

# Students' Digital Literacy Skill to Solve Learning Problems

**Dony Darma Sagitaa<sup>a\*</sup>, Asni<sup>b</sup>, Fatma Nofriza<sup>c</sup>, Fitniwilis<sup>d</sup>, Feli Cianda Adrin burhendi<sup>e</sup>, Rizki Dwi Siswanto<sup>f</sup>**, Counseling Guidance Study Program<sup>a,b,c</sup>, Department of Physics Education<sup>d,e</sup>, Mathematics Education Study Program<sup>f</sup>, Universitas Muhammadiyah Prof. DR. HAMKA, Email: <sup>a\*</sup>donyds@uhamka.ac.id

This study aimed to see the extent of students' digital literacy skills in managing learning problems. The method used was descriptive qualitative with questionnaires and interviews. The results show that the students had the ability of digital literacy at the current stage of scholarship, or it can be said that the students were interested in digital literacy. In some circumstances, the students had not been able to sort and criticise the information contained in the information system in solving learning problems. Therefore, there is a need for guidance for students to improve their digital literacy skills in solving the learning problems.

**Keywords:** *Digital literation, Information and communication technology; Learning problems.*

## Introduction

The development of the digital world can cause two opposing sides concerning the development of digital literacy. Indonesia is one of the countries with the most significant number of internet users in the world (Nasional, 2017). Literacy has become a part of human life and development. Digital literacy is an important thing needed to be able to participate in the modern world. Being digital means being able to process the information and understand messages and communicate effectively with others in various forms. The forms are to create, collaborate, chat, and work according to ethical rules, and understand when and how technology must be used effectively to achieve the intended goals. Moreover, awareness and critical thinking about the various positive and negative impacts that may occur due to the use of technology in daily life are strongly needed (Amsal, 2019).

Digital literacy was first interpreted as the ability to understand and use information in various forms from a wide variety of sources that are accessed through computer devices (Gilster & Glistler, 1997). Digital literacy is not only the ability to use various digital sources effectively but also a form of specific ways of thinking (Eshet, 2002). Digital literacy is also defined as

the ability to read and understand the information in the form of hypertext or information in multimedia formats (Bawden, 2008). Then, digital literacy is not just the ability to use digital sources, but also the ability to think about information obtained from various multimedia sources effectively. Four core competencies need to be possessed so that they can be said to have the ability in digital literacy (Gilster & Glistner, 1997). These competencies include: aspects of searching on the internet, aspects of hypertext guidance, aspects of information content evaluation, and aspects of a compilation of knowledge. Information and communication technology has become very important in the digital age (Mutiarra Felicita Amsal, 2015). There are nine essential elements in the world of digital literacy such as social networking, transliteracy, maintaining privacy, managing identity, creating content, organising and sharing content, reusing/repurposing content, filtering and selecting material, and self broadcasting (Wheeler, 2012; (Patmanthara & Hidayat, 2018; Perdana, Riwayani, Jumadi, & Rosana, 2019).

Beetham, Littlejohn & McGill (2009) stated that there are seven essential elements related to digital literacy, namely, information literacy, digital scholarship, learning skills, ICT literacy, career and identity management, communication and collaboration, and media literacy (Maulana, 2016).

Pratiwi & Pritanova, in 2017, stated that poor understanding of digital literacy would affect the psychological well-being of children and adolescents who tend to insult others, cause jealousy towards others, cause depression, be offended by negative comments with mood swings, and get used to talking with indecent language. The definition of media literacy consists of two words, namely literacy and media (Kurniawati & Baroroh, 2016). Scholarship can be simply interpreted as the ability to read and write. Media can be interpreted as an intermediary in the form of objects, humans, and events. Then, digital literacy can be construed as the ability to search, learn, and utilise various media sources in multiple forms (Kurniawati & Baroroh, 2016; (Atmanegara, Agustina, & Tiara, 2013)). Young people often experience an adequate understanding of the digital world for young people and information disclosure on social media has negative impacts on the use of social media. Media literacy is the ability of social media users who can critically and creatively filter the information in various media (Stefany, 2017). Casey and Bruce (2011) defined media literacy as the ability to use, understand, evaluate, and analyse information in various formats from various digital sources (Montebello, 2016). Digital literacy consisting of information literacy, media literacy, and ICT literacy is critical to be mastered by guidance and counselling students.

