Proceedings of International Conference on Islamic Education (ICIED)
Impactful Education : Integrating Technology, and Ecotheological Values For a Sustainable Future
Volume 10, 2025 (p-ISSN 2477-3638 / e-ISSN 2613-9804)

A Study of Digital Ethics and the Application of AI in Arabic Language Learning at MIN 2 Kota Malang

Ikke Nilova El Hasany[1], Ahmad Makki Hasan[2]

Correspondence:
icebinhasan@gmail.com

Affiliation:
MIN 2 Kota Malang, Indonesia[1]
icebinhasan@gmail.com

Department of Arabic Language Learning, UIN Maulana Malik Ibrahim, Indonesia[2]
ahmadmakih@pba.uin-malang.ac.id

Abstract
This study investigates the ethical dimensions and practical integration of Artificial Intelligence (AI) in Arabic language learning at the elementary school level, focusing on Grade 5 students at MIN 2 Kota Malang, Indonesia. Employing a qualitative case study design, data were gathered through classroom observations, interviews with Arabic teachers, and an analysis of AI-generated learning materials. Findings reveal that AI-supported tools -particularly Canva AI, AI-based coding games, Quizizz, and Wordwall- are widely used to enhance instructional media, classroom engagement, and assessment efficiency. Canva AI emerged as the most frequently utilized platform due to its rapid and visually appealing content generation. However, several ethical challenges were identified, including students' misuse of AI to complete assessments, inaccuracies in AI-generated Arabic texts, insufficient teacher filtering of AI outputs, and unequal digital competencies among students. These issues highlight gaps in digital ethics implementation, particularly concerning accuracy, transparency, responsible use, and alignment with curriculum standards. Guided by UNESCO's AI Ethics Framework, this study emphasizes the need for stronger teacher digital literacy, clear school-level AI policies, and systematic validation of AI-generated Arabic materials. The research contributes to the limited body of empirical studies on AI use in Arabic language education at the elementary level and provides recommendations for policy, pedagogical practice, and future research to ensure safe, ethical, and effective AI integration in primary education.

Keywords:
Artificial Intelligence; Digital Ethics; Arabic Language Learning, Elementary Education; Educational Technology

A. INTRODUCTION

The current digital transformation is driving the adoption of cutting-edge technology in education. Artificial intelligence (AI) has been applied in various fields to support decision-making, automation, and adaptive learning. Technology is transforming the classroom landscape. The learning process is no longer confined to classroom walls but has expanded beyond the boundaries of time and space. In education, AI has the potential to revolutionize the learning process through intelligent tutoring systems, adaptive platforms, and big data analysis for personalized teaching materials. The Indonesian government even plans to introduce AI and coding curricula as elective subjects for students to prepare a globally competitive generation.

There are two approaches to implementing artificial intelligence (AI) in educational settings. First, shifting teacher duties to AI systems, which act as tutors for each student; and second, augmenting human intelligence and assisting humans in effective and efficient learning activities (Hakim, 2022). However, the implementation of AI at the elementary level also raises ethical concerns. Elementary education involves early childhood learners, making privacy and the digital divide crucial. Recent literature has shown that AI-based education has increased student

motivation, engagement, and learning effectiveness through personalized features, automated feedback, and more engaging media design. However, these improvements are not without challenges. Numerous studies emphasize that implementing AI in primary education requires consideration of ethical aspects, such as data privacy, algorithmic transparency, potential bias, and protection against technological dependency. Digital ethics is a crucial element in ensuring the responsible use of technology.

