ANALYSIS OF TEACHERS' DIGITAL LITERACY SKILLS IN INTEGRATING DIGITAL STORYTELLING IN ELEMENTARY SCHOOLS

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Abstract

This study aims to describe teachers' digital literacy in the application of digital storytelling learning in fourth grade. The research approach used is qualitative with interview and observation methods. The research subjects were fourth-grade teachers at SD Muhammadiyah 1 Sidoarjo. The results showed that teachers had good digital literacy competencies, which were reflected in their mastery of functional skills, creativity, collaboration, communication, ability to find and select information, critical thinking and evaluation, cultural and social understanding, and cyber security. Teachers were able to utilize digital technology effectively and creatively in developing digital storytelling learning media that suited the needs of students. In addition, teachers apply a critical attitude in selecting information from the internet and instill ethical values, privacy, and digital security in students. In conclusion, teachers' digital literacy plays a vital role in creating innovative, safe, and meaningful digital storytelling learning, as well as supporting the development of students' critical thinking and digital awareness.

Keywords: Digital literacy, Teacher Skills, Digital Storytelling

Abstrak

Penelitian ini bertujuan untuk mendeskripsikan literasi digital guru dalam penerapan pembelajaran digital storytelling di kelas IV. Pendekatan penelitian yang digunakan adalah kualitatif dengan metode wawancara dan observasi. Subjek penelitian adalah guru kelas IV di SD Muhammadiyah 1 Sidoarjo. Hasil penelitian menunjukkan bahwa guru memiliki kompetensi literasi digital yang baik, yang tercermin dalam penguasaan keterampilan fungsional, kreativitas, kolaborasi, komunikasi,

kemampuan menemukan dan memilih informasi, berpikir kritis dan evaluasi, pemahaman budaya dan sosial, serta keamanan siber. Guru mampu memanfaatkan teknologi digital secara efektif dan kreatif dalam mengembangkan media pembelajaran digital storytelling yang sesuai dengan kebutuhan siswa. Selain itu, guru menerapkan sikap kritis dalam menyeleksi informasi dari internet serta menanamkan nilai etika, privasi, dan keamanan digital kepada siswa. Kesimpulannya, literasi digital guru berperan penting dalam menciptakan pembelajaran digital storytelling yang inovatif, aman, dan bermakna, serta mendukung pengembangan kemampuan berpikir kritis dan kesadaran digital siswa.

Kata kunci: Literasi digital, keterampilan guru, Penceritaan Digital

INTRODUCTION

Educating a superior and highly competitive young generation is crucial in addressing the challenges of global dynamism. Currently, we are witnessing a paradigm shift in organizing the learning process, because the times are constantly changing, and digital transformation is developing very rapidly (Suwarjo et al., 2022). The digital era is characterized by the transition of mechanical and analog technology to digital technology that continues to grow (Rahmat & Restendi, 2021). The digitalization era creates a new world (cyberspace) that offers a variety of activities in an unlimited virtual space (Rahmat & Restendi, 2021). However, the transition to technology-based education cannot be separated from essential challenges and considerations, including the issue of digital literacy. Paradoxically, although technology opens great opportunities for educational development and innovation. The challenge of digital literacy is becoming increasingly complex as integrating technology into the curriculum requires not only technical skills but also a deep understanding of the ethical, safety, and security implications to society of using digital technology (Ramadhan, 2021).

Based on a survey conducted by the Ministry of Information and Communication (Kemkominfo), digital culture in Indonesia remains at a relatively low level, or arguably still weak. This comprehensive survey also provides information that educators still have a poor level of digital skills (Shibbriyah & Nuroh, 2023). Elementary school teachers are often unaware of the urgency of digital literacy for modern learning, so the priority remains on traditional approaches. A lack of socialization from stakeholders exacerbates this low awareness. As a result, teachers' pedagogical and professional competencies are not optimal amid technological developments (Judijanto, 2024). The movement consists of several stages according to the components of digital literacy from the perspective of the needs of elementary school teachers (Shiddiqy et al., 2023). Teachers must be able to create learning support efforts that are suitable for use. One of them is creating animated video-based digital learning media. Teachers need to gain knowledge about the rules and the wise use of social media so that it can be helpful in everyday life, especially during the pandemic. Teachers must be able to know the effectiveness of online media and the effectiveness of the information they receive (Suryani & Wiryadigda, 2022). Audio and visual media that are intended to attract the attention of learners and can help convey messages or download information more easily (Ismawati & Mustika, 2021).

