

The Urgency of Digital Literacy in Shaping Students' Civic Virtue: Challenges and Opportunities in the Technological Era

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Abstract

The rapid development of technology has transformed various aspects of life, including education. Digital literacy is no longer merely a technical skill but also encompasses critical, ethical, and social aspects that are crucial in shaping students' civic virtue. This study aims to explore the urgency of digital literacy in shaping students' civic virtue in the technological era and to identify the challenges and opportunities in its implementation. Using a literature review method, this study collects and analyzes relevant literature related to digital literacy and digital citizenship education. The findings indicate that strong digital literacy can encourage students to be more responsible, think critically, and behave ethically in the digital public sphere. The main challenge is the lack of integration of digital literacy into curricula that explicitly teach digital citizenship values. Many educational institutions focus more on technical skills than on the social and moral dimensions of digital literacy. However, there are significant opportunities to develop digital literacy as a means of strengthening students' civic virtue, particularly through a more systematic and comprehensive curriculum. This study recommends integrating digital literacy into formal education, emphasizing fostering digital citizenship values to prepare students for the challenges of the technological era and to become responsible digital citizens.

Keywords: Digital literacy, civic virtue, technological era, educational technology

INTRODUCTION

The rapid development of information and communication technology has brought significant changes to various aspects of life, including the world of education. In this digital era, the use of technology in daily activities has become inevitable. However, while technology offers many conveniences and new opportunities, it also presents serious challenges, particularly in fostering civic virtue among students. Digital literacy is not only about the technical ability to use technological devices, but also includes the ability to think critically, act ethically, and be responsible in the digital space (Martin, 2008; McDougall *et al.*, 2018; Pangrazio & Sefton-Green, 2021).

The issue faced by students today is the low level of digital literacy that supports the development of civic virtue (Rahmah, 2015; Trisiana, 2020). Students often lack adequate knowledge on how to use technology ethically and responsibly. For instance, the spread of fake news, cyberbullying, and disregard for digital privacy indicate the students' limited understanding of using technology properly and correctly (Rezayi *et al.*, 2018). When low digital literacy combines with a lack of understanding of civic virtue, students are at risk of engaging in behaviors that harm themselves and disrupt social harmony in the digital environment (Mirra, 2018).

To address this issue, systematic efforts are needed to improve digital literacy to foster civic virtue among students. One possible solution is integrating digital literacy education into the curriculum, emphasizing the values of digital citizenship, such as responsibility, integrity, and social awareness (Al-Abdullatif & Gameil, 2020; Frau-Meigs *et al.*, 2017). Moreover, the development of teacher training programs and the provision of technology-based learning materials can help ensure that students receive adequate education on using technology wisely.

In digital literacy theory, a student's ability is not only measured by technical skills in operating digital devices, but also by their ability to understand, evaluate, and use information wisely (Eshet, 2004; Lei *et al.*, 2013). This theory emphasizes the importance of cognitive, metacognitive, and ethical aspects in utilizing digital technology. Civic virtue, on the other hand, refers to the values of citizenship that support social harmony, such as care for others, active participation in the community, and responsibility towards the surrounding environment.

These two concepts are interconnected in the digital era, where online behavior reflects a person's civic virtues. Theoretical studies show that strong digital literacy has the potential to enhance students' civic virtues, especially when combined with education on citizenship values. Good digital literacy can prevent the misuse of technology and increase student participation in healthy and constructive public discussions.

In this context, technology is not only a tool but also an effective medium for education, fostering students' critical awareness of the social impact of their digital actions (Haleem *et al.*, 2022). Through such educational programs, students are expected not only to master technology but also to understand the ethical and social implications of its use (Mahendra *et al.*, 2023, 2024; Mahendra & Ainulhaq, 2023).

This research aims to analyze the urgency of digital literacy in shaping students' civic virtues and to identify the challenges and opportunities that arise in efforts to implement digital literacy education in the technological era. Therefore, this study is expected to contribute to the development of educational policies that are more adaptive to the needs of digital learning and capable of creating a more responsible generation in the digital public space.

METHOD

This study employs the literature review method to analyze the urgency of digital literacy in shaping students' civic virtue in the technological era. A literature review was chosen as it allows the researcher to critically collect and evaluate a wide range of relevant literature (Snyder, 2019). The first step in this method is identifying literature sources related to digital literacy, civic virtue, digital citizenship education, as well as the challenges and opportunities in its implementation in educational settings. This process is conducted by searching prominent academic databases, such as Google Scholar, JSTOR, and ProQuest, to ensure the accuracy and relevance of the literature collected.