Teachers need technology to create innovative learning in elementary schools (Sa'odah et al., 2022). The use of AI in elementary classrooms can improve the quality of learning. AI enables personalized learning tailored to each student's needs. For example, smart tutorial systems and adaptive platforms can adjust the pace and content of lessons to suit individual student abilities. Literature reviews also show that the use of AI in learning can increase student engagement and creativity and reduce teacher workload. Teachers are no longer the primary source of student learning. Every accurate literacy resource is a "new teacher" for students. Virtual learning without seeing the teacher in person in class, learning through video tutorials, through referenced journals and reliable articles, can be done even outside the classroom. Teachers shift their role to become facilitators and discussion partners in selecting learning resources. AI, as part of the learning experience, becomes more effective and engaging; student participation increases, and teachers can focus more on quality interactions due to automated assessment tasks. Automated assessment systems and AI-based attendance management tools streamline daily administrative processes, increasing school operational efficiency and freeing teachers up for direct learning.

However, the success of AI implementation in the classroom also depends on teachers' digital competence and adequate infrastructure. Teachers' capacity to use educational technology determines the success of AI implementation. Furthermore, the use of AI can also provide analytical insights for educational decision-making. Through analysis of student learning data, principals and administrators can identify students who need additional support early on. Overall, the main opportunities for AI in elementary education include personalized learning, increased student motivation and creativity, and efficient school management, provided they are accompanied by adequate teacher training and technological infrastructure.

In the context of Arabic language learning, the use of AI remains an area with little empirical research, particularly at the elementary madrasah (Islamic elementary school) level. Most research focuses on the general use of digital media without exploring how digital ethics principles are applied to learning processes involving AI. Therefore, there is a research gap that needs to be filled with a systematic analysis of the practices of AI use in Arabic language learning. Experts say two ways to address the potentially negative effects are for schools to develop AI training and craft policies that put meaningful guardrails around its use (Vilcarino & Lauraine, 2025). Therefore, this study aims to in-depth examine the role and challenges of AI in Indonesian elementary education, identify key benefits and risks, examine a case study of AI implementation at MIN 2 Kota Malang, and formulate solutions and recommendations for the ethical implementation of AI in elementary schools.

In its application, AI poses significant ethical challenges. These challenges include the threat to student and teacher data privacy. AI requires the collection of personal data (e.g., grades, learning patterns, classroom behavior) to function effectively. This massive data processing can sometimes violate privacy if not strictly regulated to student and teacher data needs to be protected from breaches and misuse; failure to do so can undermine trust. Issues of data access (who has the right to access student data, how long it is stored) and consent policies are crucial. Education data protection regulations in Indonesia are still developing, so specific guidelines for AI in schools are needed.

Furthermore, a gap in access to technology (the digital divide) has emerged. Each region has different needs based on its demographic, economic, political, socio-cultural, and geographic conditions. This also applies to remote and less developed regions of Indonesia compared to other regions on a national scale (read: the 3T (disadvantaged, frontier, and outermost) regions. In Indonesia, areas experiencing similar problems are the Entikong Sanggau border in West Kalimantan and the small islands of the Riau Islands region. Poor access to transportation,

electricity, and internet connections make it difficult to equitably distribute quality education (Kementerian Sekretariat Negara, 2024). Many elementary schools in Indonesia, especially in remote areas, still lack adequate IT infrastructure and internet connections. Inadequate infrastructure affects most Indonesian educational institutions. If left unaddressed, this disparity will cause the implementation of AI to widen the achievement gap between rich and poor schools, urban and rural.

Another impact is the emergence of issues of equity and inclusivity. Teachers and parents worry that AI will change the role of educators and reduce human interaction in the classroom. The presence of AI can shift the role of teachers from being content providers to facilitators, requiring a change in attitude and role. Socially, society must be ready to accept the use of AI in a local context that maintains cultural values. The introduction of AI to students must be accompanied by the instilling of ethical values and digital literacy to ensure the technology remains controlled and humane. Otherwise, children may simply be encouraged to use applications without understanding their ethical implications.

The success of AI in elementary education requires a balance between the benefits of technology and the fulfillment of ethical stakeholders: student privacy and rights, teacher training, equitable access, and the sustainability of educational values. The following section will outline a case study of MIN 2 Kota Malang as an illustration of early practices in AI integration in elementary schools in Indonesia.

