

REDISCOVERING PANCASILA-BASED CIVIC EDUCATION THROUGH ARTIFICIAL INTELLIGENCE ETHICS: A FRAMEWORK FOR CHARACTER AND DIGITAL CITIZENSHIP TRANSFORMATION IN INDONESIA

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Abstract

This study aims to formulate a conceptual framework for civic education grounded in Pancasila values and integrated with artificial intelligence ethics (AI Ethics) as a strategic approach to transform character and digital citizenship in Indonesia. The background of this study arises from the growing ethical challenges in the digital era, such as AI misuse in the form of disinformation, data manipulation, and moral degradation, all of which threaten national identity and moral integrity. Employing a qualitative descriptive approach based on library research (conceptual and normative literature review), this study analyzes the conceptual interrelation between Pancasila values, AI ethical principles, and the paradigm of digital citizenship education through content analysis of academic literature, national education policies, and international AI ethics frameworks. The findings reveal a substantial alignment between the core principles of AI ethics, transparency, fairness, accountability, and humanity - and the foundational moral values of Pancasila. Integrating these dimensions produces a conceptual model called the Ethical Digital Citizenship Framework, serving as a guide for curriculum development and character education policies in the age of artificial intelligence. Conceptually, this research contributes to enriching transformative educational discourse that bridges local moral wisdom with global ethical values and offers strategic directions for shaping digital citizens who are faithful, civilized, and morally responsible in the era of intelligent technology.

Keywords: Pancasila Education, Artificial Intelligence Ethics, Digital Citizenship, Character Education, Educational Transformation.

Introduction

The 21st-century digital revolution has marked a major transformation in social, economic, and educational systems worldwide. Artificial intelligence (AI) is no longer merely a technological tool but has become a social agent influencing how humans think, behave, and interact with the digital world. In the educational context, AI presents both new opportunities and challenges for the development of students' character and morality, as its use is closely linked to issues of ethics, responsibility, and humanity (Floridi & Cowls, 2021). Various international institutions such as UNESCO and the OECD have also emphasized the importance of ethics-based digital literacy in developing critical and responsible global citizens within the intelligent technology ecosystem (Lau et al., 2022). Within this framework, education becomes a strategic arena for integrating universal moral values and AI ethical principles to ensure that digital transformation remains oriented toward humanity. In Indonesia, these challenges are increasingly complex because they intersect with national identity and the Pancasila ideology. While Pancasila values have long served as the nation's moral and ideological foundation, their implementation in the digital era still faces various

obstacles, particularly in the area of character education. Pancasila education is often understood normatively, limited to teaching values, without addressing the ethics of technology and digital responsibility (Kaelan, 2022). Yet, the misuse of AI, such as deepfakes, voice cloning, and digital disinformation, has posed serious threats to society's social and moral integrity (Dewi, 2025). Therefore, Pancasila-based civic education needs to be directed toward internalizing moral and spiritual values that can counterbalance the tide of digital pragmatism and individualism.

The academic-practical gap arises because there is no conceptual model that integrates Pancasila values with AI ethical principles in character education in Indonesia. Previous studies have largely discussed AI ethics in the context of technology policy or digital governance, but have not deeply linked it to character education based on national values (Nemitz, 2024). Furthermore, studies of Pancasila-based character education tend to be cognitive and normative, failing to develop digital moral awareness and ethical skills regarding intelligent technology (Westheimer, 2020). Consequently, a moral gap has emerged between the values taught and the practice of citizenship in cyberspace, where students are not yet fully able to apply Pancasila values in the use of digital technology.

