

DIGITAL LITERACY AND THE FUTURE WORKFORCE: EXPLORING CAREER ENGAGEMENT, EMPLOYABILITY, AND ACQUISITION CHALLENGES AMONG LAGOS STATE TECHNICAL COLLEGE STUDENTS

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Abstract

The study investigated Digital Literacy and the Future Workforce: Exploring Career Engagement, Employability, and Acquisition Challenges among Lagos State Technical College Students. A descriptive survey design was adopted, with a population of 367 respondents comprising 250 students and 75 teachers from Lagos State government technical colleges, 30 self-employed graduates, 10 employers of labour, and 2 lecturers from the University of Lagos. Stratified random sampling was employed for selection. Data were collected using a self-structured questionnaire and analyzed with mean and standard deviation for research questions. Findings revealed that digital literacy skills had a positive and significant impact on career engagement and employability among technical college students. However, the level of digital literacy training provided in the colleges was found to be inadequate. Students lacked sufficient exposure to 21st-century competencies such as online information evaluation, data privacy, collaboration, entrepreneurship, and professional digital presence. The study further identified challenges hindering the acquisition of digital literacy, including inadequate digital facilities, insufficient teacher support, socio-economic barriers to access, and the limited integration of digital literacy into the core curriculum. The study concluded that digital literacy is a vital determinant of employability and career readiness for technical college students. Without robust digital competencies, graduates risk being underprepared for the demands of the modern labor market and Nigeria's growing digital economy. It was recommended that digital literacy be fully integrated across technical college curricula, supported by investments in digital infrastructure and continuous teacher training. In addition, equitable access to digital resources for students from disadvantaged backgrounds, the adoption of innovative teaching practices, and stronger industry-school partnerships were advised to bridge the gap between training and workplace expectations.

Keywords: Digital literacy; Career engagement; Employability; Acquisition challenges; Technical college students

Introduction

Across the globe, digitalization is reshaping how people prepare for, find, and grow in work. For students in Lagos State technical colleges—the pipeline into Nigeria's skilled trades and technology-enabled occupations—digital literacy is no longer a “nice-to-have” but a baseline capability for career engagement and employability in a rapidly evolving labor market. International frameworks now define digital literacy expansively to include the ability to access, manage, understand, integrate,

communicate, evaluate, and create information safely and appropriately for employment, decent jobs, and entrepreneurship—spanning competencies such as information handling, content creation, safety, and problem solving (UNESCO Institute for Statistics, 2018; UNICEF, 2020). Nigeria's own *National Digital Economy Policy and Strategy (2020–2030)* (NDEPS) echoes this ambition, positioning digital skills development as a national lever for inclusion, productivity, and economic diversification. For Lagos State, with its growing network of government technical colleges, aligning TVET provision to these

digital competencies is pivotal to preparing learners for the “future workforce.”

“Employability” in contemporary higher and technical education scholarship is best understood not as a job outcome but as a *set of achievements*—knowledge, skills, and personal attributes—that increases graduates’ chances of obtaining work and thriving in dynamic labor markets (Yorke, 2006). This view places emphasis on transferable capabilities (e.g., problem solving, communication, adaptability) alongside technical mastery, and it aligns closely with modern digital literacy frameworks that blend technical, cognitive, and socio-emotional skills (e.g., critical evaluation, collaboration, ethical awareness). In parallel, the concept of “career engagement”—the degree to which individuals proactively develop their careers through behaviors like planning, networking, and skill-building—helps explain how digitally literate students translate competence into action during school-to-work transitions (Hirschi, Freund, & Herrmann, 2014). Together, these lenses suggest that digital literacy can catalyze employability by enabling the proactive career behaviors that build work readiness over time.

The Nigerian labor market context underscores the stakes. Recent labor force surveys—produced under a revised methodology aligned with ILO guidelines—show relatively low headline unemployment but persistent underemployment and informality, especially among youth and urban residents; analysts caution that the new metrics can obscure precarity in work hours and earnings (NBS, 2023; AP News, 2023; World Bank, 2023; NBS, 2024 Q3). For Lagos State youth, the implication is clear: beyond acquiring a qualification, students must develop adaptable digital and career management skills to navigate frequent job changes, hybrid work settings, and micro-entrepreneurship.

