LEARNERS' DIGITAL LITERACY IN THE ONLINE LEARNING DURING COVID-19

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Abstract: This research investigates the understanding of digital literacy in the online learning process during covid-19 for students in the Higher Education students in Indonesia. The objectives of this study are to describe the aspects of digital literacy in the concepts of Bawden, they are basic skill of digital literacy, attitudes and perspectives, background knowledge of the information, technology and iinformation skills, and attitudes and perspectives. This study employ qualitative with the subjects are 117 students; these students were determined using purposive sampling technique with the criteria who were joining the learning classroom actively. The collecting data technique was using 20 questions in the questionnaire and it was analyzed using descriptive quantitative techniques. The results in this study reveal that all of the respondents indicate have good criteria in digital literacy. They have good characteristics in basic skill of digital literacy; have good criteria in background knowledge of the information; have good skill in technology and information; as well as good attitude and perspective of digital literacy. The conclusion is the higher education students have a good digital literacy in the aspect of basic skill of digital literacy, they have a good digital literacy in the aspect of background knowledge of information, and they have a good digital literacy in the term of technology and information skills as well as strong attitude and perspective on digital information.
Keywords: *digital literacy; online learning; covid*-19.

INTRODUCTION

Coronavirus commonly known as Covid-19 is a fatal and infectious disease that has had a significant impact on the worldwide area. Marioni (2020) stated that education is one of the aspects that rattled by this outbreak. Also supported by Li (2016) teaching media in the teaching and learning process are switching to the digital version. The implementation of learning activities was forced to take place online. In line with Karagul, Seker, & Aykut (2021) the sudden transition from classrooms to online education has required specific skills such as learners' digital abilities at all levels of education. The Covid-19 pandemic has caused changes in the academic sphere, particularly in the learning process at all levels (Aydin & Erol, 2021). As a

result, all formal educational institutions now offer online learning, as it is unlikely to reach face-to-face during the process (offline) as stated by Dhawan (2020) this crisis will make the institutions, which were earlier reluctant to change, accept modern technology. The teacher's ability to operate new software automatically demonstrated the development of self-learning skills (Butarbutar et al., 2021). Supported by Pramono *et al.* (2021) due to the tremendous rise in cases around the world, practically all developing countries were allowed to make the hard choice to conduct distant learning education, with all the disadvantages that entail. As previous research by Yustika & Iswati (2020) stated that online students are anxious because they do not understand or are accustomed to online classes, especially those with limited computer skills. According to Layton (2000) computers and other technologies have permanently altered children's learning environments, temperaments, and ideas about work and play. In addition, Blundell *et al* (2016) said that technology is also positioned as a vehicle for educational reform via teacher practice transformation. Students can use digital technology for learning activities such as reading and sending emails, accessing learning management systems, reading journals or e-books, and taking online quizzes because of a sudden decision by the Indonesian government to close all types of activities in schools, including learning activities and move them to learn at home through distance learning. Educational institutions are scrambling to come up with solutions to this difficult scenario, in line with research by Chung *et al.* (2020) due to a lack of student control, self-directed learning, and online communication efficacy, some of them were not ready for online learning. These circumstances make us realize that scenario planning is an urgent need for academic institutions (Rieley, 2020). Now, online learning, remote learning, and the things that come up with the new technological teaching and learning process bring students and teachers to understand the knowledge of digital learning. According to Suswandari et al. (2022) said that the goal in implementing digital literacy is not only for the digital information that students receive, but also for students to learn, explore, create and become more active online and to have educational interactions between students and teachers. We need a high level of preparedness so that we can quickly adapt to the changes in the environment and

can adjust ourselves to different delivery modes, for instance, remote learning or online learning in situations of pandemics such as Covid-19. To enable effective and efficient teaching and learning practices, several teaching tactics (lectures, case studies, debates, and discussions, experiential learning, brainstorming sessions, games, drills, and so on) can be employed online. As suggested by Rahiem (2021) there are two alternatives for making online learning accessible in this archipelago nation: either expand the internet network or provide alternate learning that does not require online access for individuals who live in remote places.

