Evaluation of digital skills among Premier Private University Students: Experience from Valley View University (VVU)

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ABSTRACT

This study assesses the digital skills of students at Valley View University (VVU) in Ghana. A descriptive survey design was employed, and a structured questionnaire was the data collection instrument. The study focused on undergraduate students from various academic disciplines within the university. The study adopted the Technology Acceptance Model (TAM). The student population was 2,613 at the time of this survey. A total of 354 constituted the sample size for the study. However, 341 valid responses were retrieved and analysed using IBM SPSS Statistics Version 26. The findings indicated that while many students demonstrate basic digital competencies, gaps remain in the use of digital resources and in applying digital tools for academic activities.

The results further revealed that digital tools enhance students' critical thinking, learning engagement, and flexibility in accessing learning resources. The findings found that the university should introduce e-learning or virtual learning for all students. In addition, several challenges persist, including inadequate digital skills, limited access to technological resources, insufficient training in digital skills, poor internet services, unreliable power systems, and a lack of adequate computers. The study recommends interventions, such as integrating digital literacy into university curricula, regular workshops or training, including digital infrastructural expansion, to bridge gaps in digital skills, especially among students from less privileged backgrounds. Addressing these deficiencies will equip students with the needed skills to thrive in a digital environment.

1. Introduction

In the 21st-century educational environment, the development of life skills, digital literacy skills, and learning skills is considered crucial for students (Shuhidan et al., 2021). Furthermore, building proficiency in digital literacy is essential for students to succeed in the modern world (Tohara et al., 2021). These digital literacy competencies offer several benefits, such as enhancing critical

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thinking, which is a key skill in today's digital era (Mokhtari, 2023). It encompasses an individual's awareness, attitude, and ability to use digital tools for accessing, evaluating, integrating, and synthesising information, generating new knowledge, creating digital content, and engaging in meaningful communication (Nazza et al., 2021). Similarly, Maphosa and Bhebhe (2019) defined digital literacy as the capacity to use information and communication technologies (ICTs) to support and enhance learning.

Chetty et al. (2018) highlight its role in enabling access to online content and services, which in turn fosters greater educational engagement. Kavensky (2021) elaborated this concept by viewing digital literacy as the ability to interpret and apply information presented in formats across different digital platforms. Khan et al. (2022) described digital literacy as the ability to gather, manage and convert information into usable knowledge.

Digital skills (DSs) are essential for students in higher education. They help students to explore digital resources, evaluate their reliability, and patronise them efficiently to achieve academic goals and prepare for future career paths.

Bravo et al. (2021) and Falloon (2020) refer to digital literacy as the competencies, knowledge, skills, and attitudes required to effectively and efficiently understand and use digital technologies. This definition includes skills related to searching, evaluating, creating, and communicating on various digital platforms. It also includes ethical considerations and critical thinking regarding digital content. According to Koppel and Langer (2020), digital literacy (DL) refers to the core technical abilities necessary for fundamental interactions with technology. David-West (2022) defined digital literacy as the ability to understand and use information in various formats from a wide range of sources when it exists through a computer. It comprises a diverse set of skills, which includes media literacy, information literacy, and computer literacy. A review of literature on digital skills found that some studies were conducted by Rui and Attan (2024), Shiri and Baigutov (2024) and Bravo et al. (2021) without covering VVU. In Ghana, Frimpong and Addo (2020), Tagoe and Cole (2020), Dzandza (2020), and Narh-Kert et al. (2022) conducted similar studies.

However, their studies also did not consider VVU, leaving a gap in the literature. The current survey aims to bridge the gap in the literature and contribute to the growing body of knowledge regarding digital skills within higher education. It will again provide insights into enhancing digital skills development in universities and help establish a framework for assessing digital literacy.

1.1 Research Questions

RQ1. To what extent do students possess digital skills for learning?
RQ 2. How does digital literacy affect students' academic performance in the university?
RQ 3. What challenges do students face in using digital tools in the university?
RQ 4. What can be done to improve digital literacy among students in the university?

