EXPLORING DIGITAL LITERACY AMONG HIGH SCHOOL STUDENTS: THE ROLE OF ENVIRONMENT ASSISTANCE

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ABSTRACT

Keterampilan literasi digital pada anak-anak adalah topik serius dengan dampak yang signifikan, karena anak-anak adalah masa depan bangsa. Dalam banyak aspek kehidupan, seperti di rumah, budaya, dan di seluruh wilayah geografis di seluruh dunia, jutaan anak saat ini menggunakan teknologi komunikasi dan informasi sebagai bagian dari kehidupan sehari-hari mereka. Untuk membimbing kebijakan dan praktik, diperlukan pondasi yang kuat, dan studi yang berkelanjutan tentang dampak teknologi digital pada kehidupan anak-anak sangat penting. Penelitian ini bertujuan untuk menguji kompetensi literasi digital di kalangan anak-anak dan peran orangtua serta sekolah dalam membimbing anak-anak melalui literasi digital. Metodologi yang digunakan dalam penelitian ini adalah deskriptif kualitatif. Temuan menunjukkan bahwa kompetensi literasi digital yang dimiliki oleh siswa dapat memiliki efek negatif pada kehidupan mereka jika tidak didukung oleh lingkungan yang kondusif yang mendorong peningkatan keterampilan. Membatasi kepemilikan akun media sosial dan ponsel pribadi dapat membantu mengurangi dampak negatif internet pada anak-anak. Sekolah memainkan peran dalam meningkatkan keterampilan digital siswa, tetapi masih ada kesenjangan dalam mengatasi etika digital, keamanan digital, dan budaya digital. Mengalami kejahatan dunia maya pada usia muda dapat memengaruhi perkembangan mental dan sosial anak-anak.

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1. INTRODUCTION

Information and Communication Technology (ICT) has influenced every aspect of life, including the development of banking, transportation, economy, and education. In its development, individuals have the opportunity to grow alongside the advancements in ICT. Therefore, individuals are expected to possess the abilities and skills to adapt to the digital world. Sarkar (2012) stated that ICT has been responsible for digital development since the early 1990s. With ICT's assistance, education has progressed, contributing to a nation's development, introducing digital libraries, and creating new avenues for research (Reddy et al., 2020)

When effectively utilized, ICT can help organizations optimize available resources, making them more competitive and productive. Developed countries have leveraged the advancements in ICT in various aspects, while in developing countries, the use of ICT is still at a conceptual stage due to inadequate infrastructure, high costs, and limited support from stakeholders (Reddy et al., 2020).

The development of ICT has brought about advancements in renewable technologies, which necessitate digital competence to keep pace with these new developments. Individuals need the technical, cognitive, and sociological abilities to carry out tasks

and problem-solving in the digital world (Eshet-Alkalai, 2004). The intended abilities and skills refer to digital literacy skills, which (Gilster, 2017) defines as the ability to understand and use information in various formats from various computer or digital sources. Digital literacy demonstrates its essentiality as digitalization has become an integral part of modern global society.

Digital literacy can be seen as a broad term encompassing a range of abilities, including the use of digital tools and infrastructure, both software and hardware, as well as the ability to consume and produce digital content and participate in digital communities ((Alexander, 2016). Apart from the aforementioned definition, digital literacy carries various meanings that have sparked debates. In this paper, the author strives to present a definition that aligns with the research objectives.

Therefore, digital literacy skills are a necessity for children entering the digital world since it is undeniable that ICT has become a part of modern society. Millions of children have entered the digital world, experiencing various influences, whether significant or minor, positive or negative. In terms of children's world, the most influential factor in their development is the home environment, specifically parents.

Research conducted by netsafe.org.nz in 2020 in New Zealand revealed a gap between parents and children in handling digital literacy skills. "Parents tend to underestimate their child's engagement in risky and/or hurtful behavior as well as their experiences of harm online. This is an important gap as parents play a critical role in helping their child prevent or deal with troubling experiences and risky behavior." The study explains that parents tend to underestimate the risks or harmful behaviors experienced by their children. This becomes problematic because parents are the primary actors in assisting children in addressing these issues ((Pacheco, 2020)).