Digital learning is supported by the understanding of digital literacy. In Mardiani et al. (2021) digital technology is becoming an integral part of the educational world, and digital literacy has become a necessary skill to explore and process information and messages as much as possible. The use of digital technology to enhance teaching and learning in schools has been growing for years, but in March 2020, when the Covid-19 pandemic forced the closure of practically all educational institutions globally, it became the only choice (Scully, D., Lehane, P., & Scully, 2021). This paper will show more about the students' understanding of digital literacy through their experience in online learning facing the pandemic Covid-19 outbreak. As defined by Doni, C. P., Husain, D., Saleh, S. R., Pakaya, N. A., Tjalau, C. A., & Arsyad (2021) one of the challenges for implementing online education during this pandemic is digital literacy. Teachers must make explicit links to e-safety when attempting to promote students' digital literacy (Hague, C., & Payton, 2011). Digital literacy is the capacity to find, assess, use, produce, and use information sensibly using digital media, communication tools, or networks. As the study finding by Khan et al. (2022) state that digital literacy improves both academic performance and employability. In line with previous study by Udeogalanya (2022) that all institutions must be proactive rather that reactive to systemic shocks by preparing students for academic success and technological readiness for today's job markets. Because of the widespread influence of digital sources, the general public or citizens must be good users. According to Mega (2020), digital literacy is the ability to understand and use information from a variety of online sources. The thought of digital

literacy was introduced by Gilster (1997) defines digital literacy as the ability to understand and use information in multiple formats presented via computers. Furthermore, digital literacy skill refers to the ability in getting, using, evaluating, communicating, creating and developing digital information through digital actions as the solution for some tasks. In addition, Jan (2018) said that students' attitudes toward adopting information and communication technology (ICT) and other ICT-related demographics were found to be linked to digital literacy. Supported by Hassan & Mirza (2021) the ICT skills are critical to teachers' use of alternative teaching and learning methods, i.e., e-learning, mobile learning in the present outbreak of pandemic disease caused by Coronavirus-Covid19. Furthermore, because students cannot learn computer literacy without a computer literate faculty, the digital literacy of students is directly linked to the computer capabilities of instructors and academicians (Nawaz & Kundi, 2010). Adapted from Bawden (2008) and Martin (2008), the components of digital literacy skills cover basic ICT skills (underpinning/technical skill), information literacy skill (background knowledge), digital competencies (central competence), and attitude and perspective toward digital usages and digital transformation.

Digital literacy is used to direct student-centered learning, and it has become one of the abilities that students must master when the School Based Curriculum- was established until the 2013 curriculum. According to Abbas et al. (2019) said that digital literacy had a significant impact on students' effective communication, analytical thinking, and optimism, but had no impact on their CGPA. Educators must address several issues, including digital literacy skills, technology usage habits, and digital content accessibility (Al-Qallaf, C. L., & Al-Mutairi, 2016). In addition, M. Li & Yu (2022) state that teachers must be digitally literate in order to meet the new requirements of the currently advanced teaching approach in the future. The developments in basic literacy in the twenty-first century, there are six types of basic literacy that everyone must master: (a) language and literature literacy, (b) numerical literacy, (c) scientific literacy, (d) digital literacy, (e) financial literacy, and (f) cultural and citizenship literacy. During this pandemic, online learning requires a person's ability to master digital technology equipment, with the hope that the individual already possesses digital literacy abilities. Students need digital literacy abilities to take advantage of digital technology, Rahmi & Cerya (2020) which is defined it as the ability to use digital devices such as cellphones, PCs, or laptops and operate supporting programs to assist students majoring in education in designing quality learning. Based on the wider description above, this study aims to know how far the students' understanding about the digital literacy facing in their remote learning experience during pandemic Covid-19.

Based on the wider description above, the novelties of this study were (1) the research on student' digital literacy is something new for the intern university system, since online learning also conducted in the pandemic Covid-19, and (2) the findings of this study will be further used as the basic of the next research on the use of online learning media on the university's internal learning management system (LMS). This study aims to know how far the students' understanding about the digital literacy facing in their remote learning experience during pandemic Covid-19. It focuses on the aspect of students' digital literacy, how far the learners understand the aspect of digital literacy and the knowledge of students' literate the digital tools. So, this study pointed to 1) basic skill of digital literacy; 2) background knowledge of the information; 3) technology and information skills; and 4) attitudes and perspectives.

