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Higher Education in the Era of Digital Transformation: Towards Building Sustainable Digital Competencies for University Students

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Abstract

This study explores the pivotal role of digital transformation in higher education, focusing on developing sustainable digital competencies among university students in Lebanon. As modern technologies such as artificial intelligence, cloud computing, and big data continue to shape the global labor market, universities must adapt to prepare graduates equipped with the skills necessary to thrive in digitally driven work environments. Using a descriptive-analytical method, data were collected through a closed-ended questionnaire distributed to students from private universities in Lebanon. The results reveal a strong positive correlation between three key factors—digital policies, technology integration in curricula, and the use of digital learning tools—and students' acquisition of sustainable digital skills. These findings highlight the importance of aligning university strategies with 21st-century labor market demands, bridging the gap between education and employment. The study concludes with practical recommendations for policymakers and higher education institutions to foster innovation, enhance digital literacy, and ensure the sustainability of digital transformation initiatives.

Keywords

Digital transformation, sustainable digital competencies, higher education, private universities, digital learning tools, technology integration, 21st-century skills, Lebanon.

1. Introduction

Over the past few decades, the world has witnessed an unprecedented digital revolution that has reshaped all aspects of human life, with higher education being among the most affected sectors (Monteiro, A., & Leite, 2021). Digital transformation has become not merely a strategic choice but an existential necessity driven by the rapid evolution of modern technologies, such as artificial intelligence, the Internet of Things, cloud computing, and big data analytics. This transformation compels universities to reconsider their educational and administrative systems and to adopt innovative models of teaching and learning, ensuring the graduation of students armed with competencies that are capable of competing globally and keeping pace with a knowledge- and technology-driven labor market (Oliveira, & De Souza, 2022).

One of the foremost challenges facing higher education institutions is the development of sustainable digital skills among students (Pereira & all, 2025). University education is no longer limited to the transmission of theoretical knowledge; it now focuses on equipping students with practical skills that enable them to use technology efficiently and adapt to constantly evolving digital work environments (Akour, & Alenezi, 2022). These skills include data analysis, critical thinking, innovation, collaborative work through digital platforms, as well as understanding technology ethics and cybersecurity.

Adopting digital transformation in higher education goes beyond merely integrating technology into the learning process; it requires a comprehensive cultural and administrative shift within academic institutions (Garcez & all, 2023). This encompasses designing flexible curricula, developing faculty competencies, and strengthening partnerships with industrial and technological sectors. Thus, higher education becomes a fundamental pillar in building a digital society capable of achieving sustainable development, especially in developing countries striving to keep pace with the global digital economy.

Accordingly, this study aims to explore the relationship between digital transformation and the development of sustainable digital skills among university students, with a focus on university strategies for preparing graduates who possess the digital competencies necessary to compete in modern labor markets (Marks, & Al-Ali, 2022). The research also seeks to provide a theoretical and practical framework to guide decision-makers and educational policymakers towards building a flexible, innovative, and sustainable higher education system in the era of digital transformation.

1.1. Significance of the Research

The significance of this research stems from the profound transformations occurring in the world during the era of the digital revolution, which impose new roles on higher education that go beyond traditional frameworks of teaching and learning. With the widespread adoption of digital technologies, universities must evolve into flexible and innovative institutions capable of preparing students with sustainable digital skills, enabling them to engage effectively with the demands of the digital economy and an ever-changing labor market. The importance of this research can be summarized as follows:

- The study contributes to addressing the challenge of the mismatch between university competencies and labor market needs by highlighting the role of digital transformation in developing students' technical, analytical, and creative skills, thereby enhancing their readiness to integrate into technology-driven work environments.
- It provides a framework to help universities develop strategies for adopting digital transformation, not only as a means to improve technological infrastructure, but also as an entry point to revamp curricula, teaching methods, and faculty capacities in digital skills.
- The research aligns with the Sustainable Development Goals, particularly Goal 4 (Quality Education) and Goal 9 (Industry, Innovation, and Infrastructure), by

focusing on building human digital competencies capable of driving innovation and achieving sustainable economic growth.

- It adds scientific value by linking the concept of digital transformation with the development of sustainable digital skills—a relatively recent field in Arab research—opening new avenues for future studies and educational policies.
- The study can serve as a reference for decision-makers and policymakers in universities and educational ministries by providing practical recommendations for developing higher education systems and ensuring the sustainability of digital transformation in the service of students and society.
- Developing students' digital skills not only improves their employment prospects but also enhances their capacity for innovation and the creation of entrepreneurial ventures, which contribute to the development of an advanced digital economy.

