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The Role of Digital Information Management in Enhancing Undergraduate Students' Digital Literacy: A Multi-University Analysis

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Abstract

This study explores the role of digital information management in enhancing undergraduate students' digital literacy through a multi-university analysis. Specifically, it investigates the impact of understanding digital practices, using information, finding information, and creating information on students' digital literacy. A quantitative research design was employed, with data collected from undergraduate students at three Sri Lankan universities. Using convenience sampling technique, a total of 120 respondents participated in the study by completing a structured survey questionnaire.

The findings reveal that the experiences of using information and finding information significantly contribute to students' digital literacy, highlighting their essential role in effective digital information management. However, the study found no significant impact of understanding digital practices or creating information on students' digital literacy. These results suggest that while practical engagement with information retrieval and utilization is critical, broader conceptual understanding and content creation may require additional contextual or instructional support to influence digital literacy outcomes. This study provides valuable insights into the specific dimensions of digital information management that enhance digital literacy, offering implications for educators and policymakers in designing targeted interventions to develop these skills among undergraduate students..

Keywords*: Digital literacy, Experiential learning theory, learning by doing theory, Undergraduate Students.*

1. Introduction

The ability to read and write is the concept of being literate. American Library Association (American Library Association, n.d.) defines digital literacy as an individual's ability to find, evaluate, utilize, share and create content using information technology. According to Belshaw, D. (2011), The term literacy can be defined as mastering basic and useful skills that have the power to profoundly improve and modify a person's capacity for thought. Because new technological skills and knowledge are needed in technologically oriented workplaces, the need for learning by individuals, society, and educational authorities has become exceedingly complex in the 21st century with the arrival of new technologies and Web applications. Digital literacy is the ability to find, organize, understand, evaluate, and analyze information using digital technology (Batcha et al., 2014). the term digital literacy is defined as an individual's ability to find and evaluate information, use this information effectively, create new content using this information, and share and communicate this newly created information using appropriate digital technologies (Reddy et al., 2020). The search for digital documentation through the Internet is becoming a more relevant resource in the process of gathering information in higher education, either because of its quality or because physical sources are becoming increasingly limited and not less importantly because digital publishing is much faster than physical publishing.

1.1 Background of the Study

(Salcito, 2014), The Microsoft's Vice-President for Worldwide Education, has emphasized that preparing students for the 21st-century workforce requires equipping them with essential skills such as critical and creative thinking, collaboration, communication, and computational thinking. The rapid development of information technology, particularly in the education sector, has redefined learning practices in the 21st century (Sulaiman & Ismail, 2020).

The COVID-19 pandemic underscored the critical importance of digital literacy as an essential competency. With the sudden closure of schools and universities mandated by government regulations, a historic shift toward virtual learning environments occurred (Alvarez, 2020). This transition exposed significant challenges, particularly the lack of preparedness among educators, who were often ill-equipped with the tools and knowledge necessary to effectively facilitate online learning (Daniel, 2020). In Sri Lanka, digital literacy prior to the pandemic was limited, with most individuals demonstrating only basic skills such as social media use and elementary online searches. However, the pandemic accelerated the recognition of digital literacy as a critical skill for both educators and students, especially in the educational field, where the demand for these skills increased dramatically.

In the context of higher education, digital literacy plays an integral role in supporting academic activities. It enables students to access extensive research resources, including online databases, digital libraries, and academic journals, thereby fostering their research capabilities. Additionally, universities

increasingly depend on digital communication tools such as email, video conferencing, and online collaboration platforms to connect students, faculty, and researchers (Educause, 2020). Furthermore, digital literacy enhances academic writing, presentation, and critical thinking skills, which are fundamental for student success.

Despite universities' growing focus on improving digital literacy, the actual utilization of digital resources by students for academic purposes remains limited. According to research published in Computers & Education (2021), while many university students exhibit proficiency in social media use and basic web browsing, they lack the critical thinking skills required to evaluate online information effectively. Similarly, a study in the Journal of Information Technology Education (2020) found that although students demonstrate competency in basic digital applications, they often lack advanced skills such as data analysis and cybersecurity awareness.

Digital literacy has become an essential competency for the 21st century, involving the ability to comprehend, analyze, and effectively use digital data (Nuryadi & Widiatmaka, 2023a). Shopova (2023) highlights that university students must possess the knowledge and skills to access and utilize diverse information formats, including e-publications, online videos, audio recordings, digital libraries, and databases. Moreover, students are expected to critically evaluate information resources, independently address scientific challenges, and apply digital tools to enhance their academic and professional endeavors.

