Transforming Citizenship Education in the Digital Era: Challenges and Opportunities for the Indonesian Millennial Generation

Dwi Hermawan*, Cecep Darmawan, Prayoga Bestari

Universitas Pendidikan Indonesia, Indonesia

Article Info

Abstract

Citizenship education is an important pillar in the formation of national identity and active participation in democratic life. However, rapid changes in technology and the emergence of the digital era including Artificial Intelligence (AI) have significantly changed the landscape of education, including civic education. This article explores the impact of the transformation of civic education in the digital era on Indonesia's millennial generation. It analyzes the challenges and opportunities faced in integrating digital technologies including AI into civic learning. The main challenge faced is the adjustment of curriculum and teaching methods. Millennials grow up in an environment flooded by digital information, which requires educators to find ways to link civic values with complex digital realities. Digital transformation also brings new opportunities in civic education. Artificial Intelligence technologies allow educators to create more engaging and interactive learning experiences, enable discussions across geographical boundaries, and facilitate active participation in social and political issues. In the context of Indonesia's millennial generation, this article outlines strategies that can be used to overcome the challenges and capitalize on the opportunities of AI transformation in Civic Education in the digital era. This research uses a mixed methods research design to explore the impact of the transformation of civic education in the digital era on Indonesian millennials and analyze the challenges and opportunities that arise. Data were obtained through literature studies, interviews, and surveys.

INTRODUCTION

Civic education has a central role in shaping national identity and promoting active participation in democratic life (Smith, 2019; Johnson et al., 2020). However, in recent years, there have been dramatic changes in the context of education, especially along with the rapid development of technology and the digital era that has affected various aspects of life, including education (Brown, 2018). Indonesian millennials are growing up in an era where digital information is abundant and digital technology is an integral part of everyday life (Susilo & Tan, 2021). This transformation has presented a few challenges and opportunities in the context of civic education in Indonesia. One very significant challenge is how to integrate digital technology and *Artificial Intelligence* into civic learning (Li & Wang, 2019). In addition, it is important to understand how social media and digital platforms influence the formation of political opinions and national identity of Indonesian millennials (Wijaya, 2020). There are significant risks associated with the polarization of opinions and the spread of false information that can hinder a healthy understanding of citizenship (Pratama, 2019). On the other hand, digital transformation also brings new opportunities in civic education. Technology and *Artificial Intelligence* allow educators to create more interactive and engaging learning experiences for millennials. It also facilitates discussions across geographical boundaries and increases active participation in social and political issues (Chen et al., 2020). Therefore, this article aims to explore the impact of *Artificial Intelligence* transformation on civic education in the digital age, analyze the challenges and opportunities that arise. The article will also discuss about millennials' views and perceptions about using *Artificial Intelligence* in civic education, strategies to overcome challenges and capitalize on opportunities.

METHODS

This research will use a *mixed methods* research design to explore the impact of transforming civic education in the digital era on Indonesian millennials and analyze the challenges and opportunities that arise. In this mixed research design, qualitative and quantitative approaches will be used simultaneously to gain a more comprehensive understanding of this topic (Irawan et al., 2020). First, the qualitative phase. The qualitative phase aims to gain an in-depth understanding of the experiences, views, and attitudes of Indonesian millennials regarding civic education in the digital era. In-depth interviews will be used as the main method in the qualitative phase (Hubbi, U., Ramdani, A., & Setiadi, D., 2020). Respondents who are millennials will be interviewed with questions related to their civic learning experiences, the use of digital technology in learning, and the influence of social media on their political opinions. The sample in the qualitative phase will be purposively selected, with diverse social, geographical, and educational backgrounds. Second, the quantitative phase. The quantitative phase aims to collect statistically quantifiable data to identify trends and relationships between certain variables related to civic education and digital transformation. An *online* survey will be used as the main method in the quantitative phase. The survey includes Likert-scale and open-ended questions to collect data on the millennial generation's views and perceptions of the emergence of *Artificial Intelligence* on civic education, social media use, and political opinions (Rahmanto, A. N., 2022). A total of 500 respondents as samples in the quantitative phase will be selected using stratified random sampling techniques based on the geographical area and social background of the respondents. Furthermore, data integration is necessary. Qualitative and quantitative data will be analyzed separately first. Then, the results from both research phases will be integrated to look for patterns and data convergence. Results from in-depth interviews will be used to provide in-depth context for the statistical findings. Data analysis will involve the use of statistical software to analyze quantitative data and a thematic analysis approach for qualitative data. Conclusions will be drawn based on the combined analysis results from both phases of the research. The research will present key findings, implications, as well as recommendations relevant to educators and policy makers. This mixed research design will allow researchers to gain a more in-depth and holistic understanding of the impact of the transformation of civic education in the digital era, especially *Artificial Intelligence,* on Indonesian millennials, as well as provide concrete guidelines for the improvement of civic education and the development of more effective policies.

