



Indonesia's Digital Literacy as a Challenge for Democracy in the Digital Age

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Abstract

In the era of digitalization, digital literacy plays a vital role in shaping active participation and the quality of democracy. There are still challenges in the level of digital literacy in Indonesia, which impacts blind trust in emerging issues. As a result, people are vulnerable to the spread of fake news, online fraud, harmful content, and privacy violations. This research uses a desk research method with a qualitative approach, collecting secondary data from journal articles, books, and related reports. Analyses were conducted using content analysis techniques to identify patterns and relationships between digital literacy and democracy. The results show that although Indonesia's digital literacy index has increased over the years, the rate of digital crime and the spread of hoaxes has continued to rise, suggesting an imbalance between the development of technological skills and the understanding of digital ethics. The findings emphasize the need for a more comprehensive approach to digital literacy programs, including integrating digital literacy education into the formal curriculum and improved technological infrastructure, particularly in underdeveloped areas. The implications of this study suggest that improving digital literacy is essential for safe access to information and an important step toward strengthening more critical and responsible democratic participation in Indonesia.

Keywords: digital literacy, digital democracy.

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INTRODUCTION

In the current era, digital is inevitable in everyday life. The information spread online makes digital literacy an essential skill to obtain and utilize information properly (Dzobelova et al. 2020). The use of digital technology in everyday life is not only limited to accessing information but also has an impact on active participation in the democratic process (Fraga-Varela and Alonso-Ferreiro 2023). Digital also provides a platform for individuals to express their opinions, share their thoughts, and engage in public discussions. The digital age allows people to engage in the public sphere online, affecting the democratic process. (Candra et al. 2021; Zulqadri, Mustadi, and Retnawati 2022).

Indonesia, as a country with a large population, increasing internet users, and the rapid development of digital technology presents significant challenges regarding digital literacy as the foundation of democracy in the digital era (Zulqadri et al. 2022). According to the results of the Indonesia Digital Literacy Status 2022 survey conducted by the Ministry of Communication and Information Technology, in collaboration with the Katadata Insight Centre (KIC), Indonesia's digital literacy index reached 3.54. This figure reflects the level of mastery of digital literacy among Indonesians at the "medium" level. Indonesia's digital literacy level still needs to be higher. Based on the Global Digital Literacy Index 2022 survey conducted by Ipsos, Indonesia's digital literacy level in this survey is 62nd out of 70 countries (Pratiwi Agustini 2023).

Table 1.
Indonesia's digital literacy level with countries around the world

Rating	Country	Digital Literacy Index
1	South Korea	7,9
2	Japan	7,6
3	Finland	7,5
4	Denmark	7,4
5	Norway	7,3
6	Sweden	7,2
7	Estonia	7,1
8	Singapore	7,0
9	United States of America	6,9
10	Australia	6,8
62	Indonesia	3,5

Data source: Global Digital Literacy Index 2022 survey conducted by Ipsos

The lack of digital literacy in Indonesia can be a barrier for people to understand widespread information on the internet, making them vulnerable to the spread of fake news and hoaxes (Priwati and Helmi 2021). The inability to critique information received digitally can lead to misperceptions or blind faith in emerging issues (Candra et al., 2021). Many cybercrimes appear, such as online fraud, spreading harmful content, and privacy violations. Existing data shows that cybercrime is increasing in Indonesia from year to year. Based on data from the National Police Criminal Investigation Agency (Bareskrim), the number of digital crime cases in Indonesia has increased significantly in recent years. In 2022, Bareskrim Polri handled 8,831 digital crime cases. This figure increased by 1,342% from 2021, with only 638 cases. The most common type of digital crime in Indonesia is online fraud, with 4,712 cases. This type of crime is followed by the spread of harmful content on social media, with 2,042 cases (Pusiknas Bareskrim Polri 2022).

Table 2.