A lack of digital literacy among students can have profound consequences. Students may struggle to identify credible sources, conduct effective research, collaborate with peers, and use digital tools to complete assignments. This deficiency not only hampers their academic performance but also limits their preparedness for professional and societal roles. According to Nuryadi and Widiatmaka (2023a), developing data literacy, which includes the capacity to understand, analyze, and utilize digital information, is a core requirement for students in the digital age.

Therefore, this study seeks to examine the role of experiential learning in enhancing students' digital literacy. By analyzing the connection between students' experiences and their digital literacy development, this research aims to provide insights and recommendations for universities to implement strategies that can improve students' digital competencies, thereby preparing them to thrive in the demands of the digitalized academic and professional landscape.

Building upon the primary research problem, this research seeks to address the existing gap in the literature by providing answers to the following questions:

1. What is the significant impact of understanding digital practices on students' digital literacy?
2. What is the significant impact of Using information on students' digital literacy?
3. What is the significant impact of finding information on students' digital literacy?

4. What is the significant impact of creating information on students' digital literacy?

2. Literature Review

2.1 21st Century Teaching and Learning

Physical Education is as vital as other school subjects, requiring well-organized and planned lessons that cater to students' competencies, needs, and interests (Tiamvong, 2023). Effective Physical Education in the 21st century emphasizes critical thinking, decision-making, and problem-solving while fostering self-awareness and appreciation for others. To prepare students for the workforce, 21st-century learning must focus on skills such as creativity, collaboration, communication, and computational thinking (Schunk, 2012). Teachers are expected to transition into facilitators, enabling students to engage in active, experiential learning.

The rapid advancement of information technology has revolutionized education, with ICT literacy becoming essential for both teachers and students (Sulaiman & Ismail, 2020). Digital literacy, defined as the ability to create and use digital content wisely, is critical for student success in the digital age (Basantes-Andrade et al., 2020). Generation Z, with its innate interest in digital tools, requires teachers to integrate technology into teaching while developing critical, creative, and communicative competencies (Sánchez-Caballé et al., 2021).

The COVID-19 pandemic drastically accelerated the adoption of online learning. Institutions implemented virtual classrooms using platforms like Zoom, Google Classroom, and learning management systems. Blended learning, combining online and in-person methods, has emerged as an effective approach (Kanyal Butola, 2021a). Innovative strategies, such as flipped classrooms and just-in-time teaching, personalize learning and enhance engagement (Dominguez et al., 2018).

Virtual classrooms offer flexibility, reduced peer pressure, and access to diverse resources, but challenges remain in equipping educators with digital skills. While the pandemic disrupted traditional education, it also highlighted the need for updated teaching methods and digital competency, essential for fostering 21st-century skills in students (Govindarajan et al., 2020).

The COVID-19 pandemic prompted the rapid closure of schools, forcing education to transition from traditional to virtual platforms. This shift revealed significant challenges, particularly in technology infrastructure and teacher preparedness (Alvarez, n.d.; Daniel, 2020). Teachers, often unprepared for online instruction, faced knowledge gaps and lacked access to adequate tools and internet connectivity, which hindered their ability to adapt effectively (Baran & Correia, 2014; Adarkwah, 2021). Efforts to strengthen IT infrastructure and provide necessary resources have since gained momentum, highlighting the growing importance of technology in education (Kerres, 2020).

Online teaching posed unique challenges, requiring more time and effort from educators compared to traditional methods. Teachers spent considerable time preparing, delivering, and assessing lessons, as online platforms demanded the creation of new instructional materials and constant feedback (Fish et al., 2009; Pérez-Jorge et al., 2020). Additionally, online education necessitated greater engagement, with teachers needing to participate in discussions, emails, and digital interactions, which increased their workload significantly (Bender et al., 2004).

Despite these challenges, the pandemic underscored the necessity of digital literacy for both teachers and students. Before COVID-19, digital skills were limited to basic social media use in many regions, such as Sri Lanka. However, the crisis highlighted the critical need for comprehensive digital literacy in education (Dhawan, 2020). Teachers' motivation, combined with guidance and training, has been identified as key to improving online instruction. Innovative teaching strategies and digital tools can enhance student engagement and learning outcomes when teachers are equipped with the necessary skills and resources (Mohamad et al., 2015).