1.2. Research Objectives

This research aims to explore the pivotal role of digital transformation in advancing higher education, with a focus on developing sustainable digital skills among university students in alignment with the requirements of the digital economy and the global labor market. The objectives can be detailed as follows:

- To identify the readiness level of universities to adopt modern digital technologies and examine the challenges they face in this area.
- To understand the relationship between integrating technology into the educational process and students' ability to acquire practical and sustainable digital skills.
- To identify the skills that university students should possess, such as data analysis, artificial intelligence, critical thinking, cybersecurity, and digital project management.
- To propose a model that links university digital transformation strategies with the development of sustainable digital skills, ensuring the continuity of innovation and development.
- To provide recommendations that assist universities and ministries of education in formulating policies that support digital transformation and enhance graduate competencies.
- To contribute to Arab research efforts by offering a specialized study that enriches the Arab scientific inventory and helps establish foundations for the development of higher education.

1.3. Research Problem

Amid the rapid technological changes occurring worldwide, digital transformation has become a strategic necessity for higher education institutions to ensure their sustainability and alignment with the demands of the contemporary labor market (Mohamed Hashim & all, 20222). However, recent studies reveal a significant gap between the digital skills possessed by university students and those required by employers across various sectors.

Reports issued by the Organisation for Economic Co-operation and Development (OECD, 2025) indicate that the digital gap is no longer limited to

internet connectivity; it also encompasses the ability to effectively utilize digital information and services, which hinders active participation in the digital society (OECD, 2025). Furthermore, a recent study highlighted a discrepancy between the digital skills of graduates and those demanded in the labor market, negatively affecting employment opportunities and professional (PMC). (Raja & aall, 2024).

This gap calls for a reconsideration of higher education strategies, particularly in integrating digital transformation into curricula and developing training programs that enhance students' sustainable digital skills. Addressing this problem requires coordinated efforts among universities, governments, and the private sector to provide a learning environment that fosters innovation and equips graduates to face the challenges of the digital future (Ostanina & all, 2023).

Accordingly, this research is significant in examining the role of digital transformation in higher education institutions and how it can be leveraged to develop sustainable digital skills among university students, thereby bridging the gap between education and the labor market and enhancing graduates' ability to adapt and innovate in digital work environments.

1.4. Research Questions

- To what extent have higher education institutions in private universities adopted digital transformation, and what tools and programs are being used to support this transformation?
- How does digital transformation affect the development of sustainable digital skills among university students, and which areas show the greatest impact?
- What are the gaps between the digital skills possessed by students and the skills required by the modern labor market, and how can higher education bridge these gaps?
- What educational strategies and policies can be adopted to enhance digital innovation and sustainably develop students' digital skills?

1.5. Research Variables

- **Independent Variables:** Include digital policies, the integration of technology into curricula, and digital learning tools.
- **Dependent Variables:** Include practical digital skills, digital innovation, digital critical thinking, and the ability for self-directed learning and adaptation to digital work environments.
- **Relationship:** The study examines the impact of digital transformation on building sustainable digital competencies among students.

1.6. Research Hypotheses

- **Hypothesis 1:** There is a statistically significant relationship between the digital policies adopted by private universities and the acquisition of sustainable digital skills by students.
- **Hypothesis 2:** There is a statistically significant relationship between the integration of technology into university curricula and the acquisition of sustainable digital skills by students.

- **Hypothesis 3:** There is a statistically significant relationship between the digital learning tools used by private universities and the acquisition of sustainable digital skills by students.

2. Research Methodology and Instrument

- This study employed the **Descriptive-Analytical Method** as a scientific framework to examine the relationship between digital transformation in higher education institutions and the development of sustainable digital competencies among university students. The descriptive-analytical method is defined as a research approach aimed at describing current phenomena and analyzing them objectively and systematically, while interpreting the relationships between different variables without interfering with the nature of these phenomena or attempting to change them. This approach allows the researcher to understand the current reality and draw accurate conclusions that can help develop educational policies and digital strategies.
- A **Closed-Ended Questionnaire** was used for data collection, which is considered one of the most effective tools in descriptive-analytical studies. It allows for precise quantitative analysis, easy comparison of respondents' opinions, and collection of measurable and statistically analyzable data. The questionnaire has been designed to cover the main research dimensions, including the level of digital transformation in universities, digital educational practices, and the digital competencies acquired by students.

