# DIGITAL LITERACY AND UTILIZATION OF LEARNING MEDIA: THEIR CONTRIBUTION TO ACADEMIC ACHIEVEMENT IN INTENSIF TARUNA PEMBANGUNAN HIGH SCHOOL, SURABAYA

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Article Info	ABSTRACT
Article history:	Education in the digital era requires the development of
Published Marc 31, 2023	learning methods that are innovative and responsive to technological advances. Digital literacy and the use of learning media have a key role in increasing student learning achievement. The aim of this research is to explore the impact
Keywords:	of digital literacy and the use of learning media on student
Digital Literacy; Learning Media; Learning Outcomes.	learning achievement at Taruna Pembangunan Intensive High School Surabaya. Digital literacy is considered the key to unlocking student access to digital learning resources, improving understanding and providing a competitive advantage. The use of learning media with various approaches is also considered to have a positive impact on student learning achievement. Using quantitative methods, data was collected from 124 class XI students through questionnaires. Regression analysis is used to evaluate the relationship between variables. The research results show that the two independent variables have a significant influence on student learning achievement. Therefore, it is recommended to increase digital literacy and utilize learning media in curriculum planning and learning strategies.

## **INTRODUCTION**

The era of the industrial revolution marked a significant transformation in human life, with technology becoming the main pillar in the formation of society. Education plays a central role in preparing individuals to master technological developments and develop the global insight needed to face increasingly competitive global challenges (Ahmadi & Ibda, 2019). With adequate educational support, society can produce individuals who are not only technically skilled but also able to adapt quickly to continuous change. Education that focuses on technological developments gives individuals an edge in the job market and is the key to maintaining the country's competitiveness on a global scale (Kewuel, 2017). Therefore, quality education that is relevant to the demands of the times is a strategic step to face a future full of challenges and opportunities in the era of the industrial revolution (Bali & Hajriyah, 2020).

Learning can improve student learning outcomes, with the understanding that learning is related to mastery of subject matter and covers various dimensions of students' lives, which contributes to their personal development (Parwati et al., 2023). Learning is related to efforts to understand concepts in textbooks and involves forming positive habits, developing interests and talents, and improving skills. It is also an assessment of a number of factors, such as adjustment to the learning environment, social skills, and the pursuit of

desires and ideals. Learning outcomes reflect the extent to which students are able to apply the knowledge gained in everyday life and the extent to which they can contribute to society (Fazariyah & Dewi, 2022). The numbers or grades given to students reflect the extent to which they have mastered the learning material. Good learning must also consider qualitative aspects, such as character development, curiosity, and students' ability to face challenges and respond to change. Thus, this approach to learning recognizes the complexity and diversity of students, broadens the view of what is meant by learning outcomes, and illustrates the importance of developing students' potential as a whole in the learning process (Malawi et al., 2017).

Digital literacy in schools plays an important role in improving the quality of learning and preparing students to face challenges in the digital era (Yuniarto & Yudha, 2021). One of the main aspects of digital literacy is students' ability to use language and images effectively to read, write, listen, think critically, and process information related to social situations (Putri & Nanggala, 2023). Digital includes all forms of words or text, images, videos, internet, and computer and smartphone applications. Digital literacy includes the technical ability to use ICT devices and covers aspects of life. Students need to be equipped with digital literacy skills to succeed in an increasingly connected world. Digital literacy involves understanding how to use software, access online information, evaluate digital resources, and participate productively in various digital platforms. According to Kurniawan et al. (2022), the integration of digital literacy in education provides opportunities to improve learning methods, motivate students, and prepare them to face the demands of the ever-growing world of work. Through digital literacy, students can develop the skills needed to succeed in an information technology-based society (Mardikaningsih et al., 2015). For this reason, students need to develop social skills through digital media, understand online ethics, and become active learners (Al Hakim et al., 2014). They need to be able to think critically about information found online, and have a creative and inspiring attitude to use digital technology. Students who have good digital literacy tend to be more successful in understanding and utilizing digital resources for learning which can improve learning outcomes (Arima et al., 2021).