Once the literature is gathered, this study critically evaluates each finding from previous research. The focus of the evaluation includes the validity and reliability of the findings, the methodologies used, and the relevance of the research results to the educational context in Indonesia and internationally. The main goal of this evaluation is to identify how digital literacy can be optimally developed to support the formation of civic virtue among students, while considering the challenges faced in its implementation.

The next step is the analysis and synthesis of findings from various studies. In this phase, the research highlights key themes, such as the role of digital literacy in strengthening civic virtue, the challenges of its implementation, and how technology can be used to encourage student participation in the digital public sphere. By integrating these findings, this study aims to construct a new, more comprehensive perspective on the relationship between digital literacy and civic virtue, as well as the opportunities available in digital literacy education in the technological era.

Finally, this study reveals gaps in the existing literature and offers practical recommendations for policymakers and educators. The researcher suggests teaching strategies and curricula that can holistically enhance students' digital literacy and support the formation of civic virtue. Thus, this research is expected to make a significant contribution to the development of education in the digital era and prepare students to become responsible and ethical citizens in the digital space.

RESULTS AND DISCUSSION

Based on the literature review conducted, this study finds that digital literacy holds significant urgency in shaping students' civic virtue in the technological era (Kennedy, 2019; Martin, 2008; Rahmah, 2015; Snyder, 2019). Digital literacy, which encompasses not only technical skills but also critical thinking, ethics, and responsibility in the use of technology, has proven to play a crucial role in creating responsible digital citizens (Kennedy, 2019; Milenkova & Lendzhova, 2021; Nascimbeni & Vosloo, 2019). As students' interactions with the digital world increase, digital literacy becomes increasingly important to guide them to behave appropriately, both in everyday life and in the digital public sphere (Jones & Flannigan, 2006; Nawaz & Kundi, 2010; Pangrazio & Sefton-Green, 2021).

The literature review shows that strong digital literacy encourages students to understand the social and ethical impact of their actions in the online world (Connolly & McGuinness, 2018). Students' ability to distinguish valid information from fake news (hoaxes), participate in online discussions responsibly, and protect digital privacy are key components in the formation of civic virtue (Johnson, 2015). Several studies also highlight that students with good digital literacy are more aware of their obligations as digital citizens, such as respecting the rights of others, maintaining digital security, and engaging in constructive social activities.

However, this study also identifies several challenges in developing digital literacy in schools. One of the main challenges is the lack of integration of digital literacy into the curriculum that explicitly connects technological learning with the development of civic virtue (Trisiana, 2020). Many schools still focus on the technical aspects of technology use, such as the ability to operate digital devices, but pay less attention to the ethical, moral, and social dimensions of technology usage (Selwyn, 2010). This results in students being able to use technology but lacking an understanding of the social implications of their actions in the digital space.

On the other hand, the opportunities presented by digital literacy in shaping civic virtue are also considerable. The use of digital technology as an interactive and contextual learning medium provides students with direct experiences in interacting with various sources of information. With targeted digital literacy education, students can be trained not only to understand how technology works but also how to use it responsibly. Implementing digital citizenship education programs that incorporate digital literacy into the learning process can raise students' awareness of the importance of civic virtue in digital life, enabling them to become digital citizens who contribute positively to society.

Overall, the findings of this study emphasize that the urgency of digital literacy in shaping civic virtue cannot be overlooked. Strong digital literacy not only enables students to use technology more wisely and responsibly but also shapes their behavior as ethical citizens who actively participate in the digital community (Martin, 2008; Ohler, 2010; Poore, 2011).

Therefore, the integration of digital literacy into education is a crucial step in preparing the younger generation to face the challenges of the technological era.

CONCLUSION

Digital literacy plays a crucial role in shaping students' civic virtue in the technological era. Digital literacy is not only related to technical skills in operating digital devices but also encompasses critical, ethical, and social aspects of technology use. Students' ability to act responsibly, think critically, and participate ethically in the digital space reflects the civic virtues they possess. However, this study also highlights that the main challenge in fostering civic virtue through digital literacy is the lack of holistic integration of digital literacy education in schools. Education often focuses on the technical aspects of technology without addressing its moral and social dimensions. Nevertheless, the opportunities presented by digital literacy are substantial. With the implementation of effective digital literacy education, students can be trained to use technology wisely and responsibly, as well as become active digital citizens who contribute positively to the digital community. In conclusion, the urgency of digital literacy in shaping students' civic virtue in the technological era cannot be denied. Therefore, comprehensive integration of digital literacy into the educational curriculum is needed, with an emphasis on fostering ethical and responsible digital citizenship values. The findings of this research are expected to encourage the development of educational policies that are more adaptive to technological advancements, and to prepare students to become digital citizens with integrity and ethics.

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