2. Literature Review

2.1 Theoretical Background

The researchers adopted the Technology Acceptance Model (TAM) developed by Davis (1989). The model provides a relevant theoretical foundation for this study, which examines the digital skills of students at Valley View University. TAM asserts that an individual's intention to adopt technology is predominantly affected by learners' perceived usefulness and perceived ease of use. In this context, students' interaction with digital resources—such as academic databases, learning management systems, and online research platforms—can be influenced by their perceptions of the benefits and user-friendliness of these technologies. Adopting the theory in this research enables a more comprehensive understanding of the factors that influence the development of digital skills.

The framework provides an interpretation for the role of universities in facilitating technology adoption through training, resources, and user-centred services. Several researchers have employed the TAM in their studies elsewhere, including Alshammari et al. (2025), Lee et al. (2025), Tao (2008), and King and He (2006). In Ghana, studies by Asante et al. (2025), Amadu et al. (2023), and Ofori (2019) have also used TAM in similar studies across different geographical locations. Scherer et al. (2019) commended TAM as a perfect theory in describing the adoption of digital technology in education. Therefore, TAM not only contextualises the current digital competencies of students but also guides practical strategies for academic institutions to enhance digital literacy among learners.

2.2 Relevant of TAM to the study

The TAM explains the disparity in digital skills among students. It highlights that those who perceive digital tools as beneficial and user-friendly tend to excel. Conversely, others may face challenges stemming from negative perceptions. Using insights derived from TAM, VVU can gain a deeper understanding of how to create interventions, including training and support services. Such effort will help enhance students' perceptions of usefulness and ease of use, ultimately leading to an increase in their digital proficiency. In practicality, the university can support digital skills development by implementing targeted training sessions and integrating digital literacy into information literacy instruction.

More so, they can offer one-on-one support through digital help desks to enhance students' digital skills. Research studies, such as those conducted by Abulail et al. (2025), Akbarini (2024), Al-Adwan et al. (2023), Lin and Yu (2023), and Aburbeian et al. (2022), have utilised the Technology Acceptance Model (TAM). The extensive use of the TAM in various research studies affirmed its significance and applicability as the theoretical basis for the present study.

2.3 Digital skills among university students

At the dawn of the technological era, students must acquire digital skills to achieve their academic goals. These include their thinking level, the way to search for information, filter online materials and identify the relevant ones. The rapid advancement of technology necessitates the need for Information and Communication Technology (ICT) programmes in university curricula. Many universities are facing increasing pressure to adopt digital transformations to establish strong structures that support internationalisation, improve competitiveness, promote a digital culture, strengthen global

student mobility, and make knowledge more accessible to a wider audience(Fernández et al., 2023; Fülöp et al., 2022; Habib, 2023). Digital transformation in universities enhances students' 21st-century skills, enabling them to efficiently process information, engage socially, and adapt to digital communication methods (Godsk & Møller, 2024; Liesa-Orús et al., 2020).

Thakur (2020) surveyed the digital literacy competencies of postgraduate students at the University of Jammu's School of Social Science. The findings indicated that most students rated their digital skills as very low. ICT has become increasingly crucial across various sectors, including the workforce, leisure activities, and educational settings (Goriss-Hunter et al., 2022). ICT skills in students' learning are contingent upon teachers' digital literacy and ability. In practical terms, digital competencies are crucial for achieving academic success, enhancing employability, and fostering lifelong learning. Gaining these skills will enable students to effectively use digital tools for research, data analysis, writing, and presentations.

Competencies such as online search strategies, the use of reference management software (e.g., Zotero and Mendeley), and navigating academic databases significantly improve both efficiency and accuracy. Blayone et al. (2017) revealed that students' skills in creating digital content were at a lower intermediate stage. Shopova (2014) identified that most young adults starting university lacked digital literacy to navigate the internet for resources.

Digital literacy encompasses the skills to effectively search for, evaluate, and responsibly utilise digital technologies to obtain pertinent information. These include interpreting the content, evaluating relevancy, verifying authenticity, and sharing or retrieving information responsibly. Andimuthu and Sinha (2021) surveyed students at a central university, revealing that digital literacy has permeated both urban and rural student populations in Tamil Nadu. Students effectively used electronic resources for their academic pursuits. Moreover, digital literacy goes beyond basic computer skills or simple online searches; it demands critical thinking and ethical online interactions with digital resources.