Within TVET globally and in Nigeria, several *acquisition challenges* can impede students’ digital literacy development. First,

infrastructure deficits—unreliable power supply, limited bandwidth, and inadequate devices—constrain hands-on practice and sustained digital projects in technical colleges (UNICEF, 2020; AJAIAS, 2024). Second, many TVET educators report needing targeted upskilling across a wide range of digital teaching competencies, from learning management systems to simulation tools and industry software—suggesting capacity-building and certification frameworks are essential complements to curriculum reform (UNESCO–UNEVOC, 2022; Jebba & Nordin, 2024). Third, equity gaps persist, including gendered participation barriers and affordability issues that affect consistent access to devices, data, and safe learning spaces. These structural constraints dampen students’ opportunities to practice the higher-order digital behaviors—collaboration, creation, data use, and ethical reasoning—that drive employability and career engagement.

At the same time, Lagos State is expanding its TVET footprint and industry alignment—moves that create a timely window to embed digital competencies at scale. Public statements indicate a growing number of government technical colleges and sustained emphasis on inclusive, industry-focused training under the Lagos State Technical and Vocational Education Board (LASTVEB). If these expansions are matched by coherent digital skills pathways—sequenced learning outcomes mapped to UNESCO’s global framework and to Nigeria’s NDEPS pillars—technical college students can gain both foundational (e.g., information, technical use) and higher-order skills (e.g., content creation, safety, problem solving) that employers value across sectors, from construction tech and mechatronics to creative industries and MSME-driven services.

Conceptually, the relationship between digital literacy and workforce outcomes among Lagos State technical college students can be framed as follows. Digital literacy (as multi-dimensional

competence) enables students to *engage* in proactive career behaviors—information seeking about apprenticeships, building e-portfolios, networking on professional platforms, completing micro-credentials, and applying industry-standard tools. This engagement, in turn, enhances employability by signaling work readiness, adaptability, and problem-solving—capabilities that employers increasingly prioritize. Social Cognitive Career Theory (SCCT) further highlights the role of contextual affordances (e.g., device access, teacher support, internships) and self-efficacy in sustaining these behaviors; lowering acquisition barriers and creating mastery experiences can therefore reinforce both digital competence and career engagement, yielding stronger transitions into decent work or entrepreneurship.

In sum, *Digital Literacy and the Future Workforce: Exploring Career Engagement, Employability, and Acquisition Challenges among Lagos State Technical College Students* addresses an urgent policy and practice agenda. It examines how specific digital literacy components (from information management to content creation and safety) map onto proactive career behaviors and employability indicators within the distinctive Lagos labor market, while interrogating the institutional and structural constraints that shape students' learning opportunities. By grounding the analysis in established frameworks (UNESCO's competencies, Yorke's employability, Hirschi's career engagement, and SCCT) and Nigeria's policy context (NDEPS), the study aims to provide actionable insights for curriculum design, educator development, equitable access initiatives, and school–industry partnerships across Lagos State's technical colleges.

Problem of the Study

In today's rapidly evolving labor market, digital literacy has become a fundamental requirement for employability and sustained career development. Across sectors,

employers increasingly expect graduates to demonstrate not only technical skills but also the ability to utilize digital tools for communication, problem solving, collaboration, and innovation. For students in technical colleges, particularly those in Lagos State where economic activity is technology-driven and competitive, digital literacy represents a gateway to meaningful work engagement, entrepreneurship, and upward mobility. Yet, evidence suggests that many technical college students in Nigeria still struggle to acquire adequate digital competencies, leaving them at risk of limited employability and poor transition outcomes into the future workforce (UNESCO, 2018; UNICEF, 2020).

Despite national and state-level initiatives such as Nigeria's *National Digital Economy Policy and Strategy (2020–2030)* and Lagos State's investments in Technical and Vocational Education and Training (TVET), several challenges persist. Infrastructure deficits—including erratic power supply, inadequate access to internet connectivity, and limited availability of modern digital devices—undermine students' exposure to practical, hands-on digital learning. Equally, many teachers in technical colleges lack advanced digital pedagogy skills, making it difficult to integrate technology into teaching in ways that promote higher-order competencies such as digital content creation, data analysis, and cybersecurity awareness (UNESCO–UNEVOC, 2022; Jebba & Nordin, 2024). These constraints contribute to a widening skills gap between the training students receive and the expectations of the labor market.

Furthermore, structural inequities exacerbate the problem. Socio-economic barriers limit many students' access to personal devices and reliable data, while gender-related disparities continue to restrict female students' participation in digital skill development. As a result, opportunities for career engagement—such as using professional platforms, building digital portfolios, participating in online

internships, or obtaining industry-recognized micro-credentials—remain underutilized. Without these proactive career behaviors, employability outcomes for technical college graduates are jeopardized, leaving many underemployed or confined to the informal sector despite completing vocational programs.

