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THE EFFECT OF DIGITAL LITERACY ON STUDENT LEARNING ACHIEVEMENT AT SANTA URSULA ENDE COMMUNITY DEVELOPMENT COLLEGE

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A B S T R A C T

The research entitled The Effect of Digital Literacy on Student Learning Achievement at Santa Ursula Community Development College aims to determinate the effect of digital media literacy among male and female students on their learning achievement at STPM Santa Ursula Ende. This study used an associative quantitative research method to create a descriptive picture and explain the relationship between the two variables being studied, namely Digital Literacy (X) and Student Academic Achievement (Y). This study used a Likert scale with the hypothesis that the level of digital literacy among students has a significant effect on their academic achievement. The results of the study, using several indicators of lecture activities, shown that there is a significant influence between digital literacy skills and student academic achievement. This research used as input and consideration for determining the next steps and policies of the college, both the Study Program and the Institution, related to digital literacy to improve the quality of digital literacy, the quality of student achievement, and the quality and development of lectures in the Sociology Study Program and the Santa Ursula Ende Community Development College as a Higher Education Institution.

Penelitian dengan judul Pengaruh Literasi Digital Terhadap Prestasi Belajar Mahasiswa di Sekolah Tinggi Pembangunan Masyarakat Santa Ursula Ende, ini bertujuan untuk mengetahui pengaruh kondisi tingkat melek literasi media digital di kalangan mahasiswa dan mahasiswi pada prestasi belajar mereka di kampus STPM Santa Ursula Ende. Penelitian ini menggunakan metode penelitian kuantitatif asosiatif untuk membuat gambar atau deskriptif dan menjelaskan hubungan antara dua variable yang ingin diteliti dengan variable Literasi Digital (X) terhadap variable Prestasi Belajar Mahasiswa (Y). Penelitian ini akan

menggunakan Skala Likert dengan hipotesis dari penelitian ini adalah tingkat literasi atau melek digital mahasiswa memiliki pengaruh yang signifikan terhadap prestasi belajar mereka. Hasil penelitian dengan menggunakan beberapa indikator kegiatan perkuliahan menunjukan bahwa terdapat pengaruh signifikan antara kemampuan literasi digital dengan prestasi belajar mahasiswa. Penelitian ini akan dijadikan masukan dan bahan pertimbangan untuk menentukan langkah dan kebijakan selanjut dari pihak sekolah baik itu Program Studi dan Lembaga berkaitan dengan literasi digital untuk meningkatkan kualitas literasi digital, kualitas prestasi mahasiswa dan kualitas serta pengembangan perkuliahan di Program Studi Ilmu Sosiatri dan Lembaga Sekolah Tinggi Pembangunan Masyarakat Santa Ursula Ende sebagai institusi perguruan tinggi.

INTRODUCTION

Global-scale modernization and technological development, alongside digitalization, have catalyzed various advancements and innovations. As the cornerstone of contemporary human civilization, these advancements and innovations have demonstrated an extraordinary trajectory of progress and transformation in multiple sectors (Mseer & Sabri, 2025; Sabir et al., 2022). Within a more specific context human civilization has rapidly transformed the world due to advancements in science and technology. This development progress makes it appear as though the world is moving at great speed (Giddens, 2002). The advent of digital technology and its ubiquity in human life have precipitated the digitalization of nearly all facets of existence(Siakas et al., 2024). The field of education has undergone a profound transformation through the implementation of digital technologies in both teaching and learning processes.

This transformation is particularly evident at the higher education level, as evidenced by the integration of the Tridharma of universities (Zahariev et al., 2025). In this regard, digital literacy is undeniably necessary to accommodate the needs of education, particularly in improving the quality of teaching and learning processes, including enhancing students' academic achievement and students character(Alanoglu et al., 2025; Massie & Nababan, 2021). Nevertheless, several challenges persist, such as the potential decline in creativity due to technological overreliance, which gives rise to the perspective that technology and digitalization may not yield entirely positive impacts on educational activities or academic achievement (Bolshunova et al., 2022). This is evident in the issues of plagiarism and the contentious boundaries of Artificial Intelligence (AI) integration, which have emerged as inevitable challenges following the massive wave of digitalization within the educational sector (Ivanov, 2023; Mujtaba, 2025).