2.4 Effects of digital tools on students' academic performance

Digital skills have become a powerful weapon for students in the 21st century. As the world shifts toward technological advancements, digital skills have become an essential commodity. The acquisition of digital literacy enables students to access digital resources. These skills help them to manage information proficiently and leverage e-learning as a valuable educational tool (Fan & Wang, 2022; Soroya et al., 2021; Tameryan et al., 2022; Youssef et al., 2022). Hassana and Mirza (2021) posited that digital literacy enhances educational outcomes. Students with these skills will effectively use digital tools and electronic resources to attain their academic goals. An appropriate application of digital technologies can enhance student performance (Schindler et al., 2017).

The use of digital tools in education extends beyond basic literacy and requires that both students and teachers adjust their methods of teaching and learning (Rui & Attan, 2024). This change has altered the way knowledge is obtained and distributed in educational settings. Consequently, students are now required to develop better digital skills to actively participate in online learning activities and leverage digital information sources.

Youssef et al. (2022) indicated that digital skills are associated with improved academic results.

The cognitive, social, and emotional aspects of digital skills are considered essential in education (Spires et al., 2019). Digital literacy empowers students to skillfully navigate online educational platforms, access academic materials, and engage with various digital tools. Individuals must possess technology skills in this swiftly changing technological landscape. Chauhan (2017) and Wagiran et al. (2022) posited that the successful adoption of digital technology is contingent upon the readiness of infrastructure and teachers. These two factors are essential in determining the effectiveness of online learning outcomes. Without strong digital skills, students may struggle with online learning platforms, virtual collaboration, and accessing digital resources. Lack of these abilities may adversely affect their academic and overall learning performance in an increasingly digitalised world.

Access to technological infrastructure has become a key element in promoting digital literacy within higher education. Digital literacy goes beyond simple navigation of digital tools. It involves the ability to use technology critically and effectively in real-life situations to enhance academic performance and prepare for future careers (Ngoc & Chong, 2023).

In today's educational settings, students are encouraged to familiarise themselves with digital platforms to gather information, collaborate with peers and lecturers, and acquire new knowledge. Therefore, the proper use of technology in universities is essential for developing the skills students need to succeed in a society that is increasingly reliant on digital technologies. Timotheou et al. (2023) found that digital technologies and digital skills not only provide students with access to e-resources but also create better chances for students to interact with and gain knowledge from these resources.

Limniou et al. (2021) observed that students who possess digital literacy tend to focus more effectively in class and remain fully engaged, which also contributes to their improved academic results, particularly in challenging circumstances. Students with a higher level of digital literacy are more capable of leveraging online learning platforms efficiently, assessing information effectively, and using digital tools in a meaningful way to support their academic tasks.

2.5 Challenges students face in using digital tools

Digital skills have become a fundamental component in the educational sector. To attain a high standard of education that equips individuals with the essential skills and competencies required to navigate the challenges of the 21st century, investment in education is imperative (Comisión Europea, 2020). Anasel and Swai (2023) and Chasubuta et al. (2024) identified obstacles like inadequate internet access, insufficient technological skills among students and teachers, and limited technological infrastructure.

In the less developed countries such as Ghana, the lack of access to technology remains a significant obstacle to digital participation and education. Many educational institutions and students face difficulties due to poor technological facilities, inconsistent internet service, and the high cost of digital tools. These challenges limit students' ability to develop digital skills, access online learning resources, and maximise the use of technology-based educational settings. The aforementioned hindrances deter students from embracing digital tools and resources (Reedy & Parker, 2018). The issue of low digital literacy levels among students is a challenge that affects many countries. According to Machete

and Turpin (2020), most students today lack the skills to assess online information effectively. They also lacked critical thinking skills in digital settings. Delaney and Bates (2017) identified access to online resources as a significant limitation. The concept of digital teaching and learning in educational curricula is not prioritised adequately (Armah & Westhuizen, 2019).

