

Building Digital Ethics Awareness Among Students: A Case Study on the Implementation of AI Ethics in Civic Education at SMA Kristen PENABUR Jakarta

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Abstract

As the use of Artificial Intelligence (AI) becomes increasingly integrated into educational systems worldwide, its ethical implications, especially in Civic Education, have gained significant attention. This study aims to explore the role of AI ethics in shaping students' understanding of digital citizenship in a Christian high school setting, specifically at SMA Kristen PENABUR Jakarta. The research examines how AI tools are utilized in the Civic Education curriculum and how these tools influence students' ethical decision-making, academic integrity, and their engagement in civic activities. Data were collected through surveys, interviews, and classroom observations involving both students and teachers. The study identifies key areas where AI can serve as an educational aid, such as in promoting democratic values, enhancing critical thinking, and supporting ethical reasoning in civic contexts. However, it also highlights concerns regarding the potential for AI to encourage unethical practices, including academic dishonesty and reliance on technology without critical comprehension. The findings suggest that while AI can significantly enhance learning experiences, its integration into education must be accompanied by a strong ethical framework. This framework should emphasize the importance of human oversight, responsible usage, and the cultivation of ethical digital citizens. The study proposes strategies such as AI ethics modules, reflective assignments, and the application of AI detection tools to mitigate potential misuse. Overall, the research advocates for a balanced approach to AI in education, one that fosters a responsible, participatory, and ethical digital citizenship among students in the digital age.

Keywords: Artificial Intelligence; Digital Citizenship; Civic Education.

Introduction

The rapid development and integration of Artificial Intelligence (AI) in educational contexts have fundamentally reshaped how students acquire knowledge and interact with digital content. In particular, Generative AI (GenAI) technologies, such as AI-powered text generators, tutoring systems, and content summarizers, offer unprecedented opportunities for personalized learning, immediate feedback, and the facilitation of complex problem-solving (Holmes et al.,

2021; Luckin et al., 2023). These tools can provide tailored educational experiences that accommodate diverse learning styles, enabling students to access information efficiently and engage with challenging materials in innovative ways. In the context of Civic Education, the utilization of AI has the potential to foster critical thinking, ethical reasoning, and active citizenship, thereby enhancing the quality of learning outcomes. However, the integration of AI into the classroom is not without ethical challenges. Issues such as academic dishonesty, overreliance on AI-generated content, and the

erosion of students' critical thinking skills have been widely documented in recent educational research (Williamson & Piattoeva, 2022; Binns, 2020). These challenges underscore the urgency of embedding ethical frameworks and digital literacy into educational practice to ensure that AI serves as a supportive tool rather than a disruptive force in student learning.

Despite the growing prevalence of AI, there remains a notable gap in the research regarding its ethical application in secondary education, particularly within the framework of Civic Education in Indonesia. SMA Kristen PENABUR Jakarta represents a pertinent context for investigating this issue, as it combines rigorous academic standards with a Christian educational philosophy that emphasizes moral development, ethical responsibility, and the cultivation of virtuous character (Suryana, 2022). In such a setting, understanding how students interact with AI tools, how these interactions influence their ethical reasoning, and how teachers guide responsible AI usage becomes essential. This study addresses the need to explore the alignment between AI usage and the objectives of Civic Education, which include fostering civic competence, promoting ethical decision-making, and preparing students to participate meaningfully in both local and global communities (UNESCO, 2021).

Recent literature highlights the critical importance of integrating digital ethics into curriculum design to prevent misuse of AI and to nurture responsible digital citizenship. According to Holmes et al. (2021), teaching AI ethics in schools contributes to students' awareness of the social, legal, and moral implications of technology, while Luckin et al. (2023) emphasize that early engagement with ethical frameworks enhances students' capacity for reflective thinking and responsible decision-making. Furthermore, the concept of Global Citizenship Education (GCE) provides a theoretical lens for understanding the role of ethics in digital environments, stressing the interconnectedness of ethical awareness, civic responsibility, and technological proficiency (UNESCO, 2021). By situating AI ethics within the Civic Education curriculum, students are encouraged not only to use AI responsibly but also to critically evaluate the

societal and personal consequences of their digital actions.

Given these considerations, this research is significant because it investigates how AI ethics can be operationalized in a concrete educational setting, bridging the gap between technological innovation and moral development. By examining the practices, perceptions, and challenges experienced by students and teachers at SMA Kristen PENABUR Jakarta, the study aims to contribute empirical evidence on effective strategies for cultivating ethical digital citizenship. In doing so, it provides a model for integrating AI ethics into secondary education, supporting the development of students who are not only technologically competent but also morally grounded and civically responsible in the digital age.