METHOD

This study was intended to know the students' understanding of digital literacy during online learning in the pandemic Covid-19. It is classified into descriptive quantitative that is investigated to point the digital literacy aspects from Bawden theory, they are: 1) basic skill of digital literacy; 2) background knowledge of the information; 3) technology and information skills; and 4) attitudes and perspectives. There were 117 students of higher education students; these students were determined using purposive sampling technique with the criteria that were joining learning classroom actively. The collecting data technique was framed in 20 questions in the questionnaire; the questionnaire was analyzed using descriptive quantitative techniques. The researchers conceived the questionnaire based on the related literature and previous studies. To collect the data, digital literacy

questionnaire adapted from theories of digital literacy concept proposed by Bawden (2008). The questionnaire was distributed to the sample at the beginning. It consists of some statements in terms of likert-scale consisting of 4 choices of answers. Moreover, the questionnaire had been validated to the experts, material experts and language experts (linguists); according to the material expert validation results, the instrument measurement shows 87.5 percent, it was in the good category and may be used. According to the linguists, the instrument measurement shows 88.2 percent, it was in the very good category and could be used. As a consequence of the two experts' validation results, this instrument is suitable for usage. The questionnaire also had been tried out to other students before it was given to the sample of this study. It delivered to 25 students, from 20 items, all of them were valid and reliable with the validity score was 0.762, and reliability score was 0.814. So it can be said that the instrument were valid and reliable. The valid instrument then distributed to the sample. The participants had to respond to the questions and pick the answer which offered some choices. After delivering the questionnaire to the participants, the instrument then analyzed used descriptive quantitative analysis.

RESULTS AND DISCUSSION

The score and results of the study based on Bawden's (2008) theory is classified into four aspects; they are (1) basic skill of digital literacy; 2) background knowledge of the information; 3) technology and information skills; and 4) attitudes and perspectives.

The explanation below shows the results of the questionnaire distribution to determine students' understanding of digital literacy in the term of basic skill of digital literacy.
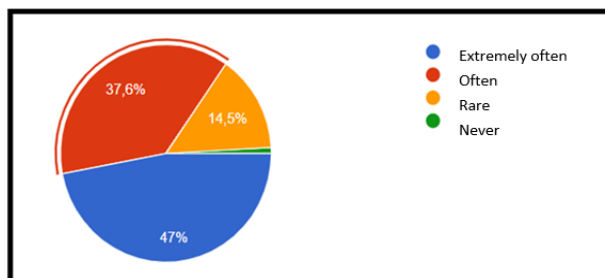

Diagram 1. *Data of students' internet accessing*

From the results of diagram 1, there are 47% of students who access the internet more than five hours a day, 37.6% in the often category, 14.5% in the rare category, and 1.8% in the never category. It means that almost all of the college students spend 21% time a day accessing the internet.
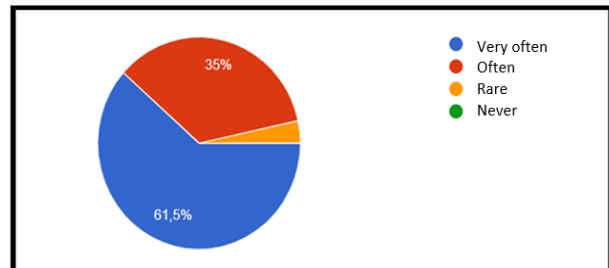

Diagram 2. *Data of students' joining in online learning*

Based on diagram 2 above, reveals that 61.5% of college students are very often joining in online learning, 35% of students are often joining online learning, and 3.5% of students are rare joining online learning.
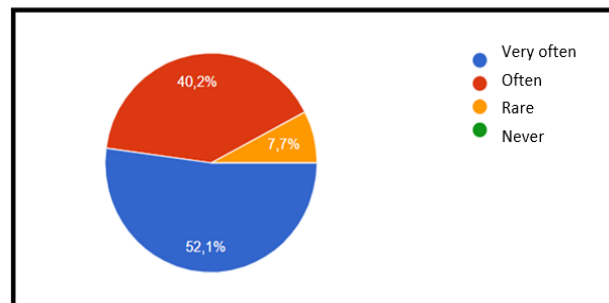

Diagram 3. *Data of applying online learning media*

Diagram 3 above describes that 52.1% of students are very often applying online learning media, 40.2% are often using online learning media, and 7.7% of students are rarely applying online learning media.