Ghana's higher education system faces challenges in building a digital society due to the lack of computers in libraries. Among the key challenges are inadequate internet bandwidth, minimal information retrieval skills, insufficient ICT training, and a shortage of Information Technology (IT) professionals (Appiah & Abdul-Rahim, 2021). Such factors adversely affect the institutions' capacity to operate effectively and execute their mandates. In today's digital landscape, students require more than traditional literacy; they need functional, informational, and technological literacy to excel. Universities, particularly through their libraries and academic support systems, must take the initiative to ensure that every student develops these crucial skills. This effort enhances academic performance, promotes equity, and prepares graduates for the future workforce. These capabilities will equip students to excel in the global economy, where technological adeptness is necessary.

2.6 Strategies to improve digital literacy among students

Many students face challenges when using digital tools because they do not have enough knowledge or skills in digital literacy. As digital innovations continue to influence academic frameworks, research, and community engagement, the Ghanaian government, higher education institutions, and development partners have commenced multiple initiatives to exploit these technological advancements (Sarpong, 2023). Universities play a vital role in equipping students with the digital skills necessary for success in both their academic and professional pursuits. Academic libraries can facilitate training sessions that cover the use of electronic resources, including information evaluation and strategies to avoid plagiarism. Librarians can hold regular interactive sessions to guide students in effectively navigating digital tools. Moreover, academic libraries can assist students by providing access to the internet, computers, and necessary software. They may also establish computer labs or lend devices to those students who face limited access. Jayadi et al. (2025) explored strategies for enhancing digital literacy within higher education institutions.

Their study recommended training sessions and workshops aimed at both students and faculty. Ghana's higher education institutions are undergoing digital transformation, with support from the World Bank and the establishment of free Wi-Fi networks to promote e-learning, aid academics, and streamline student records (Kpessa-Whyte & Dzisah, 2022).

The Sakai Learning Management System was adopted by the University of Ghana in 2012 as a learning platform for distance education initiatives, marking a significant shift from a print-centric model to an online delivery system (Tagoe & Cole, 2020). Kwame Nkrumah University of Science and Technology implemented Wi-Fi infrastructure for e-learning and virtual classroom systems. The university has also developed AIM, a student application system for registration verification and results viewing (Andoh-Baidoo et al., 2012; Kpessa-Whyte & Dzisah, 2022). The University of Cape Coast has integrated the Moodle e-learning platform, which encompasses enhanced portals specifically for lecturers and students (Alhassan, 2019). Soufghalem (2024) and Johnson et al.

(2020) posited that integrating digital literacy into the educational curriculum helps students acquire essential digital skills for future careers. According to the authors, this will help them to explore, assess, and create digital content. To advance the use of these digital assets, seven of Ghana's nine state university libraries have taken the lead on the initiative (Dzandza, 2020; Narh-Kert et al., 2022). Digital literacy in education requires the support of government, individual corporations, philanthropy, and civil society. The effort involves providing essential digital infrastructure, creating an enabling environment, and prioritising digital literacy among students at all levels. To aid students effectively, the university could establish support desks that provide individualised assistance in utilising digital tools, platforms, and databases. Additionally, training peer tutors to help their classmates with fundamental digital requirements would be beneficial.

Sanhueza et al. (2025) observed that students with limited experience regarding technology struggled to utilise electronic resources effectively. To address this phenomenon, a more extensive approach is imperative than introductory programmes. These initiatives should include the incorporation of digital skills education into the national curriculum at every educational level, along with the organisation of ongoing information literacy sessions.

3. Methodology

The study used a descriptive survey design. The method was employed because it enables researchers to gather and examine data from a large group of people, allowing them to describe trends, behaviours, and attitudes and describing an existing phenomenon (Ozobo et al., 2014).

At the time of the study, VVU had a total student population of 2,756. The study specifically focused on undergraduate students, excluding 143 postgraduate students. As a result, the undergraduate students consisted of 2,613 students at the Oyibi Campus.

3.1 Sampling Method

The researchers employed Krejcie and Morgan's (1970) sample size determination table. The table illustrates that a sample size of 354 is enough for a study. Therefore, a sample size of 354 was deemed adequate to achieve a representative and statistically valid sample.