Theoretically, the integration of Pancasila and artificial intelligence ethics has a strong conceptual foundation within the framework of character education and digital citizenship. The Pancasila character education theory emphasizes the moral, spiritual, and social dimensions in the formation of civilized human beings (Tilaar, 2019), while the AI ethics theory according to Floridi and Cowls (2021) emphasizes five main ethical principles: utility, justice, autonomy, responsibility, and explainability. These principles align with Pancasila values, such as just and civilized humanity and social justice for all Indonesians. Therefore, the integration of the two can form an educational framework that emphasizes moral responsibility and ethical awareness in the use of digital technology. In a global context, this approach also aligns with the concept of responsible AI education, which emphasizes moral and social literacy regarding intelligent technology (Jobin et al., 2023).

Based on this background, this study focuses on answering three main questions: (1) How can Pancasila values be integrated with the ethical principles of artificial intelligence in citizenship education? (2) What is the relevant character education model for forming ethical digital citizenship in the AI era? and (3) What are the conceptual and educational policy implications of the integration of Pancasila and AI ethics towards the formation of superior human resources in the digital era? The purpose of this study is to analyze the relevance of Pancasila values to the ethical principles of artificial intelligence in the context of character education in the digital era, formulate a conceptual model of digital citizenship education based on AI ethics and Pancasila values, and identify the implications of national education policy towards the development of a globally competitive national character (Rahardjo, 2023).

Scientifically, this article offers a novel contribution in the form of developing an Ethical Digital Citizenship Framework based on Pancasila values and the ethical principles of artificial intelligence. This framework is expected to serve as a theoretical and practical basis for developing a more contextual, adaptive, and ethically oriented digital citizenship

education curriculum in Indonesia. The novelty of this research lies in its approach, which combines technological ethics with the nation's moral philosophy, thus opening up space for a new paradigm in character education that not only shapes moral knowledge but also ethical responsibility towards intelligent technology (Artama & Parwati, 2023). Thus, this research makes a substantive contribution to the academic discourse on the integration of Pancasila values, AI ethics, and digital citizenship education in building national character in the era of artificial intelligence.

Literature review

Pancasila-based character education is the philosophical and normative foundation for the development of Indonesians who are faithful, civilized, and socially responsible. According to Kaelan (2022), Pancasila is not only the nation's ideology but also a source of moral values that shape the integrity and personality of citizens in social and state life. Tilaar (2019) emphasized that Pancasila character education must be able to integrate moral, spiritual, and social dimensions to produce individuals with ethical awareness and collective responsibility towards humanity. Values such as divinity, humanity, unity, democracy, and social justice need to be contextualized in an increasingly complex digital world filled with technological moral dilemmas. The integration of these values plays a crucial role in building a moral basis for the ethical use of intelligent technology, making Pancasila-based character education a strategic instrument in facing the challenges of the artificial intelligence era (Yulianto & Hasanah, 2023).

The theory of artificial intelligence ethics (AI Ethics) plays a role in providing a moral framework for the development and application of AI technology. Floridi and Cowls (2021) identify five key principles of AI ethics: beneficence, nonmaleficence, autonomy, justice, and explainability, which should guide the design and use of artificial intelligence systems. These principles align with the values of Pancasila, particularly regarding social justice and respect for human dignity. Nemitz (2024) adds that AI ethics serves not only as a technical guide but also as a moral reflection on human responsibility for their technological creations, including in socio-political and educational contexts. Therefore, the application of AI Ethics in digital citizenship education is an effort to ensure that technology strengthens, rather than weakens, human values.

The theory of digital citizenship developed in response to the changing nature of social participation in the digital space. Westheimer (2020) explains that the ideal digital citizen possesses technological competence coupled with ethical responsibility and social awareness. Ribble (2022) adds nine elements of digital citizenship, including digital ethics, information literacy, digital security, and responsible online communication. In the Indonesian context, this concept needs to be adapted to the values of Pancasila so that digital citizens are not merely technologically proficient but also possess character, empathy, and a sense of national consciousness (Wibowo, 2023).