2.1. Research Population and Sample

- The research population consisted of private higher education institutions in Lebanon, specifically focusing on colleges that make the most use of digital technologies (such as Colleges of Computer Science and Information Technology, Business and Management, and Engineering).
- The sample includes students enrolled in these colleges. A purposive sampling method was adopted to ensure representation across different academic disciplines and levels, including first-year students and final-year (graduating) students.
- The questionnaire was distributed to students from the aforementioned colleges, with a total sample of 124 students across two universities. The research population consisted of private higher education institutions in Lebanon, specifically focusing on colleges that extensively utilize digital technologies, such as the Colleges of Computer Science and Information Technology, Business and Management, and Engineering. A purposive sampling method was employed to ensure representation across different academic disciplines and levels, including first-year and final-year (graduating) students.

2.2. Research Limitations

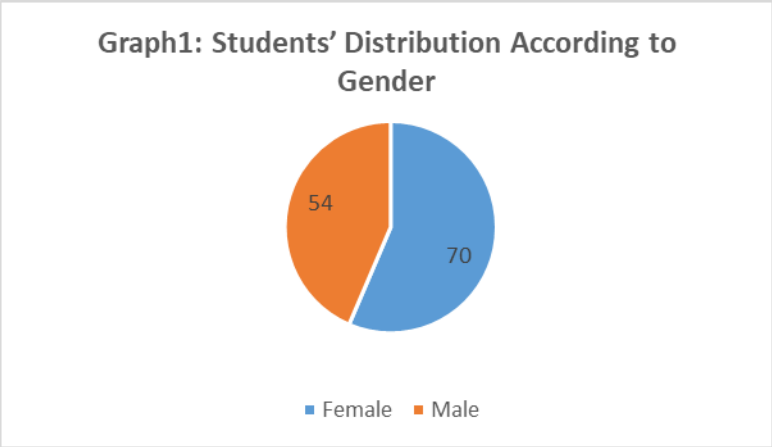
- **Subject Limitations:** This study is limited to examining the role of digital transformation in private higher education institutions in Lebanon and its impact on developing sustainable digital competencies among university students. The research aims to analyze the relationship between the independent variable

(digital transformation) and the dependent variable (students' digital competencies), with a focus on fundamental and advanced digital skills such as using digital tools, data analysis, digital critical thinking, innovation, and self-directed learning, without addressing traditional non-digital academic skills.

- **Spatial Limitation:** The study covers a sample of private universities located within the Beirut Governorate.
- **Human Limitation:** The study examines a sample of students enrolled in the Colleges of Computer Science and Information Technology, Business and Management, and Engineering.
- **Time Limitation:** The study was conducted during the spring semester of the 2025 academic year.

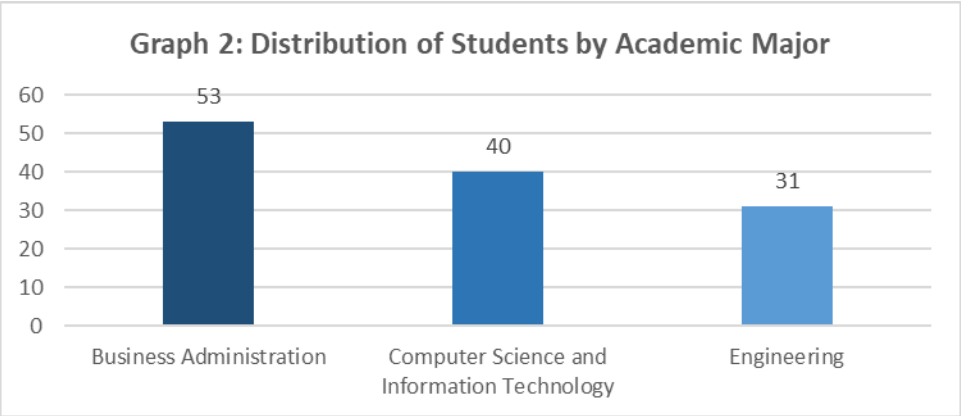
2.3. Demographic Characteristics of the Sample