Data on Digital Crime in Indonesia as of 2022

Type of crime	Number of cases
Online fraud	4.712
Spreading negative content on social media	2.042
Online sexual harassment	671
Online banking crime	622
Identity theft crimes	389
Hacking crime	368
The crime of spreading hoaxes	354
Online human trafficking crimes	317

Data source: National Police Criminal Investigation Agency (Bareskrim)

The data on digital crime in Indonesia as of 2022 shows that one of the things that must be considered is digital literacy because digital literacy dramatically influences the direction of how we interpret social media and technology. Indonesia's digital literacy index is actually starting to increase even though it is still in the low category. The increase in Indonesia's digital literacy index shows that Indonesians are increasingly skilled in using digital technology. However, there are still many things that need to be done to improve the digital

literacy of Indonesian people, especially in the aspect of digital security. Based on the Kominfo and KIC survey, digital security is an aspect of digital literacy that still needs to be improved. In 2024, Indonesia's digital security score is 3.12. This score is still below the scores of other digital literacy aspects, such as digital skills (3.57), digital ethics (3.68), and digital culture (3.84). Improving Indonesians' digital literacy is essential to reduce the risk of digital crime.

People with high digital literacy will be more vigilant and avoid digital crime (Pratiwi Agustini 2023). However, listening to the development of digital literacy in Indonesia has begun to show an increase. However, the development of digital literacy in Indonesia has yet to reach an adequate level (Rahmah 2015). This reminds us of the importance of improving digital literacy in Indonesia so that people can better understand and optimize the use of digital technology in everyday life and the democratic process. This is a good response from the Indonesian government, which is committed to improving digital literacy programs to encourage active and critical participation of the community in the democratic process. The importance of digital literacy and democracy in the digital age cannot be underestimated. Digital literacy has a vital role in ensuring the active and educated participation of the public in the democratic process (Anasta, 2023). The urgency of improving digital literacy in Indonesia is not only to fulfill the needs of individuals in accessing information but also to maintain the integrity of democracy; research conducted by Novitasari & Fauziddin (2022) revealed that digital literacy in Indonesia is one of the essential keys in facing the challenges of democracy in the digital era.

Digital literacy, which includes the skills to access, select, understand, and distribute information wisely and responsibly, is essential in a healthy democracy. In a democracy, digital literacy enables citizens to access a wide range of information, participate in public discussions, and make decisions based on various credible sources. Sardin (2017) found that a lack of understanding of how information and communication technologies (ICTs) work can also lead to misunderstandings or the spread of misinformation, which can affect democratic processes. For example, citizens who cannot distinguish between legitimate news and disinformation may make political decisions based on inaccurate information. Another study is entitled *The Digital Literacy Gap Impacts How Indonesians*

Understand and Respond to the Information They Receive, especially on the Internet, where the average Indonesian spends significant time. A lack of digital literacy can lead to difficulties distinguishing between accurate information and hoaxes, leading to the spreading of false information and hatred. This shows that improving digital literacy is not only crucial for individual progress but also for maintaining integrity and peace in a digital democracy (Andriani 2022)

Digital literacy highly influences active participation and the quality of democracy in Indonesia. This is stated by research conducted by Raharjo & Winarko (2021) who found that high levels of digital literacy are closely related to more active political participation in society. The research conducted by Nelson K, Anggraini E, and Schlüter A. (2020) showed that digital literacy is essential in increasing public participation in political discussions and understanding crucial matters related to democracy and governance. In addition, research by Viera Mayasari Sri Rengganis (2019) found that low levels of digital literacy can hurt political participation and the quality of democracy. Likewise, research by Adhianto and Suryanto (2021) found that low levels of digital literacy can hurt political involvement and the quality of democracy. Shows that low digital literacy can impact a society that is less critical of information, vulnerable to political manipulation, and has a low level of political participation. To improve digital literacy in Indonesia, it is necessary to take various steps such as increasing digital literacy education in schools, training and digital literacy development programs for the general public, and monitoring and supervision content circulating on social media (Kurnianingsih, Rosini, and Ismayati 2017). In the era of digital democracy in Indonesia, digital literacy is crucial to ensure that citizens can participate in the democratic process in a responsible and informed manner. Digital literacy includes using technology and internet access and understanding, disseminating, and critically using information (Wirawan et al. 2021).

Several previous studies have highlighted the importance of digital literacy in supporting political participation and preventing the spread of hoaxes. For example, Raharjo and Raharjo and Winarko (2021) study found that high levels of digital literacy among millennials in Surabaya correlated with increased active political participation. The study suggests that digital literacy can strengthen people's ability to engage in political discussions and make more informed decisions based on accurate information. Meanwhile, Viera Mayasari Sri Rengganis

(2019) research shows that low digital literacy among voters with disabilities in Sleman contributes to low political participation and vulnerability to disinformation.

