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The Influence of Digital Literacy in Online Learning on Student Learning Outcomes

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ABSTRACT

The study aimed to outline the effect of digital literacy on student learning outcomes within the context of online education, as well as to pinpoint the constraints related to digital literacy that affect student learning outcomes in online learning. The research utilized an ex post facto approach with a quantitative methodology. Data were gathered through questionnaires and academic performance assessments from a sample of 37. The data underwent analysis through descriptive techniques and simple linear regression. The initial findings revealed that the computed t value amounted to 0.625, which was less than the critical t value of 2.030. Consequently, no substantial influence of digital literacy on student learning outcomes was observed. This outcome emerged due to the limited understanding of digital media and the internet among students in the context of online learning. This limitation hindered them from effectively utilizing digital media and online resources to access information. The subsequent findings concerning the challenges posed by digital literacy within online learning unveiled two main obstacles: motivation/attitude and physical access. Within the motivation/attitude category, 4 students experienced isolation due to the absence of peers, 6 students struggled with comprehending the study material, and 3 students encountered issues related to time management, boredom, and fatigue. In terms of physical access, 5 students lacked the necessary digital devices, another 5 students were without internet data quotas, and 3 students faced difficulties with internet signal reception.

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INTRODUCTION

The emergence of the Covid-19 (Corona Virus Disease) outbreak around the world, including in the Indonesian region, has had various effects. A clear influence is seen in the economic sector and the education sector. In the education sector, to reduce or prevent the spread of the Covid-19 virus in the education environment, the Minister of Education and Culture issued a circular letter of the Minister of Education and Culture Number 4 of 2020 concerning the Implementation of Education Policy in the Emergency Period of the Spread of Corona Virus Disease (Covid-19). The Circular Letter contains several points including the cancellation of the 2020 National Examination (UN), the learning process from home, and the School Examination. The learning process from home can be carried out through online learning or distance learning (PJJ). One of the home learning activities carried out by some schools is online learning.

Online learning is learning that requires internet access. This is supported by the Jakarta Religious Education and Training Center written by Harnani (2020) which explains that the online learning system or online learning (network learning) is a learning process that is not

carried out in face-to-face activities between teachers and students, so it uses the internet network to learn online. Online learning is focused on learning completeness in the form of student learning outcomes. The access needed in online learning includes cellphone or computer, internet package, and signal.

Access to online learning needs to be accompanied by digital literacy in using digital media. Digital literacy in digital learning needs to be owned by teachers, students and parents of students. Gilster (1997) describes digital literacy as the ability to understand and use information in various formats from various sources when presented through computers. Meanwhile, Syaripudin (2017) describe digital literacy as the ability to use information and communication technology (ICT) to find, evaluate, utilize, create and communicate content/information, with cognitive and technical skills.

Digital literacy is very important in the digital era and has several benefits as stated by the Ministry of Education and Culture's National Literacy Movement (GLN). Digital literacy is important because it enables us to 1) think critically, creatively and innovatively, 2) solve problems, 3) communicate more fluently and 4) collaborate with more people. In addition, there are several benefits of digital literacy, namely 1) saving time, because looking for references via the internet can be done anywhere and anytime, 2) saving costs, because there are many free sites and applications on the internet, 3) expanding the network, because with social media users can add new friends from various regions and countries, 4) making better decisions, 5) learning more quickly and efficiently, 6) obtaining the latest information quickly, 7) environmentally friendly, and 8) enriching skills.

In this age of digital advancement, schools are expected to be stimulated to use effective digital literacy in both academic and non-academic fields. One of the benefits that can be brought about by this digital age is that school members (principals, educators, education personnel, and students) can obtain up-to-date educational information or the latest news. This activity can be done by utilizing digital media connected to the internet that can be accessed easily by school members. However, the lack of understanding of digital literacy is a serious hurdle to its adoption. One possible effort is to equip school members and students with digital literacy skills to explore digital information wisely.

Digital literacy in primary school literacy needs to be applied and embedded in a structured learning process, or at least integrated with the learning process. This is to make it easier for elementary students to find learning information and to supervise the use of digital media. These skills must be accommodated in the classroom and elementary school environment, so that they must be maximally utilized for cognitive, social, language, visual, and spiritual skills. In addition, digital literacy is expected to be able to provide creative, innovative, and contemporary learning innovations that can improve learning outcomes or student achievement. Research of Efendi and Hanif (2022) has two results, namely there is an effect of the application of digital literacy on social studies learning outcomes during the Covid-19 pandemic. And there is an effect of online learning on social studies learning outcomes during Covid-19. Qudsiyah and Nurhasanah's (2021) research shows that digital literacy has a fairly low effect on economic learning outcomes in the pandemic era.