Table 1. Student Population Breakdown by Faculty & School

Faculty & School	Population
Faculty of Arts & Social Sciences	327
Faculty of Science	448
School of Business	382
School of Education	645
School of Nursing & Midwifery	811
Grand Total	2,613

Source: Office of the Registrar, VVU (2023/2024 Academic Year)

3.2 Data Collection Method

The University Registrar's office granted the researchers approval for the study. An informed consent form was completed by the respondents upon request, as required by the set ethical guidelines. Subsequently, a well-structured questionnaire was administered to the students by the researchers through Google Forms. The questionnaire was reviewed and validated by experts from the university library and the school of education to ensure its clarity and relevance. Of the 354 copies of the distributed questionnaire, the researchers retrieved 341 copies. The responses resulted in a 96.3% response rate. They were considered valid for analysis. To address each research question, respondents were provided with statements formulated to evaluate their levels of agreement or disagreement using a four-point Likert scale, where 4= Strongly Agree (SA); 3= Agree (A); 2= Disagree (D), and 1= Strongly Disagree (SD).

3.3 Data Analysis

This section presents an analysis of the data obtained from the field. The study assesses the digital literacy levels of Ghanaian students. The respondents received a total of 354 copies of the questionnaire. However, 341 were successfully retrieved and deemed valid for the analysis, yielding a response rate of 96%. The instrument used for statistical analysis was IBM SPSS Statistics Version 26. The analysis process involved a detailed evaluation of the data to identify potential errors or inaccuracies that would invalidate the results. The analysis was carried out exclusively through quantitative approaches to ensure a thorough understanding of the subject. The researchers presented the results in frequency tables, percentages, means, and standard deviations.

4. Results

Understanding the gender distribution of respondents is important as it offers insights into the demographic composition of the study population. Table 2 displays the gender distribution of the respondents.

Table 2. Gender of the Respondents

Gender	**Frequency**	**Percentage (%)**
Male	179	52
Female	162	48
Total	341	100

Source: Field data, 2025

The results of this study indicated that 179 respondents (52%) were males, while 162 (48%)

were females. This distinction is an indication that male students dominated in the study against their female counterparts.

4.1 Digital skills among university students

In today's technologically driven environment, students need digital skills to navigate and search for academic materials online or search for general information.

In multiple studies, researchers have used Likert scales with an even number of response options (Jeong et al., 2019; Nemoto & Beglar, 2014; Taherdoost, 2019). The use of such scales with response categories tends to result in minimal differences in the mean when considering variation (DeCastellarnau, 2018; Pimentel, 2019). Hence, the researchers applied the Likert scale in the current study.

Table 3. Digital skills among university students

Digital skills	SA	A	D	SD	Total
I have knowledge of troubleshooting	§96 (28.2%)	48 (14.0 %)	73 (21.4 %)	124 (36.4%)	341
I have skills in various digital devices	125 (36.7%)	113 (33.1%)	62 (18.2%)	41 (12.0 %)	341
I am skilful in accessing and navigating online academic resources	40 (11.7%)	96 (28.2 %)	122 (35.8 %)	83 (24.3%)	341
I can effectively use digital tools to complete my assignments	71 (20.8%)	95 (27.9 %)	57 (16.7%)	118 (34.6%)	341
I consider my digital skills to be excellent	66 (19.4 %)	137 (40.2%)	84 (24. 6%)	54 (15. 8 %)	341

Source: Field data, 2025

The results reveal that 137 respondents (40.2%) agreed that they have excellent digital skills; only 84 (24.6%) disagreed. On the other hand, 124 respondents (36.4%) strongly disagreed that they know troubleshooting; however, 96 respondents (28.2%) strongly agreed. Again, 122 respondents (35.8%) disagreed that they have the skills to access and navigate online academic resources; nevertheless, only 96 respondents (28.2%) agreed.

Also, 118 respondents (34.6%) strongly disagreed to have used digital tools to complete their assignments; however, 95 (27.9%) agreed that they used digital tools to complete their assignments. These findings revealed that although many students are skilled in using technology, there exists a disparity in their capacity to apply digital tools effectively for educational goals. From the perspective of the TAM, this disparity may be motivated by variations in how students perceive the ease of use and usefulness of digital technologies. Students who face challenges when trying to fix problems or navigate online academic resources may perceive these technologies as complicated, which reduces their perceived ease of use and can impact their willingness to use technology for academic purposes.

4.2 Effects of digital tools on students' academic performance

This section of the study is grounded in the mean scores and standard deviations (SD) associated with several dimensions of digital tool application.

