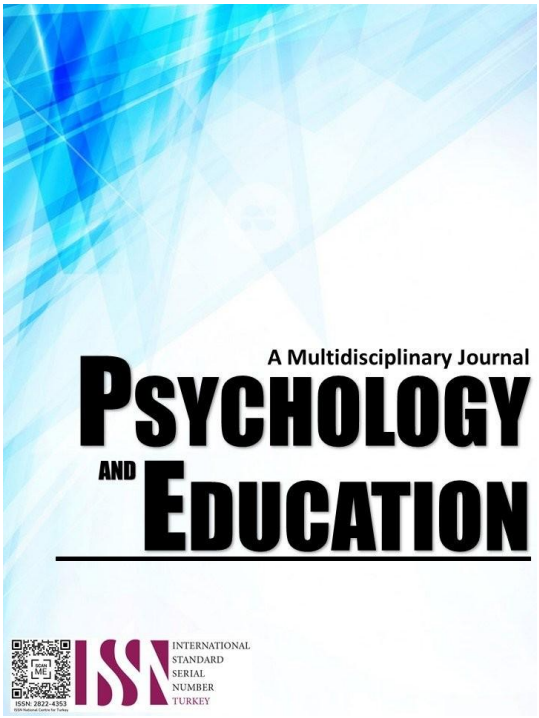
DIGITAL SKILLS PROFICIENCY AND JOB READINESS OF INFORMATION TECHNOLOGY STUDENTS IN A RURAL PHILIPPINE UNIVERSITY



PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL

Volume: 55
Issue 4
Pages: 524-538
Document ID: 2026PEMJ5376
DOI: 10.70838/pemj.550410
Manuscript Accepted: 03-13-2026

Psych Educ, 2026, **55**(4): 524-538, Document ID:2026PEMJ5376, doi:10.70838/pemj.550410, ISSN 2822-4353

Research Article

Digital Skills Proficiency and Job Readiness of Information Technology Students in a Rural Philippine University

Mikko John C. Cablao*
For affiliations and correspondence, see the last page.

Abstract

This study investigated the levels of digital skills proficiency and job readiness among Information Technology students. It examined the relationship between these variables, including the extent to which digital skills dimensions predict job readiness. A quantitative descriptive–correlational research design was employed, involving 95 Information Technology students from Eastern Samar State University–Guiuan Campus. Data were collected using a structured survey questionnaire measuring technical digital skills, cognitive and problem-solving digital skills, digital collaboration and communication skills, and job readiness across technical readiness, workplace adaptability and learning readiness, and professional communication and teamwork readiness. Descriptive statistics, Pearson's correlation analysis, and multiple regression analysis were used for data analysis. Results revealed that students demonstrated an overall Moderate Proficiency Level in digital skills across all indicators, corresponding to the "Agree" category. This indicates that students possess adequate digital competence; however, these skills are not yet consistently demonstrated at a high proficiency level. Students also reported a high level of job readiness, suggesting general preparedness for entry-level employment. Correlation analysis revealed that all digital skills proficiency dimensions were strongly and positively associated with job readiness. Multiple regression analysis indicated that all three digital skills dimensions significantly predicted job readiness, with digital collaboration and communication skills identified as the strongest predictors. The findings suggest that job readiness among Information Technology students is influenced by a multidimensional digital competence profile that includes technical capability, higher-order cognitive skills, and digitally mediated collaboration. Strengthening curriculum-based digital skill development may enhance students' preparedness for technology-driven work environments.

Keywords: *digital skills, job readiness, information technology students, digital collaboration and communication, employability, higher education*

Introduction

The contemporary labor market across Southeast Asia is undergoing rapid transformation driven by digitalization, technological disruption, and the lingering effects of the COVID-19 pandemic. Across the ASEAN region, organizations are increasingly integrating digital technologies into work processes, reshaping the competencies required from the workforce. In a regional qualitative investigation across six ASEAN countries, Intaratat (2021) reported that approximately 84% of employers are accelerating digitalization initiatives, with nearly half of the workforces transitioning to remote or hybrid operations. While such transformations generate opportunities in emerging fields such as data analytics and digital services, they simultaneously displace traditional administrative roles and expose skills gaps among workers who possess only basic digital competencies. Consequently, young graduates must increasingly acquire advanced digital capabilities such as programming, cybersecurity, artificial intelligence, and data science to remain competitive in a rapidly evolving labor market.