Although the transition was challenging, the pandemic accelerated the integration of technology in education, paving the way for a more digitally competent educational landscape..

2.2 Teaching and Learning Difficulties During The Covid-19

The COVID-19 pandemic prompted the rapid closure of schools, forcing education to transition from traditional to virtual platforms. This shift revealed significant challenges, particularly in technology infrastructure and teacher preparedness (Alvarez, n.d.; Daniel, 2020). Teachers, often unprepared for online instruction, faced knowledge gaps and lacked access to adequate tools and internet connectivity, which hindered their ability to adapt effectively (Baran & Correia, 2014; Adarkwah, 2021). Efforts to strengthen IT infrastructure and provide necessary resources have since gained momentum, highlighting the growing importance of technology in education (Kerres, 2020).

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enhance student engagement and learning outcomes when teachers are equipped with the necessary skills and resources (Mohamad et al., 2015).

2.3 Digital Literacy

Digital literacy, defined as the ability to locate, evaluate, utilize, create, and share information using digital technologies, has become a vital competency in the 21st century (Glister, 1997). It extends beyond technical abilities to include critical thinking, creativity, and innovation (Martin & Grudziecki, 2006). The European Commission emphasizes digital literacy as essential for entrepreneurship, creativity, and survival in today's technologically driven society (Batcha et al., 2014).

In higher education, digital literacy is crucial for academic, personal, and professional development (Jeffrey et al., 2014). Students must skillfully use digital tools to gather, evaluate, and create information while ensuring its credibility. Digital publishing, offering faster access to current information, is increasingly preferred over traditional physical sources. Educators play a critical role in fostering these competencies to help students adapt to an increasingly digital society (Coffin Murray et al., 2014).

The shift toward digital literacy requires higher education institutions to intentionally integrate technology into teaching and learning processes (Jeffrey et al., 2014). Without advanced digital skills, individuals cannot fully engage in modern society or achieve the innovation and knowledge needed to thrive in the 21st century, making digital literacy indispensable for lifelong learning and global competitiveness.

2.4 Experiential Learning Theory

Experiential Learning Theory (ELT) was developed in response to John Dewey's call for a theory of experience to guide educational innovation. Drawing upon foundational scholars such as William James, John Dewey, Kurt Lewin, Jean Piaget, Lev Vygotsky, Carl Jung, Mary Parker Follett, Carl Rogers, and Paulo Freire, ELT emphasizes the importance of experience in human learning and development (Kolb & Kolb, 2017). ELT is a dynamic and holistic theory that focuses on how people learn from experience, positioning learning as a continuous process of human adaptation that occurs at individual, group, organizational, and societal levels. This process involves resolving the dual dialectics of action and experience, making it relevant beyond formal educational settings. In higher education, ELT has been used to enhance teaching effectiveness through a model that encourages inquiry, self-disclosure, conversation, and reflection. Instead of merely matching teaching styles with learning preferences, ELT promotes a more nuanced approach, considering teacher-student relationships and content alignment (Willingham, 2009).

2.5 Learning by Doing Theory

John Dewey, a prominent philosopher and educator, introduced the concept of "Learning by Doing," emphasizing experiential, hands-on learning. Dewey believed that learning is most effective when students engage in meaningful activities, linking theory with real-world practice, which fosters critical thinking and problem-solving (Dewey, 1938). He criticized traditional education for separating theoretical knowledge from practical application, advocating for learning through experimentation and exploration. This approach has significantly influenced modern education, promoting techniques like project-based learning and interactive simulations. In technology and craft education, learning-by-doing is fundamental, with a constructionist view where students actively construct knowledge through problem-solving and design (Kelley & Knowles, 2016; Purzer et al., 2015). However, Dewey's philosophy stresses that effective learning requires students to reflect on their experiences, linking actions with understanding (Willingham, 2009). This reflective process is essential for developing digital literacy and competence in today's educational environment.

2.6 Understanding Digital Practices

Understanding digital practices refers to the skills and behaviors involved in using digital technologies and engaging with digital content. It encompasses digital literacy, which includes the ability to navigate digital tools and platforms, as well as efficiently locate, analyze, and utilize information. In today’s technologically driven world, digital practices have become crucial in all aspects of life, including work, education, and social interactions. These practices range from basic web browsing to more complex digital problem-solving tasks. Research on digital practices helps in understanding how people adapt to technology in various settings, including education and the workplace. This research is essential in developing digital literacy programs, enhancing the adoption of new technologies, and improving online engagement.

