



The Role of Digital Literacy in Realizing Learning Quality in Education Units

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Abstract. Technology is growing in all fields and human activities, and digitalisation is increasing. So, everyone must improve their ability to understand digitalisation. Understanding and using digital technology is important so that everyone can take advantage of digitalization. Previous research found that educators and learners need to improve in digital literacy skills. This study aims to understand the digital literacy skills of educators and learners in educational institutions. This research uses the Systematic Literature Review (SLR) method. This method has a process of identifying, reviewing, evaluating and interpreting all existing research. Data collection is sourced from online journals accessed through google scholar and publish or perish using the keyword digital literacy to improve the quality of learning. The data analysis findings show that the average use of digital media is still not mastered by its users. The findings show that mastery of digital literacy in accessing information and application in educational institutions still needs to be improved. So, this requires digital literacy skills to operate various media platforms so that educators and students can receive information properly.

Keywords: digital literacy, literacy skill, technology, quality education

1 Introduction

The social and political order system is significantly influenced by information and communication technology advances, including communication systems formed in urban and rural areas [1]. The system is not only in the social and political order but also in the realm of education also has a significant impact related to technological developments that are increasingly renewable to increase effectiveness [2]. Technological advances have made the emergence of new communication tools so that the communication system has changed, which used wired networks to switch to wireless. Technology is increasingly developing in all fields, and human activities and digitalization are increasing. So, everyone must improve their ability to understand digitalization. Digitalization demands knowledge development to stay caught up due to the rapid development of the times. Understanding and using digital technology is important so that everyone can take advantage of digitalization. Digital skills called

digital literacy are very useful today as everything has been influenced by technology used in this way. The importance of implementing Generation 4.0 technology greatly impacts the digital literacy skills that Generation 4.0 needs to compete in the global market. The development of this industrial revolution 4.0 information and knowledge is widely spread throughout the world, transcending distance, place, space, and time. Technology has always been an important part of human life in this computer and internet era [3]. In everyday life, humans have been influenced and changed by technology [4]. As a result, if today's techsavvy society cannot master information and take advantage of various opportunities, they will be left behind. Information currently has an important and real role in the information society or knowledge society era.

Digital 2023 in Indonesia, the use of the internet network reached 212 million people, and smartphones use reached 99.4% of the population in Indonesia [5]. Therefore, almost all people in Indonesia use smartphones to communicate. The communication system is so open that there are almost no restrictions on the delivery of information in any media, even on virtual portals.

Developments in the Information Technology Communication (ICT) era also provide changes in technology-oriented education. The development of competent Human Resources is very important in the era of the industrial revolution 4.0, considering that people must be required to keep up with the times, especially on updates in how to use technology in the education process, which is increasingly driven by advances in science and technology. Teachers must have the ability to use technology following the times. Technology advancement can be seen today; students are learning in virtual spaces replacing conventional classrooms. There are many learning applications available anywhere and anytime. In addition, teaching and learning can also be done remotely without having too face-to-face. Changes in the education system that result in technological developments affect literacy, especially digital literacy in knowledge to meet information needs. Students must be more selective in terms of writing, reading and interpreting information so that students can receive information properly.

Digital literacy is the ability to understand and obtain information from various sources that are very diverse and can be accessed through various electronic devices and the internet, such as electronic devices, computers, laptops, websites, and others. Activities in reading are one of the literacies that need to be considered in life. Reading literacy in the digital space is part of recognizing and understanding, and applying the knowledge gained in the education organization [6]. According to Mayes & Fowler in Martin & Mardigan in his research there are several principles underlying the development of digital literacy [7,8]. Digital literacy has three levels which can be seen in Fig 1. First, digital competence, which includes abilities, ideas, methods and behaviours; second, digital use, which involves using digital competence in a specific context; and third, digital transformation, which means creativity and innovation are required in a digital world.

