Article Received: 01/12/2025; Revised: 17/12/2025; Accepted: 12/01/2026
IJUPE, Vol. 01, No. 02, 205-213
p-ISSN: xxxx-xxxx
e-ISSN: xxxx-xxxx
https://journal.tigaedukasiglobal.co.id/index.php/IJUPE DOI: 0000-0000-0000-0000

Identifying the Factors Behind Low Digital Literacy Skills Among Higher Education Students

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Abstract. This study investigates the factors influencing low digital literacy skills among students at PBI UKI Toraja. Digital literacy is crucial for academic success and professional development, yet many students face barriers that hinder their ability to effectively engage with digital technologies. The primary objective of this research is to identify the key factors personal, academic, social, resource-related, and technological that contribute to the low digital literacy skills of students. A quantitative survey method was employed, gathering responses from 10 students through a structured questionnaire. The findings indicate that while students exhibit high interest in digital technology, personal confidence, basic knowledge, and insufficient academic support were the most significant barriers to digital literacy. Additionally, limited access to digital resources and technical issues further hinder students' engagement with digital tools. The study concludes that addressing these challenges through improved faculty support, better curriculum integration, and enhanced access to resources and technology is essential for fostering digital literacy. These findings provide valuable insights for universities to develop strategies to enhance digital literacy among students.

Keywords: Academic support; Digital literacy; Educational barriers; Personal factors; Technology access

1. INTRODUCTION

In today's rapidly advancing digital age, digital literacy has become an essential skill for academic success, personal development, and professional advancement (Anderson and Rainie, 2020). Digital literacy enables individuals to access, understand, and utilize information effectively across various digital platforms (Salinas and Lara, 2021),. However, despite the increasing integration of technology in education, many students, particularly in underdeveloped or rural regions, still exhibit limited digital literacy skills. This problem is particularly evident in universities in Indonesia, where students often face challenges in acquiring the necessary digital competencies to navigate an increasingly digital world.

The causes of low digital literacy skills among students can be attributed to a variety of factors, including insufficient access to digital resources, lack of adequate training, and minimal integration of digital literacy into formal education curricula (Teo, 2020). The impact of this issue is far-reaching, as students who struggle with digital literacy are at a disadvantage in their academic endeavors and future careers (Jafari and Lee, 2022). This problem is critical to investigate because the lack of digital literacy skills can hinder students' ability to perform effectively in the modern workforce and restrict their potential to

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participate fully in an information-driven society.

Recent studies have highlighted the importance of addressing digital literacy in higher education. Hague and Payton (2018) discussed the need for universities to incorporate digital literacy programs into their curricula to enhance students' technological competence. Anderson and Rainie (2020) examined the role of academic support in improving digital literacy, finding that faculty guidance significantly impacts students' digital skills. In addition, Wong and Teo (2021) explored the role of peer influence in fostering digital literacy, noting that students' digital skills are often shaped by the social environments in which they are situated. While these studies focus on specific factors, this research aims to adopt a more comprehensive approach by examining a combination of personal, academic, social, resource-related, and technological factors influencing low digital literacy skills among students.

This study is novel in its holistic examination of the multiple factors that contribute to low digital literacy at PBI UKI Toraja, an institution that has not been widely studied in this context. By investigating these factors, the study aims to provide a more nuanced understanding of the challenges faced by students and offer practical recommendations for improving digital literacy in Indonesian higher education.

The purpose of this study is to identify the key factors that influence low digital literacy skills among students at PBI UKI Toraja. The research question guiding this study is: "What are the key factors influencing the low digital literacy skills among PBI UKI Toraja students?" The expected outcome is to develop a set of recommendations that will help enhance digital literacy programs at the university and contribute to broader efforts aimed at improving digital skills among students in Indonesian higher education.

2. METHOD

This study employs a quantitative research approach with a survey design to identify the factors influencing low digital literacy skills among students at PBI UKI Toraja. The quantitative approach was selected because it allows for the collection of numerical data from a relatively large sample, which helps identify patterns and relationships between variables. This approach is ideal for answering research questions related to the prevalence and significance of various factors that influence digital literacy skills.