As Shopova (2014) suggests, digital literacy is necessary for full participation in the knowledge society, including technology for collaboration and communication such as smartphones, tablets, and laptops. Digital literacy involves not only knowledge of tools but also the competency to use them effectively, which becomes increasingly important in education. Yazon et al. (2019) found that students are highly literate in understanding online users and the implications of sharing online content. However, they are less aware of online self-promotion or managing digital identities. Students generally understand the ownership and legal boundaries of online information but still lack deeper engagement with critical skills in digital literacy.

2.7 Using Information

The ability to use information effectively is a crucial skill in today's digital age. Information usage involves more than just accessing data; it requires understanding, evaluating, and applying information

to solve problems and make informed decisions (Schunk, 2012). Individuals with strong information-using skills can adapt to new challenges and address complex issues in various areas of life.

However, the ability to evaluate information critically remains a concern. According to Yazon et al. (2019), while faculty members are adept at finding online information, they often lack the competence to evaluate the credibility and reliability of their sources. This gap leads to issues such as plagiarism due to improper citation practices. Additionally, they are not well-versed in social bookmarking, information sharing, or organizing data efficiently. Effective use of information, therefore, involves more than accessing it; it requires skills in evaluating its validity and organizing it for practical use.

2.8 Finding Information

With the internet providing vast amounts of information, the challenge lies in distinguishing between accurate and misleading data. Information seeking has become a central skill in digital literacy, requiring not only effective searches but also the critical ability to assess the trustworthiness of sources. While search engines are the primary tools for locating information, critical thinking is needed to navigate vast online content.

Yazon et al. (2019) suggest that academic staff are skilled at finding information online, yet they struggle with advanced search techniques and the effective use of online libraries. They are comfortable using search engines and social media platforms but lack expertise in adjusting search strategies when needed. The ability to quickly sift through search results and extract relevant information is another area where many academics fall short. This highlights the importance of teaching students not only how to search for information but also how to critically evaluate the data they find.

2.9 Creating Information

Creating information is the ability to generate new knowledge, content, or insights, often through critical thinking, creativity, and synthesis of existing material (Battelle for Kids, 2020). This ability is highly valued in the 21st-century knowledge economy and is recognized as a key skill in education, particularly in the P21 Framework, which classifies information creation as part of "Life and Career Skills."

According to Yazon et al. (2019), faculty members possess good skills in creating information, especially in using digital tools to produce media and collaborate online. They are comfortable with technologies that enable content creation, such as video editing tools, collaborative document platforms, and social media for professional and educational purposes. However, they often lack the practice of engaging with broader audiences, such as contributing to blogs, forums, or maintaining a public digital presence. Faculty members also show some understanding of the different media required for various online interactions but may not consistently engage in these practices. This demonstrates a gap in their ability to engage in diverse forms of digital content creation and interaction.

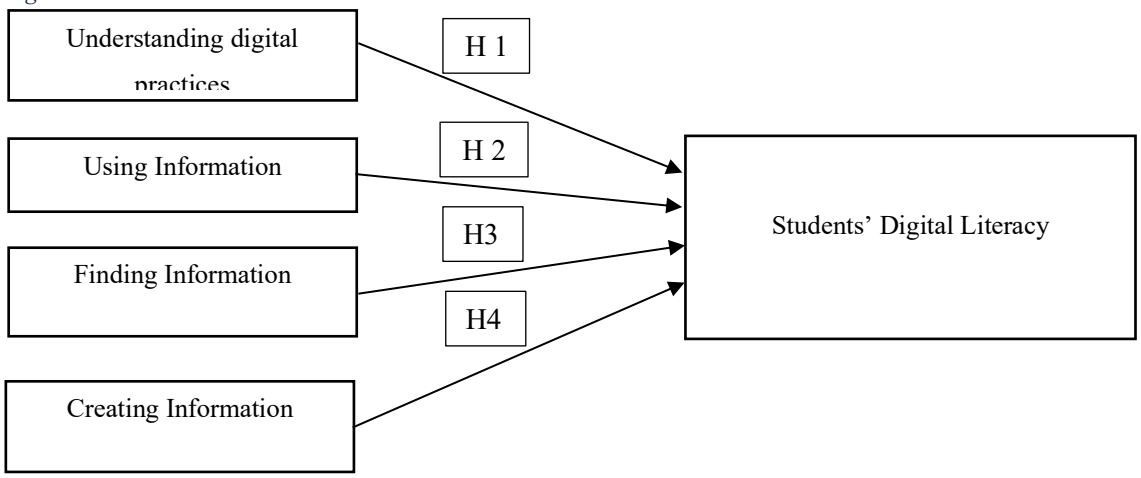
In summary, digital literacy is an evolving set of skills that encompasses finding, using, and creating information. As individuals engage with digital technologies in increasingly complex ways, their competence in these areas will significantly impact their ability to adapt and participate fully in modern society. Educational institutions and research efforts focused on digital practices are critical in preparing individuals for the challenges and opportunities presented by the digital world.