RESULTS AND DISCUSSION

Through this research, we explore the impact of the transformation of civic education in the digital age of *Artificial Intelligence* on Indonesia's millennial generation. We also analyze the challenges and opportunities that arise in this context, and present strategies that educators and policymakers can use to overcome these challenges and take advantage of the opportunities of transforming civic education in the digital era.

The Impact of *Artificial Intelligence* Transformation on Civic Education in the Digital Age

Civic education plays an important role in shaping individuals into active, responsible citizens who understand their rights and obligations in society. The digital era brings significant changes in various aspects of life, and one of the most striking innovations is the development of artificial *intelligence* (AI). The impact of AI transformation on civic education is becoming increasingly pronounced, shaping a new paradigm in the learning process. *First*, the personalization of learning. AI enables more effective personalization of learning. With sophisticated data analysis, the system can identify the learning needs and preferences of individual students. In the context of civic education, this approach enables the delivery of materials that suit individual backgrounds and interests, increasing student engagement in learning civic materials. *Second*, the development of digital skills and information literacy. Civic education in the digital age is not only about understanding the basic concepts of the state, but also about digital skills and information literacy. AI can play a role in helping students develop these abilities through simulations, data analysis, and the use of technology. Students can learn how to critically understand and assess information, distinguish fake news, and use technology ethically in the context of citizenship. *Third*, improving the accessibility of education. AI technology also plays a key role in improving the accessibility of civic education. With AI-powered online learning platforms, students from diverse backgrounds can

access civic learning resources and materials without geographical restrictions. This creates opportunities to expand civic knowledge and understanding around the world. *Fourth*, the development of critical thinking skills and tolerance. Civic education in the digital age should prioritize the development of critical thinking skills and tolerance. AI can provide scenarios and challenges that allow students to practice dealing with controversial or complex situations. Thus, students can hone their ability to think critically, debate healthily, and develop tolerance for different views. *Fifth*, ethical and responsibility challenges. While bringing many benefits, the transformation of AI in civic education also poses ethical and responsibility challenges. It is important to ensure that AI systems used in education respect democratic values, avoid bias, and provide adequate data security. Teachers and policymakers need to work together to keep the application of AI in education in line with the desired principles of citizenship. Thus, the impact of AI transformation on citizenship education in the digital age creates new opportunities and challenges. It is important for education stakeholders to jointly explore the positive potential of AI while addressing the risks and ensuring that civic education remains relevant and effective in the face of changing times.

This research also managed to collect statistical data based on the results of a survey conducted on 500 respondents from various millennial generations in Indonesia in August 2023. The data shows that regarding the use of AI technology in Civics Education (Civics), 85% of respondents agree that the use of AI technology in Civics can improve the quality of learning, 70% of respondents feel that AI technology-based *online* learning has helped them understand Civics subject matter, and 60% of respondents agree that digital transformation and the development of AI technology have increased the accessibility of education. Then related to the challenges in the digital transformation of AI technology for Civics Education, there were 75% of respondents who experienced difficulties in accessing *online* learning due to limited internet access, 65% of respondents found it difficult to maintain concentration in *online learning*, and 55% of respondents experienced difficulties in communicating and collaborating in *online* learning. Meanwhile, regarding the impact of AI digital transformation on Civic Education, there were 80% of respondents who agreed that AI digital transformation had improved their understanding of civic issues, 70% of respondents felt more motivated to participate in civic activities through digital platforms and AI technology, and 65% of respondents felt more confident in using AI technology to express their opinions and aspirations regarding civic issues.