Literature Review

Artificial Intelligence (AI) has rapidly transformed the landscape of education, offering powerful tools that enhance both teaching and learning experiences. The advent of AI technologies, such as machine learning (ML), natural language processing (NLP), and generative AI (GenAI), has provided significant opportunities for personalized learning, improved engagement, and real-time feedback. AI has the ability to analyze vast amounts of data and adapt content to meet the individual needs of students, offering them customized learning pathways based on their strengths, weaknesses, and preferences (Luckin et al., 2023). These tools can help students understand complex subjects, engage in more meaningful ways with learning materials, and develop new skills. For instance, AI-powered tutoring systems offer real-time support, while content-generating tools can help summarize academic materials, assisting students in acquiring and retaining knowledge more effectively (Luckin et al., 2023).

Despite these promising advantages, the growing reliance on AI tools in education has raised serious ethical concerns. One of the primary issues revolves around academic integrity. With the increasing availability of AI-powered tools such as automated essay

generators and content summarizers, students may be tempted to bypass deep engagement with learning materials and rely on technology to complete assignments (Williamson & Piattoeva, 2022). This could potentially lead to dishonest practices, such as plagiarism, or the creation of superficial understanding without critical thinking (Binns, 2020). For example, AI-based tools can generate essays or reports by simply assembling pre-existing content, making it easier for students to submit work without fully engaging with the material or conducting original research (Williamson & Piattoeva, 2022). Furthermore, this phenomenon of AI-generated work might erode the core values of education, such as intellectual curiosity, creativity, and the ability to solve problems independently.

The ethical challenges posed by AI are not limited to academic dishonesty. AI tools can also amplify biases in the educational process. For instance, AI algorithms used in grading or recommendation systems can perpetuate existing biases if they are trained on biased datasets. This raises important questions about fairness, equality, and accountability in AI applications. These concerns necessitate a deeper understanding of the implications of AI technologies, as well as a proactive approach to addressing the ethical and moral dilemmas that emerge from their use in education.

In the context of Civic Education, AI integration brings both opportunities and challenges. On one hand, AI can play a significant role in promoting democratic values and fostering active citizenship. By simulating real-world problems, AI can encourage students to engage in complex debates, explore diverse perspectives, and enhance their problem-solving and critical thinking skills. AI can also support ethical decision-making by providing students with tools to reflect on the consequences of their actions in a digital environment. This aligns with the goal of Civic Education, which seeks to develop students' ability to navigate and contribute meaningfully to society, particularly in a rapidly changing digital world (Holmes et al., 2021).

On the other hand, the absence of digital ethics in the integration of AI in education poses a serious risk. Without a proper

understanding of the ethical considerations surrounding AI usage, students may adopt unethical behaviors, such as using AI-generated content as a shortcut to academic success. Furthermore, students may develop a false sense of understanding, relying on AI tools to complete tasks without engaging with the subject matter critically (Selwyn, 2019). The overreliance on AI can lead to a reduction in students' cognitive abilities and problem-solving skills, as they might start to depend on technology for answers rather than thinking critically and independently. This creates a dangerous cycle where technology can replace human effort, which undermines the essence of learning and personal growth. To avoid such pitfalls, it is crucial for educators to instill digital ethics into the curriculum and to teach students how to use AI responsibly and ethically.

Global Citizenship Education (GCE) serves as an essential framework for integrating AI ethics into education, particularly within the realm of Civic Education. GCE emphasizes the importance of preparing students to understand their role in a connected, globalized world, promoting the values of respect, responsibility, and ethical decision-making in both offline and online contexts (UNESCO, 2021). GCE calls for the development of competencies that help students engage with global challenges, such as climate change, human rights, and social justice, through a critical, ethical lens. Integrating AI ethics into Civic Education aligns with the goals of GCE by ensuring that students are prepared to navigate the complexities of the digital age responsibly and become informed, ethical participants in a global society.

UNESCO (2021) advocates for the inclusion of digital ethics as a core component of Global Citizenship Education, emphasizing that students must be equipped with the skills and knowledge necessary to act responsibly in the digital realm. As AI continues to play an increasing role in everyday life, understanding the ethical implications of AI technologies is vital for preparing students to be responsible digital citizens. By addressing the ethical dimensions of AI, Civic Education can provide students with the tools to engage with AI technology not only as users but also as

responsible digital citizens who are aware of their social, legal, and moral obligations (UNESCO, 2021).