These issues raise critical questions: To what extent do Lagos State technical college students possess the digital literacy skills required for employability? How does digital literacy influence their career engagement and readiness for the future workforce? And what are the main institutional and socio-economic challenges affecting their acquisition of digital skills? Addressing these questions is essential, not only for aligning TVET outcomes with labor market demands, but also for ensuring that technical education in Lagos State contributes meaningfully to Nigeria's broader economic diversification and digital transformation agenda.

Purpose of the Study

The major purpose of the study is to examine Digital Literacy and the Future Workforce: Exploring Career Engagement, Employability, and Acquisition Challenges among Lagos State Technical College Students. Specifically, the research seeks to enquire:

1. Influence of Digital literacy on career engagement and employability among Lagos state technical college students.
2. Challenges affecting the acquisition of digital literacy skill training among Lagos state technical college students

Research Questions

The following research questions were raised to guide the study

1. To what extent digital literacy skill influence career engagement and employability of Lagos state technical college students?

2. What are the challenges affecting the acquisition of digital literacy skill training among technical college students in Lagos state?

Research Methodology

The research design employed for this study was the descriptive survey research design. A descriptive survey is essentially an assessment of the present state of affairs, usually carried out through questionnaires, opinions, and interviews. Neuman (2014) viewed descriptive survey research as a methodological approach used in social science to systematically gather, analyze, and interpret data about the characteristics, behaviors, attitudes, or opinions of a population or sample. Similarly, Creswell and Creswell (2017) opined that descriptive survey design provides a detailed snapshot of the current state of a phenomenon without deforming the concept of the variables under consideration. In other words, the descriptive survey approach is intended to describe the present condition of a phenomenon without manipulating the variables or establishing causal relationships. This design was considered most suitable for the study, as it elicited information from students of government technical colleges, teachers of these colleges, professionals and lecturers in related disciplines, career personnel in technical trades, and employers of labour in technical trades.

The study was conducted in three categories of areas in Lagos State, reflecting the heterogeneous nature of the study population. The first category covered the five government technical colleges in the state, namely Government Technical College Ado-Soba, Government Technical College Agidingbi in Ikeja, Government Technical College Epe, Government Technical College Ikotun, and Government Technical College Ikorodu. The second category included Arena Cantonment Market, Oshodi, and Computer Village, Ikeja, while the third category was the University of Lagos. The choice of these

areas was informed by the study population and the relevance of the information they provided regarding the spread and general abilities of Lagos State as Nigeria's foremost economic hub, which generates diverse employment opportunities for graduates of its institutions and those from other states across the federation.

The population for this study was heterogeneous and comprised three categories. The first category included students and teachers of the five government technical colleges in Lagos State. The second category comprised self-employed career personnel in technical trades, employees in technical trades, and employers of labour in technical trades located in Arena Cantonment Market and Computer Village, Ikeja. The third category included professionals and lecturers in related fields from the University of Lagos, specifically lecturers in the Department of Vocational and Technology Education.

Considering the heterogeneity of the population, along with constraints of time and cost, a stratified random sampling technique was adopted for selecting samples from the first category, while a purposive sampling technique was used for the second and third categories. The stratified sampling ensured that all members of the first population had an equal chance of selection, while the purposive technique enabled the researcher to generalize the findings to about 70% of the universal population. Accordingly, the sample distribution was as follows: from stratum one, fifty students and fifteen teachers were selected from each of the five government technical colleges, totaling 325 respondents. Stratum two comprised thirty self-employed individuals in technical trades and ten employers of labour in technical trades drawn from Arena Cantonment Market and Computer Village, yielding forty respondents. Stratum three consisted of two lecturers and professionals from the University of Lagos, resulting in two respondents. Altogether, the total sample size comprised 367 expected respondents. In each case, respondents were

selected as described above, and thereafter the data collection instrument was administered.

The instrument for data collection in this study was a structured questionnaire. A data collection instrument, as noted by Creswell et al. (2017), is a tool designed to gather information in a systematic and standardized manner, ensuring the collection of reliable and valid data for analysis. Structured questionnaires were developed by the researcher under the title "Digital Literacy in Technical Colleges Questionnaire (DLTCQ)," which was divided into seven sections labeled A–G. Section A focused on personal data such as status and gender. Section B included ten items assessing digital literacy skills needed by technical college students for employment. Section C comprised ten items addressing teaching techniques to develop digital literacy skills. Section D contained ten items examining how digital literacy influences career engagement and employability. Section E, with ten items, investigated challenges affecting the acquisition of digital literacy skills, while Section F addressed resources needed for integrating digital literacy into technical college curricula. Section G contained ten items focusing on strategies to motivate students to improve their digital literacy skills. Responses were measured using a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1).