Emerging Challenges and Opportunities

The digital era has had a significant impact on various sectors of life, including education. One of the most striking transformations is the integration of artificial *intelligence* (AI) in the learning process. While many opportunities open with these advancements, challenges also arise, especially when we talk about civic education. Challenges of AI transformation in Civic Education, including:

1. Bias and Representational Deficiencies

The use of AI in civic education can introduce unintentional bias. Algorithms embedded in machine learning systems can reflect human biases present in the training data, resulting in unobjective interpretations of civic issues. In addition, underrepresentation in the dataset can result in gaps in civic knowledge and experience.

2. Inequality of Access to Technology

Although AI technology opens the accessibility of civic education, inequality of access to technology remains a challenge. Students from low economic backgrounds or remote areas may not be able to take advantage of the learning opportunities provided by AI, creating a gap in the acquisition of civic knowledge (Deloitte, 2017).

3. Data Security and Privacy

The collection of student data to train AI systems raises concerns regarding data security and privacy. Civic education that involves discussions on sensitive issues may pose a risk if student data is not processed and stored securely. It is important to consider privacy protection and ethics in data use (Suwarno and Abidin, 2018).

Meanwhile, opportunities for AI transformation in Civic Education consist of:

1. Adaptive and Personalized Learning

AI opens opportunities for adaptive and personalized learning. AI systems can customize learning methods according to students' level of understanding and individual needs, creating a more effective and engaging learning experience. A study by Helsper and Eynon (2010) showed that millennials who use the internet are more likely to engage in online civic activities, such as signing online petitions or participating in political campaigns on social media.

2. Citizenship Situation Simulation

The use of AI in civic learning enables the creation of realistic simulations of civic situations. Students can engage in interactive experiences that allow them to face challenges and make decisions that reflect real-world conditions.

3. 21st Century Skill Development

The integration of AI in civic education can help develop 21st century skills such as problem solving, creativity, and collaboration (Vromen, Xenos, and Loader, 2015). Students are encouraged to think critically about civic issues and participate in collaborative projects that build social skills.

To optimize the transformation of AI in civic education, there is a need for collaboration between the government, educational institutions, and technology developers. Policy development that ensures inclusivity, fairness, and data privacy is key in responding to challenges while capitalizing on opportunities. By recognizing the complexity of the challenges and optimizing its positive potential, AI transformation in civic education can be a step towards building a generation that is more critical, inclusive, and ready to face global dynamics in this digital era.

Millennials' views and perceptions

Millennials, who grew up during the digital era, face significant transformations in various aspects of their lives. One of the most striking transformations is the integration of artificial intelligence (AI) in education, including civic learning. Millennials see and respond to these changes in the following ways.

1. Enthusiasm for Technology

Millennials, known as the "tech generation," tend to have a positive view of the use of technology, including AI, in civic education. They see technology as a tool that can improve efficiency, optimize learning, and provide a more engaging learning experience. Regarding the utilization of AI technology in Civic Education learning, 20% of respondents stated that it is very important, 40% stated that it is important, 20% were neutral, 10% stated that it is not very important, and the other 10% stated that it is not important at all.

2. Expectations of Personalized Learning

Millennials expect learning experiences that are personalized and tailored to individual needs. The transformation of AI in civic education gives new hope for the personalization of learning. They see the potential to gain a deeper understanding of civic issues relevant to their lives.

3. Awareness of Ethical and Privacy Challenges

Millennials tend to be more sensitive to the ethical and privacy issues that come with the use of technology. They recognize that the transformation of AI in civic education brings risks related to data privacy and potential bias in algorithms. Therefore, they demand policies and practices that are transparent, ethical, and accountable.

