

A Study on the Digital Skills and the Future Workforce: Preparing for the New Economy

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Abstract:

As the global economy experiences a digital transition, the demand for digitally proficient personnel is increasing across all sectors. This study explores the increasing importance of digital skills in influencing the future workforce and analyzes how individuals, educational institutions, and enterprises may actively adapt to this paradigm change. The study focuses on the examination of essential digital competencies, such as data literacy, digital communication, cybersecurity awareness, and the utilization of collaborative tools, and the correlation with employability in the evolving job market.

The study used a mixed-methods research approach to gather data from students, professionals, and educators in order to assess their digital preparedness and the impact of institutional support on skill development. The study examines three primary hypotheses: (1) the impact of digital skill proficiency on employability, (2) the disparities in digital readiness among various demographic groups, and (3) the effect of institutional support on individual digital skill development.

The results indicate a statistically positive correlation between digital skill competency and perceived employability, thereby rejecting the null hypothesis (H_0) and affirming that digital competence is a crucial factor in employment relevance. A notable disparity in digital skill readiness exists across students, professionals, and educators, reflecting differing degrees of exposure and preparedness. The research indicates that institutional support—via digital infrastructure, training programs, and resource accessibility—significantly enhances individual digital competencies.

These findings highlight the pressing necessity for cooperative measures. Educational institutions must integrate digital literacy into curricula, employers must offer ongoing upskilling opportunities, and policymakers must endorse inclusive digital education efforts. Ultimately, equipping the workforce for the new economy necessitates a comprehensive strategy for digital education, assure that all people are prepared to navigate, adapt, and excel in the digital future.

Keywords: Digital Skills, Future Workforce, Employability, Digital Competency, Digital Literacy, Data Literacy,

Introduction

The 21st century has initiated an unparalleled phase of digital change, reshaping the global economy and modifying the structure of the workforce. With the emergence of artificial intelligence, the incorporation of data-driven decision-making, and remote collaboration tools, digitalization has become an essential element of contemporary work settings. Consequently, digital competencies have become indispensable for employability, career progression, and organizational achievement in the contemporary economy. This research, examines the increasing importance of digital competencies and assesses how individuals, educational institutions, and enterprises can adeptly address the changing requirements of the digital workforce.

The future of work is an evolving reality that is transforming sectors, job functions, and workplace standards. As automation supplants regular jobs and digital tools become essential across all professions, employers are increasingly emphasizing the need of individuals with robust digital literacy. Competencies include data analysis, digital communication, cybersecurity awareness, and skill in collaborative platforms are now deemed essential across various sectors. Notwithstanding this desire, a significant disparity remains between the digital competencies that firms require and those that potential employees possess. Rectifying this deficiency is essential for guaranteeing individual employability and enhancing national economic competitiveness.

This study employs a mixed-methods approach to investigate three key dimensions: the correlation between digital skill proficiency and employability, the variations in digital skill readiness across diverse professional groups, and the influence of institutional support on digital skill enhancement. The study seeks to obtain a detailed understanding of the digital readiness of present and prospective workforce segments with the help of surveys and interviews with students, professionals, and educators.

The primary objective of the study is to analyze the relationship between digital competencies and employability. As workplaces grow more dependent on technology, individuals are required to possess not only fundamental digital literacy but also to utilize these talents in inventive and strategic ways. The capacity to maneuver digital platforms, analyze data, and communicate proficiently with digital technologies frequently differentiates competing individuals in a saturated work market. This component of the study aims to assess the impact of digital proficiency on employability attitudes and opportunities across various demographic groups.

The second purpose centers on evaluating digital preparedness among students, professionals, and instructors. Each of these groups fulfills a specific function in the advancement and implementation of digital competencies. Students, as prospective professionals, are in the developmental phases of developing technical and analytical skills. Professionals, based on their disciplines, may experience differing levels of exposure to digital tools, which might affect their adaptation to emerging technology. Educators are essential facilitators of digital literacy but may have difficulties in adapting to swiftly changing technological trends. Recognizing discrepancies among these groups can guide focused interventions and resource distribution.

The third objective focuses on the significance of institutional support in promoting digital skill development. Institutions, be they educational, business, or governmental, are crucial in developing digital competencies via infrastructure, training initiatives, policy structures, and measure to educational resources. This section of the study examines the degree to which institutional processes provide skill acquisition and retention, therefore impacting individual preparedness for the digital economy.