Amidst rapid innovation, ethics serves as a moral compass that ensures education remains centered on people with integrity (Benedicta, 2025). The role of teachers in the digital era is crucial. What distinguishes a human educator from a technological device or Artificial Intelligence (AI) is feeling. Feeling that is not manipulated by technology. A teacher possesses sympathy, empathy, compassion, and tolerance. The purpose of a teacher is not merely to transfer knowledge, but also to guide, direct, motivate, and evaluate a student's learning process (M.F.A Bima, 2022). Technology cannot replace teachers as educators, as personal interaction between students and teachers remains paramount to optimal learning (Direktorat SMP Kemendikdasmen, 2025).

The positive side of using AI, such as more interactive and tailored learning materials, can improve students' motivation and learning outcomes. However, ethical questions arise regarding student well-being. Dr. Nia stated that the digitalization of learning program is mandated by Presidential Instruction No. 7 of 2025, which aims to narrow the quality gap and improve literacy and numeracy (Eko, 2025). For example, excessive reliance on AI can diminish critical thinking and creativity if teachers rely solely on technology for teaching. Furthermore, the collection of large amounts of student data (e.g., daily learning records) raises concerns about continuous surveillance, which can make students feel stalked and invade their privacy. Furthermore, elementary school-aged children are not necessarily ready to understand how their data is being used. Without adequate ethical guidance, the implementation of AI could create the risk of students becoming mere data objects, rather than fully controlled subjects of learning. The use of AI technology can also provide feedback and support quickly to meet students' needs (Guru Inovatif, 2024).

On the one hand, AI helps teachers reduce administrative tasks, giving them more creative teaching space. Teachers also gain analytical insights to identify struggling students early. However, the presence of AI can also raise concerns. Some teachers may feel threatened by the change in their role (from learning center to facilitator), or lack confidence due to inadequate digital competency. There is also a risk of "deskilling" if teachers rely too heavily on technology to design materials without strengthening their own pedagogical skills. Socially, teachers need to be mentally and professionally prepared for this new role. Training in AI literacy and ethical use of technology is crucial so that teachers can balance the use of automated tools with a student-centered teaching approach.

AI in education poses ethical and social implications that cannot be ignored. Issues of student data privacy, algorithmic bias, and decreased human interaction are new challenges that must be addressed (Sabir & Srayeldine in Wahyudi et al., 2025). In AI-based learning, the pedagogical relationship between teacher and student can be replaced by interactions with automated systems

that fail to consider the emotional nuances and social context of students (Rivera-Novoa & Duarte, 2025:91). Systemically, the adoption of AI can expand opportunities for educational transformation for example, administratively efficient schools and dynamic curricula. However, without oversight, there is a risk of commercialization of education and dependence on technology companies. There are concerns about the entry of private companies providing AI platforms, which could prioritize profit over educational benefits. This could trigger the exploitation of student data for commercial gain if regulations are not stringent. From a socio-cultural perspective, the national education system needs to ensure that noble values (bhinneka harian (diversity), gotong royong (mutual cooperation), and national character) are not neglected in the digital era. Local initiatives such as MIN 2 Kota Malang, which combines AI with Islamic values, exemplify how technology can be integrated without abandoning cultural identity and values. However, ethical implications such as disparities in access must still be managed; AI could reinforce educational inequities.

This research employed a qualitative case study design. Participants included two Grade 5 Arabic teachers and students from two classes at MIN 2 Kota Malang. Data sources consist of classroom observations, interviews, and analysis of AI-generated instructional materials. Instruments involved observation sheets and ethical-compliance checklists. Data analysis followed thematic coding with triangulation through member checking and cross-validation of observation notes.