Digital literacy according to UNESCO is "the ability to use information and communication technology (ICT) to find, evaluate, utilize, create and communicate content or information with cognitive, ethical, social emotional skills and technical or technological aspects" which means "the ability to use information and communication technology (ICT) to find, evaluate, utilize, create and communicate content or information with cognitive, ethical,

social emotional skills and technical or technological aspects" (Lestari et al., 2021). According to Haque, digital literacy is the skill of working with and sharing opportunities that often arise and differ, combining and communicating what is understood about when and how to access information technology tools to achieve a goal (Putera et al., 2024).

Literacy-based learning enables learner-centered learning and encourages information seeking through various print and digital reference sources (Eliaumra et al., 2024). For the learning process to be carried out effectively and efficiently, teachers must have essential tasks, components, and roles in guiding students towards achieving the expected goals (Prema Swandewi et al., 2024). Digital literacy competence itself is the ability to access, manage, integrate, analyze, and critically evaluate information using digital technology, communication tools, or networks.

The difference between previous research and this study lies in the fact that earlier researchers have primarily focused on developing digital literacy instruments. The most widely used concept is Paul Gilster's the theory of literacy (Gilster, 1999), which says that the opinion of digital literacy is a person's ability to use information in various ways from both computer and mobile device sources (Rahmat & Restendi, 2021). Meanwhile, this research focuses on understanding the digital literacy skills of teachers in the context of digital progress towards achieving digital literacy. The study that researchers use is based on the competencies of (Sofian et al., 2023), which researchers have already understood from their book. The importance of conducting this research lies in measuring teachers' skills in adapting to changing times, specifically in teaching digital media in the classroom, particularly in an environment that is already literate and utilizes technology in teaching.

The purpose of the study conducted by the researcher is to analyze teachers' digital literacy skills in teaching digital media in elementary schools. This study focuses on investigating teachers' digital literacy, particularly in the context of using digital media in teaching, which has been relatively unexplored.

METHODS

A descriptive qualitative research design with case studies was chosen because the objective was to explore and describe in depth the digital literacy skills of teachers at Muhammadiyah 1 Elementary School in Sidoarjo, which are complex, contextual, and cannot be measured quantitatively alone. According to Sugiyono (2013), this method is ideal for revealing processes, meanings, and inhibiting factors in the context of real education, thereby producing a holistic understanding of the effectiveness of digital literacy. The data collection techniques employed in this study include observation, interviews, and documentation. The observation technique was employed to directly observe how literacy activities were implemented at SD Muhammadiyah 1 Sidoarjo. The observation activities used by researchers were non-participant observations, where researchers observed from the outside without being involved in the activities being observed. The interview technique used by researchers is a structured interview, where researchers use a list of questions that have been prepared beforehand. The purpose of structured interviews that use a list of pre-made questions is to get answers about the problem being studied based on digital literacy indicators. Furthermore, documentation is used to support data obtained from observations and interviews. The photos used were during literacy activities, and the literacy media used. In addition, to obtain data validity, researchers used source triangulation. Source triangulation is a method of collecting data from various sources to ensure that the data is considered valid. Data is considered valid if the information provided by one

informant is consistent with that of another informant. The collected data are then analyzed using qualitative data analysis techniques.
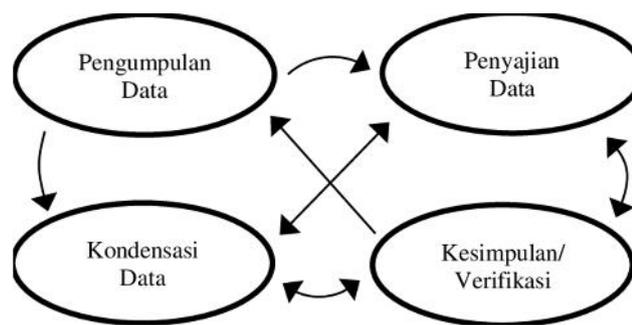

Figure 1. Qualitative Data Analysis According to (Miles & Huberman, 2016)

Activities include: 1) Condensation is obtained through researchers conducting interviews and collecting written data in the field. Then, the interview transcripts were sorted to get the research focus required by the researcher. 2) Presentation of data involves the organization, unification, and presentation of information that has been concluded. By obtaining high-quality data, researchers can identify patterns, relationships, and themes that emerge from the raw data. This helps the process of interpretation and drawing research conclusions. And 3). Inference. Here, researchers conclude from the data they collect, including looking for patterns of understanding, noting explanatory regularities, and causal flows (Wanto, 2018).