Learner results are said to be achieved if they experience the development and improvement of behavior expected in the formulation of learning objectives. According to Sinar (2018) learning outcomes are a learning achievement that students have achieved after completing a number of subject matters.

Jaradat and Ajlouni's (2021) research shows learners prefer online learning environments to face-to-face learning and find the former very useful. However, learners face some challenges, such as mental health issues (anxiety and stress), unreliable internet connection, slow e-learning platforms and services, lack of information and communication technology skills, poor time management skills, and distractions.

Based on the explanation above, it shows that it is important to further examine digital literacy but is limited to the realm of online learning. Therefore, a study was conducted outline the effect of digital literacy on student learning outcomes within the context of online education,

as well as to pinpoint the constraints related to digital literacy that affect student learning outcomes in online learning in the basic education environment.

RESEARCH METHOD

The research entitled the influence of digital literacy in online learning on student learning outcomes is Ex post facto research with a quantitative approach. Siregar (2014) describes ex post facto research as research conducted through empirical and systematic investigations, where researchers do not have direct control over independent variables that affect dependent variables because the phenomenon is difficult to manipulate. Siregar (2014) describes the objectives of research using a quantitative approach to test theories, build facts, show relationships and influences and comparisons between variables, to provide statistical descriptions in interpreting and predicting the results.

Data collection in the study used several techniques. The techniques used include online questionnaires or questionnaires and student test documents. A questionnaire is a number of written questions used to obtain information from respondents about things they want to know (Arikunto, 1998). Researchers used a questionnaire (questionnaire) directly to be given to students in class using google forms. Tests are used to measure student achievement of the material. The test documents used in the research are questions given through google classroom that have been assessed by the teacher. The value shows the learning outcomes of students in one meeting in one student learning material (subject). The evaluation sheet contains social studies questions about economic activities consisting of 10 questions and distributed by the teacher on September 14, 2021 via google classroom. The data that has been obtained is analyzed using descriptive analysis and simple linear regression.

RESULTS AND DISCUSSION

The first research result is the effect of digital literacy in online learning on student learning outcomes at SDN Klurak. Data on student digital literacy (X) was obtained through a questionnaire (questionnaire) given online and data on student learning outcomes (Y) was obtained through student test results documents. The results of the study were analyzed by linear regression analysis. The research results are shown in Table 1.

Table 1. Output Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	83,425	30,726		2,715	,010
	Digital Literacy in Online Learning	-,316	,641	-,083	-,493	,625

a. Dependent Variable: Learning Outcomes

The value of the coefficacy table obtained a sig value or t count of 0.625 and t table 2.030. The value of t count 0.625 < t table 2.030, then Ho is accepted. This shows that there is no effect of digital literacy in online learning on student learning outcomes at SDN Klurak.

The absence of the influence of digital literacy in online learning on student learning outcomes at SDN Klurak, can be influenced by literacy indicators in schools that have not been fulfilled. The National Literacy Movement (Ministry of Education and Culture, 2017) states that there are indicators of digital literacy in schools, including a classroom base, school culture base, and community base.

The classroom base as one of the indicators of digital literacy in schools includes the number of digital literacy trainings by principals, teachers and education personnel; the intensity of the application and utilization of digital literacy in learning activities; and the level of understanding. In the educator's lesson plan (RPP), learning activities carried out by teachers in applying and

utilizing digital literacy are carried out by stages (1) conducting virtual learning (google meet) and conducting discussions related to learning materials contained in the 2013 curriculum student book, (2) giving several questions that are placed into google classroom, (3) students answer these questions in the notebook, (4) students collect assignments in the form of images collected in google classroom, (5) educators assess students' assignments through google classroom. Based on the educators' lesson plans, the application and utilization of digital literacy in online learning is only limited to conducting virtual discussions and collecting assignments. This results in students' understanding of digital media and the internet in online learning is very limited and does not lead to the utilization of digital media and the internet to find information. This is also supported by the 2017 ICT usage survey by Ministry of Information and Communication (2017) which shows that the purpose of connecting to the internet for learning is 27.51%, while the most important purpose when connecting to the internet is communication at 93.46%.