The instrument was subjected to validation and reliability testing. Validity, as defined by Bryman (2016) and Trochim (2006), refers to the degree to which an instrument accurately measures the intended construct or phenomenon. To ensure validity, five experts from the fields of technology education and measurement and evaluation at the University of Lagos reviewed the instrument. Their observations and recommendations were incorporated into the final version of the questionnaire.

Reliability, on the other hand, refers to the consistency and dependability of the instrument. Following Chen and Popovich

(2018), reliability was tested through a pilot study involving thirty students and five teachers at the Federal Science and Technical College, Yaba. Using Cronbach's Alpha, the reliability coefficient of the instrument was estimated at 0.89, indicating a high level of internal consistency.

The data collection process was meticulously planned to ensure comprehensive coverage of the three categories of participants. Trained research assistants, briefed on the study objectives and ethical considerations, assisted in administering the questionnaires. All participants were provided with detailed information about the study and assured of confidentiality, while participation remained voluntary. Data from students and teachers were collected during school hours, with 50 students and 15 teachers sampled from each technical college. For self-employed individuals and employers of labour at Arena Market and Computer Village, purposive sampling was applied, and questionnaires were administered with necessary clarifications and translations provided. Two lecturers from the University of Lagos were also surveyed in their offices using the same questionnaire. In each case, the researcher waited while the respondents

completed the instrument and retrieved it immediately thereafter.

Before analysis, the data were cleaned and pre-processed to address missing values, outliers, and inconsistencies in line with Creswell et al. (2017). Descriptive statistics, including percentages, mean, and standard deviation, were used to analyze the data. Percentages were employed to describe demographic variables, while means and standard deviations were used to address research questions. The true limit of real numbers was adopted as a decision rule: a mean score of 3.50 and above indicated agreement, less than 2.50 indicated disagreement, while scores between 2.50 and 3.49 indicated neutrality. To test the null hypotheses, Chi-square was employed at a 0.05 level of significance. The decision rule was to reject the null hypothesis if the calculated value exceeded the tabulated value; otherwise, the null hypothesis was retained.

Results of the Findings

Research Question

What are the digital literacy skills needed by technical college students for employment?

Table 1: Influence of Digital Literacy on Career Engagement and Employability as Perceived by the Students

S/N	Statements	Mean	SD
1.	Digital literacy skills can enhance career engagement.	4.47	.59
2.	Employers in various field value digital literacy skills.	4.22	.59
3.	Having digital skills can make a student more confident during employment.	4.57	.57
4.	Digital literacy opens more career opportunities for the students.	4.49	.58
5.	Students seek to improve my digital literacy skills to enhance career prospects.	4.27	.53
6.	Digital skills help students to perform better in job interviews.	4.29	.61
7.	Digital literacy is crucial for modern career advancement.	4.52	.57
8.	Digital platforms can be used to network potential employers.	4.22	.52
9.	Students with digital skills are more competitive in the job market.	4.37	.67
10.	Students with digital skills are more likely to be promoted over counterparts without the skill.	4.21	.66

Key: 00–1.49 = Strongly Disagree, 1.50–2.49 = Disagree, 2.50–3.49 = Undecided, 3.50–4.49 = Agree, 4.50–5.00 = Strongly Agree

Decision: 0.00 –3.49 (Disagreed), 3.50 – 5.00 (Agreed)

Table 1 above is students' responses on influence of digital literacy on career engagement and employability. The result revealed that the students agreed that: Digital literacy skills can enhance career engagement ($X = 4.47$), employers in various field value digital literacy skills ($X = 4.22$), having digital skills can make a student more confident during employment ($X = 4.57$), digital literacy opens more career opportunities for the students ($X = 4.49$), students seek to improve my digital literacy skills to enhance career prospects ($X = 4.27$), digital skills help students to perform better in job interviews ($X = 4.29$),

digital literacy is crucial for modern career advancement ($X = 4.52$), digital platforms can be used to network potential employers ($X = 4.22$), students with digital skills are more competitive in the job market ($X = 4.37$) and that students with digital skills are more likely to be promoted over counterparts without the skill ($X = 4.21$). The items on the scale had mean scores ranging from 4.21 to 4.57. All the influence of digital literacy on career engagement and employability received a mean score of 4.21 and above and were therefore regarded as the influence of digital literacy on career engagement and employability.