The main challenge in developing digital literacy in children is not only the lack of data and measurement methods but also several other challenges to achieve globally digital literate children. Based on recent research, four interrelated areas where challenges can arise are identified: social environment, family environment, school environment, and the private sector (unicef, 2021). (1) The social environment encompasses factors such as low-quality technology infrastructure (low connectivity and a low percentage of households with computers), the cost of infrastructure required for ICT development, poor or lack of online content in the local language, poor quality or absence of content related to everyday life, and low diversity of other online activities. (2) The family environment, (Livingstone et al., 2016) noted that the role of parents and families as digital mediators varies depending on the local context, with significant differences between developed and developing countries. (3) The school

environment, schools have a role in providing digital competencies, including creativity, by integrating digital technology as an active learning tool (Gioia, 2018). Schools and community learning centers are key to raising awareness, fostering critical thinking and resilience, and influencing technology mediation strategies that support families, such as increasing school access, providing teacher training, and connecting internet usage with benefits. (4) The private sector, the role of the private sector in supporting the development of children's digital literacy is increasingly recognized, with expectations for companies to prioritize device design and services that empower and protect children by instilling effective digital literacy and risk safety mechanisms (Rudkin et al., 2017).

In measuring the digital literacy index in Indonesia, reference is made to the framework outlined in the Digital Literacy Road Map 2020-2024 (KOMINFO, 2022). This framework serves as the basis for designing programs and curricula for the Indonesian national digital literacy movement from 2020 to 2024. There are four pillars that are part of the digital literacy curriculum development (KOMINFO, 2022): (1) Digital Skills: This refers to an individual's ability to understand, comprehend, and use hardware and software information technology. It includes understanding digital operating systems and being able to apply them in everyday life. (2) Digital Ethics: This pillar focuses on ethical abilities in terms of awareness, exemplification, adaptation, rationalization, consideration, and development of digital ethics or netiquette in daily life within the digital world. (3) Digital Safety: This pillar relates to the digital security capabilities of users, including awareness, implementation, analysis, consideration, and enhancement of personal data protection and digital security in everyday internet activities. (4) Digital Culture: This pillar emphasizes an individual's cultural competence, including reading, using, developing national insights, upholding the values of Pancasila (the Indonesian state ideology), and Bhineka Tunggal Ika (Unity in Diversity), as well as participating in the digitization of culture through the use of communication technology.

Therefore, further research is needed on children's digital literacy skills, particularly among children in Indonesia, and their relationship with the support provided by parents and children. SMAN 7 Bekasi is located in the Jatisampurna district of Bekasi City, West Java Province. It is one of the leading schools with thousands of students. With a vision of "Excellence in achievement, Discipline in action, virtuous character, and environmentally conscious based on ICT," SMAN 7 Bekasi aims to improve the quality of education by integrating religious and cultural norms with technological advancements in a balanced manner. SMAN 7 Bekasi also offers a variety of extracurricular activities to support students' development and competitiveness in the digital world,

including a literacy-focused extracurricular activity

DIGITAL LITERACY

A book titled "Digital Literacy Framework for Indonesia," published by ICT Watch (an organization focusing on digital literacy in Indonesia), presents alternative proposals to enrich the discourse on digital literacy, particularly in Indonesia. This framework is based on ICT Watch's experience in implementing the Internet Safety pillar called "Internet Sehat" since 2002, followed by the Internet Rights and Internet Governance pillars that have been consistently carried out to this day. The offered framework consists of three main parts: 1) Safeguard, 2) Rights, and 3) Empowerment. (Syaripudin, n.d.)

Safeguard: This part emphasizes the importance of awareness and understanding regarding the safety and well-being of all internet users (Netizens). It includes aspects such as personal data protection, online safety and security, and individual privacy. Encryption technology is presented as a solution to address these issues. Personal risks in the online realm, including cyberbullying, cyberstalking, cyberharassment, and cyberfraud, are also considered within this part.

Rights: This part describes fundamental rights that all internet users should be aware of and respect. It encompasses freedom of expression and intellectual property rights, such as copyright and Creative Commons licensing. The right to assemble and associate, including in the online sphere, is essential when discussing social activism. This includes social criticism through hashtags on social media, advocacy through multimedia works (memes, cartoons, videos, etc.), and driving change through online petitions.

Empowerment: The internet enables users to engage in meaningful and productive work for themselves, their communities, and society at large. This part highlights ideas such as quality citizen journalism, entrepreneurship utilizing ICT and digital products by technopreneurs, digital startup players, and owners of small and medium-sized enterprises (SMEs) in the digital era. Information ethics is also emphasized, addressing challenges like hoaxes, misinformation, hate speech, and promoting responsible information consumption, wise online behavior, and critical thinking before posting. Digital Literacy Pillars.