Table 1. *Sharing file in online learning media*

Rate	Criteria
23.1%	Extremely often
56.4%	Often
19.7%	Rare
0.8%	Never

From the table 1 above, it reveals that students' activities in sharing file from online learning media are in good criteria. It describes in table 1 that 56.4% of students are extremely often sharing files during online class through online learning media.

There are 23.1% of students are often sharing file during online class, and 19.7% are rarely doing this activity. It can be illustrated that more than 80% of students have a good attitude toward sharing information with others during online learning. Information that is shared is a proper file related to academic purposes in the teaching and learning online process.

The description below describes the results of the questionnaire distribution to determine students' understanding of digital literacy in the term of background knowledge of information.
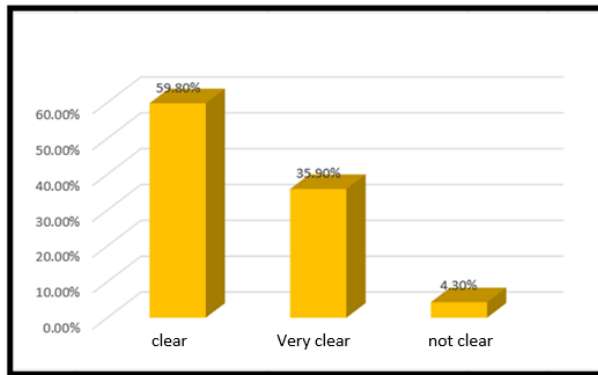

Diagram 4. *Data of students' internet searching*

Diagram 4 shows that 59.8% of students understand how to search information in the search engine, and 35.9% of students are very understood and only 4.3% of students do not understand how to find information in search engines. This reveals that more than 95% of students are finding information using the search engine on the internet so that the internet plays a significant role in finding information in education and other disciplines.
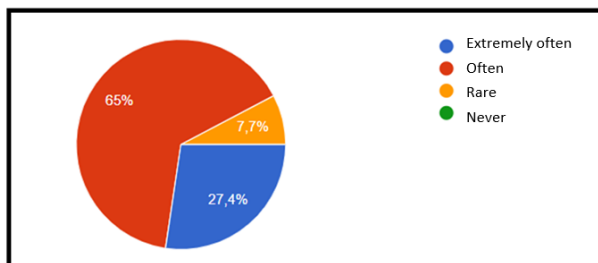

Diagram 5. *Data of students' digital references*

Based on diagram 5 above that 100% of college students using online references. This illustrates that students' most favorite references are published in online media, it is confirmed that this activity is easy, efficient, and practical.

The results below describe the results of the questionnaire distribution to determine students' understanding of digital literacy in the term of technology and information skills. This section also discusses the outcomes of using digital learning tools from reputable sources and reading all digital data.

Table 2. *Data of reading digital information in trusted sources*

Trusted digital sources		Reading digital information	
Percentage	Category	Rate	Category
25.6%	Very often	6%	Very often
67.5%	Often	56.4%	Often
16.9%	Rare	36.8%	Rare
0%	Never	0.8%	Never

According to the table above the category of very often and often have the total number 72%, this provides useful information about links or official websites viewed, and digital material is more frequently read because it is easier to obtain from an Android device.
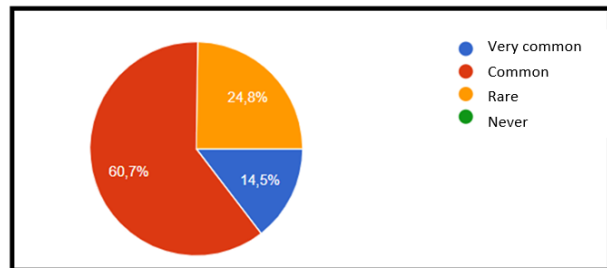