In this regard, the present study, titled *The Influence of Digital Literacy on Student Academic Achievement at the College of Social Development Santa Ursula Ende*, aims to examine the level of digital literacy among students and its impact on teaching and learning activities at STPM St. Ursula as a high education institution. This study is crucial as it reflects the relevance of higher education in demonstrating the positive influence of digitalization within the educational sector. This is particularly pertinent following the massive wave of digitalization during and after the COVID-19 pandemic, which significantly altered human life patterns (Raki, 2021). This phenomenon is evident in

daily household routines, work patterns, learning modes, and even political decision-making, all of which are strongly influenced by digital advancements (Gesu & Raki, 2025; Pujianto, 2021). Furthermore, in the education sector, teaching and learning paradigms have been optimized through online or remote learning. The implementation of online learning systems requires adequate understanding and technical skills to operate various digital features and applications effectively (Torrato et al., 2023). Consequently, both educational institutions and students must possess sufficient knowledge and competencies in utilizing digital media, collectively referred to as digital literacy.

Several studies, especially in Indonesia, have highlighted some issues about digitalizasin and education, such as Dinata (2021), in his work on literacy in online learning, defines digital literacy as the human ability to use smartphones or computers with the purpose to access the internet for enhancing creativity in conducting online learning. This enables individuals not only to collaborate but also to select and utilize information appropriately. In line with this, Restianty, (2018), emphasizes the importance of digital literacy in obtaining accurate information amid the vast array of discourses and information scattered across the digital world. Digital literacy enables individuals to remain focused and critical toward various content and discourses in social media and digital platforms, sharpening their ability to filter and interpret information (Kang et al., 2024). Moreover, digital literacy encourages responsibility and ethical conduct in using digital platforms and information, enabling individuals to communicate and pursue other objectives appropriately (Puebla et al., 2024).

However, several studies have presented contradictory findings regarding the influence of digital literacy on student academic achievement. Effendi et al., (2019) revealed that although digital platforms were extensively utilized for instruction during the COVID-19 pandemic, the lack of standardized practices and students' distrust of social media content resulted in no significant impact on academic achievement. Similar, Manubey et al., (2022) found that digital literacy did not significantly influence learning outcomes or academic performance.

The assessment of student academic achievement generally refers to the three key domains of Benjamin S. Bloom’s Taxonomy—cognitive, affective, and psychomotor aspects (Bloom, 1969; Khotimah & Darwati, 2019). These aspects serve as benchmarks in evaluating students’ academic performance. Despite growing attention to digital literacy in higher education, previous studies have reported inconsistent findings regarding its relationship with student academic achievement. Moreover, limited evidence is available from smaller higher education institutions in local Indonesian contexts, including STPM Santa Ursula Ende. Therefore, this study seeks to examine whether digital literacy is significantly associated with student academic achievement in this specific context.

There are several reasons why this research is important. First, it aligns with the growing digitalization of global developments. Second, the urgency of this study lies in students’ adaptation to the digital world, particularly digital literacy, which can help them develop their capacities and improve their academic achievement. Third, it is essential for higher education institutions, such as STPM Santa Ursula, which focus on community development and empowerment, to undergo digital adjustments to enhance their models of learning and practical approaches. Consequently, this research is expected to contribute to the digital adaptation efforts within higher education institutions

Through this study, it is expected not only to identify individual and social problems caused by digital literacy but also, in practical terms, to provide a basis for policy-making

and strategic steps to improve the quality of lectures, teaching methods, research, and community service carried out by the university in collaboration with students. Thus, the findings will not only be beneficial for students in enhancing their academic performance but will also serve as valuable input for the university in strengthening its institutional development as an institution focused on social development.