There are three dimensions to be measured in evaluating media literacy program activities (digital literacy), including the size of motivation, the proportion of knowledge, and the dimension of skills. These three dimensions are the evaluation of the first, the level of success, or management of the program. The second is the success level of media literacy among participants or participant members. Digital Literacy of 21st-century skills is covered in

learning and innovation skills, critical thinking in problem-solving, and communication and collaboration skills. According to Alkalai (2004), there are five types of skills covered in general terms of digital literacy including 1) Photo - visual literacy is the ability to read and infer information from visuals; 2) literacy reproduction is the ability to use digital technology to create new work from work; 3) literacy branching is the ability to successfully navigate in non-linear media from digital space; 4) information literacy is the ability to search, find, assess and critically evaluate information found on the web; 5) socio-emotional literacy refers to the social and emotional aspects present when online, whether through socialisation and collaboration or just through surfing content (Eshet, 2004).

Learning is a change in a person that occurs after an experience (Kurniawan, Mahmud, & Nugroho, 2006). Learning difficulties are said to be a condition and a learning process that is marked by the presence of certain obstacles to achieve learning objectives. Learning problems are a specific condition experienced by students that hinder the smooth learning process (Syafni, Syukur, & Ibrahim, 2013). Students face many difficulties in learning. Every learning problem faced by students has their reasons. Factors underlying learning problems in students can be external factors and internal factors. External factors can include physical, social, family psychology, school, and society. Internal factors can be intelligence, talents and interests, and emotional aspects such as motives, attitudes, feelings and desires (Bhandari, Erickson, Steichen, & Jacoby, 2017; Ogilvie, 2017; Reissmannová, 2015).

There are several difficulties in learning, including learning distractions, learning disabilities, teaching dysfunctions, being an underachiever, and being a slow learner (Mulyadi, 2010). Learning challenges can be classified into two groups, namely learning difficulties related to development and academic learning difficulties. Learning difficulties related to development include motor and perception disorders, language learning and communication difficulties, and learning difficulties in adjusting social behavior. Challenges in academic education include the failure to achieve academic achievement by the expected capacity.

It is hoped that having excellent digital literacy skills can help students overcome their learning problems. Learning difficulties that are experienced by many students are learning concentration, management of learning materials, learning outcomes storing, and exploration of stored learning outcomes. Learning difficulties can be associated with competencies that must be possessed by students to be said as digital literacy, namely aspects of internet search, aspects of hypertext guidance, aspects of information content evaluation, and aspects of a compilation of knowledge.

Information literacy is critical in finding information and implementing that information. Therefore guidance and counselling students must be able to access and evaluate information, access information efficiently (time) and effectively (source), assess knowledge critically and competently, use and manage data, use information accurately and to solve problems faced

creatively, manage the flow of information from various sources, and apply a basic understanding of ethical/ legal issues about the access and use of that information (Trilling & Fadel, 2009).

## Methods

This research used a descriptive quantitative method. The sample in this study amounted to 200 students with a digital literacy ability questionnaire data collection tool. Samples were taken randomly to meet data normality criteria. This questionnaire aimed to see the extent of the ability of students' digital literacy to overcome the learning problems they face.