In learning activities, the role of learning media can support the effectiveness of the teaching and learning process in the classroom. Learning media functions as an intermediary that facilitates the delivery of messages from teachers to students. The existence of this media makes it easier to convey information and increases students' motivation and interest in the material being taught (Salsabila et al., 2020). When learning media are used appropriately, students can be more actively involved in the learning process. This helps create a stimulative learning environment, where students feel engaged and motivated to understand the concepts being taught. Learning strategies also have an important role in achieving learning goals. By choosing strategies that suit students' needs and characteristics, teachers can create more effective learning experiences. Diverse learning strategies, such as cooperative learning, group discussions can develop various skills, including social skills, creativity, and problem solving. When teachers successfully integrate various learning strategies and use learning media wisely, student learning outcomes tend to improve significantly (Pamungkas & Koeswanti, 2021).

Education in the digital era presents new demands that emphasize the integration of digital literacy, the use of learning media, and the development of learning independence as key elements in the learning process. It is hoped that this overall interaction can increase students' motivation to learn effectively. Therefore, the main focus of this research is to identify the extent to which digital literacy and the use of learning media contribute to student learning outcomes at Taruna Pembangunan Intensive High School Surabaya. This

research is directed at understanding the relationship between these variables, so that it can contribute to a better understanding of the factors that influence learning outcomes in the context of digital education.

### RESEARCH METHODS

This research focuses on a quantitative approach by applying survey methods, aiming to measurably evaluate the impact of digital literacy and the use of learning media on the achievement of their learning outcomes. By using a carefully designed questionnaire instrument, this research will investigate the extent to which digital literacy skills and the effectiveness of using various learning media influence their academic achievements. Through this approach, the research aims to provide a comprehensive picture of these factors and their contribution to the quality of student learning outcomes.

This research has a population consisting of all students at the Surabaya Taruna Pembangunan Intensive High School, totaling 402 students. However, in the context of the sample, this research chose a group of class XI students totaling 124 students as the research sample. In the census approach, all students in class XI are taken as respondents, covering the entire group without random sample selection. Therefore, every student in class.

The research instrument used was a questionnaire to collect data regarding students' perceptions of digital literacy and the use of learning media on learning outcomes. The questionnaire will include structured questions related to the research variables. Data collection was carried out by distributing questionnaires to a selected sample of students. The research variables consist of independent variables (digital literacy and use of learning media) and dependent variables (learning outcomes). The following is an explanation of operational definitions and research indicators:

- 1. Digital literacy (X.1) is the ability to use technology and information from digital devices effectively and efficiently in various contexts such as academics, careers and everyday life (Kusumo et al., 2022). Based on Nahdi and Jatisunda (2020), digital literacy can be divided into four indicators, namely basic internet skills, the ability to search and obtain information, frequently used information sources, and the ability to use information effectively.
- 2. The use of learning media (X.2) is the ability to participate effectively in online communication by managing information intelligently and collaborating with other people through various digital platforms (Widianto, 2020). Utilization of learning media refers to anything that can be used to stimulate students' thoughts, feelings, attention and skills with the aim of encouraging the learning process (Ekayani, 2017). Adam (2015) noted the existence of three indicators of digital media, namely generating new desires and interests in learning, increasing motivation and interest in learning, and increasing understanding of subject matter.
- 3. Learning outcomes (Y) are students' ability to understand the concepts that students acquire as a result of the learning process (Herefa, 2020). Student Learning Outcomes (Y) are students' academic achievements which include understanding concepts, application of knowledge, and development of skills viewed from three aspects, namely affective, cognitive, and conative (Wahyudi et al., 2018). According to Bryam and Hu (2013), learning outcome indicators are as follows:
- a. Cognitive means student achievement in terms of knowledge, understanding and mastery of intellectual concepts.
- b. Affective means changes or gains in emotional aspects, attitudes and values of students as a result of learning experiences.
- c. Psychomotor means changes or mastery in the motor aspects or physical skills of students

as a result of learning experiences.

The data collected in this research will be analyzed using statistical methods, especially regression analysis. The main aim of this analysis is to determine the extent to which digital literacy and the use of learning media influence learning motivation. Through regression analysis, a more detailed and measurable picture of the relationship between the variables being investigated will be obtained. This research will include regression analysis as the main statistical method with the aim of identifying and understanding the extent to which digital literacy and the use of learning media influence student learning motivation at Taruna Pembangunan Intensive High School Surabaya. Before entering the regression analysis stage, the collected data will go through a validity and reliability testing stage to ensure the measurement instrument has adequate validity and consistency. The regression analysis process will include determining the dependent variable (learning motivation) and independent variables (digital literacy and use of learning media), as well as testing linear regression assumptions to ensure the validity of the results. The results of the regression analysis will be evaluated through interpretation of regression coefficients, test of model significance, and evaluation of model performance using measures such as R-squared. The conclusion of this analysis will provide a more detailed and measurable picture of the relationship between the variables studied, as well as their relevance in the educational context at Taruna Pembangunan Intensive High School Surabaya.