Table 2: Influence of Digital Literacy on Career Engagement and Employability as Perceived by the Teachers

S/N	Statements	Mean	SD
1.	Students seek to improve my digital literacy skills to enhance career prospects.	4.39	.71
2.	Digital skills help students to perform better in job interviews.	4.51	.66
3.	Digital literacy is crucial for modern career advancement.	4.19	.61
4.	Digital platforms can be used to network potential employers.	4.22	.52
5.	Students with digital skills are more competitive in the job market.	4.13	.62
6.	Students with digital skills are more likely to be promoted over counterparts without the skill.	4.21	.66
7.	Digital literacy skills can enhance career engagement.	4.28	.67
8.	Employers in various field value digital literacy skills.	4.46	.59
9.	Having digital skills can make a student more confident during employment.	4.42	.59
10.	Digital literacy opens more career opportunities for the students.	4.23	.69

Key: 00–1.49 = Strongly Disagree, 1.50–2.49 = Disagree, 2.50–3.49 = Undecided, 3.50–4.49 = Agree, 4.50–5.00 = Strongly Agree

Decision: 0.00 –3.49 (Disagreed), 3.50 – 5.00 (Agreed)

Table 2 above is teachers' responses on influence of digital literacy on career engagement and employability. The result revealed that the teachers agreed that: Students seek to improve their digital literacy skills to enhance career prospects ($X = 4.39$), digital skills help students to perform better in job interviews ($X = 4.51$), digital literacy is crucial for modern career advancement ($X = 4.19$), digital platforms can be used to network potential employers ($X = 4.22$), students with digital skills are more competitive in the job market ($X =$

4.13) and that students with digital skills are more likely to be promoted over counterparts without the skill ($X = 4.21$). digital literacy skills can enhance career engagement ($X = 4.28$), employers in various field value digital literacy skills ($X = 4.46$), having digital skills can make a student more confident during employment ($X = 4.42$), digital literacy opens more career opportunities for the students ($X = 4.23$). The items on the scale had mean scores ranging from 4.21 to 4.51. All the influence of digital literacy

engagement and employability received a mean score of 4.21 and above and were therefore regarded as the influence of digital literacy on career engagement and employability.

Table 3: Influence of Digital Literacy on Career Engagement and Employability as Perceived by the Lecturers

S/N	Statements	Mean	SD
1.	Digital literacy training influences the career engagement of technical college students significantly	4.51	.67
2.	Digital literacy has a strong impact on the employability of technical college graduates	4.52	.82
3.	The role of digital literacy in continuous professional development for technical college students is significant	4.48	.52
4.	Digital literacy helps technical college graduates in adapting to new job roles	4.33	.62
5.	Students with digital literacy skill possess an edge over those without in terms of their career development.	4.31	.66
6.	Students actively seek to improve their digital literacy skills for career prospects.	4.56	.66
7.	Digital skills help students to perform better in job interviews.	4.62	.59
8.	Digital literacy is crucial for modern career advancement.	4.54	.59
9.	Digital platforms can be used to network potential employers.	4.53	.69
10.	Digital skills make students more competitive in the job market.	4.49	.71

Key: 00–1.49 = Strongly Disagree, 1.50–2.49 = Disagree, 2.50–3.49 = Undecided, 3.50–4.49 = Agree, 4.50–5.00 = Strongly Agree

Decision: 0.00 –3.49 (Disagreed), 3.50 – 5.00 (Agreed)

Table 3 above is lecturers' responses on influence of digital literacy on career engagement and employability. The result revealed that the lecturers agreed that: Digital literacy training influences the career engagement of technical college students significantly ($X = 4.51$), digital literacy has a strong impact on the employability of technical college graduates ($X = 4.52$), the role of digital literacy in continuous professional development for technical college students is significant ($X = 4.48$), digital literacy helps technical college graduates in adapting to new job roles ($X = 4.33$), students with digital literacy skill possess an edge over those without in terms of their career development ($X = 4.31$), students actively seek to improve their digital literacy skills for career prospects employment ($X = 4.56$), digital skills help

students to perform better in job interviews ($X = 4.62$), digital literacy is crucial for modern career advancement ($X = 4.54$), digital platforms can be used to network potential employers ($X = 4.53$) and digital skills make students more competitive in the job market ($X = 4.49$). The items on the scale had mean scores ranging from 4.31 to 4.62. All the influence of digital literacy on career engagement and employability received a mean score of 4.31 and above and were therefore regarded as the influence of digital literacy on career engagement and employability.

