitted that they rarely checked the accuracy of information generated by these tools. Through guided discussions and practical exercises, students gained experience in comparing AI-generated information with credible sources. This activity encouraged critical thinking and reduced the tendency to accept information without verification.

These findings are consistent with previous studies that emphasize the importance of digital literacy in improving students' critical thinking and responsible technology use. Digital literacy programs help learners develop the ability to evaluate information, recognize misinformation, and participate ethically in digital environments. Ethical education related to AI also supports the development of responsible digital citizens who can utilize technology productively while understanding its limitations.

The implementation of this community service activity demonstrates that educational interventions combining digital literacy, ethical AI awareness, and fact verification can effectively enhance students' understanding of responsible technology use. The program also contributed to increasing awareness of academic honesty and the importance of critical evaluation of digital information. These outcomes support the primary objective of the community service program, namely strengthening students' digital literacy competencies and preparing them to navigate the digital era more responsibly.

CONCLUSIONS AND SUGGESTIONS

Conclusion

The community service program conducted at SMK Negeri 5 Palopo successfully addressed the need to strengthen students' digital literacy in the era of Artificial Intelligence (AI). The activity focused on increasing students' understanding of ethical AI use, digital responsibility, and fact verification skills. The results showed that students became more aware of the importance of evaluating information critically and using AI technology responsibly in academic and daily activities.

The educational approach consisting of presentations, discussions, and practical fact-verification exercises proved effective in improving students' knowledge and awareness regarding digital literacy. Students demonstrated better understanding of AI ethics, information credibility, and the importance of academic integrity. These findings indicate that digital literacy education combined with ethical AI awareness can help prepare students to become responsible digital citizens and adapt to the challenges of the digital era.

Suggestion

Schools are encouraged to continue implementing digital literacy programs and integrate ethical AI education into learning activities to enhance students' critical thinking and responsible technology use. Teachers can also provide regular guidance on information verification and digital ethics to strengthen students' digital competencies. Future community service activities may involve a larger number of participants and include more intensive practical sessions related to fact-checking, digital citizenship, and emerging technologies. Continuous collaboration between educational institutions and community service teams is expected to support the development of a digitally literate and responsible generation.

REFERENCE

- Alshahrani, Khalid, dan M. Rizwan Qureshi. 2024. "Review the Prospects and Obstacles of AIEnhanced Learning Environments: The Role ofChatGPT in Education." *International Journal of Modern Education and Computer Science* 16 (Agustus): 71–86. <https://doi.org/10.5815/ijmecs.2024.04.06>.
- Betín de la Hoz, Ana Bertha, Antonio Rodríguez Fuentes, María Jesús Caurcel Cara, dan Carmen del Pilar Gallardo Montes. 2023. "Effectiveness of a Digital Literacy

- Program in High School Basic Education Students.” *Espiral. Cuadernos Del Profesorado. Espiral. Cuadernos Del Profesorado* 16 (Extra 34): 2.
- Ilomäki, Liisa, Minna Lakkala, Veera Kallunki, dkk. 2023. “Critical Digital Literacies at School Level: A Systematic Review.” *Review of Education* 11 (3): e3425. <https://doi.org/10.1002/rev3.3425>.
- Judijanto, Loso, Renita Selviana, Emi Rahmawati, dkk. 2025. *Optimalisasi ChatGPT: Panduan dan Penerapan untuk Belajar, Mengajar, dan Membuat Konten Tanpa Batas*. PT. Green Pustaka Indonesia.
- Manuaba, Ida Bagus Kerthyayana, Danang Erwanto, Loso Judijanto, dkk. 2024. *TEKNOLOGI ChatGPT: Pengetahuan Dasar dan Pemanfaatan kombinasi keahlian dengan ChatGPT di berbagai Bidang*. PT. Sonpedia Publishing Indonesia.
- Nisa, Khoirun. 2024. “Peran Literasi Di Era Digital Dalam Menghadapi Hoaks Dan Disinformasi Di Media Sosial.” *Impressive: Journal of Education* 2 (1): 1–11. <https://doi.org/10.61502/ijoe.v2i1.75>.
- Oktafia, Nurul, Anisah Muflihatul Latifah, Aradea Dafa El Haris, Santy Andrianie, dan Elwas Berdha Krismona. 2025. “Mahasiswa Dan AI: Transformasi Cara Berpikir Kritis Dan Penyelesaian Masalah Di Era Digital.” *Prosiding Konseling Kearifan Nusantara (KKN)* 4 (Januari): 10–33. <https://doi.org/10.29407/vpnfq046>.
- Pennycook, Gordon, Ziv Epstein, Mohsen Mosleh, Antonio A. Arechar, Dean Eckles, dan David G. Rand. 2021. “Shifting Attention to Accuracy Can Reduce Misinformation Online.” *Nature* 592 (7855): 590–95. <https://doi.org/10.1038/s41586-021-03344-2>.
- Rakuasa, Heinrich, Muh Hidayatullah, dan Mohamad Ardin Suwandi. 2024. “Community-Based Education in the Digital Age: Challenges and Opportunities.” *Journal of Asian Primary Education (JoAPE)* 1 (1): 16–23. <https://doi.org/10.59966/joape.v1i1.851>.
- Singh, Dr Gurdeep. 2025. “Transformative Pedagogy in Higher Education: Integrating Critical Thinking, Digital Literacy, and Social Responsibility.” *Transformative Education: A Multidisciplinary Journal (TEMJ) E-ISSN: 3117-8057* 1 (01): 1–9. <https://doi.org/10.63665/temj.v01i01.01>.