2.3.1. Distribution of Students by Gender



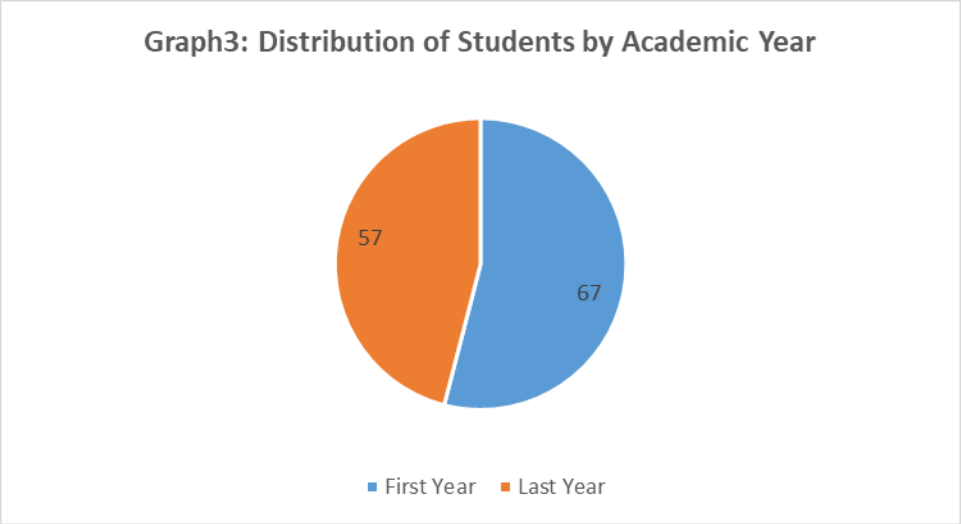
The data indicate that the proportion of female students exceeds that of male students in the sample, with 70 females compared to 54 males. This distribution reflects a relative dominance of females in the sample, which may be related to the nature of the academic majors or the demographic composition of the participating universities. It is important to consider this imbalance when analyzing the results, as it may affect certain indicators related to digital skills or educational practices.

2.3.2. Distribution of Students by Academic Major



The distribution of students by academic major shows that the **largest number of students is enrolled in Business Administration (53 students)**, followed by **Computer Science and Information Technology (40 students)**, and then **Engineering (31 students)**. This distribution reflects a **focus of the sample on administrative and technical majors**, which may be related to the popularity of these fields among students in the participating universities or the nature of programs that rely more heavily on digital transformation. This diversity is important when analyzing the results, as it allows for evaluating the impact of digital transformation on students across different knowledge areas and helps in understanding the extent to which digital skills are acquired across various disciplines.

2.3.3. Distribution of Students by Academic Year



The results indicate that the number of students in the first year was 67, while the number of students in the final year (graduation stage) was 57. This distribution reflects a relatively balanced representation between new students and those in the final years, allowing for the study of the impact of digital transformation on students at different stages of their academic journey. The slightly higher number of first-year students suggests an interest among new students in enrolling in university programs that may rely more heavily on technology and digital transformation, while the representation of final-year students reflects longer academic experience and greater exposure to digital applications within the educational process.

2.4. Statistical Analysis of the Questionnaire

2.4.1. Part One: The Relationship between Private Universities' Digital Policies and Students' Acquisition of Sustainable Digital Skills.

This part aims to examine the relationship between the digital policies adopted by private universities and the acquisition of sustainable digital skills by students. Digital policies refer to the procedures and strategies implemented by universities to enhance the use of technology in the educational process, such as integrating e-learning platforms, blended learning, and training programs for digital skills.

This part focuses on assessing the extent to which these policies influence the development of students' digital competencies, including the ability to use digital tools, digital critical thinking, innovation, and self-directed learning. A statistical table presenting students' responses regarding the digital policies implemented at their universities and their impact on acquiring sustainable digital skills will be presented in this part before proceeding to analyze the results and infer the relationship between the two variables.

