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The Influence of Using Digital Library Facilities on Improving Students' Reading Literacy

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Abstract

This study aims to explore the impact of digital tool use on improving reading skills among university students. A quantitative explanatory approach with a comprehensive sampling technique was used, involving all students from a university in Bogor Regency as participants. Data were collected through a structured questionnaire based on a Likert scale, observations, and interviews, and then analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM).

The findings of this study indicate that the use of digital tools has a positive effect on students' reading skills. Eighty-two percent of students reported using digital tools at least four times a week, while 65% preferred reading e-books, online articles, and digital journals over printed books. Students who regularly used digital tools achieved better reading comprehension scores (average 78.5) compared to those who rarely used them (average 69.2). Furthermore, 70% of students felt more motivated to read through digital platforms.

Nevertheless, several challenges were identified, including distractions from social media (40%), difficulties in focusing on long texts displayed on screens (30%), and limited internet quota and Wi-Fi access (25%). These findings highlight that digital tools not only expand access to reading materials and enhance motivation but also strengthen students' critical literacy. Therefore, digital literacy reinforcement is necessary to ensure the effective use of digital tools in supporting reading literacy improvement.

Keywords: *digital tools, reading literacy, students, PLS-SEM, learning.*

INTRODUCTION

Improving students' reading ability is one of the most crucial goals in higher education worldwide. Reading ability is not limited to understanding written texts, but also involves skills in critically evaluating information, analyzing arguments, and applying knowledge in everyday life. UNESCO (2018) defines literacy as the ability to recognize, understand, interpret, create, communicate, and calculate using written materials in various contexts. Similarly, the Indonesian Ministry of Education and Culture (2017) states that literacy refers to the ability to access, understand, and use information wisely through various activities, including reading, viewing, listening, writing, and speaking.

In the era of rapid digital technological advancement, digital tools have become an integral part of students' daily lives. The use of digital tools, such as gadgets and online applications, provides faster and broader access to various types of information sources. These digital tools have significant potential to enhance students' reading abilities, both in academic and non-academic contexts.

Along with technological developments, many educational institutions have begun to integrate digital tools into learning processes by introducing electronic books, online journals, and e-

learning platforms. Sari and Nurhadi (2020) define digital tools as technology-based digital media or devices that function as support for communication and educational processes. This indicates that although digital tools offer considerable potential, their effective application in fostering reading literacy still requires more comprehensive investigation.

Furthermore, understanding how students interact with digital media has become a major focus of previous studies. Research conducted by Cho (2018) revealed that students who actively use digital tools for reading and information seeking tend to possess higher literacy skills than those who rely primarily on traditional sources such as printed books. According to Danuri (2019), digital technology emphasizes the execution of activities through digital systems or computers rather than human labor, highlighting the efficiency and speed that enable students to access information from multiple sources in real time.

Nevertheless, despite the many advantages offered by technology, several factors influence the effectiveness of digital tool utilization in improving students' reading abilities. Jones and Brown (2020) found that although digital tools provide access to a wider variety of texts and articles, many students tend to use technology mainly for entertainment and social media rather than for academic or literacy purposes. Therefore, it is essential to examine the extent to which digital tool usage directly affects reading improvement and to identify the factors that shape its use.

As digitalization continues to expand, the need for deeper investigation into the relationship between digital tool usage and the enhancement of students' reading skills has become increasingly urgent. This study aims to explore how students utilize digital tools to improve their reading abilities and to identify the challenges they encounter in the process. In addition, this research seeks to provide insights into how higher education institutions can more effectively support the use of digital tools to promote students' reading literacy.

THEORETICAL STUDY

The development of information technology has fundamentally transformed the field of education, particularly in terms of access to and availability of learning resources. According to Warsita (2018), digital tools such as e-books, learning applications, and online platforms have become essential media that support the learning process by providing learning materials in a fast and diverse manner. The utilization of digital tools is believed to have a positive impact on the improvement of reading literacy, including reading interest, text comprehension, and reading speed.