METHODS

This study uses quantitative approach as a research method grounded in the philosophy of positivism, used to study specific populations or samples, with data collection carried out using research instruments (Sugiyono, 2015). The data are analyzed quantitatively or statistically, with the purpose of testing established hypotheses and applied an associative quantitative research design, which aims to construct a descriptive picture and explain the relationship between two variables under investigation (Arikunto, 2013). The use of quantitative methods in this research is intended to examine the relationship and influence of digital literacy on students' academic achievement at STPM Santa Ursula Ende. Accordingly, the hypothesis formulated from the literature review will be tested to determine the existence of an effect between the variables under study, namely Digital Literacy (X) and Student Academic Achievement (Y).

Data collection in this study was conducted using a questionnaire that made by researchers, defined as a list containing a series of questions regarding the subject or field under investigation (Narbuko & Achmadi, 2013). The questionnaire applied a Likert scale to assign scores to responses, structured as follows: Strongly Agree (SA) = 5, Agree (A) = 4, Disagree (D) = 3, Strongly Disagree (SD) = 2, and Totally Disagree (TD) = 1. The operational definitions used in this study are as follows:

Tabel 1. Operasional Definition

Variable	Sub-variable	Indicator	Scale
Digital Literacy	Digitalization	Use of digital devices (laptops and gadgets)	Likert
	Internet Utilization	Creative use of the internet for productive activities	Likert
	Online Activities	Learning, teaching, and discussions conducted online via social media	Likert
Academic Achievement	Cognitive	Task and exam scores above 7.0; critical and analytical thinking ability	Likert
	Affective	Behavior aligned with institutional rules and ethical codes (CPL attitude)	Likert
	Psychomotor	Ability to write accurately; ability to complete coursework effectively	Likert

The population in this study refers to the entire source of data required during the research (Saryono, 2011), while the sample is a subset of the population selected to represent it (Arikunto, 2013). The population of this study consisted of 900 students enrolled in the Sociology Study Program at STPM Santa Ursula. The sample size was determined using Slovin's formula. Mathematically, according to (Sujarweni, 2014), the Slovin formula for sample size is:

Where:$n = \frac{N}{1+Ne^2}$

Formula description:

- n = sample size
- N = total population
- e = margin of error

With N = 900 and e = 10%, the calculated sample size was:

$$
\begin{aligned}
N &= 900 \\
e &= 10\% \\
n &= \frac{900}{1+900(0.01)} \\
&= \frac{900}{1+9} \\
&= \frac{900}{10} \\
&= 90
\end{aligned}
$$

Thus, the sample of this study consisted of 90 respondents and the respondents were selected from several classes within the same semester.

The data analysis technique employed in this study is interpretative quantitative statistical analysis. The data analysis was conducted through several stages. First, the editing stage, which refers to the process of checking and verifying the data collected. Second, the coding stage, which involves assigning specific codes to each data point. Third, the tabulation stage, which is the process of organizing data into tabular form.

The data analysis in this study utilized associative analysis with the aid of SPSS 21 for Windows through the **correlate-bivariate test**. Associative analysis is a form of research data analysis aimed at examining whether or not there is a relationship between variables. If the alternative hypothesis (Ha) is accepted, it indicates that the research findings demonstrate a significant relationship between the variables. The statistical test applied in this study is the **Pearson Product-Moment Correlation** (Siregar, 2010). If the research findings show that the significance value is ≥ 0.05, then the null hypothesis (Ho) is accepted, indicating no significant effect between Digital Literacy and Students' Academic Achievement. Conversely, if the significance value is ≤ 0.05, Ho is rejected, implying that there is a significant effect between Digital Literacy and Students' Academic Achievement. Furthermore, to examine the strength of the relationship between variable X (Digital Literacy) and variable Y (Students' Academic Achievement), the correlation interpretation is used as follows: 0.00–0.199 = very low correlation, 0.20–0.399 = low correlation, 0.40–0.599 = moderate correlation, 0.60–0.799 = strong correlation, 0.80–1.000 = very strong correlation (Riduwan & Sunarto, 2012). The statistical data analyzed will be reported as a reference for further studies and as a basis for determining strategies or policies to improve the quality of teaching and learning at STPM Santa Ursula.

