

Profile of Digital Literacy Skills of Class IX Students on Online Learning Mathematics

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Abstract

This study aims to determine the profile of digital literacy skills possessed by students in online learning mathematics. This research is a quantitative study. The subjects in this study were students of 9th Grade Imam Syafi'i Junior High School Batam, which may amount to 30 students. The data technique used was a questionnaire, with descriptive data analysis. Based on the research results, it can be seen that the level of digital literacy skills possessed by students is 80% and is in the good category. Where the skill level of each digital literacy indicator, namely internet search skills, was 86% in the very good category, while the hypertext direction guideline skills were 73%, information content evaluation was 82%, and knowledge compilation skills were 82%, the total was in the good category. Furthermore, the results also showed that the most ICT devices used by students in accessing the internet were smartphones 21 students, with 22 students private ownership. The purpose of most students in accessing the internet was to find information 14 students, and the most students accessed in using the internet were academic content 14 students.

Keywords: Digital Literacy Skills, Math Online Learning

INTRODUCTION

The development of the field of education is closely related to the development of the industrial revolution. This is because the industrial revolution brings changes to the economic order of a country which indirectly changes its educational order (Risianto, 2019). The last industrial revolution that occurred in 2010 is known as the industrial revolution 4.0 or the era of the digital revolution. In this era, information and communication technology is fully utilized in almost every line of life, including education. (Forum, 2015)

Digital literacy is often defined as the relationship between the skills and competencies needed to use the internet and technology effectively (Ala-Mutka, 2011) (Cartelli, 2010). In Futurelab 2010, digital literacy is defined as the ability to share different meanings to create, communicate, and better understand digital technology (Muliawanti & Kusuma, 2019). Digital literacy is also a set of skills and technological knowledge for a person to develop their long-term learning activities and make a good contribution to society (Çam & Kırıkcı, 2017). Thus, it can be concluded that digital literacy is a skill to understand well and utilize digital technology effectively in learning activities and contributing to society.

Digital literacy includes several aspects, including information literacy, computer literacy, media literacy, communication literacy, visual literacy, and technological literacy (Covello & Lei, 2010). In addition, digital literacy includes several basic skills, namely, finding and selecting information, critical thinking and evaluation, socio-cultural understanding, collaboration, effective communication, network security, and creativity (Hague & Payton, 2011). Douglas Belshaw in (Kemendikbud, 2017) suggests 8 components of digital literacy, including: cultural, namely understanding the various contexts of users of the digital world; cognitive, namely the ability to think in assessing content; constructive, namely making something good and actual; communicative, namely understanding the performance of networks and communications in the digital world; responsible self-confidence; creative, namely doing new things in new ways; critical in addressing content; and socially responsible

According to (Rodin & Nurrisqi, 2020), Internet Searching is a student's skill to use the internet and carry out various activities in it. While the Hypertext Direction Guide (Hypertextual Navigation) is the skill to read and understand the navigation (direction) of a hypertext in a web browser. Information Content Evaluation (Content Evaluation) is the ability of students to think critically and provide an assessment of information obtained online accompanied by the ability to identify the validity and completeness of information referenced by hypertext links. Then, Knowledge Assembly is the skill to organize knowledge, build a collection of information obtained from various sources with the ability to collect and evaluate facts and opinions properly and without prejudice.

In mathematics learning itself, the application of digital literacy means providing opportunities for students to use digital technology by involving an active, critical and creative attitude in the mathematics learning process. According to (Jenkins, 2015) the application of digital literacy in the learning process consists of three stages, namely integrating digital literacy activities in learning, dividing learning in multilevel, and evaluating student learning outcomes. (Muliawanti & Kusuma, 2019) explained that the application of digital literacy in mathematics learning is divided into 3 aspects, including: computer literacy, namely students are able to operate digital technology and solve problems related to digital technology interference; visual and communication literacy, namely understanding and using digital technology in visual and communication forms; and information literacy, namely students are able to perform and select information on online searches on the internet, evaluate it and be responsible.

So that digital literacy plays a very important role in learning mathematics, especially at this time where the learning process is carried out online or in a network (online). According to (Irhandayaningsih, 2020) in online learning, digital literacy skills can make it easier for students to follow the learning process using ICT devices and internet networks effectively. Digital literacy also helps interaction and communication between teachers and students during the online learning process, such as the use of microphone and camera features for video call-based communication or video conferencing. Research conducted by (Ningrum & Wulandari, 2020) shows a positive relationship between digital literacy skills possessed by students and the learning process carried out. On the other hand, (Santoso & Lestari, 2019) proves that when learning is done online, students with digital literacy skills are able to access more learning resources and have better learning achievements.