A study conducted by Setiawan and Sari (2020) demonstrated that the use of digital platforms such as Google Books, ResearchGate, and digital library applications can increase students' reading frequency due to more flexible access compared to printed books. In line with this finding, research by Fitriani et al. (2021) revealed that students who regularly utilize digital tools tend to achieve better reading comprehension, as digital texts are often equipped with search features, hyperlinks, and multimedia elements that facilitate understanding.

Moreover, reading ability in the digital era is not limited to text comprehension alone, but also involves critical thinking skills and the ability to evaluate information obtained from various online sources (UNESCO, 2020). Students

who frequently use digital tools are required to be more selective and critical, as the abundance of available information demands adequate information literacy skills. This perspective is supported by Supriyadi and Haryanto (2022), who argue that the development of reading literacy among university students is strongly influenced by how they use digital technology, both as a reading resource and as a platform for discussion and collaboration.

Several studies further indicate that the use of digital tools can encourage students to engage more actively in reading activities due to interactive features and social support provided by online communities (Rahmawati & Nugroho, 2023). Therefore, the utilization of digital tools affects not only the frequency of students' reading activities but also the quality and sustainability of their reading practices.

METHODS

Research Approach

This study employed a quantitative approach with an explanatory research design. The purpose of this research was to examine the causal relationship between the independent variable, namely the use of digital facilities, and the dependent variable, students' reading literacy. Through this approach, the study focused on the collection and analysis of numerical data to provide an objective and measurable understanding of the phenomena under investigation. The data were analyzed using SmartPLS 3 software with the Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach.

Population and Sample

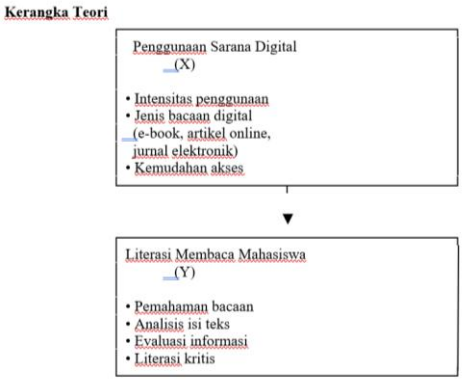
The population of this study consisted of all students from a higher education institution in Bogor Regency, totaling 31 respondents. Given that the population size was relatively small and homogeneous, a saturated sampling technique was applied, in which all members of the population who met the research criteria were included as research participants. This technique ensured full representation of all units of analysis, allowing the findings to comprehensively reflect the population's conditions (Hair et al., 2019).

Data Collection Techniques

Primary data were collected through a survey method using a structured questionnaire. The research instrument was developed based on the dimensions and indicators of the digital facilities variable and students' reading literacy. Each questionnaire item was measured using a five-point Likert scale, ranging from "strongly disagree" (score 1) to "strongly agree" (score 5). Prior to data collection, a pilot test was conducted to examine the validity and reliability of the instrument and to ensure the clarity of the questionnaire items. The data collection process adhered to research ethics principles, including informed consent, confidentiality of respondents' identities, and voluntary participation.

Research Instrument

The primary research instrument was a structured questionnaire consisting of indicators measuring the variables of digital facilities and students' reading literacy. Instrument validity was assessed through convergent validity and discriminant validity, while reliability was evaluated using composite reliability and Cronbach's alpha. Only instruments that met the validity and reliability criteria were used in the main data collection.



This theoretical framework indicates that the use of digital facilities as the independent variable (X) has a direct effect on students' reading literacy as the dependent variable (Y). The higher the intensity and quality of digital facility utilization, the greater the improvement in students' ability to comprehend, analyze, and evaluate reading materials.

Research Hypothesis (Optional)

H_1: The use of digital facilities has a positive and significant effect on students' reading literacy.