B. METHODS

This research employed a qualitative design with a case study approach to in-depth examine the implementation of artificial intelligence (AI) in Arabic language learning in fifth-grade students at MIN 2 Kota Malang. This approach was chosen because it allowed researchers to directly examine learning practices, including teacher-student interactions, the quality of AI-based learning media, and various digital ethics issues that emerged during the teaching and learning process. Data collection was conducted through participant observation during Arabic language learning sessions, in-depth interviews with subject teachers, and document review of AI-generated teaching modules and digital media such as Canva AI, AI-based coding games, Quizizz, and Wordwall. The research instruments included learning activity observation sheets, semi-structured interview guidelines, and a digital ethics checklist formulated based on UNESCO's Principles on the Ethics of Artificial Intelligence.

The research procedure began with obtaining official permission from the school, followed by exploratory interviews to understand teachers' perspectives on the use of AI. The next stage was classroom observation to document the use of AI in authentic contexts, followed by document analysis to assess the quality and appropriateness of the AI-generated materials. All data were analyzed using thematic analysis techniques through coding, categorization, and theme development processes linked to digital ethics frameworks such as the UNESCO principles, the SAMR model, the Technology Acceptance Model (TAM), and sociotechnical approaches. Through triangulation of research sources in the form of observations, interviews, and document searches, this study ensures the credibility of the findings and provides a comprehensive overview of the quality of AI integration, its pedagogical benefits, and the ethical challenges that arise in Arabic language learning at MIN 2 Kota Malang.

C. RESULT & DISCUSSION

MIN 2 Kota Malang is an example of a local initiative integrating AI into the teaching and learning process. In July 2024, MIN 2 Kota Malang held a workshop titled "Optimizing Learning Using Artificial Intelligence" for teachers and education staff (Kemenag Kota Malang, 2024). This activity aimed to improve teachers' competency in utilizing AI technology to transform the school into a "digital school" and make classroom learning more effective and enjoyable. During the two-day workshop, speakers demonstrated the use of popular applications such as Canva and Quizizz, which have embedded AI features, to create learning media. Participants were given tips on creating at least one AI-based learning media for class sessions. The principal of MIN 2 Kota Malang

even instructed them to optimize AI technology in every classroom learning process to "make classroom learning more effective and enjoyable."

MIN 2 Kota Malang continuously provides training and technology introductions to teachers both internally and at surrounding private elementary schools. In October 2025, the Madrasah Principal specifically invited a media lecturer from UIN Maulana Malik Ibrahim, Malang City, to introduce coding systems to create engaging and adaptive learning media. Introducing AI in elementary schools is not only about technology, but also about instilling critical thinking, logic, and collaboration. This cross-institutional support is expected to become a role model for AI implementation at the elementary education level in Indonesia. The case study of MIN 2 Kota Malang, along with other programs in Malang City, demonstrates that implementing AI in elementary schools requires collaboration between the government, schools, and the private sector, as well as an emphasis on ethical values from an early age.

However, programs like those at MIN 2 Kota Malang are still in their infancy. Challenges include the availability of devices (e.g., computers/tablets for students), internet connectivity, and continued use of the technology after training. For example, although MIN 2 Kota Malang teachers have been introduced to how to create AI-based learning media, their long-term effectiveness depends on the support of the school's infrastructure and policies. The MIN 2 Kota Malang case highlights that the first step in integrating AI is teacher empowerment (through training and practice), which is crucial before the overall infrastructure is fully in place.

The results and discussion section of this study presents an in-depth analysis of the use of artificial intelligence (AI)-based technology in Arabic language learning for fifth-grade students at MIN 2 Kota Malang. Based on observations conducted during several learning sessions, it was found that teachers and students utilize a variety of AI applications to support learning activities, particularly in developing learning media, conducting evaluations, and developing interactive educational games. The four most frequently used AI tools are Canva PowerPoint (AI-based), AI-based coding games in Canva, Quizizz, and Wordwall. Based on observational data, Canva PowerPoint was the most commonly used application, followed by AI coding games, then Quizizz, and finally Wordwall.