RESULT AND DISCUSSION

Implementation of Digital Literacy at STPM Santa Ursula

The Santa Ursula Community Development College is a higher education institution focusing on community development and empowerment. This focus enables the institution to evolve continuously in alignment with contemporary advancements and shifting eras, as evidenced by its current development, where in 1972, the institution began as a course for Community Development Guidance (PTPM). In 1982, it was transformed into the Academy of Community Development (APM). Later, in 1986, it was officially recognized by the Ministry of Education and Culture under the name Academy of Development Administration (AAP). By 1992, AAP received full accreditation and operated two study programs: Sosiatri (Bachelor's degree) and Community Development (Diploma 3). On August 2, 2001, the institution was officially approved by the Ministry of National Education to operate as STPM with the Sociology study program.

In 2018, a new study program in Government Science was established. Today, STPM Santa Ursula offers two programs: Social Development and Government Science (STPM Santa Ursula, 2022). As of 2022, the number of students at STPM Santa Ursula reached 1,126, consisting of 647 students in the Government Science program and 479 in the Sociology program. The institution employed 28 lecturers and 6 administrative staff (STPM Santa Ursula, 2022). Driven by institutional expansion, a growing student population, and the post-pandemic digital transformation, learning mechanisms as well as development and empowerment approaches practiced within this institution have become increasingly integrated with digitalization.

Data on the Use of Digital Tools in Learning at STPM Santa Ursula

In the post COVID-19 pandemic era, teaching and learning activities at STPM Santa Ursula and another education institute have increasingly relied on digital devices and applications (Agrawal et al., 2023). Learning is no longer conducted solely through conventional methods but also through digital media such as smartphones, laptops, tablets, and applications like Google Chrome, WhatsApp, YouTube, and Zoom. The following data illustrate the use of digital tools in classroom learning at STPM Santa Ursula, based on responses from 90 students who participated in the research questionnaire. Respondents answered on a Likert scale: Strongly Agree (5), Agree (4), Disagree (3), Strongly Disagree (2), and Totally Disagree (1).

Tabel 2. Data on the Use of Digital Tools in Learning at STPM Santa Ursula

No	Questions	Answers				
		Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**	**Totally Disagree**
1	Frequency of using digital devices (laptops, smartphones, tablets)	46%	48%			
2	Use of the internet for productive activities (e.g., coursework, reading, sharing academic information)	42%	49%			
3	Use of internet, digital applications, or social media for learning, discussions, or critical analysis	32%	52%	12%		
4	Use of internet, digital applications, or social media for discussions and collaborative learning	30%	62%	7%		

Data on Student Academic Achievement at STPM Santa Ursula

Data on student academic performance were obtained through the research questionnaire distributed to 90 respondents. The responses were based on the Likert scale (5 = Strongly Agree, 4 = Agree, 3 = Disagree, 2 = Strongly Disagree, 1 = Totally Disagree). The results are summarized below:

Table 3. Student Academic Achievement at STPM Santa Ursula

No	Questions	Answers				
		Strongly Agree	Agree	Disagree	Strongly Disagree	Totally Disagree
1	Do your semester grades often reach B or higher?	35%	52%	9%		
2	Is your semester GPA often ≥ 2.76?	32%	49%	7%	5%	7%
3	Do you frequently answer, critique, or analyze academic content effectively?	18	72	8		
4	Do you consistently attend lectures, submit assignments, and participate in mid-term/final exams?	43	44	11		
5	Do you complete tasks independently, responsibly, and honestly (without plagiarism), and on time?	21	51	25	2	1
6	Do you help peers with academic difficulties through discussion or guidance?	29	63	8		
7	Do you demonstrate the ability to formulate arguments in writing or exam responses effectively?	17	70	12	2	
8	Do you successfully complete every assigned task accurately and appropriately?	26	68	6		

Analysis

Validity Test

Validity refers to the degree to which an instrument accurately measures what it is intended to measure in a research study. A validity test is required to ensure that the measurement instrument produces valid results that reflect the actual variables being studied. In this research, the validity test was conducted to examine the correlation between students' digital literacy skills and their academic achievement using the Statistical Product and Service Solutions (SPSS) version 22 software. Validity testing will be conducted using the Pearson Product Moment correlation. A questionnaire item in the validity test is considered valid if $r_{\text{calculated}} > r_{\text{table}}$. Conversely, if $r_{\text{calculated}} < r_{\text{table}}$, then the item is considered invalid, or if the significance value is <0.05.