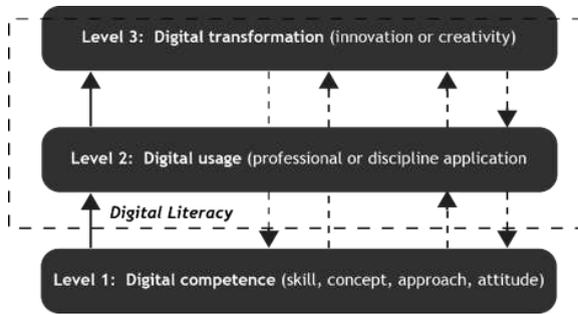


Fig. 1. Digital literacy levels

Digital literacy is very important to instil from an early age in order to be able to understand information critically, analytically and reflectively. According to Devega in Kominfo, the UNESCO organization states that Indonesia ranks second from the bottom in world literacy, which is very low reading interest [9]. Public reading interest in Indonesia is very concerning; only 0.001% then 1,000 Indonesians, only one person diligently reads. In addition, the Program for International Student Assessment (PISA) in 2018 also analyzed its findings explaining that children's literacy skills are low. The value of ability in reading shows 371, meaning that it is 116 points behind the average value of other countries. So, the importance of sorting information or also referred to as digital literacy in the current era of wide openness of information. This is a concern for learners in understanding information. Digital literacy skills in educational institutions still need to be improved [10]. The data explained that 49.39 per cent were categorized as less, they tried to do their best for learners by carrying out the concept of Schoology-based learning by using learning, but the results showed that it still needed to be more optimal. Therefore, it is necessary to analyze human resources (teachers) related to competence in digital literacy. The role of teachers is very important in improving the quality of learning to produce students who are comfortable and can understand the information or material presented. That teachers' digital competence plays a very important role in improving the quality of learning [11]. Besides, it can provide teachers with skills in presenting creative and memorable learning. The results show that digital literacy has a big influence on students related to learning outcomes.

Academics and organizations have widely used research on digital literacy. Various cases and phenomena occur that the role of digital literacy impacts society or learners, as described above. Previous studies have been reviewed consistently explaining digital literacy.

2 Research Method

This research uses the Systematic Literature Review (SLR) method. This method has a process of identifying, reviewing, evaluating, and interpreting all existing research. This SLR method is a research design to synthesize evidence based on previous

research systematically in answering a question. The data collection process is sourced from online journals accessed through google scholar and publish or perish using the keywords digital literacy in improving the quality of learning and digital literacy. The publication of articles used is a total of 5 articles spanning 5 years that will be used as a discussion in writing this article.

3 Result and Discussion

These published research data results are analyzed and summarized based on the subject matter related to digital literacy, digital technology, and changes in the impact of pre- and post-academy digital literacy in educational units. The results of the scientific article data are presented in Table 1.

Table 1. The results of the scientific article data

Title	(Researcher, Year)	Research Results
The Level of Digital Literacy of Students Based on the Use of Information Technology as Mobile Learning in Biology Learning at Senior High School (SMA) Kuala Nagan Raya District	[12]	The findings show that the two schools studied need to improve in digital literacy. The data shows 35.5% and 51.7%; It is necessary to apply a learning model that integrates digital media or online systems in biology learning activities in high school to improve Digital Literacy skills in high school students.
Distance Learning During theCovid-19 Pandemic: The Role of Digital Literacy and Task Value on Student Self-Regulated Learning	[13]	The findings show that digital literacy is quite good. Responding to the participants, it can be seen that the average. The average student has fairly good digital literacy, especially in searching, understanding, and using information references from the internet, and can communicate well on social media.
Transformation of Islamic Education in the Digital Age: Implementation Digital Literacy in Learning in Banyumas Region	[14]	The findings show that digital literacy in Islamic religious education learning has increased the effectiveness of learning and enriched understanding by using technology to produce learning that is interesting, interactive and relevant to students' lives.
Teacher Performance Professionalism and Digital Literacy Skills Teacher Influence on	[15]	The findings show that teachers' digital literacy skills are low due to limited human resources who are technologically literate, so the quality

Learning Quality Online Vocational School in Jambi City Digital Literacy [16] Analysis of Independent Learning During the Covid-19 Pandemic	of learning in online classes could be better. The findings show that learning independence can improve students' digital literacy skills during the Covid 19 pandemic. However, there are shortcomings in this study that have yet to show independent learning practices using digital technology have not been analyzed. So that doubts arise about whether digital literacy-based learning has been carried out appropriately or not.
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2.1 Digital Literacy in the Digital Age

Digital literacy is the same as media literacy, defined as the public's ability, knowledge, awareness and skills to evaluate messages critically. This is because many public perceptions of how content in the mass media has negative influences and impacts. Understanding and using digital technology is important so that everyone can take advantage of digitalization. The digital ability called digital literacy is very useful today, especially in education, because everything has been influenced by technology used in this way. Digital literacy is a person's ability to use functional skills on digital devices to think critically, be creative, collaborate, communicate, find and select information, and remain mindful of electronic safety and the evolving socio-cultural context [17]. Good digital literacy in education also improves students' knowledge of certain subjects by encouraging curiosity and creativity.