Diagram 6. *Data of screening digital information*

Based on the diagram above, it shows that 14.5% of students are very common doing screening on digital information, 60.7% of students are common doing screening, and 24.8% of students are rarely doing this activity. It means that most pupils in the digital era filter the information they received.
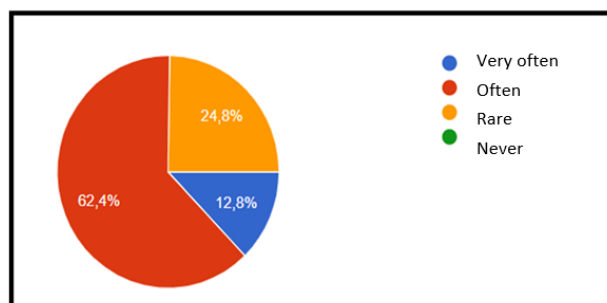
Diagram 7. *Data of confirming digital information*

According to this diagram, it was discovered that practically all students do double-check the information they received, as seen by the 0% percentage result for the never category.

Table 3. *Trust the online information*

Rate	Category
2.6%	Very common
26.5%	Often
66.7%	Rare
4.3%	Never

Based on the table above, shows that 66.7% of college students are rare trust online information directly, 26.5% of students are often trusting in online information, 2.6% of students very often believe in online information, and 4.3% of college students are never trusting on online information. This demonstrates that college students pick or screen the information they received.

The explanation below describes the results of the questionnaire distribution to determine students' understanding of digital literacy in the term of attitudes and perspectives users.

Table 4. *Data of open the link and do citation*

Declaration	Rate	Category
Open another link to find out the trusted information	14.5%	Very common
	67.5%	Often
	14.5%	Rare
	3.4%	Never
Do a proper citation method	5.1%	Very often
	60.7%	Common
	31.6%	Rare
	2.6%	Never
Attach the other writing sources (Citation)	12%	Very common
	47.5%	Often
	28.2%	Rare
	12.8%	Never

Based on the table above, it reveals that 67.5% of college students are often opening another link to look for reputable sources, 60.7% of college students are common doing a proper citation method, and 47.5% of students are often attaching the other writing sources in their papers or works. It can be concluded that more than 58% students have a good attitude and perspective on digital information.

According to the results above, the aspects of students who have good digital literacy are seen based on Bawden's points; they are 1) basic skill of digital literacy; 2) background knowledge of the information; 3) technology and information skills, and 4) attitudes and perspectives. Most of the students are using online learning media in the learning process during the pandemic. It is found that most of the college students here have mastered several online learning media including zoom meetings, Google meet, and others. It illustrates that college students are digitally literate and capable of adapting to changes in the lecture system, such as the transition from face-to-face to online learning. It can be described that most of the students are joining online learning during this pandemic Covid-19. First, the students have good digital literacy in the aspect of basic skill of digital literacy. The support reasons are almost all of the students spend their 21% time a day accessing the internet, the second is most of the students are joining online learning during this pandemic Covid-19, the next is that students are digitally literate and capable of adapting to changes in the lecture system, such as the transition from face to face to online learning, and more than 80% of students have a good attitude in sharing information to others during online learning.

Second, the students have good digital literacy in the aspect of background knowledge of information. The support discussions are more than 95% of students are finding information using the search engine on the internet, so that the internet plays a significant role in finding information in education and other disciplines, 100% of college students using online references so that students' most favorite references are published in online media.

The third is the students have a good digital literacy in the term of technology and information skills. The next discussions are internet provides useful information about links or official websites viewed, and digital material is more frequently read by students because it is easier to obtain from an Android device, and most pupils in the digital era filter the information they received, all students do double-check the information they received, and also college students pick or screen the information they received. And the last is the students have a good digital literacy in the term of attitudes and perspectives users. The findings discussions are more than 58% of students have a good attitude and perspective on digital information.

CONCLUSION

The students have a good digital literacy in the aspect of basic skill of digital literacy, they have a good digital literacy in the aspect of background knowledge of information, and they have a good digital literacy in the term of technology and information skills as well as strong attitude and perspective on digital information.

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