In addition, research by Candra et al. (2021) highlighted the importance of digital citizenship infrastructure to strengthen national identity in Indonesia. Their findings show that while technological infrastructure can support digital literacy, technical aspects alone are not enough to shape responsible political participation without education on digital ethics. This is also reinforced by Andriani (2022) findings, which show that a lack of understanding of digital literacy makes people more vulnerable to the spread of hoaxes and hate speech.

However, most of these studies focus more on technical aspects, such as improving technological skills and infrastructure access, without emphasizing the direct impact of digital literacy deficiencies on the quality of democracy. For example, (Kurnianingsih et al. (2017), study focuses on improving digital literacy skills through school training. Still, it must explore how a lack of digital literacy can affect information manipulation and decrease critical political participation. Therefore, this study seeks to fill this gap by highlighting digital literacy as a vital challenge to the quality of democracy, particularly its direct impact on the spread of hoaxes and political manipulation in Indonesia.

METHODS

This research methodology uses a literature study approach with qualitative analysis to explore digital literacy challenges in democracy in the digital era. Through this approach, researchers collected and analyzed information from various relevant and reliable sources, including journal articles, books, research reports, and government documents related to digital literacy, democracy, and governance. The literature study approach allows researchers to evaluate patterns, themes, and trends in the literature and dig deeper into the issues under study to gain in-depth insights into the role of digital literacy and its impact on the quality of democracy in Indonesia (Sugiyono. 2013).

Data collection was conducted systematically with a literature search using keywords such as 'digital literacy,' 'digital democracy,' 'online political participation,' and 'social media hoaxes.' Literature sources were obtained from

academic databases such as SINTA, Google Scholar, Scopus, and official government and research institution websites to ensure that the literature collected was credible and relevant to the research topic. The collection process followed structured steps to ensure the accuracy and relevance of the sources used.

The data collected was analyzed using the content analysis method to identify key themes and patterns in the literature reviewed (Anguera et al. 2023). This analysis involved coding the data to find frequently occurring topics and linking them to the concepts of digital literacy and democracy. Data triangulation was conducted by comparing results from various literature sources to increase the validity and reliability of the research findings (Lawlor, Tilling, and Davey Smith 2017). Thus, this research can provide a more objective and in-depth picture of the challenges of digital literacy in strengthening democracy in the digital era and offer practical recommendations to overcome the barriers identified.

RESULTS AND DISCUSSION

The emergence of digital democracy in the current generation has caused some problems with its ability. The millennial generation is most affected by digital technology, but they also have an essential role in overcoming existing problems. They need instruction on utilizing this technology wisely and critically to avoid spreading false information and hate speech. Therefore, mastering digital literacy is crucial for developing a peaceful democracy in the digital era. People must be able to recognize and evaluate information received through digital media (Alchatib, Haqqi, and Murdani 2021; Andriani 2022).

Indonesia now has at least 62.1% of the population using the internet. Indonesia now has at least 62.1% of the population using the internet. The 2022 data on Indonesian internet users shows a significant increase from the previous year. However, some provinces still have a low level of digital literacy and need special attention (Belawati et al. 2023). One of them is in eastern Indonesia, such as Papua and Maluku. One of the factors that caused the development of typing in these areas was the lack of access to adequate ICT infrastructure. Typing is an essential factor in the progress of a country and increasing people's digital literacy (Prakasa et al. 2022).

Figure 1.
ICT Development Index in 34 Indonesian Provinces (2022)



Source: Central Bureau of Statistics (BPS) report

The growth of the Information and Communication Technology (ICT) sector in Indonesia still needs to be more robust. The gap in the domestic digital ecosystem is increasing, as measured by the Central Statistics Agency (BPS) through three leading indicators to assess the achievement of ICT development in each Indonesian province. Using this approach, in 2022, DKI Jakarta achieved an index of 7.64, which is the highest value among all provinces in Indonesia. In contrast, Papua Province only achieved an index of 3.22, placing it as the province with the lowest index nationally. Out of 34 provinces in Indonesia in 2022, only one province achieved a development index that could be categorized as "high," namely DKI Jakarta. Meanwhile, 32 other provinces were classified as "medium," only one province, Papua, had a development index categorized as "low." BPS also noted an increasing gap in ICT development by 2022. The low ICT development index in some parts of Indonesia, which causes a digital divide between urban and rural areas, still requires serious attention (Belawati et al. 2023). The impact of uneven ICT development will be seen in the inequality of people's access to information and opportunities. Therefore, strategic measures are needed to address this challenge and improve digital literacy in Indonesia as a whole. One action is to increase investment in ICT infrastructure, especially in underdeveloped regions (Md Sawari et al. 2022).