Research Question 2

What are the challenges affecting acquisition of digital literacy skill training among Technical college students in Lagos state?

Table 4: Challenges Affecting Acquisition of Digital Skill in technical college as Perceived by the Students

S/N	Statements	Mean	SD
1.	There is a digital literacy workshops and seminars regularly.	2.87	.53
2.	There are enough digital literacy resources available to me.	2.82	.49
3.	There is access to high-speed internet and modern devices in the school.	2.97	.57
4.	There are challenges in accessing digital tools and technology in the college	3.14	.53
5.	There are opportunities for hands-on training in digital literacy at the college.	3.01	.60
6.	There is a need to improve digital literacy training in the school.	4.42	.68
7.	The teachers support in developing digital skills.	4.18	.62
8.	There are opportunities for internships or work placements that require digital literacy.	3.12	.51
9.	The overall digital literacy environment in the School is satisfactory.	2.37	.47
10.	In the school, students inadequately utilize digital tools for studies.	3.52	.53

Key: 00–1.49 = Strongly Disagree, 1.50–2.49 = Disagree, 2.50–3.49 = Undecided, 3.50–4.49 = Agree, 4.50–5.00 = Strongly Agree

Decision: 0.00 –3.49 (Disagreed), 3.50 – 5.00 (Agreed)

Table 4 above is students' responses on challenges and opportunities for enhancing digital literacy. The result revealed that the students agreed that: There is a digital literacy workshops and seminars regularly ($X = 2.87$), the students disagreed that: There are enough digital literacy resources available to me ($X = 2.82$), there is access to high-speed internet and modern devices in the school ($X = 2.97$), there are challenges in accessing digital tools and technology in the college ($X = 3.14$), there are opportunities for hands-on training in digital literacy at the college ($X = 3.01$), there is a need to improve digital literacy training in the school ($X = 4.42$), the teachers partially support in developing

digital skills ($X = 4.18$), there are opportunities for internships or work placements that require digital literacy ($X = 3.12$), the overall digital literacy environment in the school is satisfactory ($X = 2.37$) and that in the school, students inadequately utilize digital tools for studies ($X = 3.52$). The items on the scale had mean scores ranging from 2.82 to 4.42. seven of the challenges affecting acquisition of digital skill in technical college received a mean score less than 3.49, while others had mean of 3.52 and above and were therefore regarded as the challenges affecting acquisition of digital skill in technical college.

Table 5: Challenges Affecting Acquisition of Digital Skill in technical college as Perceived by the Teachers

S/N	Statements	Mean	SD
1.	There are challenges in accessing digital tools and technology in the college	3.31	.59
2.	There are enough digital literacy resources available to the students.	2.78	.45
3.	There is access to high-speed internet and modern devices in the school.	2.91	.55
4.	There are opportunities for hands-on training in digital literacy at the college.	3.38	.61
5.	There is a digital literacy workshops and seminars regularly.	2.88	.54
6.	The teachers partially support in developing digital skills.	4.68	.81

7.	In the school, students inadequately utilize digital tools for studies.	3.59	.59
8.	There are opportunities for internships or work placements that require digital literacy.	3.92	.65
9.	The overall digital literacy environment in the School is satisfactory.	2.80	.51
10.	There is a need to improve digital literacy training in the school.	4.54	.77

Key: 00–1.49 = Strongly Disagree, 1.50–2.49 = Disagree, 2.50–3.49 = Undecided, 3.50–4.49 = Agree, 4.50–5.00 = Strongly Agree

Decision: 0.00 –3.49 (Disagreed), 3.50 – 5.00 (Agreed)

Table 5 above is teachers' responses on challenges and opportunities for enhancing digital literacy. The result revealed that the teachers agreed that: There are challenges in accessing digital tools and technology in the college ($X = 3.31$), there are opportunities for hands-on training in digital literacy at the college ($X = 3.38$), teachers partially support in developing digital skills ($X = 4.68$), in the school, students inadequately utilize digital tools for studies ($X = 3.59$), there are opportunities for internships or work placements that require digital literacy ($X = 3.92$), and there is a need to improve digital literacy training in the school ($X = 4.54$). However, the teachers disagreed that: There are

enough digital literacy resources available to the students ($X = 2.78$), there is access to high-speed internet and modern devices in the school ($X = 2.91$), there is a digital literacy workshops and seminars regularly ($X = 2.88$) and that the overall digital literacy environment in the school is satisfactory ($X = 2.80$). The items on the scale had mean scores ranging from 2.80 to 4.68. six of the challenges affecting acquisition of digital skill in technical college received a mean score less than 3.49, while others had mean of 3.59 and above and were therefore regarded as the challenges affecting acquisition of digital skill in technical college.