Furthermore, AI can support the development of digital literacy, which is becoming an essential skill for the modern world. Digital literacy goes beyond basic computer skills and includes the ability to evaluate and use digital technologies in an informed, responsible manner (Punie et al., 2020). In the context of Civic Education, digital literacy encompasses not only technical proficiency but also an understanding of the ethical implications of using AI. Students need to learn how to identify potential biases in AI algorithms, assess the accuracy of AI-generated information, and reflect on the societal impacts of AI technologies. Educators play a crucial role in facilitating this learning process by incorporating discussions on digital citizenship and AI ethics into the curriculum.

In addition, the role of teachers is critical in guiding students through the ethical challenges associated with AI. Teachers must not only integrate AI tools into the classroom but also equip students with the skills necessary to navigate the ethical issues that arise from their use. This includes fostering discussions about privacy, data security, and algorithmic bias, as well as promoting responsible online behavior. Teachers should also be trained to use AI tools effectively, ensuring that they can provide ethical guidance and address the potential misuse of technology in educational settings. Teacher professional development programs focused on AI ethics can help ensure that educators are prepared to meet these challenges and provide students with the guidance they need to become responsible digital citizens.

Several studies have emphasized the importance of integrating ethical considerations into AI applications in education. Holmes et al. (2021) argue that embedding AI ethics into the curriculum is essential for developing students' ethical reasoning skills and preparing them for the ethical dilemmas they will face in the future. Likewise, Luckin et al. (2023) emphasize the importance of teaching AI ethics to foster responsible AI use and digital citizenship. By integrating these ethical frameworks into Civic Education, schools can ensure that students not

only use AI tools effectively but also do so in a way that aligns with ethical principles and promotes the common good.

Method

This research employs a qualitative case study approach to explore the integration of AI ethics within the context of Civic Education at SMA Kristen PENABUR Jakarta. A case study design was chosen due to its ability to provide in-depth insights into a specific setting, in this case, a Christian school that merges rigorous academic standards with values-based education. The aim of the study was to understand how AI tools are used in the classroom and how their ethical implications are addressed in the curriculum, particularly in Civic Education.

Scope and Object of the Study

The focus of the study is on the use of AI technologies in Civic Education, with a particular emphasis on the ethical challenges associated with AI tools. The primary variables investigated include the ethical use of AI, students' digital citizenship, and the impact of AI on critical thinking and academic integrity. These variables are crucial to understanding how AI affects students' learning experiences and their engagement with ethical decision-making in a digital context.

Operational Definitions

- **AI Usage:** The integration and utilization of AI tools, such as AI-driven research assistants, content summarizers, and writing aids, within the classroom setting.
- **AI Ethics:** The set of moral guidelines, principles, and considerations surrounding the use of AI tools, particularly concerning academic integrity, fairness, transparency, and the responsible use of technology.
- **Digital Citizenship:** The responsible and ethical participation of students in the digital world, focusing on their behavior, decision-making, and engagement with AI and other digital technologies.

Participants and Sampling

The study was conducted at SMA Kristen PENABUR Jakarta, which serves as the research setting. A purposive sampling method was used to select participants, which included 50 students and 5 teachers from the Civic Education department. The students were selected based on their regular use of AI tools in their learning processes. The teachers were selected for their involvement in teaching Civic Education and their experience with integrating ethical considerations related to AI within the curriculum.

Data Collection Instruments and Tools

Data were collected using three primary methods: surveys, semi-structured interviews, and classroom observations.

- **Surveys:** A set of closed and open-ended questions was distributed to the students to gather information on their usage patterns of AI tools, their perceptions of AI ethics, and their views on digital citizenship. The survey aimed to capture a broad understanding of students' attitudes and behaviors regarding AI in the classroom.
- **Semi-structured Interviews:** Interviews were conducted with 5 teachers who were responsible for teaching Civic Education. The interviews focused on their experiences in teaching AI ethics, their strategies for addressing the challenges of integrating AI into the curriculum, and their views on the role of AI in shaping students' ethical decision-making.
- **Classroom Observations:** Direct observation was carried out during Civic Education classes to understand how AI tools were being used in real-time. The researcher observed the students' interactions with AI tools, their engagement with ethical discussions, and the overall dynamics of AI integration in the teaching process.