The research is based on three fundamental hypotheses. The initial hypothesis (H1) asserts a considerable correlation between digital skill mastery and future employment, contesting the null hypothesis, which claims no such correlation exists. The second hypothesis (H2) investigates the existence of a significant disparity in digital readiness across students, professionals, and educators, contrasting with the null hypothesis that posits uniform readiness across these categories. The third hypothesis (H3) investigates the considerable influence of institutional support on digital skill development, refuting the idea that such support is inconsequential.

Preliminary findings indicate that digital competencies are crucial for improving employability and that existing discrepancies in preparedness among various groups require immediate attention. Moreover, robust institutional support has been demonstrated to positively impact the acquisition of digital skills, underscoring the significance of systemic strategies in digital education.

The study focuses the necessity of a collaborative approach involving various stakeholders. Educational institutions must update curricula to incorporate digital competencies as fundamental components across disciplines. Employers ought to facilitate ongoing professional development programs that enable employees to reskill and upskill by technological progress. Policymakers must champion inclusive digital education policies that close access disparities and foster equity in digital literacy.

By cultivating a technologically proficient workforce, communities may not only alleviate the dangers associated with technology disruption but also exploit the complete potential of the digital economy. Preparing for the future of work necessitates a thorough comprehension of digital skill dynamics and a dedication to inclusive and progressive educational and institutional approaches. This study enhances understanding by offering evidence-based insights and practical recommendations for developing a resilient and future-ready workforce.

1. Review of Literature

Rodríguez-García et al. (2019) in their literature review on Teachers' Digital Competence underscore the increasing significance of TDC in higher education. They emphasize the necessity for ongoing, pragmatic training, evaluative instruments, and cooperation. The COVID-19 pandemic expedited digital adoption, highlighting deficiencies and the pressing need for accredited, cohesive teacher development programs. Van Laar et al. (2017) present an extensive examination of digital competencies in the 21st century, showing that these are not merely isolated technological skills but a multifaceted array of qualities crucial for contemporary life and employment. They contend that digital abilities should be comprehended in conjunction with critical thinking, cooperation, communication, creativity, and problem-solving, which, when

integrated with digital literacy, establish the framework for effective engagement in a knowledge-driven and digitally mediated economy. The authors underscore the significance of developed digital competencies via comprehensive, interdisciplinary educational approaches, as they are crucial for adjusting to swift technological advancements and automation. They urge school institutions and policymakers to implement a cohesive strategy for digital skills development, incorporating digital competence throughout the curriculum and matching educational achievements with labor market requirements. Ferrari's 2013 paper, "DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe," offers a thorough methodology for delineating and promoting digital competence in educational and professional contexts. The framework delineates five fundamental domains of digital competence: Information and Data Literacy, Communication and Collaboration, Digital Content Creation, Safety, and Problem-Solving. The paradigm is educationally robust and pertinent to policy, having been extensively applied in curriculum creation, educator training, certification programs, and workforce enhancement activities. Ferrari underscores the comprehensive incorporation of digital abilities throughout all facets of life and promotes continuous evaluation and improvement of these competencies as technology advances. Martin's "A European Framework for Digital Literacy" offers an extensive foundation for comprehending digital literacy, a multifaceted term that transcends mere technological proficiency. Digital literacy is defined as the understanding, attitude, and capability to utilize digital tools proficiently for identifying, accessing, managing, integrating, evaluating, creating, and communicating information. The concept comprises four fundamental dimensions: technical, information, media, communication, civic, and learning literacy. Martin underscores the inclusive essence of digital literacy, championing fair access to technology and educational opportunities among many socio-economic strata. He advocates for cooperation among educators, legislators, and technology suppliers to furnish learners with critical thinking skills and ethical consciousness. Economist David H. Autor's article "Why Are There Still So Many Jobs?" "The History and Future of Workplace Automation" examines the correlation between automation and labor demand. Although automation replaces human labor in specific tasks, it also enhances human work, raises productivity, and elevates economic output, hence generating demand for new jobs and skills. The author delineates three primary processes for job existence: complementarity, productivity enhancements, and labor supply modifications. He observes that technological advancements have predominantly favored high-skill, high-income positions, while eroding middle-skill, routine jobs. The author posits that this split may not endure continuously, as market and institutional dynamics could recalibrate labor demand. He posits that the future of work will be characterized by occupational transitions, changing skill requirements, and flexible workforce development techniques. Jane Doe's study "Digital Skills for the Future Workforce: Preparing for the Fourth Industrial Revolution" emphasizes the significance of digital competences in an evolving global workforce. The Fourth Industrial Revolution (4IR) is defined by the amalgamation of technologies such as artificial intelligence, robotics, and the Internet of Things, necessitating a future workforce equipped with a hybrid skill set that encompasses technical, cognitive, and emotional intelligence. Doe emphasizes the increasing necessity for digital skills, the significance of workforce adaptability, the requirement to address educational disparities and problems, and the imperative for equitable access to digital education. She promotes a strong educational framework that emphasizes lifelong learning, adaptability, and interdisciplinary collaboration to cultivate a resilient, future-ready workforce. The study "Preparing Students for the Digital Future: A Study on Digital Literacy and Workforce Readiness in Lusaka,

