

Available online at:

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Volume 5, 2025 (686-722)

International Conference on Humanities,
Education, Language, and Culture

Analyzing The Effect of Digital Literacy on The Formation of Student Character: A Literature Review

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Abstract

In today's modern era, humans cannot escape the existence of digital-based technology. In recent years, the use of digital devices has entered the education environment. The understanding of the benefits and dangers of using digital devices must be instilled from the start. This awareness will foster various character traits that can protect students from the misuse of digital devices, equipping them with the character traits needed. This study aims to provide a description of how digital literacy impacts the formation of responsible student character. The research method used in this study is SLR (Systematic Literature Review). Data collection is done by identifying or examining all articles that have the same research topic in this study. A total of 10 national and international journal articles were used in this study, obtained from Google Scholar, Sinta, and the international journal Saintis Publishing. From this study, it was found that character building can be conveyed digitally, by introducing

principles and the consequences of use, which can foster a sense of responsibility towards oneself and the environment.

Keywords: Digital literacy; Character; Students

INTRODUCTION

The development of digital technology has revolutionized various aspects of life, including education. The rapid development of information and technology has affected everything in human life (Nikou & Reuver, 2022). Rapid digital transformation requires the world of education to be able to adapt, not only in the method of delivering learning, but also in the process of forming the character of students. In the midst of massive and fast-paced information flows, digital literacy is one of the essential 21st century competencies that students must have. Digital literacy not only includes technical skills in using digital devices, but also includes the ability to think critically, ethically and responsibly in utilizing technology for learning and self-development.

On the one hand, digital literacy opens up vast opportunities for students to access various sources of knowledge, develop creativity, and collaborate with various parties across geographical boundaries. But on the other hand, big challenges also arise, such as the spread of hoaxes, cyberbullying, negative content, and excessive consumptive behavior due to exposure to digital media. It is in this context that the role of digital literacy becomes very important in helping students build characters who are strong, critical, responsible, and care about their social environment. Education in the 21st century can improve various skills of students, such as innovating, using

technology and information, and having life skills (Laksana, 2021).

Character education, which has been an important focus in Indonesia's education system, must now be designed in synergy with digital developments. Students' characters are not only formed through direct interactions in the school or family environment, but also through virtual interactions on social media, digital learning platforms, and various other online information channels. Therefore, the integration of digital literacy in student character building is a necessity that cannot be ignored.

Digital literacy has become an important dimension in modern education. UNESCO (2018) states that digital literacy is not only about the use of digital devices, but also about the ability to understand, evaluate and critically participate in the digital world. Digital literacy includes understanding how technology works, how information is constructed and disseminated, and how users can utilize technology wisely and responsibly.

In Indonesia, various policies have encouraged the importance of digital literacy in schools. The Ministry of Education, Culture, Research and Technology (MoECristek) has developed programs such as the School Literacy Movement (GLS) which also includes digital literacy. This shows the realization that students need to be equipped with digital literacy skills to become not only users of technology, but also smart and ethical producers of information.

Digital literacy helps students to understand that not all information spread on the internet is true and trustworthy. Thus, students are taught not to believe easily, but to have the ability to verify and analyze information critically. This critical attitude is part of the important characters that students must have in the digital era, so

that they do not become victims of information manipulation or the spread of fake news (hoaxes).

Character building is a complex process that involves cultivating values, habits and attitudes that reflect moral and social integrity. In the context of education, student character building includes values such as honesty, responsibility, cooperation, empathy, tolerance and independence. These values can be developed through various educational activities, both formal and non-formal, including in digital interactions.

The digital age has changed the way students interact with the world. Students now learn not only through books and teachers, but also through social media, online platforms and virtual communities. This brings positive impacts, but also challenges. Students can get information faster, but they are also vulnerable to negative influences such as instant culture, digital individualism, and unethical behavior online. In connection with the demands of 21st-century learning, one of the solutions needed is to encourage increased digital literacy of students (Urip & Riwanto, 2020).