#### RESULTS AND DISCUSSION

Data collection carried out at Taruna Pembangunan Intensive High School Surabaya obtained results from 107 students who responded well to the questionnaire. The sample was taken previously from a group of class XI students totalling 124 students. However, not all filled out the questionnaire. Despite this, the research results can still provide valuable insight into the factors that influence student learning outcomes based on the responses of the 107 students involved.

Validity testing was carried out on two independent variables, namely digital literacy and use of learning media, as well as one dependent variable, namely student learning outcomes. The validity of the test results can be considered strong, because not a single statement was eliminated during the test. This is caused by the total corrected item correlation values, all of which exceed 0.3. The absence of statements eliminated during testing can be interpreted as an indication that all statements in the measurement instrument remain relevant and have a fairly good correlation with the variables being measured. The high correlation between each statement and the variables measured shows that the measurement instrument as a whole is reliable and valid in measuring digital literacy, use of learning media, and student learning outcomes.

The results of reliability measurements with a Cronbach's Alpha value higher than 0.6 show that all variables in the research, namely digital literacy (0.789), use of learning media (0.812), and student learning outcomes (0.833), are considered reliable as measurement tools. A Cronbach's Alpha value above 0.6 indicates a good level of consistency and reliability in measurement. This means that the instruments used to measure digital literacy, use of learning media, and student learning outcomes can be relied on to provide consistent and accurate data.

Table 1 t Test

		Unstandardized Coefficients		Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	4.727	2.154		2.194	.030
	X1	1.422	.435	.223	3.267	.001
	X2	.977	.094	.709	10.397	.000

From the results of this research, a regression model has been formed which can be represented by the mathematical equation Y = 4.727 + 1.422X1 + 0.977X2. This model provides an overview of the relationship between student learning outcome variables (Y) with digital literacy variables (X1) and learning media use variables (X2). Specifically, the predicted value of student learning outcomes (Y) can be calculated by substituting the variable values for digital literacy (X1) and use of learning media (X2) into the regression equation. However, when both independent variables have a value of zero. Therefore, if digital literacy (X1) and use of learning media (X2) are both zero, then the predicted student learning outcome value (Y) will be around 4.727.

Analysis of the results shows that digital literacy and the use of learning media at Taruna Pembangunan Intensive High School Surabaya have high significance, with significance values of 0.001 and 0.000 respectively. A significance value of less than 0.05 indicates that there is a significant relationship between digital literacy variables and the use of learning media and student learning outcomes at Taruna Pembangunan Intensive High School Surabaya. Furthermore, based on the regression coefficient value, digital literacy has a coefficient value of 1.422, while use of learning media has a coefficient value of 0.977. This coefficient value shows how big a change is expected in the student learning outcome

variable when the digital literacy variable or use of learning media experiences a change of one unit. From these results, it can be concluded that digital literacy has a more dominant influence on student learning outcomes compared to the use of learning media. A larger coefficient value indicates that a one unit change in digital literacy is more strongly correlated with a change in student learning outcomes compared to a one unit change in learning media use.

Table 2 Model Summary<sup>b</sup>

Model	R	R Square	R Square Adjusted R Square Std. Error of the Estimat		
1	.888a	.788	.784	3.62317	

The findings from this research show that there is a significant relationship between digital literacy and the use of learning media and student learning achievement at Taruna Pembangunan Intensive High School Surabaya. The R value of 0.888 shows the strength and direction of the relationship between the independent variables (digital literacy and use of learning media) and the dependent variable (student learning achievement). Furthermore, the R Square value of 0.788 indicates that around 78.8% of the variation in student learning achievement can be explained by the combination of digital literacy and use of learning media as measured in this study. Meanwhile, around 21.2% of the variation in student learning achievement is explained by other variables not included in this study.

Table 3 ANOVAa

a		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5065.746	2	2532.873	192.946	.000b
	Residual	1365.245	104	13.127		
	Total	6430.991	106			

The F test results show that the F-calculated value reaches 192.946, with a significance level of 0.000. Since this probability value is < 0.05, it implies that the regression equation has strong significance. In other words, this analysis indicates that the variables of digital literacy and use of learning media when combined have a simultaneous influence on student learning outcomes at Taruna Pembangunan Intensive High School Surabaya. The results of this analysis show that the variables digital literacy and use of learning media, when combined in a regression model, have a simultaneous and significant influence on student learning outcomes. This means that the two variables, digital literacy and use of learning media, contribute to each other in explaining variations in student learning outcomes in the context of Taruna Pembangunan Intensive High School Surabaya.