## Results and Discussion

**Table 1:** Results of the Research

Element	Score
Internet Search Aspects	3.5
The Guiding Aspect of Hypertext Direction	2.5
The aspect of Information Content Evaluation	2.6
Aspects of Compiling Knowledge	2.5

There are four aspects of digital literacy that must be possessed to be said to be digital literacy, namely issues of searching on the internet, aspects of hypertext guidance, aspects of evaluating information content, and elements of compiling knowledge. Based on the table, the results can be described on Internet search aspects, the level of competence of students in aspects of searching on the internet was at an average value of 3.5. Students could search for learning materials by utilising the internet in a very high category. Students were accustomed to finding information that would be used in doing each task given by the lecturer. Students said that it was straightforward to get the data needed, and it did not require much time to get whatever information was needed. One of the competencies students must possess to become a digital literate is the ability to search for information using the internet. This aspect is the basis of digital literacy competence, which is explained as a person's ability to use the internet and carry out activities within it (Gilster & Glister, 1997). Several events can be done by utilising the internet, including reading news online, conducting online activities such as communicating online and other matters relating to education. The use of the internet among students to overcome learning problems is only focused on the search for information assigned by the lecturer. Thus, it makes students unproductive and inactive for thinking critically.

Then, in the guiding aspect of hypertext direction, the level of student competency in the element of hypertext direction guidance was at an average of 2.5. In some circumstances, students had a low level of competence in aspects of hypertext guidance. Students still need a deeper understanding of this aspect. Students even found it challenging to browse through the many hyperlinks available and choose hyperlinks to get to the required information. Also, students still had difficulty in understanding the language used in the use of technology that utilises internet networks. Competency of a hypertext direction guide is a skill to read and understand dynamically about a hypertext direction guide (Gilster & Glistner, 1997). The competency of hypertext guidance is measured using several indicators, including student's knowledge of hypertext and hyperlinks, student's understanding of how the web works, and student's knowledge of web page characteristics. On the aspect of information content evaluation, the level of student competency in the issue of evaluating information content was, on average, 2.6. In other words, students had a high level of competence in the aspect of assessing information content. But, it can be said that students still could not think critically when faced with evaluating the content of information found on the internet. Students even accepted information obtained without filtering it. Students always did not understand the aspects of domain compatibility with the information content available, traced links provided on a website, and the FAQ function in a discussion group.

Digital literacy is closely related to the ability to think critically in the face of information found on the internet (Jones & Hafner, 2012). One of the methods used to see the suitability of information obtained from the internet is to check the compatibility of information with other data from several different author sources. Also, it is necessary to consider the relevance of the origin of information sought with data obtained by needs. Digital literacy is also related to the ability to use media for many purposes, especially in the world of education. The last aspects of compiling knowledge, the level of student competency in the aspect of collecting intelligence, was at an average of 2.5. In a sense (2009), students had a low level of competence in aspects of compiling knowledge. Students still had to go deeper into the issues of collecting the understanding obtained from digital sources. Literacy in the digital age requires self-awareness to care for others and awareness to contact others to discuss and get help in addition to the ability to find information through the internet and be able to evaluate it.

This competency is an ability to compile knowledge and build a collection of information obtained from various sources with the ability to collect and evaluate facts and opinions well and without prejudice (Gilster & Glistner, 1997). This competency encompasses several components, namely: the ability to search for information via the internet, the ability to create a personal news feed, or the latest news notifications obtained by joining and subscribing to the news in a newsgroup: A mailing list or discussion group contains a particular topic by needs or specific problems, the ability to cross-check, or re-examine the information obtained. The ability is to compile sources of information collected on the internet with real life that is not connected to the network (Igwe & Ndubuisi-Okoh, 2014; Woods & Murphy, 2013).



## **Conclusion**

The digital literacy ability of students still needs to be improved in terms of aspects of evaluating the content of information obtained and aspects of composing knowledge. It is hoped that with the increase in digital literacy skills, students can help themselves in solving learning problems.