The use of AI in Arabic language learning has been shown to provide various benefits in terms of student engagement, media variety, and teacher time efficiency in preparing materials. The AI-based Canva PowerPoint, which ranked first, significantly assists teachers in producing visual presentations quickly, engagingly, and consistently. Canva's AI features make it easier for teachers to design slides, select illustrations, and create layouts that align with the learning theme. This improves the quality of learning visuals, resulting in more focused and enthusiastic students participating in learning activities. Furthermore, AI-based coding games on Canva also significantly contribute to student engagement. Interactive games created using simple coding commands allow students to engage in playful learning activities. This activity stimulates creativity, logical thinking, and problem-solving skills, while simultaneously enabling them to learn Arabic in a fun way. However, limitations arise when teachers fail to filter the images, text, and instructions generated by the AI. Several findings indicate that visual content is inappropriate for the cognitive developmental level of fifth-grade students, as well as material that is irrelevant to the Arabic language curriculum. This underscores the importance of the teacher's role as the primary controller in the technology integration process.

The use of Quizizz, which ranked third, serves a crucial role in providing real-time practice questions and formative evaluation. Teachers can quickly create quizzes, view results, and monitor student response analysis. However, field observations indicate that some students utilize external AI (e.g., ChatGPT or Google AI) to automatically answer Quizizz questions. This practice diminishes the authenticity of the learning process and makes it difficult for teachers to gauge students' authentic understanding. Furthermore, some AI-generated Arabic questions for use in Quizizz contain fairly basic grammar and grammar errors, suggesting that question validation mechanisms need to be improved before use in learning.

Wordwall, the least frequently used tool, still contributes to a variety of learning media, but its use is limited due to teachers' lack of training in modifying existing game templates. Some

teachers prefer Canva, perceived as more flexible and visually appealing. However, Wordwall still has potential when combined with simple vocabulary and sentence structure exercises in Arabic.

Key findings from the observations also highlight key issues related to digital ethics in AI-based learning. First, students' tendency to use AI to answer exercises or assessments threatens the integrity of the evaluation process. This behavior can hinder the development of students' authentic Arabic language skills and potentially create a dependency on AI. Second, the lack of accuracy of AI in producing Arabic text, particularly in terms of punctuation, structure, and vocabulary, has the potential to mislead students if not corrected by teachers. Third, the lack of filtering in AI coding game content results in the emergence of visual elements that are out of context or even contradict basic educational values.

From the perspective of the UNESCO AI Code of Ethics, several relevant ethical principles that need to be considered are transparency, accountability, inclusive justice, privacy and data protection, and the sustainable use of technology (UNESCO, 2021). In the context of Arabic language learning at MIN 2 Kota Malang, teachers need to ensure that the use of AI is carried out transparently, explaining to students how the technology works, its limitations, and potential errors in the content. Teachers must also be responsible for verifying AI-generated materials to ensure their accuracy, especially in aspects of the Arabic language that are highly sensitive to morphological and syntactic errors.