Therefore, the integration of digital literacy in the character building process is essential. Teachers and educators need to develop learning strategies that not only teach digital skills but also shape positive attitudes in the use of technology. For example, digital project-based learning can be used to instill the values of cooperation and responsibility, while online discussions on current issues can be used to foster critical attitudes and empathy.

Teachers have a central role in integrating digital literacy in learning and character building. Teachers are not only material deliverers, but also facilitators, models and mentors in the ethical and productive use of technology. For this reason, teachers need to be given adequate training to

be able to integrate digital literacy in the learning process.

Schools as educational institutions must also create a healthy digital ecosystem. The provision of digital infrastructure, policies on the wise use of technology, and the acculturation of digital literacy must be part of the school's strategic planning. Schools also need to collaborate with parents and communities in assisting children in the digital world.

METHODS

The method used in this article is a literature review. The literature review research method is an approach used to compile, evaluate, and interpret literature or written sources relevant to a research topic (Maryanto et al., 2023). This literature review is used to identify and analyze the role of digital literacy in student character building. The literature review process began by formulating specific research questions related to the main challenges in digital literacy. Inclusion and exclusion criteria were then established to ensure the relevance and quality of the selected studies, journal articles published within the last 5 years and in Indonesian or English were included, while non-scientific publications and reviews without empirical databases were excluded. A literature search was conducted on databases such as Google Scholar using keywords such as "digital literacy", "student character", and "challenges of 21st century education". The articles found were screened based on their abstracts and their conformity to the set criteria. Selected studies were analyzed to extract data regarding the identification of barriers, research methods used and key findings.

RESULTS AND DISCUSSION

Table 1. Presented Review Results of 8 Verified Articles Up to Inclusion Stage

Auth or and year	Title	Methods	Results	Summary
(Ammatulloh, 2021)	Character Building of Students During the Covid-19 Pandemic with Digital Literacy Media Civics Caring Apps	Design and Development (D&D)	The contribution of research to science includes the field of Citizenship Education and the field of Sociology. The results of this study are user tasks, evidence of student	Based on the research that has been carried out, it can be concluded that the presence of Civics Caring Apps has succeeded in answering the anxiety of teachers in monitoring and

			<p>character chaner ges, prototype design and android application s providing understand ing character values with good user experience and interactive content display motivate students to implement each positive character value they learn.</p>	<p>charact er buildin g for student s during the Covid- 19 pande mic. With applica tion content that is educati ve as well as fun and in accorda nce with student interest s, this applica tion is very</p>
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				effective to serve as educational entertainment for students.
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(Anjarwati et al., 2022)	Implementation of Digital Literacy in an Effort to Strengthen Student Character Education	qualitative descriptive	The results of this study found that SD Muhammadiyah 1 Padas during the digital literacy pandemic has been running well, especially for "Salam Sapa" where students are very enthusiastic in reading various information that has been prepared	The conclusion of the research is that at SD Muhammadiyah 1 Padas, initially literacy was already running with the title "Reading Corner" because of the conditions during the pandemic, teacher
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				s develop ed their creativi ty by doing digital literacy which they called "Salam Sapa" which was carried out on Monda y, Wedne sday and Friday. By contain ing videos, images in the form of pamphl
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				ets or posters that are shared on Whats App, Instagram, and Google Classro om. In this literacy , there is a strengt hening of charact er educati on in indepe ndence, commit ment, honest y, and also
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				responsibility in students doing various things, especially in doing digital literacy . Corresponding
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(Aulia et al., 2023)	The Impact of the Literacy Movement on Character Education Development of Elementary School Students	library study approach	The results of the analysis from this study are that in growing the character of students in the 21st century, digital literacy plays an important role because children tend to be more interested in things that smell like technology, YouTube and other social media can be used by teachers or	The concept of the School Literacy subject books for 10-15 minutes at school, 2) Second stage, Development which is a
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			educators as a forum to channel the developme nt of values. character. The conclusion of this study is that the use	
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			of digital literacy needs supervision from parents and teachers by providing or limiting digital ethics, so that students avoid negative impacts.	follow-up to the habituation stage, 3) The third stage is the implementation of literacy-based learning. In addition, the Student Literacy Movement has positive and negative impacts.
(Khairunisa, 2023)	The urgency of digital literacy in developing character education for youth in	literature review	The results show that digital literacy can be an effective tool to strengthen	Digital literacy in character education in the Society 5.0 era significant