Based on the explanation, it can be concluded that digital literacy skills are very important for students to have. In the short term digital literacy skills are needed in the online learning process during the covid-19 pandemic, and in the long term it is very necessary in facing the challenges of 21st century education. Therefore, this study aims to determine the profile of digital literacy skills possessed by students in learning mathematics online in facing the challenges of 21st century education

METHODS

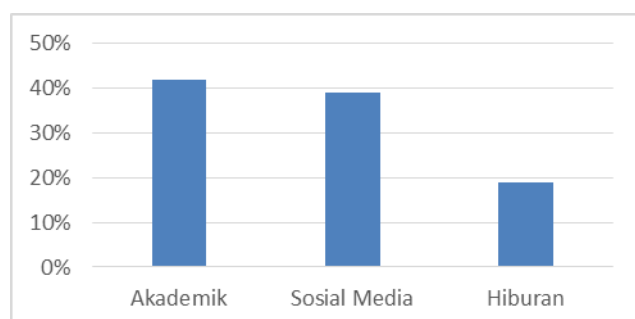
This research is a quantitative study with a descriptive approach, and was carried out in class IX of SMP IT Imam Syafi'i Batam with 30 students as research subjects. The results of this study are an analysis of students' digital literacy skills which are presented in the form of tables and diagrams. The data analysis technique used in this research is descriptive data analysis technique, namely the mean to determine the average of the variables and the grand mean to determine the range of the rating scale. The scale used for the research instrument is the Likert Scale (Setyosari, 2016) which consists of alternative answers Strongly Agree (SS), Agree (S), Doubtful (R), Disagree (TS), and Strongly Disagree (STS).

RESULTS AND DISCUSSION

Based on the results of the data analysis of the digital literacy questionnaire instrument with a Likert scale in class IX students of SMP IT Imam Syafi'i Batam totaling 30 students, using the grand mean method, obtained a range of scales for each assessment score, where the highest score is 145 and the lowest score is 30. In the indicator of Internet Searching skills, the average student is in the very good category with a total score of 125 and is in the 100–125 score range. This means that students' skills in accessing the internet and doing various activities in it are very good. Meanwhile, on the Hypertext Direction Guide indicator (Hypertextual Navigating), the average student scores 102 and is in the range of 100–102 with a good category. This means that students are good at reading and understanding the navigation of a hypertext in a web browser.

Then, for the Information Content Evaluation skill indicator, the score is 118 and is in the range of 100–102 with a good category. This shows that students' ability to think critically and provide an assessment of information obtained online is good. So is their ability to identify the validity and completeness of information referenced by hypertext links. Next is the Knowledge Assembly indicator which scores 118 and is in the range of 100–102 with a good category. This shows that students' skills in compiling knowledge and building a collection of information obtained from various sources are good. Thus, the average score of the Digital Literacy skills of class IX students of SMP IT Imam Syafi'i Batam amounting to 30 students is 116 and is in the good category.

From result this research, Most students access the internet using smartphone devices, namely as many as 21 students. The rest, as many as 8 students use laptops or computers. Furthermore, as many as 22 students, most often access the internet using their personal devices. While the remaining 7 students access the internet using other people's property, such as parents, schools, or old computers. Then, as many as 14 students often access the internet with the aim of finding information and as many as 12 people for social media. The rest, 2 people often access the internet to play games and 1 for online shopping.



CONCLUSIONS AND SUGGESTION

Based on the results of research conducted in class IX of SMP IT Imam Syafi'i Batam totaling 30 students, it can be concluded that:

(1) Students' digital literacy skills are in the good category, with an average score of 116 which is in the 100-122 scale range. So it can be said that these students are ready to face the challenges of 21st Century Learning, where digital literacy skills and competencies are needed in using the internet and technology effectively.

(2) The most frequently used ICT devices for students to access the internet are smartphones, followed by laptops or computers.

(3) The ownership of students' ICT devices in accessing the internet is mostly private property, followed by other people, including parents, schools, or rentals.

(4) The purpose of students accessing the internet most often is for browsing information or looking for information, then next is social media, playing online games and shopping online.

(5) The content that is most accessed by students in using the internet is academic content, which includes lesson materials, questions, instructions for working on assignments or projects and other educational information. The next content is social media. Finally, the content that students often access is entertainment content.

The suggestions that can be given based on the conclusions of this study are:

(1) The school can provide guidance programs for students in order to improve digital literacy skills, and provide insight on the importance of evaluating the goals and content that is accessed on the internet correctly and effectively.

(2) The teacher can provide motivation to students regarding strategies for applying digital literacy skills and using the internet in the learning process, in order to face the challenges of 21st century learning.

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