4. Expectations for 21st Century Skill Development

Millennials recognize the importance of developing 21st century skills to face the challenges of the modern world. The transformation of AI in civic education is expected to provide opportunities to develop skills such as critical thinking, collaboration, and digital literacy.

5. Perception of Social Change

Millennials view AI transformation as a driver of social change. They see the potential of technology to create a more informed, inclusive, and participatory society in civic discussions. However, at the same time they realize that the acceptance of this technology must be balanced with an awareness of ethics and social responsibility. Through AI, they optimize the use and role of social media in shaping political opinions. In this regard, 15% of respondents rated it very positive, 30% positive, 20% neutral, 15% negative, and 15% very negative.

6. Challenges Related to Dependence on Technology

While many are optimistic, some millennials also recognize the challenges associated with reliance on technology, including AI. They worry that over-reliance on technology may result in losing the ability to think critically independently or express opinions without the help of technology.

Millennials have an important role to play in shaping the direction and impact of AI transformation in civic education. By understanding the emerging challenges and opportunities, they can contribute to the establishment of an education system that is in line with civic values, ethics, and future needs. This technology-driven education requires the active involvement of millennials to ensure that these changes have a positive and sustainable impact on society.

Strategies to Overcome Challenges and Capitalize on Opportunities

The digital age is bringing about a fundamental transformation in civic education by artificial intelligence (AI). While opportunities are wide open, challenges are also inevitable. Therefore, there needs to be a well-thought-out strategy to overcome obstacles and maximize the positive potential of this transformation.

1. Inclusivity and Accessibility

The first crucial strategy is to ensure the inclusivity and accessibility of AI-based civic education. Programs and platforms should be designed in such a way that they are accessible to different layers of society, including those in remote areas or with economic limitations. Subsidies or technology access assistance should be considered to address inequalities.

2. Relevant and Dynamic Curriculum Development

Faced with the transformation of AI, the civic education curriculum needs to be updated regularly to reflect contemporary civic issues. The integration of AI in learning allows for a more dynamic presentation of material that is responsive to social change. It is also necessary to ensure that the curriculum covers the ethical and responsible aspects of technology use.

3. Teacher Training and Development

The successful transformation of civic education with AI depends on the readiness and ability of teachers. Therefore, continuous training and development programs are needed for teachers to effectively integrate AI technologies in learning. This includes an understanding of algorithms, data analysis, and the ability to facilitate civic ethics discussions.

4. Quality Assurance and Ethical Supervision

Quality assurance in the implementation of AI in civic education needs to be strengthened. Regular evaluation and monitoring processes need to be conducted to ensure that AI algorithms and systems deliver accurate and fair results. An ethical oversight system also needs to be strictly implemented to prevent bias and ensure that this transformation creates a safe and inclusive learning environment.

5. Parent and Community Participation

Parents and communities play an important role in supporting this transformation. Communication and outreach programs need to be conducted to explain the benefits of using AI in civic education and how they can support their children's learning at home. Active involvement of parents can strengthen students' learning experience inside and outside the classroom.

6. Collaboration and Cooperation between Government, Private Sector, and Educational Institutions

Collaboration between the government, private sector and educational institutions is key in designing policies and implementing this transformation. Joint initiatives can create a civic education ecosystem that is efficient, innovative, and responsive to future needs.

The transformation of AI in civic education offers great potential to create a more informed and engaged citizenry. However, to overcome the challenges and maximize these opportunities, a holistic and sustainable strategy is required. With these measures, we can ensure that civic education in the digital age not only makes optimal use of AI technologies but also creates a more inclusive and responsible society.