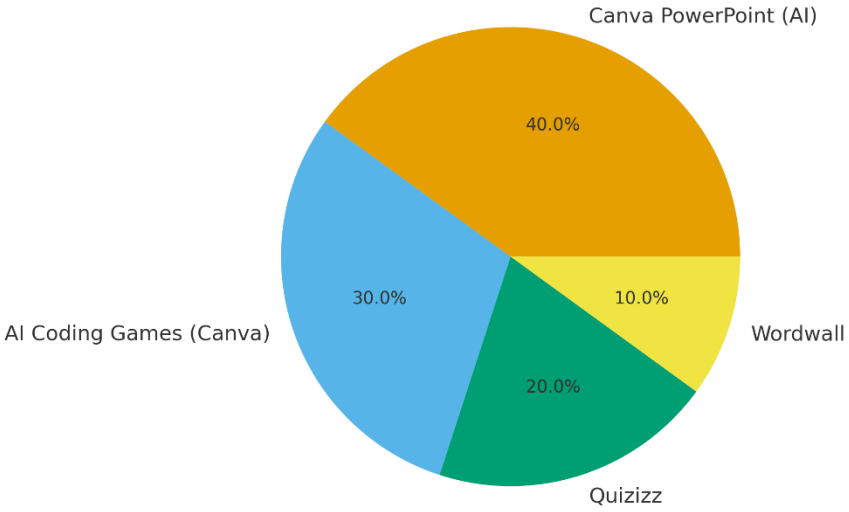

Diagram 1: Percentage of AI Use in Arabic Language Learning

UNESCO's principles of equity and inclusivity also emphasize that technology should not create learning inequalities. However, the reality on the ground shows that some students are more adept at using AI than others, creating a digital skills gap. Teachers must provide additional guidance for students who are struggling to ensure that learning remains inclusive and equitable.

Privacy principles are also crucial, given that many AI applications collect student data. Teachers must ensure that the use of Quizizz, Canva, and other applications adheres to data security procedures and does not disclose students' personal information without permission. This implementation requires clear school policies regarding the use of technology, especially cloud-based technology.

In the context of learning, AI can actually be a very helpful tool for Arabic language learning. However, without control, oversight, and ethical understanding, AI can actually hinder the educational process, especially if students use it as a shortcut to completing assignments. Teachers need to teach digital literacy and AI ethics from an early age so that students can use technology to learn, rather than avoid the learning process.

D. CONCLUSION

Artificial intelligence has significant potential to improve the quality of learning and administrative efficiency in primary education. Research and early implementation examples (such as at MIN 2 Kota Malang) demonstrate that AI can increase student engagement and ease the burden on teachers. However, these benefits must be balanced with an awareness of ethical challenges: student data privacy, algorithmic bias, and unequal access to technology are key issues that must be addressed. The impact analysis emphasized that AI must be applied while maintaining the role of teachers as educators and ensuring a humane and equitable learning experience for all students.

Based on the research findings, several key recommendations can be made, as follows:

1. Development of Digital Infrastructure and Access
   Funding incentives for schools can be sought so that every student has access to at least a computer/tablet and internet, provided by the school.
2. Strengthening Teacher Training and Digital Literacy
   Training programs, such as workshops at MIN 2, must be conducted continuously. Training should not only cover the use of AI tools (e.g., content creation with Canva AI), but also in-depth digital literacy and an understanding of technology ethics. Teachers must understand the principles of data privacy, algorithmic bias, and intellectual property rights to select appropriate tools and mitigate risks. Collaboration with universities that offer specialized education programs can provide educational support. Arabic language teachers should participate in specialized training on AI output validation. This training will help them assess the accuracy of AI-generated Arabic text and prevent language misconceptions.
3. A Curriculum That Instills AI-Based Ethics and Critical Thinking
   AI teaching must be accompanied by teaching ethical values, digital literacy, and critical thinking. The AI curriculum at MIN 2 Kota Malang needs to be designed in stages: students are first taught basic principles such as algorithmic logic, ethical use of technology, and the ability to sort digital information, before learning about technical AI applications. For example, before assigning assignments using ChatGPT, students must understand what AI is, its limitations, and how to use it. Schools should develop internal policies regarding the use of AI in learning, including limitations, usage procedures, and reporting mechanisms for problematic content. These policies should adhere to the principles of the UNESCO AI Code of Ethics to ensure safe, inclusive, and responsible use of AI.
4. Continuous Monitoring and Evaluation
   Schools can conduct surveys with students and teachers about their perceptions of the safety and effectiveness of AI. Learning outcome data before and after AI integration can be analyzed to determine whether gaps are widening or narrowing. An action research approach in schools, involving teachers as participatory researchers, can help adapt AI strategies to meet real-world needs. Teachers need to implement stricter oversight in the assessment process. For example, teachers can provide open-ended questions that assess thinking processes, not just final answers. Additionally, teachers can administer oral assessments as an alternative to more authentically measure Arabic language skills.