The results of this research indicate that there is a significant influence between digital literacy on the learning outcomes of Surabaya Taruna Pembangunan Intensive High School students. These results are confirmed by Rahmadhani's research (2020); Arima et al. (2021); Pratiwi (2022) stated that there is a positive relationship between students' digital literacy level and their academic achievement. Digital literacy has a very important role in improving the quality of education and student learning outcomes. With advances in information and communication technology, digital literacy has become an essential skill that is not only relevant for everyday life, but also has a huge impact on the formal learning process. Students who have a good level of digital literacy tend to be better able to utilize digital resources, access information effectively, and participate actively in online learning or using technology in the classroom (Kong, 2014; Masnawati & Kurniawan, 2023). Digital literacy also helps students to develop critical thinking, information analysis, and problem solving, skills that are highly valuable in the modern educational context. In addition,

integrating digital literacy in learning can increase student motivation, increase their engagement, and create a more interactive learning environment. Thus, understanding and applying digital literacy not only supports students' ability to use technology, but also makes a significant contribution to improving the overall quality of education, creating graduates who are ready to face the demands of an ever-growing digital world. Digital literacy can help students to access a more diverse range of learning resources. Students who are able to assess the authenticity, accuracy and relevance of digital information tend to have awareness and understanding of learning material (Husna, 2023). Thus, digital literacy is about the use of technology and about developing thinking skills for the learning process (Habibah et al., 2022). Given the significant influence between digital literacy and student learning outcomes, the implications are important for designing learning strategies that integrate aspects of digital literacy. Teachers and educational institutions can utilize these findings to develop curricula that strengthen students' digital literacy, so that they are ready to face the demands of learning in the ever-growing digital era. In addition, this approach can also help prepare students to participate actively in a society that is increasingly connected and dependent on digital technology.

The results of this research indicate that the use of learning media has a significant influence on the learning outcomes of Surabaya Taruna Pembangunan Intensive High School students. These findings have the same results as previous research conducted by Supardi et al. (2015); Hunt et al. (2016); Pamungkas and Koeswanti (2021) stated that learning media can influence students' participation levels and improve their learning outcomes. These findings indicate that wise use of learning media can bring positive changes in achieving student learning outcomes. One key aspect that can be explained is that learning media provides variety and diversity in teaching approaches. By providing learning materials through various media, teachers can adapt teaching styles to the needs of various students (Rahmadayanti & Hartono, 2022). This diverse approach creates a more engaging learning environment that suits students' individual learning styles, allowing them to be more engaged and focused in the learning process. It can stimulate students' various senses, make learning more lively, and help them better internalize the concepts being taught. The use of learning media can also create a more dynamic learning experience. This increases students' motivation and helps them develop digital skills that are important for modern life (Rambung et al., 2023). With the finding that the use of learning media has a significant influence on student learning outcomes, teachers and educational institutions can consider increasing media integration in the learning process. Selection of media that is appropriate to learning objectives, balance between traditional and modern methods, as well as developing teacher skills to utilize media effectively can be important steps to improve the quality of learning and student learning outcomes.

#### CONCLUSIONS

From the results of this research, it can be concluded that digital literacy and the use of learning media have a significant influence on the learning outcomes of Surabaya Taruna Pembangunan Intensive High School students. Digital literacy, which includes the ability to use and understand digital media, has been proven to play a crucial role in improving the quality of learning. Students who have good digital literacy tend to be better able to access, assess and use digital information effectively, which in turn has a positive impact on their learning outcomes. The use of learning media also shows a positive influence on student learning outcomes. Learning media presents information in a more interesting and interactive way and supports various student learning styles. The diversity of learning media gives teachers the flexibility to design learning that suits students' individual needs, which

ultimately increases their engagement and understanding of the subject matter. Based on this conclusion, it is recommended to increase digital literacy and the use of learning media in the curriculum and learning strategies. Training and development of teachers to utilize digital technology and choose appropriate learning media can increase learning effectiveness. In this way, educators can ensure that students are proficient in digital and technological literacy and have independent and relevant learning skills to face the demands of an ever-changing world.

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