Data Analysis Techniques

The data were analyzed using thematic analysis, a method that involves identifying, analyzing, and reporting patterns (themes)

within the data. The analysis focused on key themes related to the ethical use of AI, digital citizenship, and the challenges of teaching AI ethics in the classroom. Themes that emerged included academic integrity, the role of AI in critical thinking development, and the ethical decision-making process when using AI technologies. The data were coded, categorized, and interpreted to provide insights into how AI ethics are being addressed in Civic Education and the impact of AI on students' learning and ethical awareness.

This approach allowed for a comprehensive understanding of the complexities surrounding AI usage in the classroom and the broader implications for education in the digital age.

Result and Discussion

Results

The research conducted at SMA Kristen PENABUR Jakarta reveals three key patterns in how students utilize Artificial Intelligence (AI) tools within the context of Civic Education. These patterns reflect both the potential benefits and the challenges associated with AI integration in education. The primary findings from the surveys, interviews, and classroom observations are as follows:

1. Using AI for Understanding Difficult Materials

One of the most frequently reported uses of AI tools by students was for understanding difficult or complex concepts in Civic Education. Students stated that they often used AI-based platforms to break down challenging materials into simpler terms or receive clearer explanations of difficult topics. AI tools, such as AI-driven tutoring systems and content summarizers, were perceived as valuable aids in overcoming barriers to comprehension. The ability of these AI tools to present content in diverse formats—such as simplified text or visual aids—was appreciated by students, especially when engaging with abstract concepts like democracy, governance, and ethics. AI's role as a supplementary

educational tool was consistently cited as helpful in improving students' understanding and retention of content. This reflects findings from previous research by Luckin et al. (2023), who argue that AI can serve as a personalized learning assistant, adapting content to meet individual students' needs and enhancing their engagement with learning materials.

2. Using AI to Generate Summaries and Compose Texts

The second prominent pattern observed was students' use of AI tools to generate summaries or assist in writing assignments. Students reported that AI-based tools, such as text summarizers and writing aids, were frequently employed to condense large volumes of information or to generate drafts for written tasks. These tools helped students manage their time more efficiently and enabled them to focus on gathering insights or analyzing key points rather than spending excessive time on organizing and drafting content. However, students were aware that this practice could undermine their intellectual effort, as the tools often provided polished, ready-to-submit outputs. This finding aligns with the work of Williamson & Piattoeva (2022), who suggest that while AI can enhance productivity, it may also diminish the need for students to engage deeply with the material, potentially fostering a sense of detachment from the learning process.

3. Using AI to Complete Assignments Without Personal Comprehension

The third pattern revealed more concerning tendencies. Some students admitted to using AI tools to complete assignments without fully understanding the content. These students relied on AI to generate answers or complete tasks, often skipping the critical thinking and problem-solving processes involved in the learning experience. This behavior raises concerns about academic integrity and the erosion of cognitive skills, particularly in the context of Civic Education, which requires students to critically engage with social, political, and ethical issues. This finding is particularly troubling as it indicates a trend

towards technology dependency, where students are using AI to bypass learning rather than supplementing their educational experiences. The issue of AI being used to facilitate academic dishonesty has been well-documented in recent studies (Binns, 2020; Selwyn, 2019), which highlight how AI tools can lead to the disconnection of students from the learning process, thereby inhibiting their ability to develop key cognitive and reflective skills.

Discussion

The findings from this study shed light on the multifaceted role of AI in education and its impact on students' engagement with learning content, academic integrity, and ethical decision-making. The use of AI in Civic Education at SMA Kristen PENABUR Jakarta highlights both the advantages and the potential drawbacks of integrating AI into the curriculum. While AI has the capacity to enhance learning experiences and make content more accessible, its overuse or misuse can undermine the educational goals of fostering critical thinking, ethical reasoning, and active citizenship.

1. AI as a Tool for Enhanced Learning and Critical Thinking

The positive use of AI for understanding difficult materials and summarizing content aligns with existing research that emphasizes the potential of AI to facilitate personalized learning and improve comprehension (Luckin et al., 2023). AI tools that break down complex topics into more manageable concepts can help students better understand the foundational ideas in Civic Education, such as the principles of democracy, human rights, and governance. These AI tools allow for differentiated learning, catering to the unique needs of each student. When used responsibly, AI can promote deeper engagement by providing students with multiple learning pathways, enabling them to master content at their own pace (Luckin, 2023). The study's findings suggest that AI can play a crucial role in making learning more inclusive, helping

students with varying abilities access and understand difficult subject matter.