   Therefore, AI integration in elementary schools must be accompanied by strong policies, a digital literacy and ethics curriculum, and improved infrastructure. The involvement of the government, educators, parents, and technology providers is crucial in formulating shared guidelines. The results of this study underscore the need for a holistic approach. Advanced technology should not replace educational values, but rather strengthen them. With the right strategy, the ethical and socially responsible use of AI can support Indonesia's educational mission of developing an intelligent and characterful future generation. By implementing these recommendations, AI-based learning can be more effective, safe, and ethical in accordance with international guidelines and national curriculum requirements.

ACKNOWLEDGMENTS

The authors would like to express his appreciation and gratitude to Mr. Nanang Sukmawan Setiabudi, S.Pd., M.Pd.I., Head of MIN 2 Kota Malang, for his full support, research permit, and facilities provided, ensuring the smooth and successful data collection and implementation of the research.

REFERENCES

Eko. (2025). Pentingnya Etika, Keamanan Digital, dan Pendampingan Anak Dalam Penggunaan IFP Untuk Pembelajaran. https://schoolmedia.id/artikel/902/pentingnya-etika-keamanan-digital-dan-pendampingan-anak-dalam-penggunaan-ifp-untuk-pembelajaran

Hakim, Lukman. (2022). Peranan Kecerdasan Buatan (Artificial Intelligence) dalam Pendidikan. https://ppg.kemendikdasmen.go.id/news/peranan-kecerdasan-buatan-artificial-intelligence-dalam-pendidikan

Guru Inovatif. (2024). https://guruinovatif.id/artikel/manfaat-dan-cara-mengatasi-kesulitan-menggunakan-ai-bagi-tenaga-pendidik

Direktorat SMP Kemendikdasmen. (2025). Bijak menggunakan AI: Etika penggunaan AI. https://ditsmp.kemendikdasmen.go.id/ragam-informasi/article/bijak-menggunakan-ai-etika-penggunaan-ai

Kemenag Kota Malang. (2024). Tambah cerdas dengan kecerdasan buatan (AI). https://kemenag.malangkota.go.id/showNews?head=tambah-cerdas-dengan-kecerdasan-buatan-(ai)

Kementerian Sekretariat Negara. (2024). Pendidikan di wilayah terpencil: Tantangan pemerintah dalam pemerataan pendidikan di Indonesia. https://www.setneg.go.id/baca/index/pendidikan_di_wilayah_terpencil_tantangan_pemerintah_dalam_pemerataan_pendidikan_di_indonesia_1

Sakti, M. F. A Bima. (2022). Peran Guru yang Tak Tergantikan di Era Digitalisasi. https://ppg.kemendikdasmen.go.id/news/peran-guru-yang-tak-tergantikan-di-era-digitalisasi

Sa'odah et al. (2022). Learning Technology in Elementary School: Al-Ishlah: Jurnal Pendidikan 14(4). https://journal.staihubbulwathan.id/index.php/alishlah/article/view/1488/1329

UNESCO. (2021). *Recommendation on the Ethics of Artificial Intelligence*. UNESCO. https://www.unesco.org/en/artificial-intelligence/recommendation-ethics

Vilcarino, Jennifer & Lauraine Langreo. (2025). Rising Use of AI in Schools Comes With Big Downsides for Students. https://www.edweek.org/technology/rising-use-of-ai-in-schools-comes-with-big-downsides-for-students/2025/10

Wahyudi, et al. (2025). Analisis Dampak AI Dalam Pendidikan, 8(6). https://ejournal.cahayailmubangsa.institute/index.php/kohesi/article/view/2258/1975

Wijayanti, Benedicta Eka. (2025). Etika dan Penggunaan AI dalam Dunia Pendidikan: Menyiapkan Guru yang Bijak di Era Digital. https://bif-sby.telkomuniversity.ac.id/etika-dan-penggunaan-ai-dalam-dunia-pendidikan-menyiapkan-guru-yang-bijak-di-era-digital/