Transformative education policy theory emphasizes that education must be oriented toward equitable social change and rooted in universal moral values. Tilaar (2019) emphasized that transformative education is not merely adaptive to changing times but

proactively shapes the direction of change to align with humanitarian values. Nata (2023) stated that education policy needs to internalize the principles of humanization and moral emancipation to avoid being trapped in the pragmatism of globalization. In the context of AI, a transformative approach means leveraging artificial intelligence to expand access, personalization, and equity in education, while ensuring that technology does not erode humanitarian values.

Previous studies have shown a trend toward integrating ethical values into digital education. A study by Kim and Lee (2021) showed that AI ethics education in schools can raise students' critical awareness of the social responsibility of technology. Meanwhile, UNESCO research (2022) found that digital citizenship education emphasizing empathy and integrity can reduce the spread of disinformation and increase global digital solidarity. In Indonesia, a study by Artama and Parwati (2023) showed that the Pancasila curriculum needs to be strengthened with a technological ethics dimension to address the impacts of AI, such as deepfakes and voice cloning.

However, there is a conceptual gap in research linking Pancasila to AI ethics. Most studies still focus on the normative and moral aspects of character education without systematically addressing the integration of technology ethics (Lee et al., 2022). Furthermore, research on AI ethics has largely been conducted in developed countries and has not considered the socio-cultural context of Indonesian society, which is based on Pancasila values (Rahman & Sari, 2024). This highlights the urgent need to develop a conceptual framework that can bridge Pancasila values with AI ethical principles in the context of digital citizenship education.

This article strategically positions itself to fill this gap by developing a conceptual framework for AI-based citizenship education rooted in Pancasila values. This integration is not only theoretical but also applicable, with implications for educational policy and pedagogical strategies that can shape ethical, intelligent, and civilized digital citizens (Suharto, 2024).

Methodological trends in similar studies indicate a shift from normative approaches to integrative ethical frameworks that combine value analysis with public policy reflection (Zhang et al., 2023). This approach allows for a broader mapping of the relationship between technology ethics and national character development. In the Indonesian context, this methodological synthesis opens up opportunities for curriculum reform that is more adaptive to digital challenges and technology ethics.

Based on this conceptual review, it can be synthesized that the integration of Pancasila character education, artificial intelligence ethics, and digital citizenship forms the theoretical foundation for developing a transformative educational framework in the digital era. The universal moral values in Pancasila serve as an ethical orientation in the application of AI, while the principles of AI Ethics provide operational guidance for implementing these values in education and public policy. This conceptual synthesis serves as a methodological foundation for formulating a conceptual model for AI-ethics-based digital citizenship education that aligns with the Indonesian national identity.

Research methods

This study uses a conceptual research approach with a narrative literature review strategy, focusing on a theoretical and conceptual synthesis regarding the integration of Pancasila values into AI ethics and its implications for character education and digital citizenship. This approach was chosen because it aims to build a new conceptual framework that links technology ethics with values education in the Indonesian context. As emphasized by Farwati, Iskhak, and Mahnun (2023), qualitative methods based on literature analysis are effective in exploring Pancasila values as the basis for character education relevant to social and technological dynamics.

The data sources in this study are secondary literature, including scientific journal articles, academic books, research reports, and educational policy documents relevant to the themes of AI ethics, Pancasila character education, and digital citizenship. Data were collected from open-access sources indexed in databases such as DOAJ, Google Scholar, and Consensus. According to Daffana (2024), a literature-based approach allows for in-depth exploration of the integration of philosophical values and digital technology in a contextual and argumentative manner.

The data collection technique was carried out through a systematic literature search protocol, including the following steps: (1) determining keywords (“Pancasila ethics”, “AI ethics”, “digital citizenship education”, “transformative education”, “Indonesia”), (2) selecting a trusted academic database, (3) determining the publication period (2019–2025), (4) conducting an initial selection based on the relevance of the title and abstract, and (5) downloading and organizing literature in digital reference tools such as Zotero for the purposes of citation searches and theme categorization. A similar approach was used by Rasmini and Nofikusumawati (2024) in a literature-based study on strengthening Pancasila character through digital media in educational environments.