3. Methodology

a. Conceptual Framework

A robust research framework is essential for understanding the study's core concepts. The conceptual framework illustrates the hypothesized relationships between key variables, aiding in the empirical investigation of the role of digital information management in enhancing undergraduate students' digital literacy.

Figure 12 Research Model



Source : Generated by the author

3.2 Hypotheses

H1: Understanding digital practices has a significant impact on Students' Digital Literacy.

H2: Using information has a significant impact on Students' Digital Literacy.

H3: Finding information has a significant impact on Students' Digital Literacy.

H4: Creating information has a significant impact on Students' Digital Literacy.

3.6 Research Design

The research approach employed in this study is deductive, as it is grounded in established theories, namely the Experiential Learning Theory and Learning by Doing theory. The research began with the formulation of these theories, followed by the development of hypotheses which were subsequently

tested. The research philosophy adopted is positivism, as the study seeks to explore objective, quantifiable data through a structured approach. A mono-method research choice was utilized, employing only a quantitative approach for data collection. Data was gathered using a survey questionnaire, which provided a structured means of capturing responses from participants.

To analyze the data, a cross-sectional study design was employed, considering the limited timeframe available for the research. The population for this study includes all private and government university students in Sri Lanka. The sample consisted of 120 undergraduate students selected from three universities. Convenience and snowball sampling techniques were used for participant selection, enabling efficient access to respondents. Primary data was collected and analyzed using the SPSS analysis tool to draw conclusions based on statistical examination of the survey responses.

4. Data Presentation and Analysis

In this study, the participant pool consisted of 57% females and 43% males. Age distribution among the participants revealed that 63% were aged between 21 and 23 years, 28% were between 24 and 26 years, 7% were between 18 and 20 years, and 2% were between 27 and 29 years. The data were collected from both private and government universities in Sri Lanka. Of the total participants, 67% were from private universities, while 33% were from government universities. Regarding academic year distribution, 53% of participants were in their fourth year of study, 19% were in their third year, 15% were in their second year, and 13% were in their first year. These demographic characteristics provide a comprehensive overview of the study's participant sample.

4.1 Reliability of the Study

Internal consistency was measured using Cronbach's Alpha, which ranges from 0 to 1, with higher values indicating greater reliability and dependability of the constructs used.

Table 24 Reliability of Data

Variable	Cronbach's Alpha
Understanding digital practices	0.908
Using Information	0.849
Finding Information	0.895
Creating Information	0.915
Students' Digital Literacy	0.917

Source : Survey Data

The study includes five variables, with Table 4.1 showing the reliability of data for each. All variables have Cronbach's Alpha values greater than 0.8, indicating good internal consistency and reliability. Thus, the questionnaire used to measure these variables is both valid and reliable for the study.

4.2 Correlation Analysis

In this analysis, the strength of the relationship between the independent variables and the dependent variable, Students' Digital Literacy, was measured using correlation analysis.

The independent variable of Understanding Digital Practices exhibits a strong positive relationship with students' digital literacy, with a correlation coefficient of 0.547. This value indicates a substantial and positive association between understanding digital practices and the level of students' digital literacy.

The independent variable of Using Information also demonstrates a strong positive relationship with students' digital literacy, with a correlation coefficient of 0.691. This suggests that higher levels of information usage are strongly associated with increased digital literacy among students. Similarly, the independent variable of Finding Information shows a strong positive relationship with students' digital literacy, with a correlation coefficient of 0.677. This indicates that students who are adept at finding information tend to have higher levels of digital literacy.

The independent variable of Creating Information exhibits a weak positive relationship with students' digital literacy, with a correlation coefficient of 0.451. While this value is still positive, it suggests a weaker association compared to the other independent variables.

These results indicate that understanding digital practices, using information, and finding information have strong positive correlations with students' digital literacy, whereas the relationship between creating information and digital literacy is relatively weaker, though still positive.