RESULTS AND DISCUSSION

Based on data collected from observations in Khalid's fourth-grade class at SD Muhammadiyah 1 Sidoarjo, it was revealed that teachers have strong storytelling and digital literacy skills. The following presents the results of data processing on the digital literacy skills of teachers at SD Muhammadiyah 1 Sidoarjo.

1. Functional Skills

Figure 2. A Teacher Operating A Computer

Functional skills refer to teachers' ability to use technology to support education. This includes basic skills such as using computers, mobile phones, and software applications. Teachers at SD Muhammdiyah Sidoarjo create digital stories using the Canva application, which are then uploaded to the school's YouTube channel. Students use these digital stories to develop

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digital literacy. This activity is carried out routinely for 15 minutes before the start of lessons. In literacy training, teachers strive to make literacy activities enjoyable and not dull.

2. Creativity

Figure 3. A Teacher Teaches Digital Storytelling

In this context, creativity refers to the ability of teachers to think critically and gather knowledge from various concepts and sources to utilize digital technology effectively. The strategy applied by teachers at SD Muhammadiyah 1 Sidoarjo in this case is to involve students in using existing devices, such as designing story videos, and teachers providing feedback.

3. Collaboration

Based on the interview results, the teacher's strategy involves the application of collaborative learning and the use of technology, such as giving group assignments to students to be discussed in their respective groups. This method can create very effective collaboration, so that not only are teachers involved in creating digital stories, but students are also trained to participate. When creating digital story videos, teachers collaborate with other classroom teachers who also use digital story videos as learning materials. The collaboration between fourth-grade teacher Khalid and fifth-grade teacher Mas Mansur involves developing ideas and concepts for future learning materials.

4. Communication

Teachers ensure that communication in digital storytelling among students is effective by making sure that students can understand and respond actively to what they have learned. For example, when the teacher explains details related to digital storytelling about "Sumur Temple and Pari Temple," students can listen carefully, and they respond actively when the teacher asks questions. By understanding and responding effectively, teachers can ensure that communication between students is very effective, thus providing a smooth learning

5. The Ability to Find and Select Information

Based on the interview results, teachers emphasized that digital stories created by students can reflect critical thinking. This can be seen in the results of the digital stories created by students, as well as in the way they communicate them. The steps taken by teachers to evaluate information sources for accuracy and high quality when using digital technology include analyzing the sources to be used and utilizing technology effectively. In this case, teachers play an active role in identifying and selecting relevant and credible information or themes from reliable sources before the digital storytelling process is carried out, in an effort to ensure the quality and accuracy of the content developed by students.

6. Critical Thinking and Evaluation

Teachers apply critical thinking skills in the process of selecting information from the internet by carefully analyzing and evaluating each source. The information obtained is not

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accepted directly, but is adjusted to the learning objectives, relevance of the material, and the level of accuracy and credibility of the source. This process is carried out to ensure that the information used in learning is of good quality and in accordance with the learning needs of students.

7. Cultural and Social Understanding

Digital literacy must be adapted to the social and cultural understanding of the environment. A person's culture and social environment greatly influence how they interact with others. In this case, the teacher used the theme "the origins of Pari Temple and Sumur Temple." Based on the teacher's work, the video clearly and thoroughly explains the origins of Pari Temple and Sumur Temple. The connection between the video and socio-cultural understanding is that the teacher prioritized learning materials related to the culture of their own environment, namely, the Pari Temple in Porong District.

8. E-Safety

This component emphasizes safety practices in the use of digital technology. Based on the interview results, teachers provide students with an understanding of safe technology use by strengthening digital literacy, particularly in relation to ethics and privacy in digital story publishing. Teachers emphasize the importance of politeness, respect for the work of others, and copyright protection so that students understand the limitations and responsibilities when publishing digital stories.