Table 4. Effects of digital tools on students' academic performance

Effects	Mean	SD
Digital resources boost critical analysis	2.7302	1.11827
Digital platforms make learning interactive	2.6569	1.06668
Digital tools boost learning motivation	2.6100	1.14163
Online platforms offered me flexible study options	2.5836	1.04722
I use digital tools for academic activities	2.5543	1.12230
Digital technology helps me prepare for examinations	2.4897	1.01636
Digital tools enhance collaboration with classmates	2.4516	1.11994
Digital tools improve my time management	2.3314	1.01395
Digital literacy helps me to access e-materials	2.1994	1.07435

Source: Field data, 2025: Note, Strongly Agree = 4; Agree = 3; Disagree = 2; Strongly Disagree =1

The findings showed that digital tools significantly enhance critical thinking, with a mean ($\bar{x}$) of 2.7302 and an SD of 1.11827, indicating a positive impact on students. Digital platforms enhance the interactivity of learning experiences with an $\bar{x}$ = 2.6569 and an SD of 1.06668. Digital tools enhance students with an $\bar{x}$ = 2.6100 and an SD of 1.14163. Subsequently, online platforms offered me flexible study options with the mean and standard deviation scores of $\bar{x}$ =2.5836, SD =1.04722. I use digital tools for academic activities, with mean and standard deviation scores of $\bar{x}$ =2.5543 and SD = 1.12230. The high standard deviation indicates varied experiences; some students report significant motivation, whereas others do not perceive digital tools as motivating. The positive mean scores across these items indicate that students perceive digital tools as helpful in improving learning outcomes, such as critical thinking, engaging in interactive learning, and flexible study options. These perceived benefits of the usefulness of digital tools correspond with the idea of perceived usefulness within the TAM, which increases the likelihood that students will adopt and continue using technology for their academic work.

Analyses in Table 5 revealed that poor internet connectivity 29.6% hinders the use of digital resources by students, followed by 20.8%, who indicated an unreliable power system; 13.2% asserted that lack of adequate computers was their challenge, while 12% indicated frequent downtimes disrupt digital access, which affects digital learning, and 9.1% indicated inadequate support from the university. Within the framework of the TAM, users' adoption and use of technology are driven by their perceptions of usefulness and ease of use. Infrastructure-related barriers such as poor internet connectivity, unreliable electricity, and limited access to computers may negatively impact students' use of digital technologies.

Table 5. Challenges Students Face in Using Digital Tools

Challenges	Frequency	Percentage (%)
Frequently technical problems disrupt academic work	22	6.5
Poor internet limits digital resources	101	29.6
Insufficient training on digital tools	13	3.8
Some digital platforms are not user-friendly	7	2.1
Frequent downtimes disrupt digital access	41	12.0
University technical support is inadequate	31	9.1
Lack of adequate computers	45	13.2
The digital facilities available are outdated	10	2.9
Unreliable power system affects digital learning	71	20.8
Total	**341**	**100**

Source: Field data, 2025

4.3 Strategies to improve digital literacy among students

The researchers applied the Relative Importance Index (RII) to determine the relative importance or ranking of factors based on respondents' ratings on a Likert scale.

The RII was calculated using the following formula:

$$\text{RII} = \frac{\Sigma W}{A \times N}$$

$$\text{RII} = \text{Sum of weights } \frac{(W1 + W2 + W3 + W4 + W5)}{A \times N}$$

Where:

- W = weight assigned to each factor by respondents (ranking values)
- A = highest weight (in this case, 5)
- N = total number of respondents (341)

This part of the study used the Relative Importance Index to determine the factors influencing reason for mobile phone usage based on a Likert scale of 5-point levels of agreement.

Thus, the degree of contribution was categorised on a five-point Likert scale as follows: where 1= Very low, 2 = Low, 3= Moderate, 4 = High, and 5= Very high.