2. METHODOLOGY

The qualitative approach was used in this research, which is a research method with a descriptive exposition aiming to describe phenomena, events, or occurrences as they naturally happen. The researcher attempts to capture these events and occurrences, making them the focus of attention to be elaborated just as they are. The methodology used is qualitative descriptive. Qualitative descriptive presents data as it is without manipulation or additional treatment. This methodology aims to provide a comprehensive picture of an event or occurrence by describing or explaining in detail several variables or concepts related to the researched issue. In this case, the concepts referred to are the pillars of digital literacy, namely Digital Skills, Digital Ethics, Digital Safety, and Digital Culture, as well as the aspects related to the Family, Social Environment, and School.

RESEARCH SUBJECTS

In this study, the researcher selected informants using purposive sampling, a non-random sampling technique where participants are intentionally chosen based on specific criteria according to the researcher's discretion ((Patton, 2015). This approach is also consistent with (Moleong, 2014) viewpoint that in qualitative research, there are no random samples; instead, samples are purposefully chosen. Therefore, this research will select individuals who have experience, knowledge, and information related to digital literacy at SMAN 7 Bekasi. The criteria for the research subjects are as follows: Students of SMAN 7 Bekasi who are involved in the literacy extracurricular activity, especially those who understand digital literacy, including the Chairperson or Vice-Chairperson and members of the extracurricular group. The Chairperson or Vice-Chairperson of the extracurricular group was chosen as the primary data source as they are considered students with digital literacy skills. Additionally, three (3) other members were selected to provide data for the analysis of digital literacy competence among students.

Ratih Amelia Lestari (Vice-Chairperson of Literacy Extracurricular)
Grade 11
Gender: Female
Started Using Social Media at the Age of 9
Owned a Mobile Phone since the Age of 9
Kesya Fadilah Putri (Member)
Grade 11
Gender: Female
Started Using Social Media at the Age of 7
Owned a Mobile Phone since the Age of 9
Amanda Raina Shofa
Grade 11
Gender: Female
Started Using Social Media at the Age of 11
Owned a Mobile Phone since the Age of 11
Fikri Isnawiyudin (Member)
Grade 11
Gender: Male
Started Using Social Media at the Age of 12
Owned a Mobile Phone since the Age of 12

3. RESULTS
Digital Literacy Pillars
Digital Skills

The informants' understanding of digital skills is quite good. Overall, the indicators indicate that they have a good grasp of digital skills. They use digital devices for their daily activities, including school tasks and accessing materials from the internet. They also

utilize online communication with virtual communities effectively. The researchers noticed that the informants' digital skills lie in their ability to process information accurately. Amanda has strong digital literacy competence due to her upbringing by her family, who limited her internet access from a young age, which has contributed to her excellent digital skills. Keisha also shares a similar experience, as she received guidance from her family, specifically her older sibling, about identifying good and bad content online, which has equipped her with knowledge on what to follow and avoid. Ratih also acknowledged that her family laid the initial foundation by teaching her to distinguish between reliable and unreliable sources. She learned not to readily accept news without further investigation. On the other hand, Fikri did not receive much information about digital skills from his family but mostly relied on his peers. He often consults friends, either online or offline, to verify whether something is right or wrong.

Digital Ethics

The informants' digital ethics competence is also commendable. The Digital Ethics indicators, such as uploading other people's photos, refraining from sharing content related to others without consent, and not creating groups without permission, are well understood by the informants. Although some of them may have made mistakes in the past, they have since learned from their experiences and refrain from repeating them.

Amanda acquired her understanding of digital ethics from her parents, who taught her how to behave ethically on social media and the importance of respecting others' privacy. Keisha learned about digital ethics through a negative experience as a victim of cyberbullying, which now makes her refrain from making negative comments about others, as she empathizes with the victims.

Digital Safety

The informants demonstrate good self-protection and safeguarding of personal data in the online world. They rarely upload personal data or photos, as there is a fear of data theft. Amanda gained her proficiency in data protection from her family. They frequently discuss ways to maintain family and personal privacy and how to protect personal account passwords. Amanda's digital skills are more advanced compared to the other informants since she uses additional security features provided by Google applications. On the other hand, the other informants still store personal data, such as passwords, in their mobile phone notes (as in Ratih's case) or rely on passwords from distant relatives (as in Keisha's case). The informants understand the importance of not disclosing their current location on social media. Keisha, Amanda, and Fikri usually upload content or photos after leaving a location, not while they are still there.

The ability to back up data is also something they have learned from their families. Amanda was taught by her family about proper data storage, as was Ratih, who learned how to save photos on her mobile phone to prevent loss.