Currently, Indonesia's digital literacy index is still in the medium and low categories, indicating the need for more severe efforts to improve digital literacy in Indonesia by increasing accessibility through the provision of affordable and accessible internet access for all levels of society. Thus, measures to develop digital

literacy in Indonesia should involve collaboration between the government, educational institutions, the private sector, and society.

Table 3.
Indonesia Digital Literacy Index (2020-2022) Scale 1-5

Data Name	2020	2021	2022
Digital Literacy Index	3,46	3,49	3,54
Digital Skills	3,34	3,44	3,52
Digital Ethics	3,72	3,53	3,68
Digital Safety	3,24	3,1	3,12
Digital Culture	3,55	3,9	3,84

Source: Ministry of Communication and Information Technology

Overall, the utilization of digital information and communication technology by Indonesians has increased since the start of the pandemic until now. Based on the report, Indonesia's digital literacy index in 2022 reached 3.54 points from a scale range of 1 to 5, indicating that the overall level of mastery of digital literacy among Indonesians is at a "medium level." This increase can be seen from the increase in the index by 0.05 points compared to 2021, which was previously at the level of 3.49. When compared to 2020, there was an increase of 0.08 points. This report evaluates the digital literacy index by referring to four main indicator pillars: Digital Skills, Digital Ethics, Digital Safety, and Digital Culture. Below are the details of the indicators and their score movements.

First, the increase in digital skills from 3.44 points in 2021 to 3.52 points in 2022 indicates an improvement in the use of technology, such as computers and the internet. However, this data only sometimes correlates with the ability to identify false information, as seen by the increasing number of hoaxes. Raharjo and Winarko (2021) Argued that although technical digital literacy is increasing, without the ability to assess information critically, people remain vulnerable to disinformation. Priwati and Helmi (2021) Also supports these findings, pointing out that many internet users in Indonesia are still easily swayed by hoaxes, especially on social media platforms. Fraga-Varela and Alonso-Ferreiro (2023) Additionally, technical skill enhancement should be accompanied by more

comprehensive information literacy training, including the ability to verify and filter accurate information.

Thus, despite improving digital skills, this study aligns with previous researchers' findings that more than technical ability is needed. Information and critical literacy need to be enhanced to address the spread of hoaxes and improve the quality of democratic participation. In the Indonesian context, digital upskilling should include a critical component to sort out accurate information to maximize the benefits of technological advancements.

Secondly, the improvement in digital etiquette, which rose from 3.53 points in 2021 to 3.68 points in 2022, indicates an increase in users' awareness of how to act in the digital space, including how to comment and respect privacy. However, despite the increase in these indicators, the spread of harmful content on social media remains high. Sardini (2017) stated that despite the rise in ethical awareness, implementation on the ground could be more consistent, especially in countries with low levels of digital literacy, such as Indonesia. Candra et al. (2021) also argued that digital ethics development requires a more comprehensive approach, including formal education that integrates ethical values and digital responsibility. Andriani (2022) strengthens this argument by pointing out that a lack of in-depth understanding of digital ethics can worsen when people engage in political discussions on social media, often filled with hate speech and disinformation.

These findings emphasize the need for a more comprehensive approach to teaching digital ethics. Improving existing digital ethics indicators needs to be complemented by more proactive programs that teach the social impact of unethical information dissemination to contribute to creating a healthy digital environment.

Third, digital security, which increased slightly from 3.10 to 3.12 in 2022, reflects that public awareness of cyber risks is still low. This is supported by the increase in online fraud cases, which reached 4,712 cases in 2022. Akazaki et al. (2020) and Zulqadri et al. (2022) stated that although technical skills and internet access are increasing, self-protection in the digital world remains a significant challenge in many developing countries, including Indonesia. Hinck, Hawthorne, and Hawthorne (2018) also highlighted that low digital security awareness directly impacts the rise of cybercrime, such as fraud and identity theft.