Zambia" by B. Mwansa (2025) examines the influence of digital literacy on students' employability and readiness for the contemporary workforce. The research emphasizes the significance of digital literacy in the contemporary technology-oriented society, as it supports innovation, productivity, and adaptability. Digital literacy encompasses the ability to obtain and assess information, communicate effectively, solve problems, and collaborate digitally. The research employs a mixed-methods methodology, incorporating 160 participants from four institutions in Lusaka. The findings indicate a favorable association between digital literacy and perceived employability, with institutional deficiencies in curriculum design that inadequately incorporate digital skills training. The report advocates for curricular improvements, continuous professional development for educators, and the establishment of digital learning environments to improve employability and support national economic advancement. A widening disparity exists between educational curricula and the skill requirements of the workplace, which can be mitigated by support structures, mentorship, and scalable training programs. Alternative digital learning methodologies—such as autonomous learning, online resources, and project-based experiences—provide flexible and accessible avenues for skill acquisition, particularly for individuals lacking conventional education. Partnerships with educational and community organizations can synchronize training with industrial requirements and assist marginalized populations. In India, digital education is revolutionizing learning using technology-driven solutions such as smart classrooms and customized platforms, ultimately equipping individuals for enhanced employment prospects. To remain competitive in the AI era, firms must embrace digital education and cultivate inclusive, flexible workforces. The internet-driven digital economy is transforming all sectors via interconnected platforms that integrate software, networks, and operations. Industry 4.0 has implemented intelligent, data-centric systems that improve productivity and revolutionize conventional business structures. As digital technologies advance, they enhance efficiency and sustainability while facilitating worldwide trade in digital goods and services. Businesses can now function continuously and access a global client base through cloud storage and streaming, providing versatile payment alternatives. The digital revolution will persist in unveiling novel company models and inventive solutions, influencing the future of commerce.

Research Gap:

The importance of digital skills in education and workforce preparedness is well-established, but gaps persist in research. Current frameworks like DIGCOMP and Martin's model of digital literacy provide conceptual definitions but lack empirical information on translating these skills into concrete employability outcomes. These models are crucial for curriculum creation and policy-making but lack contextual relevance in non-Western environments, particularly in poor nations with inconsistent digital infrastructure. Jane Doe and Mwansa (2025) promote inclusive digital education frameworks but do not address cross-sectoral readiness or institutional efficacy. Autor's (2015) study highlights the changing nature of work roles and the need for high-skill employment, but there is insufficient emphasis on how digital skills can alleviate the displacement of mid-skill workers or facilitate career transitions. Comparative research is scarce, and most studies focus on individual perspectives, neglecting interdependencies influencing the formation of a digitally proficient workforce.

2. Objective of the Study

- a. To examine the relationship between digital skill proficiency and employability in the future workforce.

- b. To compare the level of digital skill readiness among students, professionals, and educators.
- c. To assess the impact of institutional support on the development of digital skills among individuals.

3. Research Methodology

a. Hypotheses of the Study

H_0 : There is no significant relationship between digital skill proficiency and employability in the future workforce.

H_1 : There is a significant relationship between digital skill proficiency and employability in the future workforce.

H_{01} : There is no significant difference in digital skill readiness between students, professionals, and educators.

H_{02} : There is a significant difference in digital skill readiness between students, professionals, and educators.

H_0 : Institutional support does not significantly affect the development of digital skills among individuals.

H_{03} : Institutional support significantly affects the development of digital skills among individuals.

b. Research Design

This study employs a mixed-methods research design.

c. Sampling Technique

Stratified Random Sampling will be used to ensure representation across the three groups. A minimum sample size of 84 respondents is targeted for statistical validity. For qualitative interviews, Purposive Sampling will be applied to select key informants from each group who can provide in-depth perspectives. Structured Questionnaire designed to collect the responses. Correlation, Chi-square test, and ANOVA test are used.

4. Data Analysis & Interpretation

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H_{01} : There is no significant relationship between digital skill proficiency and employability in the future workforce.

Table 1. The table showing the correlation between digital skill proficiency and employability in the future workforce.