4.3 Regression Analysis

4.3.1 ANOVA

Model	**Sig.**
Regression	**0.001**

Source : Survey Data

4.3.2 Coefficient analysis

Variable	**Significance**
Understanding Digital Practices	0.712
Using Information	0.001

Finding Information	0.001
Creating Information	0.802

Source : Survey Data

The results of this study indicate that the independent variable of Understanding Digital Practices does not have a significant impact on the dependent variable, Students' Digital Literacy (P = 0.712, P > 0.05). This finding contrasts with the results of Yazon et al. (2019), who identified a significant impact of understanding digital practices on teachers' digital literacy. Several factors may contribute to this discrepancy. First, the samples in the two studies differ, with Yazon et al. (2019) focusing on teachers, whereas this study examines students. Furthermore, the study by Yazon et al. (2019) was conducted in the Philippines, while this research was carried out in Sri Lanka. Additionally, Yazon et al.'s study was conducted before the COVID-19 pandemic, which has had a significant impact on the digital literacy of individuals, potentially altering the relationship between digital practices and digital literacy in the post-pandemic context.

Conversely, the independent variable Using Information was found to have a significant impact on Students' Digital Literacy (P = 0.001, P < 0.05). This result aligns with the findings of Yazon et al. (2019), who also concluded that the use of information significantly affects digital literacy among students. Both studies were conducted in university settings, and Sri Lanka and the Philippines share similar cultural backgrounds, which may explain the consistency in findings. Additionally, Aramide (2022) also found that the use of information significantly impacts digital literacy, further supporting the results of this study. However, the study by Aramide (2022) involved a larger sample size (193 individuals), while this study utilized a sample of 120 participants. Furthermore, Aramide's study was conducted in Nigeria, which could contribute to the differences observed in other findings.

Similarly, the independent variable Finding Information was found to have a significant impact on Students' Digital Literacy (P = 0.001, P < 0.05). This result is consistent with the findings of both Yazon et al. (2019) and Aramide (2022). As with the variable of Using Information, both the Yazon et al. (2019) study and this research were conducted in university contexts, with Sri Lanka and the Philippines sharing similar cultural traits. Aramide's study, conducted in 2022, also aligns with these findings, likely due to the fact that both studies involved students and were carried out in the post-pandemic era. Therefore, the consistency in findings may be attributed to these similarities across the studies.

Lastly, the independent variable Creating Information does not exhibit a significant impact on Students' Digital Literacy (P = 0.802, P > 0.05). This finding contrasts with the results of Yazon et al. (2019), who found that the creation of information significantly influenced students' digital literacy. This discrepancy may stem from differences in sample and country, as Yazon et al. (2019) focused on

teachers, while this study surveyed students, and the study was conducted in the Philippines prior to the COVID-19 pandemic. The post-pandemic context in Sri Lanka could have altered the relationship between creating information and digital literacy. In contrast, the findings of Aramide (2022) are consistent with the results of this study, suggesting that the creation of information may not have a significant impact on digital literacy in the context of students. Both studies were conducted in recent years (2022 and 2023), and the findings may be similar due to the temporal alignment.

In conclusion, the differences in findings across studies can be attributed to variations in sample characteristics (teachers vs. students), geographical contexts (Philippines vs. Sri Lanka, Nigeria), and the timing of the studies (pre- and post-COVID-19 pandemic). These factors highlight the need to consider contextual variables when interpreting the results of studies on digital literacy.

4.4 Model Summary

This section shows the multiple regression analysis for the variables. This test is also used to evaluate the study's hypothesis.

R	**0.712**
R Square	0.507
Adjusted R Square	0.49

Source : Survey Data

The adjusted R-squared value for this study is 0.490, indicating that 49% of the variation in the dependent variable, Students' Digital Literacy, can be explained by the independent variables. This value provides a measure of the explanatory power of the model, suggesting that the independent variables account for a substantial portion of the variance in digital literacy outcomes. For comparison, Aramide (2022) reported an adjusted R-squared value of 0.33, indicating that only 33% of the variation in digital literacy could be explained by the independent variables in that study.

The higher adjusted R-squared value in this study (0.490) compared to Aramide's (2022) study can be attributed to the difference in the number of independent variables included in the models. Aramide (2022) utilized seven independent variables, while this study focused on four independent variables. Typically, the adjusted R-squared value is expected to be higher when more independent variables are included in the analysis; however, it is important to note that the inclusion of additional variables does not always result in a proportionally higher explanatory power.