Meanwhile, Nelson et al. (2020) and Pratiwi Agustini (2023) found that efforts to improve digital security literacy must be further emphasized, primarily through training programs involving cyberattack simulations and education on best practices for protecting personal data. Based on these findings, it is clear that more than improving digital security indicators in Indonesia is needed to keep up with the increasing cyber threats. More systematic measures are required, including collaboration between the government and the private sector to provide comprehensive training on digital security

Overall, the results of this study show that despite improvements in various aspects of digital literacy, the positive impact on the quality of democracy in Indonesia is still limited. Kurnianingsih et al. (2017) highlighted that adequate digital literacy should include more than just technical skills; there should be an emphasis on critical, ethical, and security aspects. Wirawan et al. (2021) support this view by stating that digital literacy programs that do not include ethical and vital elements will only produce technically skilled users but are vulnerable to information manipulation.

In the context of the upcoming 2024 General Election, digital literacy improvement needs to be done holistically to prepare the public for disinformation and increased digital security risks. A more comprehensive approach, which includes ethics, critical skills, and cybersecurity training, can help ensure that digital literacy improvements genuinely positively impact the quality of democracy in Indonesia.

The impact of weak digital literacy in Indonesia can be felt in several aspects. A form of the effect of the lack of digital literacy is the much fake news spread on social media that can influence people's perceptions and decisions (Panchenko, Plakhtii, and Plakhtii 2021). Based on data from KOMINFO, the number of hoax news circulating in Indonesia increases yearly; digital literacy is becoming increasingly important in addressing this problem and ensuring the public can sort out correct and reliable information. In this way, it is hoped that citizens can be literate in digital literacy to form digital citizenship.

Table 4.

Hoax Data in Indonesia per year from 2019 - 2023

Year	Number of Hoaxes
2019	9,072
2020	10,227
2021	9,072
2022	10,142
2023	11,642

Source: Ministry of Communication and Information Technology

Referring to information from the Ministry of Communication and Information Technology (Kominfo), the number of hoax issues identified in Indonesia in 2023 reached 11,642. This number increased when compared to 2022 when it reached 10,142 issues. If you look at the data, the number of hoax issues per year in Indonesia has increased significantly. This can threaten democracy and social stability in the context of elections. This explains how important it is to improve digital literacy to face the challenges of hoaxes ahead of the 2024 Election. Societal issues, such as identity politics, social conflicts, and religious sensitive problems, also influence the spread of hoaxes. In 2020, the issue of COVID-19 and vaccines became the main target of hoaxes, which spread widely. This is also similar to 2023. The growing issue is political crime and corruption scandals, which are the target of hoaxes that harm the election process and damage the image of candidates and related institutions (KOMINFO 2023).

In addition, low digital literacy also creates a digital divide between those who are proficient and have access to technology and those who are not (Akazaki et al. 2020). This condition makes individuals who do not have digital literacy fall behind in accessing information and opportunities available in the digital era. The most significant impact is the low level of community participation in the digital democratic process (Dzobelova et al. 2020). This is due to limited knowledge and skills in actively using digital media to participate in discussions, elections, and decision-making.

The impact of low digital literacy in Indonesia is far-reaching. These include limitations in accessing and utilizing digital technologies effectively, which hinders

people's ability to obtain accurate and reliable information. In addition, a lack of awareness about digital security and privacy increases the risk of cybercrime, such as fraud and personal data theft. The lack of ability to sort out true and false information (hoaxes) also facilitates the spread of fake news, which has the potential to cause misunderstandings and harm the public. Addressing these challenges is crucial to forming a digitally literate society that can thrive in an increasingly technology-driven world. Here is the Indonesia Digital Literacy Index (IDLI) data from 2019 to 2022, showing the development of digital literacy in Indonesia

Table 4.
Indonesia's Literacy Index 2019-2022

Year	IDLI
2022	3,54
2021	3,49
2020	3,46
2019	3,39

Data source: Ministry of Communication and Information Technology

The data above shows an increased digital literacy index from 2019 to 2022, although the growth is relatively slow. This indicates that despite the progress in improving digital literacy, challenges still need to be overcome to achieve optimal digital literacy in Indonesia. The improvement of this index needs to continue to be encouraged through various initiatives and collaborations to accelerate the progress of digital literacy evenly across regions.