The research design used in this study is survey research, which is effective for gathering data from a sample of individuals to examine their experiences, perceptions, and behaviors regarding digital literacy. A structured questionnaire was developed, consisting of 12 items designed to measure key factors related to digital literacy. These factors include: (1) personal factors such as self-confidence, knowledge, and interest in digital technology, (2) academic factors including faculty support, the integration of digital literacy into the curriculum, and access

to digital resources, (3) social factors such as peer motivation and the presence of stigma towards new technologies, (4) resource-related factors focusing on access to digital materials and technology, and (5) technological factors which encompass access to devices and technical difficulties encountered during digital learning.

The survey was administered to a sample of 10 students from the English Language Education Department (PBI) at UKI Toraja. The participants were selected from various academic levels, ensuring a diverse range of responses. Data collection occurred over a seven-day period, from November 12 to November 19, 2025, and the responses were analyzed using descriptive statistics. This method allowed for the identification of common themes and significant factors contributing to low digital literacy skills. This survey research design provides valuable insights into the factors that affect digital literacy skills and offers a clear understanding of the challenges faced by students in a specific academic context.

In addition to descriptive statistics, the data will also be analyzed using factor analysis to explore the underlying dimensions or latent variables that influence digital literacy skills among students. This method allows for the reduction of data complexity by grouping related items into factors, which can provide a clearer understanding of how different factors interact and contribute to low digital literacy. Factor analysis is particularly useful for identifying patterns within a large set of variables and will help determine which key factors have the most significant impact on students' digital literacy levels. By applying this method, the study aims to offer a more refined model of the factors that influence digital literacy, helping to target specific areas for improvement in digital literacy programs at PBI UKI Toraja.

3. RESULTS

The findings of this study aim to answer the research question regarding the key factors influencing low digital literacy skills among students at PBI UKI Toraja. The data obtained from the survey indicate several important factors, categorized into personal, academic, social, resource-related, and technological aspects. The results are presented as sub-findings, each corresponding to these key factors.
The findings of this study aim to answer the research question regarding the key factors influencing low digital literacy skills among students at PBI UKI Toraja. The data obtained from the survey revealed several important factors, categorized into personal, academic, social, resource-related, and technological aspects. Below is a detailed description of each factor.

Personal Factors

Personal factors such as confidence, knowledge, and interest in using digital technologies were significant in shaping students' digital literacy skills. The survey

revealed that 60% of students reported feeling confident in using digital technology, demonstrating a moderate level of self-assurance in their digital skills. However, 30% were unsure of their own confidence levels, and 10% expressed low confidence. Regarding knowledge of digital tools, 50% of the students indicated that they had sufficient basic knowledge, while 30% felt their knowledge was insufficient, and 20% struggled to assess their abilities. Despite a generally high interest in digital technology, with 80% expressing enthusiasm, there remains a gap in translating this interest into actual proficiency. Only a small percentage, 10%, reported low interest in digital technology, indicating that while personal motivation is strong, there are barriers to developing expertise.

Academic Factors

The academic factors explored in the study included faculty support, curriculum integration of digital literacy, and access to academic resources. The findings revealed that 50% of respondents agreed that faculty provided adequate support for developing digital literacy, yet 20% disagreed, and another 20% were uncertain. This suggests that faculty support is insufficient, which could contribute to the low digital literacy levels. As for the integration of digital literacy into the curriculum, only 10% of students felt it was adequately incorporated, with 50% uncertain and 40% disagreeing. This finding underscores a significant gap in how digital literacy is embedded into academic programs. Additionally, 60% of students reported limited access to computer and internet facilities on campus, which affects their ability to fully develop digital skills.