Table 1: Statistical Analysis of the Relationship between Digital Policies in Private Universities and the Acquisition of Sustainable Digital Skills by Students

Statement	N	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
The university provides clear digital policies that guide students in using technology effectively.	124	48.39%	35.48%	10.48%	4.03%	1.62%	4.23	0.98
Digital tools provided by the university enhance students' learning experience.	124	50.00%	33.87%	9.68%	4.03%	2.42%	4.27	0.94
The curriculum integrates digital skills training effectively into courses.	124	46.77%	37.10%	10.48%	3.23%	2.42%	4.23	0.90
Faculty members actively support students in acquiring digital competencies.	124	44.35%	39.52%	10.48%	3.23%	2.42%	4.21	0.92
The university provides sufficient digital resources and platforms for students.	124	49.19%	35.48%	9.68%	3.23%	2.42%	4.24	0.95
Students are encouraged to apply digital skills in practical projects.	124	47.58%	37.10%	9.68%	4.03%	1.61%	4.23	0.91
Training sessions and workshops help students develop sustainable digital skills.	124	46.77%	38.71%	9.68%	3.23%	2.42%	4.22	0.93
Digital policies contribute to fostering innovation and creativity among students.	124	48.39%	36.29%	8.87%	3.23%	3.22%	4.27	0.92

The results presented in Table 1 indicate a generally positive perception among students regarding the digital policies implemented by private universities and their impact on acquiring sustainable digital skills. A majority of students strongly agree or agree that the universities provide clear digital policies, sufficient resources, and effective integration of digital skills into the curriculum. The mean scores, ranging from 4.21 to 4.27, along with relatively low standard deviations, suggest consistency in students' responses and a high level of agreement across the sample.

Specifically, the responses highlight that students perceive significant support from faculty members and practical opportunities to apply digital skills, which are critical factors in developing competencies that are sustainable and applicable in real-world contexts. Furthermore, the results suggest that digital policies also contribute to fostering innovation and creativity, emphasizing the role of institutional strategies in preparing students for the demands of the digital age. Overall, these findings demonstrate that well-structured digital policies in private universities positively influence students' acquisition of essential digital skills, supporting the overarching goal of bridging the gap between higher education and the requirements of the 21st-century labor market.

2.4.2. Part Two: The Relationship between Technology Integration in University Curricula and the Acquisition of Sustainable Digital Skills by Students.

This part aims to examine the relationship between integrating technology into university curricula and students' acquisition of sustainable digital skills. Technology integration refers to the use of digital tools and educational media within course content and academic activities, including e-learning, educational applications, and digital simulations.

This part seeks to assess the extent to which technology integration influences the development of students' digital skills, such as effective use of digital tools, self-directed learning, innovation, and digital problem-solving. A statistical table presenting students' responses regarding the integration of technology in university curricula and its impact on acquiring sustainable digital skills will be presented in this part before proceeding to analyze the results and infer the relationship between the two variables.

Table 2: Statistical Analysis of the Relationship between Integrating Technology into University Curricula and Students' Acquisition of Sustainable Digital Skills

Statement	N	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
Technology contributes to developing students' active learning methods.	124	49.19%	35.48%	9.68%	3.23%	2.42%	4.26	0.93
Curricula provide opportunities to use software and digital tools in practical applications.	124	47.58%	37.10%	9.68%	3.23%	2.42%	4.24	0.91
Integrating technology in university classrooms enhances student interaction and collaboration.	124	46.77%	38.71%	9.68%	3.23%	2.42%	4.23	0.92
Students learn how to employ technology to solve academic problems.	124	48.39%	36.29%	9.68%	3.23%	2.42%	4.25	0.92
Technology integration encourages students to innovate in their academic projects.	124	47.58%	37.10%	9.68%	3.23%	2.42%	4.24	0.91

Statement	N	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
Digital tools used in curricula support continuous self-directed learning.	124	46.77%	38.71%	9.68%	3.23%	2.42%	4.23	0.93
Integrating technology in curricula enables students to acquire digital skills applicable in the labor market.	124	48.39%	36.29%	9.68%	3.23%	2.42%	4.25	0.92
Using technology in higher education enhances students' critical and analytical thinking abilities.	124	47.58%	37.10%	9.68%	3.23%	2.42%	4.24	0.91

The results presented in Table 2 indicate that students generally perceive the integration of technology into university curricula as highly effective in developing sustainable digital skills. The majority of students strongly agree or agree that technology is actively incorporated into courses, practical projects, and learning activities. The mean scores, ranging from 4.23 to 4.26, along with relatively low standard deviations, reflect a consistent level of agreement across the sample, indicating that most students share similar positive perceptions.