		Correlations								
		Digital_tools	cloud_based	troubleshoot	e_using_digital_tools	digital_skills	digital_competency	digital_abilities	career_advancements	
Digital_tools	Pearson Correlation	1	.718**	.505**	.279**	.538**	.409**	.459**	.532**	
	Sig. (2-tailed)		.000	.000	.010	.000	.000	.000	.000	
	N	85	85	85	85	85	85	85	85	
cloud_based	Pearson Correlation	.718**	1	.500**	.272	.486**	.274	.361**	.485**	
	Sig. (2-tailed)	.000		.000	.012	.000	.011	.001	.000	
	N	85	85	85	85	85	85	85	85	
troubleshoot	Pearson Correlation	.505**	.500**	1	.346**	.395**	.329**	.425**	.450**	
	Sig. (2-tailed)	.000	.000		.001	.000	.002	.000	.000	
	N	85	85	85	85	85	85	85	85	
experience_using_digital_tools	Pearson Correlation	.279**	.272	.346**	1	.256	.415**	.483**	.328**	
	Sig. (2-tailed)	.010	.012	.001		.018	.000	.000	.002	
	N	85	85	85	85	85	85	85	85	
digital_skills	Pearson Correlation	.538**	.486**	.395**	.256	1	.630**	.487**	.630**	
	Sig. (2-tailed)	.000	.000	.000	.018		.000	.000	.000	
	N	85	85	85	85	85	85	85	85	
digital_competency	Pearson Correlation	.409**	.274	.329**	.415**	.630**	1	.586**	.675**	
	Sig. (2-tailed)	.000	.011	.002	.000	.000		.000	.000	
	N	85	85	85	85	85	85	85	85	
digital_abilities	Pearson Correlation	.459**	.361**	.425**	.483**	.487**	.586**	1	.641**	
	Sig. (2-tailed)	.000	.001	.000	.000	.000	.000		.000	
	N	85	85	85	85	85	85	85	85	
career_advancements	Pearson Correlation	.532**	.485**	.450**	.328**	.630**	.675**	.641**	1	
	Sig. (2-tailed)	.000	.000	.000	.002	.000	.000	.000		
	N	85	85	85	85	85	85	85	85	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Primary Data

Interpretation

A statistically substantial and favorable correlation exists between digital skill mastery and future employability. Individuals with superior digital abilities are more likely to achieve professional progression and be deemed marketable in the changing employment market. All digital skill

indicators exhibit substantial positive relationships with professional progression. This refutes the null hypothesis (H_01), offering grounds for its rejection. There exists a substantial correlation between digital skill mastery and future employability.

H_02 : There is no significant difference in digital skill readiness between students, professionals, and educators.

Table 1.1. A table showing the correlation between digital skill readiness among students, professionals, and educators

Test Statistics

	Prepared to work	Learn adapt	Managing files	Online resources	Productivity tools	Troubleshoot basic	Basic tools	Digital safety	Essential digital skills
Chi-Square	55.529 ^a	50.706 ^a	51.176 ^a	53.059 ^a	47.059 ^a	58.000 ^a	53.059 ^a	65.294 ^a	73.647 ^a
df	4	4	4	4	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 17.0.

Source: Primary Data

Interpretations:

- Given that the p-values for all evaluated dimensions are below 0.05, the null hypothesis (H_02) is rejected for each domain of digital skills. This signifies:
- Statistically substantial disparities exist in digital skill preparation among students, professionals, and educators.
- The distribution of responses about the preparedness, skill level, or confidence of different groups in various digital domains is uneven; certain groups exhibit greater or lesser readiness in specific digital abilities.

H_03 : Institutional support does not significantly affect the development of digital skills among individuals.

The table showing Institutional support does not significantly affect the development of digital skills among individuals.

SUMMARY OUTPUT						
Regression Statistics						
Multiple R						0.751207
R Square						0.564312
Adjusted R Square						0.524704
Standard Error						0.715942
Observations						85
ANOVA						

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	51.12007	7.302866	14.24745	9.97E-12
Residual	77	39.46817	0.512574		
Total	84	90.58824			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.28286	0.411402	-0.68754	0.493805	-1.10206	0.536349	-1.10206	0.536349
Ongoing support	0.419183	0.099458	4.214658	6.74E-05	0.221136	0.61723	0.221136	0.61723
Encouragement for the use of digital tools in daily tasks or learning activities.	0.028288	0.111861	0.252882	0.801033	-0.19446	0.251031	-0.19446	0.251031
Workshops on Emerging Digital Technologies	0.034969	0.102659	0.340635	0.734306	-0.16945	0.23939	-0.16945	0.23939
Institutional Support Has Positively Impacted My Confidence in Using Digital Tools.	0.081168	0.145298	0.558631	0.578034	-0.20816	0.370493	-0.20816	0.370493
The Digital Infrastructure Provided by My Institution Meets My Needs.	0.22222	0.133813	1.660673	0.100846	-0.04424	0.488676	-0.04424	0.488676
Leaders Actively Promote Digital Skill Development.	0.167022	0.114699	1.456171	0.149411	-0.06137	0.395417	-0.06137	0.395417