Table 4. Validity Test Results for Digital Literacy (X)

Item Code		5% (90)	Description
X1	0,746	0,207	valid
X2	0,818	0,207	valid
X3	0,799	0,207	valid
X4	0,779	0,207	valid

Table 5. Validity Test Results for Academic Achievement (Y)

Item Code		5% (90)	Description
Y1	0,685	0,207	valid
Y2	0,530	0,207	valid
Y3	0,422	0,207	valid
Y4	0,531	0,207	valid
Y5	0,697	0,207	valid
Y6	0,591	0,207	valid
Y7	0,614	0,207	valid
Y8	0,701	0,207	valid

Thus, all items in both variables (X and Y) are valid and can be used for further analysis.

Reliability Test

Reliability refers to the consistency of a measurement instrument in producing stable and dependable results. An instrument is considered reliable if repeated measurements yield the same results. In this study, reliability was tested using Cronbach's Alpha method, with the significance threshold set at 0.05. An instrument is considered reliable if Cronbach's Alpha > 0.60 (Arikunto, 2013).

Table 6. Reliability Test Results for the Correlation between Digital Literacy and Academic Achievement

Variabel	*Alpha Cronbach*	Description
X	0.789	Reliable
Y	0.700	Reliable

Thus, indicates that both instruments are reliable and consistent for measuring the studied variables.

Correlation Test: The Effect of Digital Literacy on Academic Achievement

Product-Moment Correlation Test

The Product-Moment Correlation test is designed to measure the correlation between items by calculating the total score of various items that have been converted into numerical form (Suharsaputra, 2012). This test is employed to support associative analysis conducted in quantitative research. Meanwhile, associative analysis is a type of data analysis aimed at examining whether or not there is a relationship between variables. If the alternative hypothesis (Ha) is accepted, it indicates that the research findings demonstrate a significant relationship between the variables. The statistical test applied in this study was the Pearson Product-Moment correlation analysis (Siregar, 2013).

If the research findings show a significance level of ≥ 0.05, the null hypothesis (Ho) is accepted, indicating no significant influence between digital literacy and students'

academic achievement. Conversely, if the significance level is ≤ 0.05, Ho is rejected, indicating that digital literacy has a significant influence on students' academic achievement. Furthermore, to determine the strength of the relationship between variable X (digital literacy) and variable Y (students' academic achievement), the following correlation interpretation is used: 0.00–0.199 = very weak, 0.20–0.399 = weak, 0.40–0.599 = moderate, 0.60–0.799 = strong, and 0.80–1.000 = very strong (Sunarto, 2019). After the data collection and the Product-Moment correlation analysis were conducted, the following results were obtained:

Table 7. Product-Moment Correlation Analysis Results

		TOTALX	TOTAL Y
TOTALX	Pearson Correlation	1	.512**
	Sig. (2-tailed)		.000
	N	90	90
TOTALLY	Pearson Correlation	.512**	1
	Sig. (2-tailed)	.000	
	N	90	90

Based on the table above, it can be stated that the calculated *r* value is 0.512, the *r*-table value is 0.207, and the *p*-value (sig) is 0.00 < 0.05. Thus, the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted, indicating that there is a significant effect of digital literacy on students' academic achievement.

Furthermore, to assess the strength of the relationship between variable X (Digital Literacy) and variable Y (Academic Achievement), the following correlation interpretation scale was applied: a value between 0.00–0.199 indicates a very weak relationship; 0.20–0.399 indicates a weak relationship; 0.40–0.599 indicates a moderate relationship; 0.60–0.799 indicates a strong relationship; and 0.80–1.000 indicates a very strong relationship.

When comparing the correlation analysis results with the interpretation scale above, it can be concluded that the relationship between digital literacy and academic achievement demonstrates a moderate correlation. This is evidenced by the calculated *r* value of 0.512, which falls within the coefficient interval of 0.400–0.599, signifying a moderately strong association.