Digital Culture

Digital culture relates to ethics, norms, and cultural practices in online communication. Keisha and Fikri have communities from abroad, such as Keisha's friends from Turkey, America, and England. This requires Keisha to understand Indonesian culture thoroughly. Her social life online compels her to seek more information about Indonesian culture to facilitate discussions with friends from diverse cultures. This helps Keisha to become more acquainted with Indonesia. Negative cultural aspects or differences with the global community affect Keisha, but she has set boundaries based on guidance from her family, especially her older sibling.

Fikri has friends from foreign countries and once felt somewhat inferior about Indonesian culture. However, over time and with the exposure to online content, Fikri became more proud of Indonesia and now shares information about Indonesian culture with his friends or online communities from abroad.

Amanda and Ratih are proud of Indonesia's achievements and enjoy content related to Indonesian culture. They also share or repost content related to Indonesian culture.

This indicates that concerning competence involving cultural elements, the informants are influenced and gain deeper understanding from the content available on the internet.

The Role of the Environment in Digital Literacy Family

The target of developing a digital literacy culture within the family is to enhance critical, creative, and positive thinking in utilizing the internet in daily life. The role of parents is to promote a digital literacy culture focused on managing and utilizing digital media with good ethics, as well as being cautious in building social interactions in the online world. This way, individuals can obtain information for personal and group development. According to interview results, the family plays a significant role as the foundation for understanding digital literacy for the informants. Amanda's parents, who are considered to have good digital literacy skills and actively communicate with family members, have equipped her with the ability to interact and protect herself while socializing online. This has also helped Amanda experience fewer negative effects from digital media. Keisha and Ratih, who were exposed to social media from a young age (7 and 9 years old), without supervision from their families, encountered cybercrime or cyber-related crimes. This is due to early exposure to digital media without proper supervision. Fikri's case is different; although he claims not to have a close relationship with his family, accessing digital media at the age of 11-12 allowed him to minimize negative media influences initially. However, he now feels the negative effects due to the

need for more digital communication compared to direct communication with his family.

School

The process of digital literacy should be incorporated into the school curriculum or at least embedded in the teaching and learning processes. Digital literacy should not only be taught to students but also educators, who should enhance their creativity and promote a digital literacy culture within the school environment. Along with providing facilities and infrastructure, creating forums for strengthening digital literacy is essential. According to the interview results, the informants feel that the digital literacy culture at school still needs improvement because they find more varied material and modules on the internet compared to what they receive at school. The teaching and learning processes also tend to lack variety and creativity. Only a few teachers support the promotion of digital literacy culture by assigning tasks that encourage students' creativity in using digital media, such as creating posters to be uploaded on social media or using websites as teaching materials.

Social Community

In the social community, digital literacy aims to assist people in using digital media intelligently. This includes responsibly analyzing data and content and understanding the consequences of social activities in the online world, in accordance with the Information and Electronic Transactions Law (Law no. 19 of 2016). Through interviews, it was found that a supportive environment positively impacts the quality of the informants' social media use. However, a competitive environment that values quantity over quality, such as the number of followers, can lead to pressure and mental distress. Amanda experienced a negative impact on her mental well-being during middle school, as her environment focused on the number of followers and the social media circle. This hindered her growth and created discomfort. Ratih also had a negative social environment during middle school, where individuals were judged based on their appearances on social media, number of followers, and other factors, making socializing in the digital world unpleasant. For Fikri, he finds it more comfortable to socialize in the online world because he feels less capable of communicating within his real-life social circle. He prefers communicating privately via WhatsApp with online friends.

4. CONCLUSION

The four important pillars in understanding digital literacy competence (Digital Skills, Digital Ethics, Digital Safety, and Digital Culture) have significant impacts. Good digital literacy competence can still have negative effects if not supported by a conducive environment.

Family plays a primary role in shaping children's digital literacy. Building digital literacy skills early within the family environment provides protection for children to avoid negative impacts from the internet, such as cyberbullying and cybercrime. Therefore, it is crucial to strengthen the family's understanding of minimum limits for social media usage and children's ownership of mobile phones. Schools provide technical understanding of Digital Skills through digital materials, facilities, and infrastructure, as well as using Google Form applications in exams. However, understanding of other pillars such as Digital Ethics, Digital Safety, and Digital Culture still needs improvement.

Supportive social environments, such as school and online friendships, influence students' mental health development. Despite having good digital literacy competence, negative internet impacts still affect children. High exposure to the internet and social media, along with the need to socialize online, especially for school assignments, plays a significant role in this.

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