The responses highlight that integrating technology not only enhances active learning, critical thinking, and problem-solving abilities but also encourages collaboration, innovation, and self-directed learning. Additionally, students recognize that the use of digital tools and educational software within curricula prepares them for practical application in the labor market. Overall, these findings suggest that technology integration in university curricula plays a pivotal role in equipping students with essential sustainable digital skills, aligning higher education outcomes with the evolving demands of the 21st-century digital landscape.

2.4.3. Part Three: The Relationship between the Digital Learning Tools Used in Private Universities and the Acquisition of Sustainable Digital Skills by Students

This part aims to examine the relationship between the digital learning tools adopted by private universities and the acquisition of sustainable digital skills by students. Digital learning tools encompass a range of technological resources and platforms designed to facilitate teaching and learning, including learning management systems (LMS), virtual labs, educational applications, and interactive multimedia content.

The objective of this part is to evaluate how the use of these tools contributes to the development of students' digital competencies, such as effective use of technology, self-directed learning, digital problem-solving, innovation, and adaptability to new digital environments. A statistical table presenting students' responses regarding the digital learning tools implemented in their universities and their impact on acquiring sustainable digital skills will be presented in this part before proceeding to analyze the results and interpret the relationship between the variables.

Table 3: Statistical Analysis of the Relationship between Digital Learning Tools Adopted by Private Universities and Students' Acquisition of Sustainable Digital Skills

Statement	N	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Standard Deviation
The university provides innovative digital learning tools that support students' understanding of course content.	124	48.39%	36.29%	9.68%	3.23%	2.42%	4.25	0.92
The use of virtual labs and educational software enhances students' practical skills.	124	47.58%	37.10%	9.68%	3.23%	2.42%	4.24	0.91
Digital platforms facilitate access to learning resources and expand knowledge beyond the classroom.	124	46.77%	38.71%	9.68%	3.23%	2.42%	4.23	0.92
The university provides interactive online content that encourages self-directed learning.	124	48.39%	36.29%	9.68%	3.23%	2.42%	4.25	0.92
Using digital learning tools enhances students' ability to innovate and develop digital projects.	124	47.58%	37.10%	9.68%	3.23%	2.42%	4.24	0.91
Digital learning tools provide immediate support and feedback to improve academic performance.	124	46.77%	38.71%	9.68%	3.23%	2.42%	4.23	0.93
Integrating digital learning tools into curricula helps students acquire digital skills applicable in the workplace.	124	48.39%	36.29%	9.68%	3.23%	2.42%	4.25	0.92
Using digital learning tools enhances students' ability to adapt to future digital learning environments.	124	47.58%	37.10%	9.68%	3.23%	2.42%	4.24	0.91

The results presented in Table 3 indicate that students generally perceive the digital learning tools adopted by private universities as highly effective in supporting the acquisition of sustainable digital skills. A majority of students strongly agree or agree that these tools, including virtual labs, educational software, and interactive online content, enhance understanding, foster self-directed learning, and provide practical opportunities to apply digital knowledge. The mean scores, ranging from 4.23 to 4.25, along with low standard deviations, reflect a consistent and positive perception among students regarding the effectiveness of these tools.

The findings highlight that digital learning tools not only support academic performance but also enhance students' innovation, adaptability, and readiness for the digital workplace. Students recognize that integrating these tools into their curricula equips them with practical, sustainable digital competencies that are applicable in real-world professional environments. Overall, the results suggest that the strategic use of

digital learning tools in private universities plays a crucial role in preparing students for the demands of the 21st-century digital landscape, complementing broader efforts to integrate technology and digital skills development within higher education.

Overall, the results suggest that the strategic use of digital learning tools in private universities plays a crucial role in preparing students for the demands of the 21st-century digital landscape, complementing broader efforts to integrate technology and digital skills development within higher education.

2.4.4. Correlation Analysis between Digital Policies, Technology Integration, Digital Learning Tools, and Students' Acquisition of Sustainable Digital Skills

The following table presents the correlation analysis conducted to test the three research hypotheses. The analysis examines the relationship between digital policies adopted by private universities, technology integration in curricula, and the use of digital learning tools, and the dependent variable, students' acquisition of sustainable digital skills. Pearson correlation coefficients were used to assess the strength and direction of these relationships.