	society 5.0	<p>learners' character in the era of society 5.0. Through digital literacy, learners can develop fundamental values such as honesty, responsibility, empathy, cooperation and problem-solving skills. By considering key aspects such as technological knowledge, digital skills, responsible online behavior</p>	<p>ly impacts. Digital literacy is through</p>
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			and ethical awareness, digital literacy can be a strong foundation for developing solid moral and ethical values in the use of digital technology.	
(Husna & Novita, 2022)	Digital Literacy in Student Character Building at MTs Uswatun Hasanah Mirza Kota Binjai	Survey	Through the lecture method with material presentation and discussion techniques, this activity gave students enthusiasm and enthusiasm where 75% understood the material	The digital literacy movement in schools aims to increase students' motivation in learning, develop students' creative thinking and foster the integrity of students

			presented well and as a result students were willing to become ambassadors of the digital literacy and Unity in Diversity in their schools.	and teachers in order to create great students who can compete in the current era of globalizati on.
(Musa, 2022)	Implementa tion of Digital Literacy in the 21st Century Era in Shaping the Character	descriptiv e qualitative	The results of the study explain that this digital literacy has been applied at MIS Soko Pekalongan City, especially in shaping the character of students. Moreover, 2 years ago the whole	Digital literacy has been implement ed at MIS Soko Pekalonga n changed, one of which is in education,

			world spread a disease called covid 19 all human activities have changed, one of which is in	
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			education, critical thinking.	previously the learning process at MIS Soko Kota Pekalonga n was face-to- face to online learning. This is why digital literacy is applied at MIS Soko Pekalonga n City in shaping character.
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(Nusantara et al., 2025)	Digital Literacy Strengthens Character Education in the Era of Society 5.0	Literature review	Digital literacy can encourage the growth of these values including honesty, accountability, empathy, cooperation, and problem-solving skills. Finally, digital literacy teaches students about the social, economic and cultural consequences of their actions online. Therefore, collaboratio	In the era of Society 5.0, when information and communication technology is developing rapidly, digital literacy is essential for building education. Combining character education and digital literacy not only improves technical skills, but also instills moral and social values in young
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			<p>n between various parties is needed to enable efficient integration of digital literacy into character education in the Era of Society 5.0.</p>	<p>people, thus promoting the development of noble character. In this concept, instructors act as agents of change, responsible for creating a conducive learning environment, encouraging and problem-solving skills.</p>
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(Pandie, 2022)	Digital Literacy Based on Christian Education as a Means of Character Building in the Era of Technological Disruption	Literature review	Based on the results of the study, Christian religious education continues to seek a fully Christian education to reach many people, through the development of digital literacy in schools, communities, churches and families.	Digital literacy is one of the alternatives to build youth character in the era of technological disruption that cannot be stopped by anything. Therefore, good literacy will produce youth with good character, while bad literacy will produce youth with bad character. SIGN UP
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(Pentian asari et al., 2022)	Strengthening character education in elementary school students through the use	Literature review	The results of the analysis of this study are in strengthening the character education of elementary school students in the 21st century, digital literacy plays an important role as a supporting media because	The use of digital literacy for elementary school students still requires supervision from both parents and teachers in harmony in its use by providing good knowledge in ethics so that children
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			<p>students tend to be more interested in technology, the internet, social media, and others, and are supported by thematic learning taught in elementary schools. which includes the integration of character values in each lesson. The conclusion of this study is that the use of digital</p>	<p>avoid the negative behavior and impact of the bad influence of technology. Parents can provide good direction when in the home environment, while at school teachers can utilize digital literacy during learning in order to achieve learning based on advances in Science and Technology (IPTEK).</p>
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			literacy is able to strengthen character values with balanced supervision from parents and teachers in its use.	
(Maulita, et.al 2022)	Building student character through digital literacy in facing 21st century education.	Literature review	The results of the research analysis are that in shaping the character of students in the 21st century, digital literacy has an important role because students tend to be	The conclusion of the study is that in the use of digital literacy, teacher and parent supervision is needed by setting limits for students so that they can avoid the negative impacts

