



Application of Technology in Improving Primary School Students' Digital Literacy Skills

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Abstract : Literacy is an individual's ability to manage and understand information through reading and writing activities. This skill is closely related to language skills because it includes aspects of speaking, reading, writing, counting and problem-solving skills. In other words, literacy includes language abilities and skills, including reading, writing, speaking, counting, and problem solving at a certain level needed in everyday life. This research uses a literature study approach as the main method of data collection. In the process, the researcher conducted an in-depth study and understanding of various relevant theories from literature sources. Today, in the digital era, digital literacy is a very important ability for elementary school students to have. The development of information and communication technology has changed learning methods, so it is important that students have sufficient ability to access, evaluate and use digital information effectively. Digital literacy of primary school students includes various important elements. First, digital literacy enables students to develop skills in utilizing digital technology, including surfing the internet, understanding hardware and software, and using productivity applications. Second, digital literacy teaches students about the safety and ethical aspects of using technology, such as maintaining online privacy, protecting personal data and avoiding cyberbullying.

Keywords: Technology, Digital, Literacy, Elementary, School

1. INTRODUCTION

Literacy is a person's ability to manage and understand information through reading and writing activities. This skill is closely related to language skills, because it includes aspects of speaking, reading, writing, arithmetic, as well as the ability to solve problems (Wahyuti et al., 2023). Thus, literacy includes various language abilities and skills, including reading, writing, speaking, arithmetic, and solving problems needed in everyday life (Wahyuni, 2022a).

In this modern era, digital literacy has become a very important skill for every individual. The development of information and communication technology has changed the way we interact, work and learn. Digital literacy not only includes the ability to use technological devices, but also includes skills in searching, evaluating and utilizing information effectively (Cynthia & Sihotang, 2023). With these technological advances, the ability to access, analyze and use digital information has become increasingly important. According to a UNESCO report, around 90% of future jobs will require digital skills (Rizal et al., 2022).

Technology has significantly changed learning and teaching methods. With the existence of devices such as computers, tablets and learning applications, students now have wider access to learning resources. At the elementary school level, digital literacy is very

important because at this phase children begin to know and interact with technology. A good introduction to digital literacy from an early age can provide a strong foundation for students to face future challenges (Hidayat & Khotimah, 2019). Therefore, educational institutions need to design effective strategies to increase digital literacy among elementary school students. Data from the Pew Research Center shows that 73% of students use the internet to search for information related to their studies, indicating that technology serves not only as a tool, but also as a link between students and knowledge. (Naufal & Maulida, 2025).

Although the application of technology has many positive potentials, there are significant challenges in increasing digital literacy among elementary school students. Based on a survey conducted by the Ministry of Education and Culture, 40% of students in Indonesia reported difficulty in using technology effectively for learning (Wahyuni & Manurung, 2024). These challenges include a lack of understanding of online security, limited access to technology, and a lack of basic skills in using digital devices (Kamal & Sassi, 2024).

There are various types of technology that can be used to increase digital literacy among elementary school students. Examples are interactive learning software, e-learning platforms, and mobile applications designed specifically for education. Research shows that apps like Kahoot and Quizizz can increase student engagement in the learning process (Baroroh et al., 2024). The effectiveness of applying technology in learning can be measured through increasing students' digital literacy skills. A study by (Munip et al., 2024) revealed that students who engaged in technology-based learning experienced significant improvements in their ability to search for and evaluate information. This shows that technology can function as an effective tool in supporting the learning process.

Obstacles in implementing technology often relate to infrastructure and training. According to a report from the World Bank, 30% of schools in Indonesia still do not have adequate internet access. In addition, the lack of training for teachers in using technology is also a major obstacle in integrating technology into the curriculum (Chairunnisa et al., 2024).

2. RESEARCH METHODS

This research uses a literature study approach or literature review as the main method of data collection. In the process, researchers carried out in-depth studies and understanding of various relevant theories from literary sources. Carrying out the literature study was carried out through four systematic steps: first, preparing the required equipment; second, organizing a working bibliography; third, carry out effective time management; and fourth, carrying out reading activities and recording research material. The data collection process involves

searching and combining information from various reference sources including books, journal articles, and previous research results. All references collected were then reviewed critically and thoroughly to strengthen the propositions and ideas put forward in the research (Fadli, 2021).

3. RESULTS AND DISCUSSION

Currently, in the digital era, digital literacy is a very important skill for elementary school students to have. The development of information and communication technology has changed learning methods, so it is important to ensure that students have adequate abilities in accessing, evaluating and using digital information effectively (Resti et al., 2024). However, the implementation of digital literacy in basic education environments does not always run smoothly. Therefore, this section will thoroughly explore why digital literacy is important and strategies that can be implemented to improve the digital literacy skills of elementary school students. (Pambudi & Windasari, 2022).

The Importance of Digital Literacy in Elementary School Students

1. Ability to Use Digital Technology

Digital literacy is a very important skill for students. They need to have the ability to read, think critically, and filter information. Concepts such as how to search for information, assessing the veracity of data, and maintaining digital security should also be taught in the classroom (Anshori & Hidayat, 2023).