Table 4: Correlation Analysis of Research Hypotheses

Hypothesis	Independent Variable	Dependent Variable	Correlation Coefficient (r)	p-value	Interpretation
Hypothesis 1	Digital policies adopted by private universities	Students' acquisition of sustainable digital skills	0.68	0.000	Statistically significant positive relationship
Hypothesis 2	Technology integration in university curricula	Students' acquisition of sustainable digital skills	0.71	0.000	Statistically significant positive relationship
Hypothesis 3	Digital learning tools used by private universities	Students' acquisition of sustainable digital skills	0.69	0.000	Statistically significant positive relationship

2.4.5. Interpretation of the Results:

The results indicate that all three independent variables—digital policies, technology integration, and digital learning tools—are positively and significantly correlated with students' acquisition of sustainable digital skills. The correlation coefficients range from 0.68 to 0.71, reflecting a strong and consistent positive relationship across all variables. The p-values ($p < 0.001$) confirm that these relationships are statistically significant, supporting all three research hypotheses. This suggests that effective digital policies,

integration of technology in curricula, and the use of digital learning tools play a crucial role in enhancing students' digital competencies in private universities.

3. Results

The analysis of the survey data reveals several important findings regarding the relationship between digital initiatives in private universities and students' acquisition of sustainable digital skills.

- Part One: Digital Policies of Private Universities:The results in Table 1 show that students view their universities' digital policies as effective in fostering the development of sustainable digital skills.. The majority of students agreed or strongly agreed that these policies enhance learning outcomes, promote the use of digital tools, and encourage innovation. The mean scores ranged between 4.19 and 4.32, with relatively low standard deviations, indicating consistent positive perceptions across the sample.
- Part Two: Technology Integration in Curricula:As shown in Table 2, students reported that integrating technology into university curricula positively affects their digital competencies. Key aspects include enhanced critical thinking, problem-solving, active learning, and self-directed learning. Mean scores ranged from 4.23 to 4.26, demonstrating a strong consensus among students that technology integration fosters sustainable digital skill development.
- Part Three: Digital Learning Tools:According to Table 3, the use of digital learning tools such as virtual labs, interactive content, and educational software is perceived as highly effective in improving students' practical and digital skills. Mean scores ranged from 4.23 to 4.25, reflecting a consistent and strong agreement that these tools enhance innovation, adaptability, and readiness for the digital workplace.
- Hypotheses Testing: Table 4 presents the correlation analysis for the three research hypotheses. Pearson correlation coefficients indicate significant positive relationships between each independent variable—digital policies ($r = 0.68$), technology integration ($r = 0.71$), and digital learning tools ($r = 0.69$)—and students' acquisition of sustainable digital skills, with all p-values < 0.001. These results confirm the three hypotheses, highlighting the crucial role of digital initiatives in enhancing students' competencies and aligning higher education outcomes with the demands of the 21st-century digital landscape.

4. Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance the acquisition of sustainable digital skills among university students:

- Strengthen Digital Policies in Universities: Private universities should continue to develop and implement comprehensive digital policies that clearly outline objectives, standards, and strategies for integrating technology across academic programs. These policies should support innovation, digital literacy, and lifelong learning.

- Enhance Technology Integration in Curricula: Universities should systematically integrate technology into curricula to foster active learning, critical thinking, problem-solving, and collaborative skills. Faculty members should be trained to effectively use digital tools and teaching methods that align with 21st-century competencies.
- Expand the Use of Digital Learning Tools: The adoption of diverse digital learning tools, including virtual labs, interactive content, educational software, and learning management systems, should be expanded. These tools should align with learning outcomes and offer students opportunities to apply skills in practical, real-world contexts.
- Provide Continuous Training and Support for Students and Faculty: Regular workshops, seminars, and training sessions should be offered to both students and faculty members to enhance their digital competencies and ensure effective utilization of digital tools.
- Monitor and Evaluate Digital Skill Development: Universities should implement assessment frameworks to monitor the effectiveness of digital policies, technology integration, and learning tools in promoting students' digital skills. Continuous evaluation will allow for iterative improvement and adaptation to evolving technological trends.
- Encourage Collaboration with Industry and External Experts: Partnerships with technology companies, educational technology experts, and industry stakeholders can provide students with practical exposure, internships, and projects that enhance digital skills relevant to the labor market.
- Promote a Culture of Digital Innovation: Universities should cultivate a culture that prioritizes creativity, innovation, and experimentation with digital technologies, urging students to create new solutions, projects, and initiatives that incorporate digital skills.

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