Table 6: Challenges Affecting Acquisition of Digital Skill as Perceived by the Lecturers

S/N	Statements	Mean	SD
1.	The main challenges in teaching digital literacy to technical college students include inadequate digital facilities	4.48	.52
2.	Professional program in digital literacy is essential for technical college students job preference opportunities	4.54	.59
3.	Collaboration with tech companies can enhance digital literacy education	4.53	.69
4.	Availability of up-to-date technology is crucial for effective digital literacy training	4.51	.67
5.	Lack of digital literacy skills can limit career opportunities for technical college graduates	4.52	.82
6.	Students face challenges in improving their digital literacy skills.	4.49	.71
7.	There are enough digital literacy resources available for students.	1.16	1.04
8.	Students have access to high-speed internet and modern devices.	1.18	1.03
9.	There are opportunities for hands-on training in digital literacy.	1.15	1.01
10.	Students participate in digital literacy workshops or seminars regularly.	1.25	1.11

Key: 00–1.49 = Strongly Disagree, 1.50–2.49 = Disagree, 2.50–3.49 = Undecided, 3.50–4.49 = Agree, 4.50–5.00 = Strongly Agree

Decision: 0.00 –3.49 (Disagreed), 3.50 – 5.00 (Agreed)

Table 6 above is lecturers' responses on challenges and opportunities for enhancing digital literacy. The result revealed that the lecturers agreed that: The main challenges in teaching digital literacy to technical college students include inadequate digital facilities ($X = 4.48$), professional program in digital literacy is essential for technical college students job preference opportunities ($X = 4.54$), collaboration with tech companies can enhance digital literacy education ($X = 4.53$), availability of up-to-date technology is crucial for effective digital literacy training ($X = 4.51$), lack of digital literacy skills can limit career opportunities for technical college graduates ($X = 4.52$) and students face challenges in improving their digital literacy skills ($X = 4.56$). However, the lecturers disagreed that: There are enough digital literacy resources available for students ($X = 1.16$), students have access to high-speed internet and modern devices ($X = 1.18$), there are opportunities for hands-on training in digital literacy ($X = 1.15$) and that students participate in digital literacy workshops or seminars regularly ($X = 1.25$). The items on the scale had mean scores ranging from 1.15 to 4.54. four of the challenges affecting acquisition of digital skill in technical college received a mean score less than 3.49, while others had mean of 4.48 and above and were therefore regarded as the challenges affecting acquisition of digital skill in technical college.

The study established that technical

Discussion of the Findings

Digital Literacy, Career Engagement, and Employability among Lagos State Technical College Students

The findings of this study revealed that the digital literacy training provided in Lagos State technical colleges is not adequate. This inadequacy aligns with the conclusions of Quraishi, Ulusi, Moihd, Hakimi, and Olusi (2023), who emphasized the importance of integrating digital literacy into higher education curricula to prepare students for the demands of the 21st century.

college students in Lagos State lack adequate exposure to essential 21st century skills such as digital literacy, entrepreneurship, communication, and teamwork. These skills are fundamental for career advancement and employability in today's technology-driven labor market.

Furthermore, the data underscored the necessity for continuous digital literacy support and innovative training techniques. Effective preparation should go beyond basic computer skills and embrace competencies such as evaluating online information, understanding data privacy, and maintaining a professional digital presence. This finding corroborates Gerben (2017) and Raish and Rimland (2016), who highlighted that digital literacy education must prepare students to navigate the ethical and practical dimensions of technology use in academic and professional settings. Hence, digital literacy training should adopt a blend of innovative teaching practices, comprehensive educator support, and the deployment of robust technological tools. Emphasizing real-world applications will ensure that technical college students are adequately equipped to meet the dynamic requirements of the digital workforce.

The results of this study further support Bawden (2008), who noted that digital literacy fosters complementary skills such as creativity, problem-solving, critical thinking, and innovation. Similarly, Medina (2010) asserted that digital literacy is a cornerstone of modern education, enabling students to responsibly access, evaluate, create, and communicate information using digital technologies. The present findings also highlight the trajectory of digital literacy in shaping students' professional competence. For example, proficiency in digital project management, design, and collaboration tools—such as Information Modeling (IM) software—enables graduates to visualize, coordinate, and execute projects more effectively. This aligns with Hwang and Tseng (2021),

who demonstrated that virtual laboratories enhance students' understanding of complex

technical concepts while improving their problem-solving capabilities. Collectively, these results affirm that digital literacy has a direct and positive influence on the employability and career engagement of Lagos State technical college students.