DISSCUSION

According to Paul Gilster's book, digital literacy is a skill that involves understanding and utilizing information from various complex sources accessible via a computer network (Gilster, 1999). Digital literacy is also defined as a skill that involves understanding and using information from various sources that can be accessed via a computer. The results of Fauziah and Kurniawan's research on Aqil Siroj et al., (2022), show that teachers can use digital literacy to increase students' interest in reading and maximize.

Based on several points, it can be concluded that digital literacy encompasses the understanding and skill of using networks, communication tools, and digital media to collect, evaluate, use, create, and utilize information in an appropriate manner to integrate relationships in everyday (Aveny et al., 2023). The results of an interview with Khalid's teacher in grade IV showed that the teacher's literacy skills were very appropriate to the needs of his students. This aligns with the theory of Sofian et al., (2023). Wich posits that digital literacy comprises eight components. The teacher has mastered the eight theories, so that the data can be explained as follows:

1. Functional Skills

Functional skills are the ability to adapt to new situations, which is an integral part of overall skill development. The focus is on what can be done with digital tools and how to use them effectively. Teachers demonstrate good mastery of functional skills, namely the ability to use and utilize digital devices and applications effectively in learning. Teachers can adapt to technological developments by learning how to use applications independently or through collaboration with other teachers. These findings support the opinion of Sofian et al., (2023), who emphasize that functional skills are an essential foundation in digital literacy. Functional skills are a necessary technical foundation that enables individuals to use and access various digital tools (Fuad Ihsan, 2010). These skills include understanding how digital devices work and ensuring that individuals have a strong technical foundation to navigate the complexities of the

digital world.

2. Creativity

The implementation of this learning media was created to overcome two primary difficulties: understanding long stories and concluding a story. However, it is not uncommon for teachers to use other editing applications, such as Kinemaster and CapCut. "For the video on the origins of Pari temple and Sumur temple, I specifically use the Canva application, because it is easier and has many free features that I can use," said grade IV teacher Khalid. The benefits of learning media are to help teachers deliver lessons that produce more innovative and effective learning (Fadila & Ramadan, 2022). Based on the conclusions above, the researcher found that the material provided to students was a digital storytelling video entitled "The Origins of Candi Pari and Candi Sumur". This video was created to help students who have difficulty understanding a long story. The video was created by emphasizing intonation, demonstrations, and expressions that convey a soulful tone, making it easier for students to understand the story.

3. Collaboration

Collaborative skills are skills for producing meaning and knowledge. Improving digital literacy in young people means teaching them how to work together effectively using digital technology and how technology can facilitate collaboration in both the outside world and the classroom. The teacher's obligation is not limited to teaching but needs to be improved in terms of understanding broadly related to understanding in the digital space.

Digital media in the digital space is very easy to apply for teachers who already understand it. Teachers can more easily explain learning materials that previously required by searching for information through Google, Chrome, or other websites. Additionally, using easy-to-understand language to explain concepts obtained from internet searches will meet the needs of students. By implementing learning like this, it will be easier for both students and teachers to understand new information that has never been received before.

4. Communication

Communication involves people talking to each other, exchanging ideas, and understanding each other. The skill of working with others is the skill of producing meaning and knowledge. Improving digital literacy in young people means teaching them how to work together effectively using digital technology and how it can enhance collaboration in both the outside world and the classroom.

The increasing use of digital technology can make it easier for everyone to communicate. By fostering effective communication, teachers can disseminate information about the culture that needs to be preserved, enabling students to understand the differences between Indonesian and foreign cultures. However, students often misuse digital use. Therefore, teachers need to provide students with supplementary learning information that they obtain from the internet.

5. The Ability to Find and Select Information

Everything that previously had to be done manually can now be done automatically and quickly. Information that was previously developed slowly can also be spread quickly. Information search skills refer to a person's ability to recognize, understand, and utilize information effectively (Rozan & Dewi, 2022). In his book "Digital Literacy", digital literacy is defined as the ability to understand and utilize various forms of information from diverse sources that can be accessed through computer devices (Gilster, 1999).

This component analyzes the skills required to search for information in the digital world and then select relevant information, such as identifying misleading content interpretations, spelling errors, or explicit expression words (Al-Zou'Bi, 2025). To find information, teachers

must know how to search for it correctly and then evaluate the results. These skills include communication, social awareness of the digital world, knowledge of electronic security, and the creation of new information. Digital and information literacy is supported by critical thinking and evaluation.