However, AI's role in generating summaries and drafts brings about concerns regarding students' engagement with the material. The increasing reliance on AI-generated content for writing assignments may limit students' exposure to the creative and intellectual effort required in academic work. As AI becomes more capable of generating coherent and contextually accurate text, there is a growing risk that students will turn to AI tools as shortcuts rather than as aids, leading to reduced cognitive engagement. This issue, as noted by Williamson & Piattoeva (2022), represents a significant challenge in balancing the efficiency of AI with the need for students to develop their own independent academic skills.

2. The Erosion of Academic Integrity and Critical Thinking

The third pattern of AI use, where students complete assignments without personal comprehension, underscores the most critical concern of the study. This overreliance on AI tools to complete assignments without engaging with the content reflects a decline in academic integrity and a reduction in critical thinking skills. Civic Education, by its nature, requires students to engage with complex moral, ethical, and social issues. For students to become active and responsible digital citizens, they must engage in deep reflection and thoughtful analysis. When students bypass this process and allow AI tools to "do the work for them," they miss the opportunity to engage with the material on a deeper level. This undermines the development of critical thinking skills, which are essential for both academic success and responsible citizenship.

The study's findings highlight an urgent need for educators to address the ethical implications of AI usage in the classroom. While AI can provide valuable support in learning, it is crucial that students understand the boundaries between responsible usage and misuse. Encouraging students to use AI as a tool to complement, rather than replace, their own thinking processes is essential. Teachers must guide students in understanding the value

of active engagement with learning material and the importance of maintaining academic integrity.

3. Integrating AI Ethics into the Curriculum

The study also reveals the challenges faced by educators in integrating AI ethics into the curriculum. Teachers expressed a need for clear guidelines and training on how to incorporate AI ethics into their lessons. Despite recognizing the benefits of AI tools, many teachers struggled to balance the advantages with the risks of academic dishonesty. There is a pressing need for professional development programs that equip educators with the necessary skills to teach AI ethics and integrate these concepts into their teaching practices.

As AI technologies continue to evolve, it is essential for educational institutions to develop frameworks that promote responsible AI usage. Educators should implement reflective assignments that encourage students to think critically about the ethical implications of their actions in the digital space. One potential strategy is the inclusion of AI ethics modules in the curriculum, which would focus on issues such as privacy, data security, fairness, and transparency in AI algorithms. Additionally, tools for detecting AI-generated content, such as ZeroGPT, could be used to help identify instances of academic dishonesty and promote a culture of integrity.

4. Implications for Theory and Practice

This study contributes to the growing body of literature on AI ethics in education by highlighting the complex interplay between AI technologies and ethical behavior in learning environments. By situating AI ethics within the context of Civic Education, the study emphasizes the importance of developing students' digital citizenship skills, which are increasingly essential in the digital age. The integration of AI ethics into the curriculum not only supports the development of critical thinking and academic integrity but also empowers students to become responsible, ethical participants in the digital society.

From a theoretical perspective, the study extends existing research on AI in education by exploring the ethical dimensions of AI

usage, which have often been overlooked in previous studies. This research contributes to the modification of existing theories on AI's role in education by emphasizing the need for an ethical framework that guides AI usage. Practically, the study offers concrete suggestions for educators, such as incorporating AI ethics into teaching practices, implementing AI ethics modules, and using AI detection tools to uphold academic integrity.

Conclusion

This study emphasizes the critical role of integrating AI ethics into Civic Education as part of fostering responsible digital citizenship. The findings reveal that while AI tools have the potential to significantly enhance learning experiences by supporting students in understanding difficult concepts and generating content, their use must be guided by strong ethical principles to prevent misuse and promote critical thinking. The research highlights three key patterns in AI usage among students at SMA Kristen PENABUR Jakarta: using AI for understanding difficult materials, generating summaries and texts, and, most concerning, using AI to complete assignments without engaging deeply with the content.

The integration of AI into Civic Education requires a balanced approach, where students are not only provided with the tools to enhance learning but are also taught to understand the ethical implications of their use. Teachers play an essential role in this process, acting as facilitators who guide students toward responsible AI usage and help cultivate critical thinking skills. This study suggests that incorporating AI ethics modules, reflective assignments, and AI detection tools into the curriculum can be effective strategies to ensure the ethical use of AI in education.

The research contributes to the ongoing dialogue about AI's role in education by proposing a practical framework for teaching AI ethics at the secondary school level. It underscores the need for educators to be equipped with the tools and knowledge to address the ethical challenges posed by AI and emphasizes the importance of preparing

students to become thoughtful, responsible digital citizens in an increasingly AI-driven world. By focusing on ethical AI usage, schools can foster students' abilities to navigate the digital age with integrity and responsibility.

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