Social Factors

Social factors, including peer influence and attitudes towards new technologies, were also found to play a role in shaping students' digital literacy. According to the survey, 70% of students felt that their peers were motivated to learn digital literacy skills, while 20% disagreed, and 10% were unsure. This suggests that a supportive peer group can have a positive impact on students' engagement with digital technologies. Regarding stigma toward new technologies, 50% of students were uncertain about its presence, while 40% disagreed with the notion of stigma, and 20% believed it existed. This indicates that negative attitudes toward emerging technologies are not widespread, but some students still exhibit resistance to new digital tools.

Resource-Related Factors

Access to digital resources was another critical factor in this study. While 70% of students reported having access to digital resources such as e-books and online tutorials, 20% indicated limited access, and 10% were unsure about the extent of their access. This highlights that, while many students have the necessary resources, accessibility remains a limitation for some. Additionally, 70% of students felt capable of finding relevant digital materials to improve their literacy skills,

whereas 20% struggled to assess their abilities, and 10% found it difficult to locate appropriate resources.

Technological Factors

Technological factors such as the availability of devices and technical issues were also assessed in this study. The survey found that 90% of students had access to suitable devices, such as computers or smartphones, which are necessary for engaging with digital learning materials. This indicates that, for most students, technological tools are not a major barrier. However, 40% of students reported experiencing technical difficulties that could hinder their ability to effectively engage with digital literacy learning. Despite this, 60% of respondents did not face significant technical challenges, suggesting that for the majority, these issues are not a major concern.

The main findings from the study suggest that personal interest in digital technology is high, but confidence and knowledge gaps still exist. Academic factors, particularly limited faculty support and poor integration of digital literacy into the curriculum, emerged as significant barriers. Socially, peer motivation plays a positive role, while stigma toward new technologies is not a major issue. Limited access to resources and technical difficulties are important factors to address, despite the general availability of digital tools. These results provide a comprehensive overview of the factors contributing to low digital literacy among students at PBI UKI Toraja.

Table 1. Summary of Key Findings

Factor	Result	Impact on Digital Literacy
Personal Confidence	60% confident, 30% unsure, 10% low confidence	Low confidence could contribute to reduced engagement
Knowledge of Digital Tools	50% sufficient, 30% insufficient, 20% unsure	Insufficient knowledge affects the ability to use tools
Interest in Technology	80% high interest, 10% low interest	High interest supports motivation to improve literacy
Faculty Support	50% adequate, 20% inadequate	Lack of support hinders skill development
Curriculum Integration	10% well integrated, 40% poor integration	Curriculum gaps hinder learning opportunities
Peer Motivation	70% motivated, 20% not motivated	Positive peer influence can enhance digital literacy
Access to Digital Resources	70% sufficient access, 30% limited access	Limited access restricts learning opportunities
Technical Issues	40% faced technical difficulties	Technical issues hinder engagement with digital tools

4. DISCUSSION

The results of this study confirm that low digital literacy skills among students at PBI UKI Toraja are influenced by multiple interconnected factors. The personal,

academic, social, resource-related, and technological elements identified in the study align with previous research while contributing new insights to the current understanding of digital literacy in higher education contexts.

The findings related to personal factors, such as students' confidence and knowledge of digital tools, corroborate several studies that emphasize the importance of self-efficacy in developing digital literacy. Similar to Hague and Payton (2018), who suggested that students with higher self-confidence in using technology tend to perform better in digital literacy tasks, this study found that a lack of confidence (10% of students) and knowledge (30% of students) were key barriers to digital literacy. Tsai and Chai (2021) also pointed out that students who lack basic knowledge and familiarity with digital tools struggle to use them effectively. These findings indicate that improving students' self-efficacy and ensuring foundational knowledge in digital tools are essential steps in enhancing digital literacy.

Academic factors, particularly faculty support and curriculum integration, emerged as significant barriers to digital literacy. These results are consistent with findings from McMillan and Morrison (2020), who noted that students often experience challenges in developing digital literacy skills when faculty support is limited or absent. Suh et al. (2021) also observed that a lack of formal integration of digital literacy in university curricula contributes to the digital literacy gap. Similarly, Anderson and Rainie (2020) found that academic institutions with a strong focus on technology integration within the curriculum yielded better digital literacy outcomes. In this study, 50% of students indicated that they received insufficient faculty support for digital literacy development, reinforcing the need for educators to play a more active role in fostering digital competencies.