The Relative Importance Index (RII) was calculated based on the following equation:

$$\text{Relative Importance Index: } \frac{\Sigma W}{AN} = \frac{W1 + W2 + W3 + W4 + W5}{5 \times N}$$

$$\text{Social networking} = \frac{(100 \times 1) + (90 \times 2) + (84 \times 3) + (18 \times 4) + (150 \times 5)}{5 \times 341}$$

: 100+90+84+72+750/1705 = **0.643**

The results on the strategies to improve digital literacy among students revealed that universities

Table 6. Strategies to improve digital literacy among students

Statement	1	2	3	4	5	RII	Rank
Universities should embed inclusive digital literacy in entrance exams for new entrants	100	90	84	72	750	0.643	**1st**
Universities should introduce e-learning or virtual learning for all students	121	78	180	200	355	0.548	**2nd**
There should be periodic assessments and feedback mechanisms	75	250	165	192	190	0.511	**3rd**
The university should offer regular training sessions to enhance digital literacy	107	210	135	56	350	0.503	**4th**
Universities should provide adequate internet service	102	220	135	84	315	0.502	**5th**
The university should invest in to up-to-date digital resources or facilities	110	200	150	84	300	0.495	**6th**

Source: Field data, 2025

should include digital literacy in their entrance exams or interviews, which ranked first with (RII 0.643); then universities should introduce an e-learning or virtual learning for new entrants, ranked second (RII 0.548); there should be regular assessments and feedback systems, ranked third (RII 0.511); the university should offer regular training sessions to improve digital literacy, ranked fourth (RII 0.503); and finally, the university should provide adequate internet service, ranked fifth (RII 0.502).

These results emphasised the importance of institutional approaches focused on improving students' digital skills. From the TAM perspective, enhancing students' digital literacy and providing better access to technological resources can improve their perception of how easy and useful digital technologies are. Additionally, reinforcing digital literacy programmes helps students gain critical thinking abilities in this rapidly changing technological environment.

5. Discussion of findings

This part of the study serves as a venue for discussing the findings, enabling a detailed discussion that enhances the study's overall contribution to its respective discipline.

5.1 Digital skills among university students

The findings showed that the majority of the students have digital skills. This finding is not in line with a study by Blayone et al. (2017), which indicated that students' skills in creating digital content were at a lower intermediate stage. The results also found that some students, although not the majority, lack knowledge in troubleshooting and the skills to access and navigate online academic resources. This outcome aligns with similar studies by Shopova (2014), who found that numerous young adults entering university lack the skills to utilise the internet and ICT facilities. Digital skills motivate students to navigate, assess, and use digital technologies in their educational activities. Therefore, digital literacy must be considered a requirement in this digital era.

5.2 Effects of digital tools on students' academic performance

Digital technologies have become fundamental tools that enhance the educational experience, equipping university students with creative methods to boost their academic success. The findings indicate that the use of digital resources enhances students' ability to use digital resources. This result is consistent with Schindler et al. (2017), who posit that digital technologies can significantly enhance student engagement. Spires et al. (2019) added that cognitive, social, and emotional aspects are crucial in digital education. Digital technologies have become fundamental tools that enhance the educational experience, equipping university students with creative methods to boost their academic success.

5.2 Challenges students face in using digital tools

Digital literacy enhances learning and academic achievements. However, obstacles like restricted access and insufficient facilities need adequate improvement. The findings on challenges revealed that poor internet connectivity, frequent downtimes disrupting digital access, and the lack of adequate computers were the key factors students faced in using digital facilities. These findings support similar studies by Appiah and Abdul-Rahim (2021), Anasel and Swai (2023), and Chasubuta et al. (2024), which enumerated challenges such as limited access to technology and inadequate facilities, the lack of computers, inadequate internet bandwidth, inadequate retrieval skills, insufficient ICT training, and a shortage of skilled IT professionals. Armah and Westhuizen (2019) and Delaney and Bates (2017) indicate a lack of adequate online resources, including digital teaching and learning in Ghana's higher education institutions. They emphasised that promoting equitable access to digital technologies can enhance learning outcomes.

5.3 Strategies to improve digital literacy among students

Universities must incorporate digital literacy into their curricula in the current digital landscape. The approach will ensure the effective adoption of digital devices by students. Results on strategies to improve digital literacy revealed that the university should embed digital literacy in entrance examinations for new entrants. These findings are inconsistent with Jayadi et al. (2025). Their studies identified workshops, computer laboratories, and reliable internet access, including e-libraries.