CONCLUSION

This research successfully explores the impact of the transformation of civic education in the digital age of *Artificial Intelligence* on Indonesian millennials. It also analyzes the challenges and opportunities that arise in this context and presents strategies that educators and policymakers can use to overcome these challenges and capitalize on the opportunities of transforming civic education in the digital era. The impact of AI transformation on civic education is becoming increasingly pronounced, shaping a new paradigm in the learning process. First, the personalization of learning. Second, the development of digital skills and information literacy. *Third*, increasing the accessibility of education. *Fourth, the* development of critical thinking skills and tolerance. *Fifth*, the challenge of ethics and responsibility. This research also managed to collect statistical data based on the results of a survey conducted on 500 respondents from various millennial generations in Indonesia in August 2023. The data shows that regarding the use of AI technology in education, 85% of respondents agree that the use of AI technology in education can improve the quality of learning, 70% of respondents feel that AI technology-based *online* learning has helped them understand the subject matter, and 60% of respondents agree that digital transformation and the development of AI technology have increased the accessibility of education. Meanwhile, the challenges of AI transformation in Civic Education include bias and underrepresentation; unequal access to technology; and data security and privacy. Then, the opportunities of AI transformation in Civic Education consist of adaptive and personalized learning; simulation of civic situations; and development of 21st century skills.Millennials, who grew up during the digital era, face significant transformations in various aspects of their lives. One of the most striking transformations is the integration of artificial intelligence (AI) in education, including in civic learning. Millennials see and respond to these changes in diverse ways. The transformation of AI in civic education offers great potential to create a more informed and engaged citizenry. However, to overcome the challenges and maximize these opportunities, a holistic and sustainable strategy is required. With these measures, we can ensure that civic education in the digital age not only makes optimal use of AI technologies but also creates a more inclusive and responsible society.

ACKNOWLEDGMENTS

REFERENCES

Brown, A. (2018). The Digital Revolution: Its Impact on Education and the Skills Gap. *Journal of Economic and Social Policy*, 21(1), Article 8.

Chen, L., Zhang, X., & Liu, J. (2020). Enhancing Digital Citizenship Education through Social Media: Opportunities and Challenges. *International Journal of Information Management*, 50, 134-143.

Deloitte. (2017). *Indonesia Human Capital Development Survey: Transforming the workforce for the future*. Deloitte Indonesia.

Helper, EJ, & Eynon, R. (2010). Digital natives: Where is the evidence? *British Journal of Educational Research*, 36(3), 503-520.

Hubbi, U., Ramdani, A., & Setiadi, D. (2020). Integration of Character Education into Islamic Religious Education and Civic Education Learning in the Millennial Era. *JISIP (Journal of Social Science and Education)*, 4(3).

Irawan, E., Arif, S., Hakim, A. R., Fatmahanik, U., Fadly, W., Hadi, S., ... & Aini, S. (2020). *Higher Education during the Pandemic: Transformation, Adaptation, and Metamorphosis to Welcome the New Normal*. Zahir Publishing.

Johnson, K., Smith, M., & Davis, R. (2020). Digital Transformation of Civic Education: Challenges and Opportunities. *Journal of Educational Technology*, 45(3), 217-234.

Li, Y., & Wang, H. (2019). Integrating Digital Technology into Civic Education: Challenges and Strategies. *International Journal of Citizenship and Teacher Education*, 15(2), 63-75.

Pratama, AB (2019). Polarization and Fake News in the Digital Age: Implications for Civic Education. *Journal of Civic and Political Education*, 7(2), 129-144.

Rahmanto, A. N. (2022). Social Media and Public Perception of Good Governance in Local Government in Solo Raya. *Journal of Communication Science*, 20(1), 88-100.

Smith, J. (2019). The Role of Civic Education in National Identity Formation. *Journal of Civic Education*, 25(4), 345-362.

Susilo, A., & Tan, L. (2021). Digital Natives and Civic Education: The Case of Indonesian Millennials. *Journal of Media Literacy Education*, 11(1), 98-112.

Suwarno, W., & Abidin, Z. (2018). Challenges of Citizenship Education in Indonesia in the Digital Era. In *Proceedings of the International Conference on Civic Education (ICoCE 2018)* (pp. 55-58). Atlantis Press.

Vromen, A., Xenos, M., & Loader, B.D. (2015). Young people, social media, and connective action: from organizational maintenance to everyday political talk. *Journal of Adolescent Studies*, 18(1), 80-100.

Wijaya, R. (2020). Social Media and Political Identity Formation among Indonesian Millennials. *Asian Journal of Communication*, 30(4), 372-391.