However, digital literacy-based learning must be considered carefully because the information is analyzed first. Digital learning must begin with good planning, and then how the learning material is delivered (delivery content) to the learners must refer to the planning. The scope of competence for a teacher in digital learning includes planning and organizing learning, presentation skills, both verbal and non-verbal, teamwork, questioning strategy skills, expertise in mastering learning materials, involving learners in learning and coordinating their learning activities, knowledge of learning theory, knowledge of digital learning, knowledge of learning planning, and mastery. Other research findings show that the participants' responses can be seen that the average student has quite good digital literacy, especially in finding, understanding, and using information references from the internet, and can communicate well on social media [18]. In the study, there are concerns about the influence of Distance Learning (DL) which allows learners not to be technologically proficient. Technology takes over the role of educators, who are expected to be able to receive knowledge and carry out learning well. The research explained that educators use self-regulated learning, which a person can use to develop themselves and achieve success, so every student, student, teacher, lecturer, and other learner must have it. However, to achieve digital literacy skills, validation is needed by carrying out the concept of task value.

In reality, the concept of task value in research on digital literacy skills after task assessment has a greater influence [18]. Task assessment has a greater role in supporting and facilitating students' self-regulated learning abilities in the context of Distance Learning (DL). In contrast to other article authors who are only limited to digital technology as a fulfilment of information needs and academic learning but have yet to be validated. This was done, and digital literacy has been implemented well. Implementing digital literacy has significant benefits, but several challenges need to be overcome [14]. Adequate resources are an important factor in fulfilling the digital literacy aspect. The research location needs to support technology which results in limitations in the use of internet access. In addition, they still need to conduct training on the use of technology, which is an important element in producing effective digital literacy and improving the quality of educators. In addition, the need for curriculum adjustments is also an important consideration. The curriculum applied in the research locations needs to pay attention to digital literacy, which needs to be reviewed. Given the rapid development of technology today. This involves adjusting learning materials and teaching strategies that enable the use of technology and digital media. The selection of appropriate content and the development of relevant digital learning resources should also be considered. Educational institutions need to conduct regular evaluation monitoring so they cannot see the achievement of digital literacy in their learning. In assessing digital literacy, evaluation can be done through surveys of educators and learners, assessment of learner performance, and analysis of the learning outcomes achieved. The results of this evaluation can be a valuable reference to make future improvements and enhancements in the implementation of digital literacy. In addition, digital literacy skills still need to improve in other studies, namely those researched by [12], explaining that the findings show that the two schools studied have weaknesses in digital literacy. The data shows 35.5% and 51.7%; it is necessary to apply a learning model that integrates digital media or online systems in high school biology learning activities to improve high school students' digital literacy skills. On the other hand, human resources (educators) training in information and communication technology competency development is needed.

2.2 Digital Literacy in Learning Media

Learning media serves as an intermediary and source of information in the learning process, encouraging critical thinking and an easier learning process. From an educational perspective, the media is also a very strategic tool in determining the success of the learning process. The presence of this learning media can directly provide creativity to students. Digital media-based learning is tailored to their wants and needs so that they can understand the material, think creatively, skillfully investigate and critically, and make conclusions. Media is considered a support for learning and teaching. Learning media can also transfer knowledge, encouraging student interest in achieving certain goals. Learning media can contain messages and information that are intended to interest students. Learning media can increase the effectiveness of learning and enrich understanding by using technology to produce learning that is interesting, interactive and relevant to students' lives [14].

Learning media is believed to provide information to build a thinking process that can change students' attitudes at the cognitive, affective and psychomotor levels. Nonetheless, the result of the process faces many problems and still needs to be as expected. The factors that support learning activities, especially the program, academic environment, learning materials, and learning motivation, certainly do not affect the observed shortcomings. Learning media must be in place if the quality of learning is to be improved.

Educators must be able to develop teaching materials relevant to the developing technology. The selection of learning materials that are practical, innovative, and easy to understand by combining various existing media, such as text, images, video, and audio, is an important component of achieving learning objectives.

4 Conclusion

Learning through digital media is a form carried out face-to-face using virtual learning media. Implementing learning through digital media does not necessarily mean the message is as expected. Learning using digital technology that needs to be considered is the readiness of educators and students. Digital literacy skills are needed in order to operate various forms of media platforms so that students can receive information properly. Based on the analysis of the author's findings of the authors of previous articles, it is necessary to improve the digital literacy skills of students and educators so that they show creativity and innovation in supporting digital learning. However, some previous researchers need help to reach heuristically related to the results or data presented. So that researchers can only review or analyze a little. This is because the target of their research is only learners, so it does not look very objective because it does not see the context of digital literacy from the educator's side. High literacy skills in educators can also indirectly improve the quality of learning and students in educational units. In addition, the high level of digital literacy can also indirectly affect student learning outcomes. Therefore, it is necessary to have good digital literacy skills so that information and communication technology in online learning can run according to educational goals.

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