While an adjusted R-squared value above 70% is often considered ideal, the value of 49% in this study still represents a reasonable level of explanatory power. Digital literacy is a multifaceted and complex concept, encompassing a wide range of skills and competencies. Consequently, it is challenging to

capture the full extent of digital literacy using only four independent variables. The findings are consistent with the nature of the subject, which is broad and may require a more comprehensive set of variables to fully explain the variance in digital literacy outcomes. Therefore, the adjusted R-squared values of both this study and Aramide's (2022) study are appropriate given the scope of their respective models and the complexity of digital literacy as a construct.

4.5 Model Summary

Table 25 Hypotheses Testing

Hypotheses	Correlation coefficient		Regression coefficient		
	Statistic	P value	Statistic	P value	
H1	0.547	0.001	0.159	0.712	Reject
H2	0.691	0.001	0.206	0.001	Accept
H3	0.677	0.001	0.300	0.001	Accept
H4	0.451	0.001	0.021	0.802	Reject

Source : Survey Data

4.6. Results and Discussion

Correlation and multiple regression analyses were used to achieve the study's objectives. The reliability test results indicated that all variables were reliable, with Cronbach's alpha values ranging from 0.85 to 0.92, demonstrating a very good level of reliability.

H1: There is a significant impact of understanding digital practices on Students' Digital Literacy.

According to the result of this study, it says in independent variable of Understanding digital practices has 0.712 of P value, which means that the H0 do not rejected. It indicates that the independent variable of Understanding digital practices do have not significant impact on dependent variable of Students' Digital Literacy. Further, the correlation analysis suggest that the independent variable of understanding digital practices have a moderate positive relationship with the students' digital literacy. ($0.5 < 0.547 < 1$)

Yazon et al., (2019) have found that the understanding digital practices have a significant impact on teachers' Digital literacy. So, my findings and the study were conducted in 2019 findings are different. It may be that the two were different because the sample and country was different. The study conducted in 2019, they have taken teachers as a sample. But in my study in get students as my sample.

And also, this study done in Philippine but my study based on the Sri Lankan context. Furthermore, the study conducted in Philippine done the research in 2019, that mean before the covid-19 pandemic. The covid-19 pandemic most affect to the improvement of people digital literacy. So, findings may change due to these reasons.

H2: There is a significant impact of using Information on Students' Digital Literacy

According to the result of this study, it says in independent variable of Using Information has 0.001 of P value which means that the H0 rejected. It indicates that the independent variable of Using Information has significant impact on dependent variable of Students' Digital Literacy.

Yazon et al., (2019)have found that the using information have a significant impact on students' Digital literacy. So, my findings and the study were conducted in 2019 findings are same. It may be that the two findings were same because both the studies data were gathered from universities and both the countries where Sri Lanka and Philippine have quite similar cultural background.

Aramide, (2022)have found that the using information have a significant impact on Digital literacy. So, my findings and the study were conducted in 2022 findings are different. It may be that the two were different because the sample size and country was different. The study conducted in 2022, they have taken 193 individuals as a sample. But in my study, I get 120 individuals as my sample. And also, this study done in Nigeria but my study based on the Sri Lankan context. Furthermore, the study conducted in 2022, they have taken school student as a sample. But in my study, I get university students as mt sample.

Further, the correlation analysis suggest that independent variable of using information have a strong positive relationship with the students' digital literacy. ($0.5 < 0.691 < 1$)

H3: There is a significant impact of finding Information on Students' Digital Literacy

According to the result of this study, it says in independent variable of finding Information has 0.01 of P value, which means that the H0 rejected. It indicates that the independent variable of Finding Information has significant impact on dependent variable of Students' Digital Literacy. Further the correlation analysis suggest that the independent variable of finding information have a strong positive relationship with the students' digital literacy. ($0.5 < 0.677 < 1$)

Yazon et al. (2019) found that the ability to effectively locate and utilize information significantly impacts students' digital literacy. Similarly, the findings of my study, conducted in 2019, align with those of Yazon et al. This alignment may be attributed to the fact that both studies gathered data from university students in countries with comparable cultural contexts, namely, Sri Lanka and the Philippines.

Additionally, Aramide (2022) also identified that the ability to find information has a significant influence on students' digital literacy. My findings, derived from a study conducted in 2023, correspond

with Aramide's results. The similarity in findings could be explained by the fact that both studies were conducted in recent years and involved data collection from student populations. The temporal proximity of these studies may have further contributed to the consistency of results.