The second research result is the constraints of digital literacy in online learning on student learning outcomes at SDN Klurak. The digital access that everyone has is different, van Dijk (2020) mentions the first-level divide and the second-level divide. The research will discuss the results of the research on first-level divide (motivation and attitudes) which will have an impact on second-level divide (digital skills and usage). The first level divide in digital literacy in online learning at SDN Klurak, namely.

A. Motivation/attitude

Motivation is the basic drive to move someone to behave (Uno, 2006). Without sufficient motivation and a positive attitude from individuals, individuals do not have a positive attitude in using and individuals will not develop their digital skills (van Dijk, 2020). The research found that the motivation for digital literacy in online learning on student learning outcomes at SDN Klurak, including 4 students had no friends, 6 students did not understand the material, and 3 students had time problems, boredom, and sleepiness. This underlies the digital skills and use of digital devices of students at SDN Klurak Kec.Candi Kab.Sidoarjo in the 2021/2022 academic year during the Covid-19 Pandemic.

B. Physical access

Physical access is the opportunity to use digital media by obtaining it either privately at home or publicly. Physical access is the most important condition to reach the next stage, which is digital skills and the correct use of computers or the internet to get the benefits (van Dijk, 2020). The research found that 5 learners did not have a digital device, 5 learners did not have a quota, and 3 learners had problems with the signal.

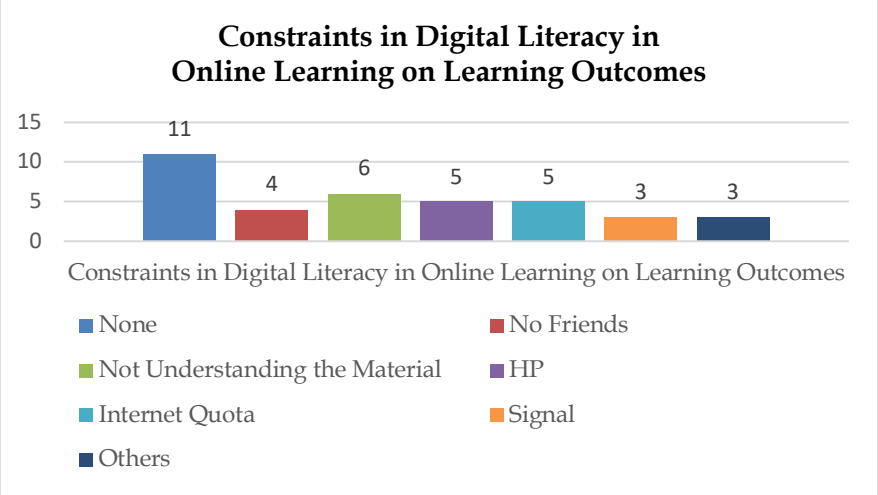


Figure 1. Constraints in digital literacy in online learning on learning outcomes

The first level of digital divide related to motivation/attitude and physical access is presented in Figure 1. The motivation/attitude and physical access experienced by learners during online learning during Covid-19 led to differences in digital literacy skills and digital media usage of each participant. This is also supported by previous research from Jaradat and Ajlouni (2021) learners face several challenges, such as mental health problems (anxiety and stress), unreliable internet connections, slow e-learning platforms and services, lack of information and communication technology skills, poor time management skills, and distractions.

CONCLUSION

The findings of this study provide valuable insights into the relationship between digital literacy and online learning outcomes among students at SDN Klurak. Firstly, the analysis reveals that the calculated t value of 0.625 is below the critical t value of 2.030, indicating that digital literacy does not significantly affect student learning outcomes in the context of online learning. This result can be attributed to students' limited familiarity with digital media and the internet, which hampers their ability to effectively leverage these resources for learning purposes.

Secondly, the study highlights notable barriers that hinder the potential impact of digital literacy on student learning outcomes within the online learning environment at SDN Klurak. These barriers encompass motivational and physical access challenges. Motivationally, several students face obstacles such as lack of peer support, difficulty in understanding course materials, and various factors affecting engagement, including time management issues, boredom, and drowsiness. On the other hand, physical access limitations are prevalent, with a subset of students lacking access to essential digital devices and sufficient internet data quotas, while others grapple with signal-related connectivity problems. Overall, the study underscores the need to address these multifaceted challenges to maximize the effectiveness of digital literacy in enhancing student learning outcomes in online learning settings.

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