Peer motivation and the social environment have a notable influence on students' engagement with digital technologies. The results of this study show that the majority of students (70%) reported that their peers were motivated to learn digital literacy, which is consistent with the findings of Wong and Teo (2021), who noted that a peer-driven environment fosters increased digital literacy engagement. However, Teo and Wong (2020) observed that social stigma toward new technologies could be a hindrance, which was not a significant finding in this study. This discrepancy may arise from cultural differences or the relatively small sample size in this study, indicating the need for further research to explore the social dynamics surrounding digital literacy in different academic contexts.

Access to digital resources was another critical factor impacting digital literacy. The study found that 70% of students had access to digital resources, but 30% faced challenges due to limited access. This aligns with Bawden and Robinson (2019), who identified that unequal access to digital resources exacerbates digital literacy disparities. Jafari and Lee (2022) also noted that access to e-books, online tutorials, and other digital learning materials is crucial for improving students' digital competencies. The findings suggest that equitable

access to resources, especially in rural or underfunded institutions, is vital for bridging the digital divide.

The technological infrastructure at PBI UKI Toraja also played a significant role in shaping students' digital literacy skills. While 90% of students reported having access to digital devices, 40% faced technical difficulties, which is consistent with Anderson and Rainie (2020), who found that technical issues were one of the primary barriers in digital learning environments. Kimmons et al. (2020) and Zhang and Wang (2021) also emphasized the importance of ensuring reliable technological infrastructure to facilitate digital learning. The results from this study indicate that while device availability is generally sufficient, technical issues still hinder the effective use of digital tools, underscoring the need for improved technical support.

The results of this study support the framework suggested by Anderson (2021), who highlighted that the integration of personal, academic, social, and technological factors plays a critical role in enhancing digital literacy. Moreover, Bennett et al. (2021) observed that while digital literacy is a critical component of 21st-century skills, students in many developing regions face barriers related to infrastructure, training, and resources, as found in this study. These barriers need to be addressed holistically, as digital literacy is a multifaceted skill set influenced by both individual and external factors.

The study also aligns with recent research by Salinas and Lara (2021), who found that the lack of systematic approaches to integrate digital literacy into university programs contributes to persistent digital skill gaps. Furthermore, Bozkurt et al. (2020) discussed how academic institutions must adopt more inclusive policies and interventions to support students in developing digital literacy in an increasingly technology-driven world. The findings from this study reinforce these arguments, suggesting that academic institutions need to implement structured and continuous digital literacy training programs alongside technological support systems.

The results of this study also extend the findings of Teo (2020), who found that digital literacy development is not just about technical skills but also involves the broader context of socio-cultural influences and resource access. In this study, students' social environment, including peer motivation and faculty support, emerged as key enablers of digital literacy, confirming the significance of a supportive learning environment.

This study provides valuable insights into the factors influencing digital literacy and offers actionable recommendations. It suggests that universities, particularly those in rural or under-resourced areas, should prioritize enhancing faculty support, integrating digital literacy into curricula, and improving access to technological resources. Furthermore, the study indicates the importance of addressing technical issues and providing adequate training for both students and faculty to optimize the use of digital tools

5. CONCLUSION

This study concludes that low digital literacy skills among students at PBI UKI Toraja are influenced by a combination of personal, academic, social, resource-related, and technological factors. While students demonstrate high interest in digital technology, gaps in confidence, basic knowledge, and access to adequate academic support hinder the development of their digital literacy. Additionally, limited access to digital resources and technical challenges further exacerbate these issues. The study highlights the need for improved integration of digital literacy in the curriculum, increased faculty support, better access to resources, and enhanced technological infrastructure to foster digital literacy among students. Addressing these factors is crucial for equipping students with the necessary skills to thrive in a digital world.

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