H4: There is a significant impact of creating Information on Students' Digital Literacy

According to the results of this study, the independent variable *Creating Information* has a p-value of 0.802, indicating that the null hypothesis (H_0) cannot be rejected. This implies that *Creating Information* does not have a significant impact on the dependent variable, *Students' Digital Literacy*. Additionally, the correlation analysis reveals that the independent variable *Creating Information* has a weak positive relationship with *Students' Digital Literacy*, with a correlation coefficient in the range of 0.451 ($0 < 0.451 < 0.49$).

Yazon et al. (2019) found that *Creating Information* significantly impacts students' digital literacy. However, the findings of my study differ. This discrepancy could be attributed to differences in the sample and context of the two studies. The study conducted in 2019 by Yazon et al. used teachers as the sample population, whereas this study focused on students. Furthermore, their research was conducted in the Philippines, while mine is based on the Sri Lankan context. It is also important to note that their study was conducted prior to the COVID-19 pandemic, which significantly influenced the development of digital literacy worldwide. These differences in sample, context, and time period may account for the variation in findings.

In contrast, Aramide (2022) found that *Creating Information* has a significant impact on students' digital literacy. The findings of the study align with those of Aramide (2022). This consistency may be due to both studies gathering data from student populations. Moreover, Aramide's study was conducted in 2022, and my study in 2023, suggesting that the temporal proximity and similar target populations may have contributed to the alignment of the findings.

5. Conclusion

This study aims to examine the relationship between the independent variables—Understanding Digital Practices, Using Information, Finding Information, and Creating Information—and the dependent variable of students' digital literacy, while also identifying measures to enhance digital literacy among undergraduates in Sri Lanka. The findings from the ANOVA analysis indicate that the model, incorporating all independent variables, is significant. Correlation analysis revealed that Understanding Digital Practices, Using Information, and Finding Information exhibit a strong positive relationship with students' digital literacy, while Creating Information has a weaker positive relationship.

Coefficient analysis further showed that Understanding Digital Practices and Creating Information do not significantly impact students' digital literacy.

Conversely, Using Information and Finding Information were found to have a significant impact on digital literacy. These results suggest that practical experiences related to using and finding information positively affect students' digital literacy, while understanding digital practices and creating information have a lesser impact. The majority of respondents expressed a desire to improve their digital fluency, recognizing its importance for enhancing learning. In response, universities could implement educational programs, workshops, and critical thinking training to foster digital literacy.

Based on the findings of this study, several recommendations can be made to enhance the digital literacy of undergraduates in Sri Lanka. Universities should consider integrating digital literacy training into the curriculum, ensuring that students gain proficiency in critical areas such as using information, finding information, and creating information. This could involve incorporating digital tools and resources into various academic courses and practical assignments, which will allow students to gain hands-on experience in working with technology.

Since the study found that the experience of using information and finding information has a significant positive impact on students' digital literacy, universities should offer specialized workshops that focus on enhancing students' ability to effectively search for and evaluate online information. These workshops could cover essential skills such as using search engines, navigating academic databases, and utilizing online research methods. In addition, universities should encourage students to engage more deeply with digital practices by offering awareness campaigns or training programs that highlight the importance of understanding digital content and engaging with it in various formats such as blogging, video production, or participating in online communities.

It is also essential for universities to provide students with access to modern digital resources, such as software tools, e-libraries, and other platforms that support learning and the development of digital literacy. Furthermore, teaching students how to critically evaluate online information should be a priority, especially in the age of misinformation. Incorporating critical thinking modules that help students assess the reliability and credibility of sources will empower them to navigate the digital landscape with greater confidence.

Additionally, universities should foster a culture of continuous learning by offering online courses, certifications, and exposure to emerging digital trends. This is particularly important as students have expressed a willingness to further develop their digital skills. Finally, post-COVID-19, universities must recognize the accelerated shift to digital learning and ensure that all students have equal access to opportunities for improving their digital fluency. By implementing these strategies, universities in Sri Lanka can play a significant role in enhancing students' digital literacy and equipping them with the necessary skills to thrive in an increasingly digital world.

6. Limitations and Suggestions for Future Research

The study has several limitations, including a small sample size and a focus on only three universities in Sri Lanka. Additionally, the use of a self-reported online survey may introduce bias. Future research could address these limitations by expanding the sample size, including more universities, and employing alternative data collection methods for broader insights..

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