Digital literacy is a significant challenge for Indonesian society, especially in the era of digital democracy. The lack of digital literacy understanding and skills affects people's ability to access, use, and understand information presented through digital technology (Ünal and Çiçeklioğlu 2019). In addition, Indonesia's complex economic issues and limited IT infrastructure are also barriers to implementing digital literacy in the country (Hinck, Hawthorne, and Hawthorne 2018). The challenge of digital literacy in Indonesia is also related to the level of public awareness and knowledge about information and communication technology.

Indonesia faces several critical challenges in improving digital literacy in the era of digital democracy. Firstly, access and infrastructure limitations:

Indonesia's complex economic issues and limited IT infrastructure limit people's access to digital technology. Second, Lack of Digital Literacy Understanding and Skills: Many Indonesians still need to understand the importance of digital literacy and lack the skills to use digital technology effectively. Third, Low Awareness and Knowledge of ICT: Indonesians need to increase their awareness and knowledge of information and communication technology to utilize it optimally in their daily lives. Moreover, there is a Lack of Educational Facilities and Resources: Limited educational infrastructure, especially in rural areas, is an obstacle to providing adequate facilities and resources for the digital literacy learning process.

However, despite these challenges, there are still great opportunities to improve digital literacy in Indonesia (Hinck et al. 2018). One is through cooperation between the government and relevant organizations in providing comprehensive digital literacy education integrated into the formal education curriculum. In addition, encouraging active community participation in digital literacy programs and providing more comprehensive access to digital resources are essential steps in improving digital literacy in Indonesia. Improving digital literacy in Indonesia will positively impact society in several ways.

In addition, increasing digital literacy will help people understand and use technology ethically and maintain their security and privacy when interacting in the digital world (Damanik 2019). Concrete steps need to be taken to overcome the challenges of weak digital literacy in Indonesia. One of them is to involve all relevant parties, such as the government, educational institutions, community organizations, and the private sector, in providing structured and integrated digital literacy learning programs. Based on the explanation above, the challenges and opportunities for improving digital literacy in Indonesia can be summarized in the following table.

Tabel. 5

Challenges and Opportunities for Improving Digital Literacy in Indonesia

Challenges	Opportunities	Description
Limited Access and Infrastructure	Government and Organizational Cooperation	Economic issues and limited IT infrastructure hinder access to digital technology, but collaboration with organizations can provide comprehensive solutions.
Lack of Digital Literacy Understanding and Skills	Encouraging Active Community Participation	Many people are unaware of the importance of digital literacy, but active participation in literacy programs can enhance understanding and skills.
Low Awareness and Knowledge of ICT	Providing Broader Access to Digital Resources	Awareness of information and communication technology remains low, yet expanding access to digital resources can help improve digital literacy.
Limited Educational Facilities and Resources	Involving Multiple Stakeholders	The lack of adequate educational infrastructure can be addressed by involving the government, educational institutions, and the private sector in digital literacy programs.

Source : Data processed by researchers

The table above illustrates that although there are several challenges in enhancing digital literacy in Indonesia, there are still significant opportunities for improvement. Cross-sectoral collaboration, increasing community participation, and providing broader access to digital resources are strategic steps that can accelerate progress in achieving digital literacy goals. By engaging multiple stakeholders, digital literacy is expected to develop more rapidly and positively impact society in facing the increasingly complex digital era.

This study aims to identify the challenges of digital literacy in Indonesia and its impact on the quality of democracy in the digital era. The findings show that although the digital literacy index is increasing yearly, the imbalance between developing technical skills and understanding digital ethics remains a significant challenge. This finding aligns with Raharjo and Winarko (2021) research, which states that improved technical skills in digital literacy are only sometimes accompanied by a critical ability to filter information. They found that people remain vulnerable to disinformation and political manipulation without critical

literacy. This is also supported by Priwati and Helmi (2021), who points out that many internet users in Indonesia are easily affected by hoaxes, especially on social media. They emphasize the importance of critical literacy as an integral part of digital literacy programs.