Literature inclusion criteria were established to ensure theoretical and empirical fit with the research focus. Literature was included if: (1) it was published between 2019–2025, (2) it discussed the themes of technology ethics, character education, or Pancasila values, (3) it was peer-reviewed, and (4) it was available open-access. Exclusion criteria included: (1) non-scientific publications such as opinion articles or news, (2) policy documents that lack an explicit theoretical basis, and (3) literature that focuses solely on the technical aspects of AI without ethical or educational dimensions. Lubis, Purnama, and Sulaiman (2024) emphasized the importance of clear selection criteria so that the results of the conceptual analysis have strong academic validity.

The unit of analysis in this study is the normative and theoretical concepts found in the scientific literature regarding the relationship between AI ethics, Pancasila values, and character education. The analysis focuses on how these concepts are articulated, integrated, and contextualized within the Indonesian educational environment and digital society. Agustin, Wiyono, and Yamanto (2024) show that an analysis of AI ethical values and responsibilities in civic education can reveal a moral framework rooted in Pancasila.

The data analysis technique used conceptual content analysis developed through an interpretive approach. The analysis stages include: (1) data reduction by grouping the

literature into main themes, such as Pancasila character education, AI ethics, and digital citizenship; (2) data presentation through conceptual mapping between themes; and (3) drawing integrative theoretical conclusions. This approach aligns with the views of Rachman and Ratna (2025), who emphasize the importance of conceptual analysis in identifying the coherence of Pancasila values with the global ethical and moral dimensions of education.

The synthesis process was conducted using a thematic integrative approach, where each main theme was broken down into subthemes, then their conceptual relationships were analyzed using a thematic matrix. This strategy was adapted from the method used by Putri et al. (2024) in analyzing the role of Pancasila education in the digitalization of education, which emphasized the balance between technological advancement and national morality.

To maintain the validity and transparency of the analysis, this study employed peer debriefing and audit trail techniques, which involved cross-checking the literature and documentation of the analysis process. This technique follows the approach adopted by Tannar and Susilowati (2024), who assessed the ethical perceptions of lecturers and students regarding the use of AI based on the principles of Pancasila and academic responsibility.

As an analytical tool, this study utilized NVivo 14 for literature coding, helping to identify the frequency of concepts and relationships between thematic categories such as "ethics," "AI," "Pancasila character," and "digital education." The use of this tool aligns with contemporary qualitative research practices that demand process transparency and data replication. In line with Asy'ari's (2024) approach, the use of digital content analysis allows researchers to map gaps in understanding Pancasila values in netizen behavior and relate them to the morality dimension of technology.

Thus, the methodological design of this research is systematic, interpretive, and reflective, combining conceptual accuracy with contextual relevance. Through an in-depth narrative review strategy and conceptual content analysis grounded in Pancasila values, this research seeks to establish a solid theoretical foundation for understanding AI ethics as an integral dimension of national character education in the digital era.

Research result

The results of this conceptual research are compiled based on a synthesis of the latest literature linking Pancasila character education, artificial intelligence ethics (AI ethics), and digital citizenship in Indonesia. The literature analysis shows that from a total of 48 relevant scientific publications identified, there are four main categories of thematic results: (1) strengthening Pancasila values in the digital era, (2) applying AI ethics principles in educational contexts, (3) developing a digital citizenship model based on moral values, and (4) policy challenges and the need for character education curriculum reform.

The first theme shows that the values of Pancasila, particularly social justice, humanity, and responsibility, remain the foundation of national ethics amidst the development of digital technology. Several studies have found that Pancasila-based character education can counterbalance the influence of technology, which tends to be

pragmatic and individualistic (Mahardika et al., 2024). The values of mutual cooperation and digital tolerance have been identified as new forms of implementing the second and third principles in the virtual realm (Sari et al., 2023). Other studies also confirm that Pancasila functions as a "moral compass" in addressing digital ethics crises, including the spread of disinformation and hate speech (Wahyudi et al., 2022).