6. Critical Thinking and Evaluation

Thinking is one of the things that distinguishes humans from each other. Meanwhile, critical thinking is a high-level thinking skill that contributes to moral development, social development, mental development, and cognitive development. In many countries, educational goals include developing critical thinking skills, which are among the key objectives to be achieved. In line if we think critically, we will not easily get caught up in things that can put us in danger and harm us (Fitriani et al., 2020). In line with the opinion of research conducted, it is stated that students' critical thinking skills and their cognitive learning outcomes can be improved through problem learning (Atris Yuliarti Mulyani, 2022).

The skills to manage digital space have been evaluated as a necessity and accompanied by responsibility. Human existence has undergone a significant transformation in the digital space controlled by electronic speed (Hefni, 2020). Critical thinking skills can be enhanced through practice and habituation. To improve critical thinking skills, eight steps can be taken: (1) determining the problem, real issue, project, or decision being considered; (2) determining the point of view; (3) explain why the point is considered; (4) make the necessary assumptions; (5) use clear language; (6) make conclusions based on convincing facts; (7) make conclusions; and (8) determine the consequences of the conclusions (Oktarina et al., 2023).

7. Cultural and Social Understanding

Cultural literacy encompasses an understanding of the practices, symbols, values, and traditions that characterize a particular culture. This includes an understanding of social norms, ethics, and beliefs that influence interactions and behavior in society. In addition, cultural literacy encompasses understanding and appreciating cultural diversity, as well as fostering an inclusive perspective (Purwadi et al., 2024). The goal of a culture of literacy is to create a culture of critical thinking among students, starting with reading and writing activities. This is reinforced by the opinion according to Zuriana in the study (Awa, 2023), stating that the implementation of a culture of literacy in schools has three advantages, namely: (1) improving children's basic skills in reading, writing, and arithmetic; (2) improving critical thinking skills; and (3) building reading habits as a first step towards a culture of literacy. In addition, students with high literacy skills will be better equipped to receive, process, and apply information; and (3) prepare students to enter the world of school. The culture of literacy in schools is closely related to students' critical thinking skills. The higher the literacy skills of students, the more critical they tend to be. In line with opinion, many teachers and educators argue that digital literacy experiences can influence cultural and social perspectives. Cultural values can help combine information in the digital world with socio-cultural understanding (Dinata, 2021).

8. E-Safety

According to thurlow Ahyati et al., (2025), netiquette is defined as the rules of social behavior on social media and the proper use of the internet. Digital literacy encompasses information, media, visual, and technology literacy. Understanding internet security enables teachers and educators to ensure the security of personal and public data that is suitable for use as learning materials or resources (Bellová et al., 2023). Digital ethics is a crucial aspect of digital literacy, encompassing an understanding of the responsibilities associated with technology use, the importance of protecting privacy, and the need for ethical behavior when

interacting online. This is increasingly important in a globally connected world to maintain personal security and integrity in the digital world, based on innovation.

Digital literacy encompasses several essential elements, including teaching individuals how to identify security threats, create strong passwords, manage application permissions, and avoid phishing attacks (Aveny et al., 2023). Digital literacy enables individuals to understand their rights regarding personal data and how to protect it, allowing them to make informed decisions about when and how they share their data (Ursic, 2018).

CONCLUSION

Based on the results of the research and discussion, it can be concluded that teachers' digital literacy plays a vital role in the application of digital storytelling learning in fourth grade. Teachers demonstrate mastery of various components of digital literacy, including functional skills, creativity, collaboration, communication, the ability to find and select information, critical thinking and evaluation, cultural and social understanding, and cybersecurity.

This mastery of digital literacy is reflected in the teachers' ability to utilize digital technology effectively and creatively to develop innovative learning media that suit the needs of students. Teachers also apply a critical attitude in selecting and evaluating information from the internet before using it in learning, so that the information conveyed is highly relevant and accurate. In addition, teachers instill ethical values, privacy, and digital security in students in the learning process, especially in the publication of digital stories. This shows that digital literacy does not only focus on technical aspects but also includes social and cultural responsibilities in the use of digital technology.

Thus, the application of teachers' digital literacy in digital storytelling learning contributes positively to the creation of innovative, safe, and meaningful learning, as well as supporting the development of students' critical thinking, creativity, and digital awareness.

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