Challenges Affecting the Acquisition of Digital Literacy Skills

The findings also revealed several challenges limiting the acquisition of digital literacy skills among students. One of the most prominent challenges is the inadequacy of digital facilities in technical colleges. This supports Fajemirokun (2019), who reported that limited access to modern technology—including reliable internet connectivity, updated computers, and contemporary digital tools—undermines students' ability to build digital competence. Another significant challenge identified is the limited support provided by teachers in fostering students' digital skills. This observation aligns with Tihamiyu and Ajayi (2020), who argued that inadequate technological support from educators severely hampers students' ability to develop essential digital skills. The lack of opportunities for hands-on experience with current digital technologies widens the gap between academic training and industry expectations, leaving graduates unprepared for employment. Socio-economic disparities further exacerbate the digital divide. Many students from low-income households cannot afford personal digital devices or reliable internet access at home, thereby limiting their chances to practice and refine digital skills outside the classroom. Consequently, this inequality perpetuates gaps in digital literacy across different student groups.

Additionally, the study found that digital literacy is often not integrated into the core curriculum of technical colleges, but instead treated as an isolated subject. This disjointed approach prevents students from appreciating the cross-disciplinary relevance of digital skills. The finding corroborates Oviawe, Uwameiye, and Uddin

(2017), who observed that reliance on outdated teaching methods that prioritize theoretical knowledge over practical digital competencies renders students ill-prepared for the realities of today's labor market. Embedding digital literacy across multiple subjects would therefore provide students with a more holistic understanding of how digital tools and practices are applied in diverse industries.

Conclusion

This study examined the influence of digital literacy on career engagement, employability, and the challenges affecting the acquisition of digital skills among Lagos State technical college students. The findings revealed that digital literacy training provided in these colleges remains inadequate to fully prepare students for the demands of the 21st century workforce. Students lack sufficient exposure to essential competencies such as online information evaluation, data privacy awareness, collaboration, and professional digital presence. These gaps undermine their career engagement and limit their employability in a labor market increasingly defined by technology-driven processes. The study further identified key challenges impeding the acquisition of digital literacy. These include insufficient digital infrastructure, inadequate teacher support, socio-economic disparities that restrict access to personal digital devices, and the lack of integration of digital skills into the core curriculum. Together, these challenges widen the digital divide and create a mismatch between the training offered in technical colleges and the expectations of industry. In conclusion, digital literacy is not only a technical competence but also a catalyst for employability and professional growth. Without adequate digital skills, technical college graduates may find themselves underprepared for gainful employment, self-employment, or entrepreneurial ventures in Lagos State and beyond. Addressing these challenges is therefore vital to aligning technical

education with labor market demands and Nigeria's broader digital economy agenda.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. **Integration of Digital Literacy into the Curriculum:** Digital literacy should be embedded across all subjects in technical colleges rather than treated as a stand-alone skill. This cross-disciplinary approach will ensure that students appreciate the relevance of digital competencies in diverse fields of study and practice.
2. **Provision of Adequate Infrastructure:** Government and school administrators should invest in modern digital facilities, including reliable internet connectivity, updated computers, virtual laboratories, and industry-standard software, to enhance practical learning experiences.
3. **Capacity Building for Educators:** Teachers in technical colleges should be provided with continuous professional development programs focused on digital pedagogy and the use of emerging technologies. This will enable them to effectively guide students in acquiring relevant digital competencies.
4. **Equitable Access to Digital Resources:** Policy interventions should be introduced to address socio-economic disparities by providing affordable access to digital devices and subsidized internet for students from low-income households. Partnerships with private sector organizations and NGOs could support such initiatives.
5. **Industry Collaboration:** Technical colleges should strengthen partnerships with industries to expose students to real-world applications of digital literacy through internships, mentorship, and project-based learning. This will bridge the gap between school training and workplace requirements.
6. **Innovative Teaching Approaches:** Educators should adopt innovative

methods such as blended learning, project-based assignments, and simulation-based tools to foster creativity, problem-solving, and ethical use of digital technologies among students.

7. **Policy Support and Monitoring:** The Lagos State Technical and Vocational Education Board (LASTVEB) and other regulatory bodies should develop clear frameworks for monitoring digital literacy integration in technical colleges, ensuring accountability and continuous improvement.

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