However, some other studies suggest a different approach. For example, Kurnianingsih et al. (2017) focused on improving technical skills through in-school training, assuming that improved technical ability would lead to an improved understanding of information. This approach does not fully align with the findings of this study, which show that technical skills alone are not enough to face the challenges of digital literacy. This study reinforces the view that improving digital literacy should go beyond technical skills and include the critical ability to evaluate information.

Furthermore, this study found that despite an increase in digital ethics awareness, the spread of harmful content on social media remains high. This finding is supported by Sardini (2017) and Candra et al. (2021), which showed that despite increasing awareness of ethics, the application of ethical practices in digital life is still lacking. Andriani (2022) research also indicates that a profound lack of understanding of digital ethics can worsen the situation when people engage in political discussions that are often full of hate speech and disinformation. This suggests that digital ethics literacy needs to be integrated more comprehensively into formal education programs to influence social media behavior more effectively.

On the other hand, research by Belawati et al. (2023) emphasized the importance of technology infrastructure and equitable access as critical factors in improving digital literacy. They argue that improving digital literacy will be hampered without adequate infrastructure, especially in underdeveloped areas. This finding is slightly different from the focus of this study, which emphasizes the ethical and security aspects of literacy rather than just infrastructure. Nonetheless, this study recognizes the importance of access and infrastructure as prerequisites but asserts that improving digital literacy should prioritize the development of critical skills and ethical awareness.

In terms of digital security, this study shows that although security literacy scores are increasing, public awareness of cyber risks is still low. This is supported

by the findings of Zulqadri et al. (2022) and Hinck et al. (2018), highlighting that cybersecurity awareness in many developing countries is still a significant challenge. They recommend that digital literacy programs include more intensive security training, including simulations of cyberattacks. Meanwhile, research by Nelson et al. (2020) shows that efforts to improve security literacy are often less prioritized than developing other technical skills. This finding emphasizes the importance of enhancing security literacy as part of a more significant effort to equip people to protect themselves from digital threats.

Overall, the dialog with previous studies shows that while there is consensus on improving digital literacy, the proposed approaches and focus vary. This research confirms that a holistic approach that includes balanced development of technical skills, critical literacy, digital ethics, and cybersecurity is vital to ensuring that improved digital literacy can genuinely strengthen the quality of democracy in Indonesia.

CONCLUSION

This study aims to identify key challenges in digital literacy in Indonesia and assess their impact on the quality of democracy in the digital era. Based on the findings, although the digital literacy index increased from 3.46 in 2020 to 3.54 in 2022, the increase has yet to address fundamental issues related to the ability to evaluate information and awareness of digital ethics and security critically. The imbalance between mastery of technical skills and other aspects of literacy is the main problem revealed, with an indication of an increase in the number of hoax cases to reach 11,642 in 2023 and a digital security score that remains low at 3.12 in 2022. The findings show that while the public is becoming increasingly proficient in using technology (digital skills score of 3.52), the ability to sort accurate information from false and awareness of cyber risks and ethical behavior still needs to be improved. Therefore, this study asserts that solutions to the digital literacy challenge should include a holistic approach that focuses on technical skills and integrates critical literacy, digital ethics, and cybersecurity to strengthen democracy in Indonesia.

To address the identified problems, this study recommends several specific policies, such as integrating critical literacy, ethics, and digital security into the

formal education curriculum, community-based training in areas with low digital literacy scores, and public awareness campaigns on cybersecurity risks. In addition, collaboration between the government, private sector, and communities to strengthen digital infrastructure in underdeveloped areas is also needed to address the technology access gap. With these strategies, Indonesians' digital literacy is expected to significantly improve, thus supporting more critical and responsible democratic participation in the digital era.

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Bulya is a Master of Government Science student at Universitas Muhammadiyah Yogyakarta. With a deep interest in governance and democracy issues, Bulya focuses on how digital literacy can be both a challenge and a catalyst in strengthening the quality of democracy in Indonesia. Her research explores the role of technology in driving more inclusive change in public administration.

Suci Izzati studied Informatics Engineering at Vocational School, Universitas Sebelas Maret. Suci is intensely interested in applying information technology to solve problems in the digital era. Through her involvement in this research, Suci provides a valuable technical perspective and seeks to advance the use of technology to improve governance and education.

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