Discussion

The learning process experienced a significant transformation in the post–COVID-19 pandemic era, shifting from conventional classroom-based learning to more digitally oriented models, such as virtual classrooms and other digital learning modalities. This transformation required students to rely more heavily on digital tools and facilities (Gupta et al., 2024). Consequently, it affected various aspects of the learning process, both for students and lecturers. The changes not only influenced the methods of delivering materials and the nature of interaction but also altered the processes of evaluation and the learning outcomes achieved.

Based on the research findings entitled *The Influence of Digital Literacy on Student Academic Achievement at the College of Community Development Santa Ursula Ende*, it was revealed that there is a moderately strong correlation between digital literacy and student achievement. The study population consisted of students enrolled at STPM Santa Ursula, from which a sample of 90 respondents was drawn. The correlation analysis yielded an *r* value of 0.512. According to the interpretation scale, a coefficient ranging from 0.400 to 0.599 indicates a moderately strong relationship. Thus, the results of this

study demonstrate a moderately strong correlation between digital literacy and academic achievement.

This condition is reflected in several indicators, such as the high frequency of digital device usage (48%) and the utilization of the internet for productive activities (49%). Furthermore, a significant proportion of students utilize applications and social media for academic purposes, including learning and critical analysis (52%), as well as discussions (62%). These factors exert a positive impact on student achievement, evidenced by improved academic grades and an enhanced capacity to critique and analyze academic content. Moreover, digital proficiency enables students to complete assignments, participate in examinations, and perform tasks independently, responsibly, and with integrity. It also facilitates collaborative learning by helping peers, formulating logical arguments, and ensuring the accurate and appropriate completion of all assigned tasks.

These findings support the assumption that digital literacy plays a pivotal role in students' academic performance. The ability to access, utilize, and critically evaluate digital tools and content not only facilitates student participation in online learning but also enhances their skills in information management, communication, and self-regulated learning. Consequently, students who demonstrate higher levels of digital literacy are better equipped to adapt to the demands of digital-based education, particularly in the post-pandemic era. Furthermore, these results reinforce the initial research premise that digitalization exerts a significant influence on the educational sector, specifically regarding student academic achievement. Moreover, the results of this study counter previous findings by Effendi et al., (2019) and Manubey et al., (2022) which suggested no correlation between digital literacy and academic outcomes. This condition suggests that social media and digital content can indeed provide a positive influence on the development of students' cognitive abilities, analytical skills, and academic performance.

CONCLUSION

This research, entitled *The Influence of Digital Literacy on Student Academic Achievement at the College of Community Development Santa Ursula Ende*, draws several key conclusions. First, in the post–COVID-19 pandemic period, the learning process at STPM Santa Ursula increasingly incorporated digital mechanisms. Students relied on digital tools and facilities, as well as internet-based resources, to support digital learning. The questionnaire results indicated relatively high levels of participation in digital-based learning activities. Second, the use of digital tools, facilities, and learning processes related to digitalization had a significant relation on students' learning outcomes. Third, the correlation analysis confirmed a moderately strong relationship between digital literacy (variable X) and student academic achievement (variable Y). This was supported by the correlation coefficient (r) value of 0.512, which falls within the range of 0.400–0.599, indicating a moderately strong correlation.

Based on the findings, several recommendations can be made: First, the institution and lecturers at STPM Santa Ursula have to continue, enhance, and innovate digital-based teaching and learning mechanisms. By doing so, students' digital literacy competencies can be continually developed, equipping them with the necessary knowledge and skills for both their academic journey and their professional futures. Second, it is essential for the students to further improve their digital literacy skills and knowledge. Strengthening these competencies will not only benefit their academic activities but also provide long-term advantages in non-academic endeavors, preparing them to meet the challenges of an

increasingly digitalized world. Furthermore, such advancements provide a strategic advantage for the institution, enabling the development of robust learning models and practical approaches to community development and empowerment. Third, as this study adopts a quantitative research design, it provides an opportunity for future researchers to employ qualitative or mixed-methods approaches. Such methodologies could strengthen numerical data by incorporating insights from interviews and observations

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