			interested in things related to technology and social media that can be used by teachers as a forum to build student character values.	caused.
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Based on the literature review obtained from online journals, it can be described as follows. The Society 5.0 era presents major changes in human life triggered by advances in digital technology. The world is in a new era, in which globalization and the rapid evolution of digital technologies such as the Internet of Things (IoT), Big Data (BD), Artificial Intelligence (AI), robotics, 3D printing, Cloud Computing (CC), Mobile Devices (MD), among others, are pushing for major changes in business and society, and creating an entirely new environment. (Sydle, 2023). These changes affect various aspects of life, including education. Education as one of the main pillars in human resource development faces the challenge of preparing students who are not only proficient in technology, but also have strong character and noble character. The developed knowledge has been able to make modern humans invent a technology that can facilitate various needs and community activities so that the technology that is present is no longer a new element in

society (Rahmawati et al., 2021). One strategic approach that is now widely used is the integration of digital literacy in character education. Digital literacy is not only understood as the ability to use technology, but also includes the ability to think critically, ethically and responsibly in the digital world.

In this context, student character building through digital literacy is an urgency that cannot be ignored. Moreover, the Covid-19 pandemic that has hit the world in the last two years has become a momentum to accelerate the use of technology in education. Schools are required to immediately adapt to online learning systems that directly or indirectly encourage the implementation of digital literacy. This narrative will comprehensively discuss how digital literacy is an important pillar in the formation of student character in the era of Society 5.0, by highlighting good practices that have been carried out by schools, theoretical analysis, as well as challenges and solutions in its implementation. Technology encourages students to explore information and collaborate to strengthen 21st-century skills (Utaminingsih, Raharjo, et al., 2023).

The Society 5.0 era emphasizes the integration between humans and technology to create a better life. In education, this era demands a paradigm shift from conventional learning to technology-based learning that utilizes digital sophistication to improve the quality of education and strengthen student character. Education is no longer just about transferring knowledge, but also forming a strong personality, thinking critically, being able to work together, and having social sensitivity. The competency that must be mastered is digital literacy skills that strengthen students' character values and mental and

intellectual capacities. It requires students to prepare to face the challenges of the 21st Century (Sarwi et al., 2019).

Digital literacy is part of the six basic literacies launched by the government, namely literacy in reading and writing, numeracy, science, digital, financial and cultural-civic literacy. In Society 5.0, digital literacy becomes very important because learners are faced with abundant information, rapid social change and the complexity of digital life. Therefore, digital literacy not only teaches how to use devices, but also how to select information, interact ethically, and utilize technology for the common good.

One good practice in implementing digital literacy that supports student character building is that of SD Muhammadiyah 1 Padas. In the midst of the pandemic, this school not only focuses on delivering subject matter, but also develops a digital literacy program called "Salam Sapa". This program is available every Monday, Wednesday and Friday through WhatsApp, Instagram and Google Classroom. Teachers present educational content in the form of videos, pamphlets and posters containing moral messages and character values. Student response is very enthusiastic, and from the track record of assignments given, teachers can conclude the achievement of student character education.

The character values instilled through this program include honesty, responsibility, independence and commitment. Digital literacy here is not just about conveying information, but also building students' awareness of the importance of having strong character in digital and real life. This strategy shows that digital literacy can be an effective medium for character building if it is packaged creatively, fun and relevant to children's world. This means

that character-building by utilizing digital literacy is essential in elementary schools (Abdullah & Wicaksono, 2020).

Schools should utilize digital literacy in the online learning process. During the pandemic, this school integrated character values such as discipline, creativity and critical thinking in the materials delivered online. Teachers not only give assignments, but also invite students to discuss online, make creative videos, and reflect on character values through digital platforms. Digital literacy becomes a bridge between technology and the nation's noble values.