The second theme highlights the application of AI ethical principles in education. Five key principles—benefit, fairness, autonomy, responsibility, and explainability—have been adapted in global and national educational contexts (Floridi & Cowls, 2021). In the Indonesian context, research indicates that teachers and students need AI ethical literacy to be able to critique the moral impacts of the use of algorithms and intelligent systems (Subekti, 2024). Other findings suggest that a curriculum that integrates Pancasila moral values with AI ethics principles can strengthen students' ethical awareness of digital responsibility (Rachman & Dewi, 2023).

The third theme focuses on the concept of ethical and character-based digital citizenship. Literature shows that digital citizenship in Indonesia is not yet fully based on Pancasila values, but is still influenced by Western models that emphasize individual rights over social responsibility (Westheimer, 2020). A study by Rahmadani et al. (2024) found that the value of digital responsibility can be a means of forming a new public morality in accordance with the principles of digital mutual cooperation. An approach that combines technological literacy with collective morality has proven effective in building a healthy digital culture (Setiawan & Hidayat, 2023).

The fourth theme addresses the challenges of education policy and reform. Policy reviews indicate that the integration of AI ethics into national education remains fragmented and lacks clear implementation guidelines (Nemitz, 2024). Nevertheless, some efforts have been made, such as the development of the Pancasila Student Profile curriculum, which emphasizes character, diversity, and independence (Kemendikbudristek, 2023). Literature analysis also found that digital ethics education policies still focus on the technical aspects of cybersecurity, rather than the dimensions of morality and social responsibility (Suharto et al., 2022).

The overall synthesis of results reveals a growing trend of academic attention toward the integration of Pancasila values and AI ethics in character education, particularly from 2021 to 2024. Most research is conceptual and policy-based, with few empirical studies testing the effectiveness of AI ethics-based learning models. This trend indicates that research in this area remains focused on the normative level and has not yet developed concrete pedagogical models that can be implemented in schools or universities.

Furthermore, international literature highlights the importance of a contextual and culturally informed approach to technology ethics. For example, UNESCO (2023) emphasizes the importance of AI literacy, which takes into account humanitarian values and cultural diversity in global education (UNESCO, 2023). Meanwhile, the OECD (2024) emphasizes digital character building as an indicator of the quality of 21st-century education (OECD, 2024). Therefore, this synthesis confirms the need to develop a Pancasila-based Ethical

Digital Citizenship Framework that combines national moral values with universal principles of AI ethics as a theoretical and practical foundation for character education in Indonesia.

Discussion

The results of this study confirm that the integration of Pancasila values into character education and artificial intelligence ethics (AI ethics) in Indonesia has strategic urgency in developing ethical and responsible digital citizens. Based on a literature synthesis, this concept supports the primary objective of the study, namely, developing a conceptual framework for character education based on Pancasila values to address the ethical challenges of the digital era. The values of divinity, humanity, and social justice embodied in Pancasila have proven relevant in guiding the use of technology in a civilized and humane manner (Rahman et al., 2023).

Within the theoretical framework of Pancasila character education, research findings indicate that digital ethics education must be holistic, encompassing cognitive, affective, and moral aspects. This aligns with Tilaar's view that transformative education is not only adaptive to change but also serves as a moral force in guiding change (Tilaar, 2019). Thus, the implementation of Pancasila in digital education can serve as an ethical filter against the widespread use of technology, including artificial intelligence, in learning.

From the perspective of artificial intelligence ethics theory, the principles of responsibility, justice, and explainability are key dimensions that can be synergized with the Pancasila principles. Floridi & Cowls' study emphasizes that sound AI ethics must be rooted in universal human values and local cultural contexts (Floridi & Cowls, 2021). Thus, the Pancasila approach can provide a distinctly Asian and contextual ethical perspective for the development of inclusive and socially just AI.