RESULTS AND DISCUSSION

Descriptive Analysis

The descriptive analysis reveals that indicators Y4 to Y9 fall within the high or positive category, with mean values consistently above 4. The standard deviation ranges from 0.598 to 0.766, indicating low to moderate variability in respondents' answers. The negative skewness observed across all indicators suggests that most respondents selected responses in the higher categories, approaching the maximum score of 5. Therefore, these indicators can be considered to consistently reflect respondents' positive perceptions.

Table 1. Results of Descriptive Analysis for Indicators Y4–Y9

Indikator	Mean	Std. Deviasi	Skewness	Kategori
Y4	>4	0,598	Negatif	Tinggi
Y5	>4	0,612	Negatif	Tinggi
Y6	>4	0,644	Negatif	Tinggi
Y7	>4	0,766	Negatif	Tinggi (variasi tertinggi)
Y8	>4	0,701	Negatif	Tinggi
Y9	>4	0,655	Negatif	Tinggi

Questionnaire, Observation, and Interview Results

In addition to the descriptive data, the research findings were further supported by data obtained from questionnaires, observations, and interviews conducted with students.

Table 2. Table 2. Results of Questionnaires, Observations, and Interviews

Aspek	Temuan Utama	Persentase / Skor
Intensitas penggunaan	Mahasiswa menggunakan sarana digital ≥4	82%

	kali/minggu untuk membaca.	
Jenis bacaan	Lebih sering membaca e-book, artikel online, jurnal elektronik dibanding buku cetak.	65%
Kemampuan literasi	Skor tes pemahaman bacaan pengguna digital lebih tinggi (78,5) dibanding non-digital (69,2).	–
Motivasi belajar	Lebih termotivasi membaca via digital karena akses mudah & interaktif.	70%
Kesulitan focus	Mengalami kesulitan fokus saat membaca teks panjang di layar digital.	30%
Distraksi digital	Terganggu media sosial saat membaca.	40%
Hambatan teknis	Terganggu keterbatasan kuota internet & akses wifi.	25%

Research Findings

The findings of this study indicate that digital facilities have a positive effect on improving students' reading literacy. The high intensity of digital device usage (82%) and the tendency of students to read digital sources more frequently (65%) reflect a shift in preference from printed media to digital media.

Furthermore, students who regularly use digital facilities demonstrate higher reading literacy scores (78.5) compared to those who rarely use them (69.2). This finding confirms that digital facilities not only increase access to reading materials but also enhance students' comprehension and critical literacy skills.

In terms of motivation, 70% of students reported being more motivated to read through digital media due to ease of access and interactive features. These findings are consistent with Warsita (2008), who states that information and communication technology functions as a tool for information management to support educational effectiveness, and Danuri (2019), who emphasizes that digital technology can foster innovation in learning.

However, this study also identifies several challenges, including distractions from social media (40%), difficulties in maintaining focus when reading lengthy texts on screens (30%), and limitations related to internet data quotas and Wi-Fi access (25%). These obstacles highlight the importance of strengthening digital literacy so that students are able to manage distractions and utilize digital facilities more effectively.

Overall, the results indicate that digital facilities are capable of expanding access to reading materials, increasing reading motivation, and developing students' critical literacy skills, despite

existing challenges that need to be addressed to ensure more effective utilization.

Conclusion

This study demonstrates that the use of digital facilities has a positive impact on improving students' reading literacy. High levels of digital device usage and students' preference for digital reading sources contribute to enhanced comprehension and critical literacy skills. In addition, digital facilities have been shown to increase reading motivation due to their ease of access and interactive presentation.

Nevertheless, several challenges remain, including social media distractions, difficulties in focusing on lengthy on-screen texts, and limited internet access. Therefore, strategies to strengthen digital literacy are necessary to enable students to utilize digital facilities optimally while minimizing these barriers. Overall, digital facilities can serve as an important instrument in supporting the improvement of students' reading literacy, provided that their use is guided wisely and integrated effectively into the learning process.

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