In addition to initiatives from schools, technological innovation also makes an important contribution in supporting student character building. One example is the *Civics Caring App* developed as an interactive learning media in Civics Education. The app is designed to deliver civic character values through interactive features, engaging visual content, and a fun user experience. Pentianasari et al. (2021) said that strengthening character education in elementary school children can utilize technology-based learning media through digital literacy skills, which are used to facilitate, support, and motivate students in teaching and learning activities. Students not only learn about norms and rules in society, but are also invited to reflect on their attitudes and actions in everyday life. The advantage of this application lies in its ability to provide a learning experience that is not boring. Students' character can be built through in-depth and meaningful digital experiences. Research shows that this app is able to answer teachers' concerns in shaping students' character during online learning. There are several benefits of utilizing digital

literacy activities, such as increasing critical thinking skills in understanding information, increasing vocabulary, increasing verbal skills, increasing focus and concentration of students, increasing reading skills, composing sentences, and writing information. Students are expected to be able to master the digital world in preparing for innovative education (Fitriyani & Nugroho, 2022).

For digital literacy to truly become part of character education, it needs to be systematically integrated into the curriculum. One strategy that can be done is through the School Literacy Movement (GLS). This program can be expanded not only in the form of reading non-lesson books for 15 minutes before the lesson starts, but also integrating digital activities such as reading educational articles online, watching character-based learning videos or discussing through digital forums

The role of teachers and parents is very important in guiding students to be able to use technology wisely. This should be an awareness for educators to improve digital literacy competencies so that educators have good digital literacy competencies in using technology tools (Dressen, 2021). Teachers as facilitators need to equip themselves with digital literacy and be able to present learning materials that are not only informative, but also shape character. Meanwhile, parents need to be active companions in directing children in interacting with the digital world. Collaboration between teachers and parents can create an ecosystem that supports student character growth. For example, teachers can assign projects that require students to work together with parents to create educational content or character-themed digital campaigns. Thus, character building does not only happen at school, but also at home.

The main challenge in implementing digital literacy for character building is teachers' and parents' lack of understanding of the concept of comprehensive digital literacy. Many still think that digital literacy is only about using devices, whereas it is much more than that, digital literacy includes digital ethics, information security and social responsibility. The solution is through training and strengthening the capacity of teachers and counseling parents. The government and educational institutions need to provide modules, training and mentoring to teachers and parents so that they are able to integrate digital literacy in character education effectively.

CONCLUSION

From the series of findings and studies described earlier, it is clear that digital literacy has made a major contribution to the transformation of learning, especially in strengthening character education. Through various innovations such as the use of educational applications (*Civics Caring Apps*), the "Salam Sapa" activity developed during the pandemic, and the utilization of digital platforms such as WhatsApp, Instagram and Google Classroom, teachers are able to present content that is both educational and fun for students. These contents, presented in the form of videos, pictures, pamphlets, and posters, are not only visually appealing but also contain character values such as honesty, responsibility, independence, and commitment.

Not only at school, the role of the family, especially parents, is a determining factor in the successful integration of digital literacy with character education. Children growing up in a digital environment need consistent guidance in order to be able to navigate the virtual world wisely and responsibly. Parental supervision that is aligned

with teacher teaching at school is key in preventing students from the negative impacts of technology use, such as device addiction, the spread of hoaxes, and unethical behavior on social media.

Digital literacy has also proven to be an adaptive solution to learning challenges during the COVID-19 pandemic. When face-to-face interaction is not possible, schools such as SD Muhammadiyah 1 Padas and MIS Soko Pekalongan successfully utilize digital space to continue learning while strengthening the character of students. Children are encouraged to remain creative, disciplined, think critically, and honest in completing assignments submitted online. However, this success does not come by itself. There needs to be strong multi-stakeholder collaboration: teachers as agents of change at school, parents as the main companion at home, and support from educational institutions and policies that provide space for the development of digital literacy with character. Digital literacy should not only be interpreted as the technical ability to use devices, but should touch on the ethical and social aspects of children's lives. Therefore, digital literacy is no longer an additional option, but a fundamental need in the character education process in the present and future. It is a solid foundation for the formation of a generation that is not only skilled in technology, but also wise in using it for the benefit of themselves, society and the nation.

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