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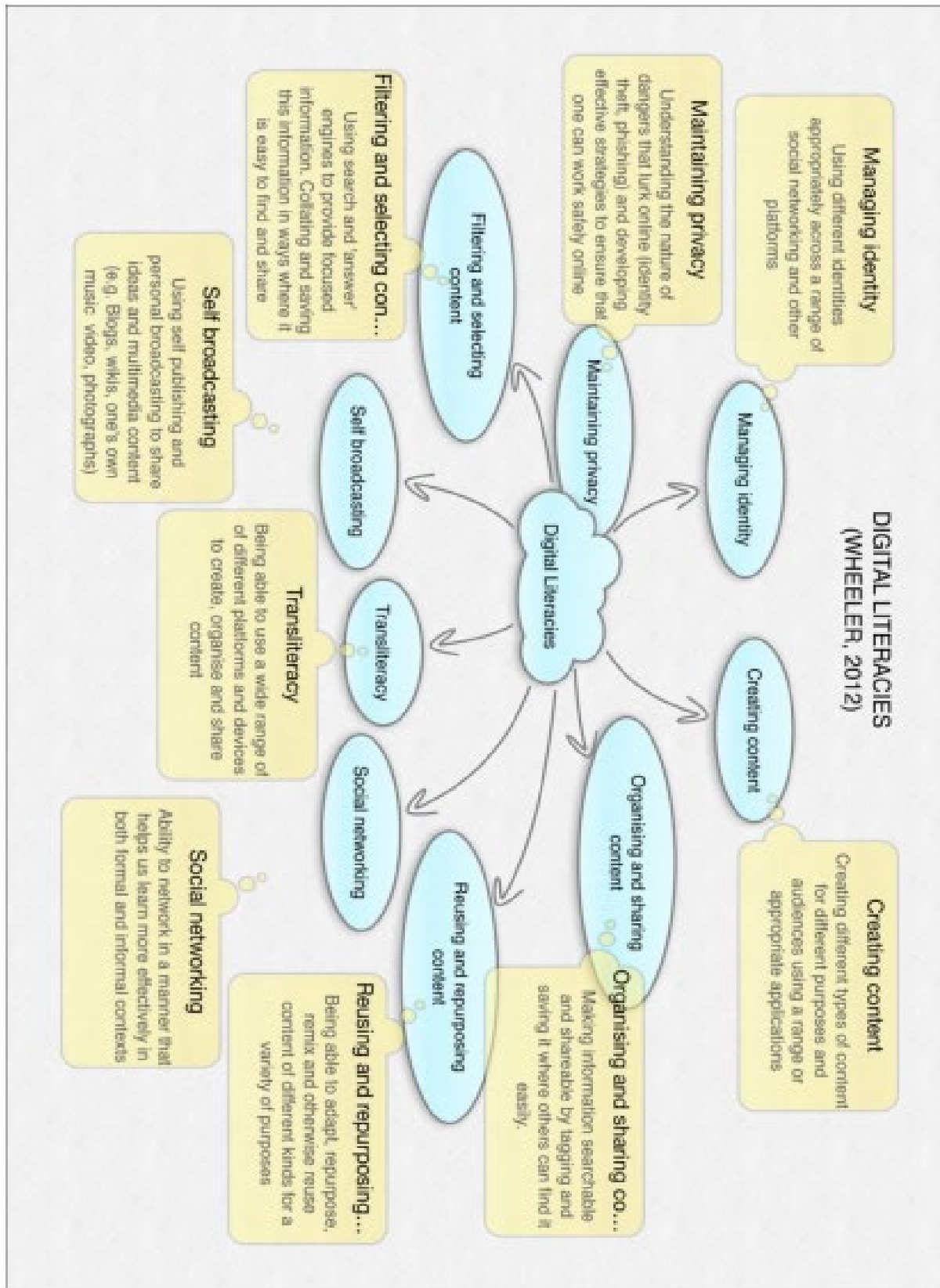
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**Appendix 1. Elements of Digital Literacy (Wheeler, 2012)**



**Appendix 2.** Elements of Digital Literacy by Beetham, Littlejohn dan McGill (2009)