Research (Widiyanti et al., 2024) reveals the phenomenon of exposure to digital technology in children from a young age. The main challenge parents face today is the difficulty in monitoring their children's digital activities. Several factors that influence this situation include the type of content children access, how active and aware parents are in supervision, and the length of time children spend with digital devices. The research also emphasizes the importance of digital literacy as a key component, which includes the ability to understand the beneficial and detrimental effects of digital devices, as well as knowledge about using technology responsibly.

2. Ability and Ethics in the use of Technology

In technology education, the focus of learning needs to include more than just technical operational skills. Understanding security aspects and ethical principles in the use of technology is equally important for students. They need to be equipped with knowledge about how to protect privacy when engaging in cyberspace, strategies for

securing personal data, and awareness to avoid cyberbullying behavior and the use of technology that could harm other parties.(Ikhlas & Suyanta, 2024) .

3. Development of problem solving abilities and creativity.

Elementary school students need to be taught how to use technology as a creative tool to create digital content, solve problems and find innovative solutions. This requires critical and creative thinking skills, as well as a basic understanding of design and programming concepts (Nisa et al., 2023).

Game-based media can increase students' interest in learning. Conventional learning is no longer effective in this modern era, because this method is often boring and does not provide space for students to develop their skills to the maximum. Therefore, new methods need to be implemented to encourage students' interest in literacy (Hutauruk et al., 2022).

Digital Literacy Strategy for Elementary School Students

1. Integration of Digital Literacy in the Elementary School Curriculum

The initial step proposed is to integrate digital literacy as part of the basic education curriculum. Learning content needs to be designed to provide students with an understanding of the use of technology, digital norms and security aspects in online activities. The scope of learning material can include basic knowledge about computer hardware and software components, guidelines for safe internet use, the ability to verify the veracity of information, as well as understanding the importance of maintaining privacy and behaving ethically when using technology. This approach aims to build a foundation for students' understanding so they can use technology responsibly while still upholding ethics.(Sholeh & Efendi, 2023).

2. Teacher Training and Development in Digital Literacy

Increasing teacher competency through digital literacy training and development programs is crucial. Educators need to be equipped with adequate knowledge and expertise, both in operating digital technology and in methods of teaching digital literacy to students. According to Murtado in (Fadilah et al., 2024), Teachers who have a good grasp of technology get more benefits because they are able to integrate technology optimally in learning activities, thereby creating a more meaningful learning process for students. Meanwhile, providing continuous training and support in the use of technology is a basic need for teachers so they can continue to keep pace with rapidly developing technological advances (Wahyuni, 2022b).

According to Research (Fitri et al., 2024), An effective teacher training program must prepare educators to face the dynamics of curriculum change and provide assistance in aspects of teaching. This research also highlights that the use of technology can be a challenge that slows down the learning process of teachers, while changes in regulations from both the government and educational institutions also have an impact on teachers' capabilities in carrying out teaching.

3. The Role of Parents in Digital Literacy in Children

Collaboration is needed between schools, families and the community in efforts to support the development of digital literacy for elementary school students. Parents are required to play an active role in supervising and directing their children's use of technology, as well as providing education about the safe and responsible use of technology. The role of parents is not limited to teaching good behavior, but also includes providing motivation for children to develop independent learning abilities (Astrianingsih et al., 2024). In addition, (Nugroho et al., 2022) parents have the ability to accompany their children through monitoring the digital content they access. Parental involvement plays a vital role in minimizing the bad effects that may arise from consuming digital content. On the other hand, technological developments in this era have made various daily activities easier.

Additionally, according to (Widiyanti et al., 2024), In digital literacy learning, parents act as examples for children. Therefore, children's behavior reflects the role of parents, because children tend to capture, understand, and imitate what they see and read during the digital literacy learning process.

Research discussing the application of technology in improving digital literacy skills has been widely researched before. For example research (Naimah et al., 2024) with the title Implementation of Digital Literacy in Elementary School Students, the research results show that digital literacy programs can teach students about the positive and negative impacts of using social media. Collaboration between schools and parents is a key component of the success of this program. Research (Krisnawati et al., 2023) entitled Digital Literacy in 21st Century Learning in Elementary Schools, the results of this research show that YouTube can make learning easier for students. Additionally, YouTube supports modern learning, which helps students prepare for the technological challenges of the future. Apart from that, this platform is considered to be able to encourage digital literacy of students in elementary schools.

Even though digital literacy provides many benefits for the world of education, there are several disadvantages that need to be considered. One of them is excessive dependence on technology, which can reduce direct social interaction between students. Apart from that, unequal access to technology is still the main obstacle in implementing digital literacy in elementary schools. Therefore, further efforts are needed to equalize technological facilities, as well as increasing the competence of teachers and students in using technology effectively. In this way, digital literacy can be implemented optimally and provide maximum benefits for the world of education.

4. CONCLUSION

Primary school students' digital literacy includes various important elements. First, digital literacy allows students to develop skills in utilizing digital technology, including surfing the internet, understanding hardware and software, and using productivity applications. Second, digital literacy teaches students about security and ethical aspects in using technology, such as maintaining online privacy, protecting personal data, and avoiding cyberbullying. Third, digital literacy emphasizes the importance of using technology appropriately and correctly.

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