Again, the finding contradicts a similar study by Soufghalem (2024) and Johnson et al. (2020), which recommended incorporating digital literacy into academic curricula, asserting that such integration equips students with digital skills for success in the workforce. This result is a key reminder for institutions to prioritise digital literacy at all levels. They must also implement modern digital tools and efficient digital infrastructure for teaching and learning.

6. Conclusion and Recommendations

6.1 Conclusion

This research examined the digital skills of students at Valley View University and explored opportunities and challenges associated with using digital technologies in the university. The results showed that while many students have some level of basic digital skills, there are still significant gaps in more advanced skills needed for academic research and learning. The study also found that digital technologies play a beneficial role in enhancing students' involvement in their studies, developing their critical thinking, and providing greater access to learning materials. Despite these benefits, obstacles such as unstable internet connections, limited availability of digital devices, and a lack of proper support from the institution continue to prevent students from fully utilising digital tools.

To address these challenges, both the institution and policymakers must work together in a coordinated and thoughtful manner. The university should focus on improving digital infrastructure, including digital literacy, new curriculum development, and offering ongoing support to help students build the digital skills necessary for success in today's academic and professional world.

6.2 Recommendations

The study recommended that digital literacy should be included as part of the current academic curricula to ensure that all learners develop essential digital skills. The approach will allow all learners to develop basic and advanced digital skills relevant to their fields. The study suggested regular training initiatives, seminars, and workshops for students and lecturers to improve their digital capabilities. Moreover, investment in contemporary technological resources and reliable internet connectivity is crucial for equipping students with the necessary tools for digital learning. Digital platforms should be available to help students develop their skills by applying them in real-world situations.

Educational institutions must integrate digital literacy within the core curriculum throughout all tiers of education. Faculty members should receive proper training on digital tools so they can effectively showcase best practices to their students. The university should collaborate with industry partners to offer workshops, internships, and real-world projects to enhance students' digital expertise and employability.

Additionally, a systematic evaluation of ICT policies would encourage the use of technology to tackle emerging significant challenges. These recommendations will significantly enhance the skills of VVU students to navigate and excel in a progressively digital global landscape. The study suggested that national education authorities, higher education regulators, and policymakers should focus on prioritising broad digital literacy programmes, funding digital infrastructure, and integrating digital training skills into higher education curricula. At the policy level, the recommendations aim to support efforts to improve students' digital skills and enhance the use of technology in higher educational institutions.

7. Implications of the study

The results underscore the importance of integrating digital literacy programmes into university curricula to strengthen students' digital skills. University leaders and policymakers can use these findings to formulate initiatives that promote digital skills training and improve access to digital infrastructure. Addressing gaps in digital competencies can also help ensure equitable access to digital resources for students from diverse backgrounds.

Furthermore, strengthening digital skills enhances students' employability and prepares them for the challenges of the digital job market. The study also highlighted the need for sustained investment in contemporary digital tools and educational platforms to facilitate student learning and innovation. From a theoretical perspective, the findings support the relevance of the Technology Acceptance Model (TAM) in explaining how students adopt and use digital technologies in higher education. The study indicated that students with stronger digital skills tend to perceive these tools as more useful and easier to use, thereby increasing their readiness to use and integrate these technologies into their learning activities.

From a practical perspective, universities should focus on integrating programmes that improve digital literacy skills, specifically those that support effective navigation, evaluation, and application of digital technologies in an academic context.

At the policy level, national education authorities and higher education regulators should formulate comprehensive policies that support the development of digital literacy across universities. These policies might include incorporating digital literacy courses into higher education curricula, investing in digital infrastructure, and setting national standards for digital competencies. These techniques can create an enabling environment that supports the successful integration of digital technologies in higher education.

Overall, the introduction of digital literacy courses in universities with established theatrical frameworks, such as TAM, can enhance the acceptance and effective use of digital technologies in higher learning institutions.

8. Suggestion for Future Studies

Future studies could adopt a comparative approach to examine digital literacy levels among private and public universities. Further studies could broaden their scope beyond a specific geographical area to investigate students' perceptions of digital literacy. Future studies might also evaluate the effects of emerging digital trends, such as artificial intelligence (AI) and virtual reality (VR), on students' digital skills.

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