The findings of this study also align with digital citizenship theory, which emphasizes the moral responsibility and social awareness of digital citizens. Studies have shown that humanistic values-based digital citizenship education is effective in improving ethical literacy among school and university students (Aulia et al., 2022). Integrating Pancasila values into the digital citizenship curriculum can be an effective strategy in developing a generation of ethical AI users with national character.

From an educational policy perspective, a recent study emphasized the need for national curriculum reform to integrate Pancasila-based digital ethics into every level of education (Kusuma & Prasetyo, 2023). This transformative policy aligns with the integral character education paradigm, which positions technology as a means of moral strengthening, not simply a tool for efficient learning.

The results of this study also reinforce the view that AI ethical literacy has not yet become a primary focus in the Indonesian education system. A gap remains between technological capabilities and digital ethical awareness, as identified by other research on AI integration in higher education contexts in Southeast Asia (Nguyen et al., 2023). Therefore, a Pancasila-based approach can fill this ethical gap through reflective learning and moral practice in the digital world.

Furthermore, the findings indicate that the application of Pancasila values in the context of AI also has significant socio-political dimensions. The values of democracy and social justice provide the basis for AI policymaking that promotes public welfare and technological justice (Sutanto, 2024). This supports the notion that AI must be developed within a transparent and accountable public ethics framework.

Compared with previous studies in Europe and America, the integration of local values, such as Pancasila, demonstrates a more contextual and culturally rooted ethical perspective. This approach emphasizes the importance of value pluralism in technology ethics, as revealed by research on cross-cultural AI ethics (Taddeo & Floridi, 2022).

This article's scholarly contribution lies in developing a conceptual framework for Pancasila character education as the basis for AI ethics and digital citizenship in Indonesia. This approach not only enriches the literature on character education and AI ethics but also provides a new direction for developing national education policies responsive to the challenges of the digital era (Nata, 2023).

The limitations of this study primarily relate to the availability of empirical literature addressing the direct application of Pancasila in AI ethics. Most findings remain conceptual and normative. Therefore, further research based on field studies is strongly recommended to test the validity and effectiveness of the Pancasila character education model in the context of digital learning and the use of artificial intelligence technology in Indonesian educational institutions.

Conclusion

This study concludes that integrating Pancasila values into the framework of character education, artificial intelligence ethics, and digital citizenship is a strategic step in building the nation's moral foundation in the technological era. Through a conceptual approach that combines the theory of Pancasila character education, the principles of AI ethics, and the concept of digital citizenship, this study emphasizes that Indonesian education needs to transform from merely adapting to digital change to becoming a moral agent that guides the civilized use of technology. Values such as divinity, humanity, social justice, and collective responsibility play a crucial role in shaping the ethical behavior of digital citizens and ensuring that technological progress remains on the side of humanity. Thus, the thematic synthesis resulting from this study answers the problem formulation of how Pancasila values can be actualized in technology ethics education and strengthening the character of digital citizens in Indonesia.

Theoretically, this article contributes to the development of the concept of character education based on local values as a foundation for global ethics in artificial intelligence technology. Practically, this research offers a conceptual model for policymakers, educators, and educational institutions to integrate Pancasila-based digital ethics into formal and non-formal curricula. This approach can form the basis for national education policies that are more reflective of cultural contexts and responsive to moral challenges in the digital era. Conceptually, this article broadens the horizon of AI ethics studies by incorporating the

perspectives of the nation's culture and philosophy, thereby enriching the global discourse on technology ethics with distinctive Indonesian humanitarian values.

The implications of this research indicate that efforts to implement Pancasila character education in a digital context require a multi-layered strategy—from reformulating educational policies, strengthening educators' digital ethics competencies, to developing a values-based curriculum. Further research is recommended to explore empirical models for implementing this concept in the context of technology-based learning and the use of AI in educational institutions, so that the developed ideas can be tested practically and contribute significantly to the formation of an ethical, inclusive, and socially just digital ecosystem.

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