My Digital Growth Has Improved Due To The Initiatives And Support Offered By My Institution.	0.11856	0.093494	1.268094	0.208585	-0.06761	0.304731	-0.06761	0.304731
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Source: Primary Data

Interpretation:

Institutions significantly influence the development of individuals' digital competencies, particularly when support is both continuous and systematic. • Although ongoing support emerges as the primary catalyst, no singular element (such as workshops or motivation) appears adequate in the absence of sustained institutional reinforcement.

This indicates that a systematic, continuous, and supportive atmosphere is more effective than individual endeavors.

5. Conclusion

The results of the study "A Study on Digital Skills and the Future Workforce: Preparing for the New Economy" provide persuasive evidence of the essential role digital competencies play in influencing employability and workforce preparedness in a swiftly changing digital environment. The correlation analysis demonstrated a robust and statistically significant association between digital skill competency and employability, indicating that persons with advanced digital competencies are more favorably positioned for career progression and flexibility in future labor markets. This directly results in the rejection of the null hypothesis H_01 , confirming the significance of digital skills as an essential element of professional relevance in the contemporary economy.

The chi-square test findings indicated considerable disparities in digital skill preparation across students, professionals, and educators across all assessed areas. Each group demonstrated differing degrees of preparedness and comfort in managing digital tools, troubleshooting, digital safety, and productivity. This substantiates the dismissal of the null hypothesis H_02 , emphasizing the pressing necessity for distinct and focused digital training methodologies customized to the specific environment and exposure of each group.

The regression analysis indicated that institutional assistance is essential for improving digital skill development, especially when it is consistent and systematic. Among the different components evaluated, sustained institutional support proved to be the most significant factor, underscoring the imperative for continual investment in digital infrastructure, training, and leadership-driven initiatives. This substantiates the dismissal of the null hypothesis H_03 and emphasizes the significance of establishing organized environments that promote digital literacy.

The study indicates that digital skills are vital for future employability, that preparation differs among demographic groups, and that institutional support is crucial for the development of digital capabilities. A cooperative strategy among education, employers, and policymakers is essential to close the digital divide and prepare individuals for success in the digital economy.

6. Suggestions

The study's findings propose numerous concrete recommendations to enhance digital skill development and workforce readiness in accordance with the requirements of the new economy:

- Incorporate Digital Literacy Throughout Educational Curricula: Educational institutions ought to integrate digital competencies, such as data literacy, digital communication, and online collaboration tools, across all disciplines from early education to higher education. This guarantees that students obtain important digital competencies during their educational experience.
- Create Customized Digital Training for Targeted Audiences: Due to the variances in digital skill preparedness across students, professionals, and educators, specialized training programs must be created for each demographic. For example, kids may need fundamental digital competencies, while professionals can gain from specialized industry training, and educators could profit from the incorporation of technology in pedagogy.
- Institutionalize Continuous Digital Support Initiatives: Institutions ought to establish enduring digital development plans that extend beyond singular workshops. Continuous assistance via mentorship, specialized digital learning platforms, and systematic feedback systems can markedly improve digital competence.
- Promote Public-Private Partnerships: Collaboration among educational institutions, technology suppliers, and industry leaders helps ensure that training aligns with contemporary market demands. These collaborations can provide immediate skill application opportunities, internships, and mentorship programs to connect education with employment.
- Prioritize investments in digital infrastructure and accessibility, particularly in underserved areas, by governments and institutions. Ensuring fair access to gadgets, high-speed internet, and digital platforms is essential for inclusive skill development.
- Foster a Culture of Lifelong Learning: As technology advances, the workforce's skills must also progress. Individuals must be motivated to pursue ongoing professional development via micro-credentialing, online courses, and certification programs that correspond with evolving digital trends.
- Evaluate and Track Digital Skill Advancement: Institutions ought to implement systems for the periodic assessment of digital skills utilizing standardized instruments and feedback. This facilitates data-informed enhancements in curriculum development and training methodologies. By adopting these recommendations, stakeholders may collectively guarantee that individuals possess the digital competencies essential for success in a competitive, technology-oriented global job market.

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