Recognizing these structural shifts, governments across ASEAN have emphasized the need for coordinated educational reforms that strengthen digital literacy and workforce readiness. Pascua-Valenzuela (2025) highlighted that effective digital workforce preparation requires collaboration among governments, higher education institutions, industry partners, and international organizations to improve digital infrastructure, establish digital literacy standards, and promote technology-integrated teaching and learning. Such policy initiatives are particularly important in developing inclusive "smart learning environments" that enable students from diverse socioeconomic and geographic contexts to acquire competencies necessary for participation in the digital economy.

The digital transformation of the Philippine economy has intensified in recent years as national development agendas increasingly prioritize innovation, digitalization, and workforce competitiveness. According to the Commission on Higher Education (2023), the Information Technology (IT) sector plays a strategic role in supporting key industries such as business process outsourcing, e-governance, education, and emerging digital services. As a result, higher education institutions offering IT programs are expected to produce graduates who demonstrate strong digital skills proficiency and are adequately prepared for employment in technology-driven workplaces. The World Bank (2022) further emphasized that employers in the Philippines now place greater value on applied digital competencies alongside formal academic credentials, making job readiness among IT graduates a pressing national concern.

The urgency of strengthening digital competencies became even more pronounced during the COVID-19 pandemic, which accelerated the shift toward online learning, remote work, and digital service delivery across the Philippines, including rural and geographically isolated institutions. This rapid digital transition exposed existing inequities in infrastructure and digital preparedness, particularly in provincial higher education settings.

Digital skills proficiency in IT education encompasses both domain-specific technical competencies and transversal digital skills necessary for modern workplaces. In the outcomes-based education guidelines articulated by CHED (2023), IT students are expected to acquire competencies in programming, database management, networking, and cybersecurity, as well as higher-order skills such as problem-solving, digital collaboration, information literacy, and adaptability to technological change. Similarly, the Asian Development Bank (2021), in its assessment of digital skills development in the Philippines, highlighted the importance of aligning academic programs with industry-relevant digital competencies. However, despite ongoing curriculum reforms, the ADB noted that significant disparities in digital skill development persist across regions due to uneven institutional resources, technological access, and exposure to industry-linked learning experiences.

These disparities are particularly evident in geographically isolated and disadvantaged areas such as Eastern Samar. As a largely rural and island province, Eastern Samar faces persistent challenges related to limited digital infrastructure, economic vulnerability, and restricted access to technology-driven industries. IT students in the province often pursue their education in constrained learning environments characterized by unstable internet connectivity, limited laboratory facilities, and fewer opportunities for industry immersion. In their study on graduate employability in Philippine higher education, Tayco et al. (2022) observed that students from non-urban institutions tend to experience greater difficulty translating academic competencies into employment readiness. However, empirical research focusing specifically on rural IT students remains limited.

Job readiness refers to graduates' preparedness to transition successfully from higher education to professional employment. The Department of Labor and Employment (2022), through the JobsFit Labor Market Information Report, described job readiness as a combination of technical competence, confidence, adaptability, communication skills, and the ability to apply knowledge to real-world contexts. In IT education, job readiness is closely tied to graduates' capacity to work with evolving technologies, collaborate in digital environments, and respond effectively to workplace demands. Employer feedback analyzed by DOLE consistently reveals gaps between graduates' technical qualifications and their practical readiness for employment, particularly among graduates from non-urban higher education institutions.

Recent multidisciplinary research suggests that digital workforce readiness extends beyond technical competence and includes psychological and cognitive dimensions. Studies in Southeast Asia highlight the importance of digital self-efficacy, critical thinking, and collaborative learning in shaping young people's readiness for digital employment. For instance, Khan et al. (2022) found among Malaysian youth that digital literacy development significantly contributes to both academic performance and employability outcomes.

Similarly, Suhada et al. (2025), in a study of Indonesian youth, demonstrated that digital skills significantly improve digital self-efficacy, which in turn fully mediates their influence on digital work readiness. These findings indicate that individuals must possess not only technical capabilities but also the confidence to apply these competencies effectively in workplace contexts.

Other empirical studies further highlight the interaction between digital competencies and broader employability skills. Aryasandy et al. (2025) reported that work readiness among vocational students is significantly influenced by critical thinking, internship experience, and self-efficacy. In contrast, digital literacy alone did not directly predict employment readiness. Similarly, Kholifah et al. (2025) demonstrated that digital communication and collaboration serve as key mediating competencies linking technical digital skills to productivity and innovation outcomes among vocational graduates. Supporting these findings, Rakowska and De Juana-Espinosa (2021) observed that employers increasingly prioritize transferable competencies such as communication, teamwork, and adaptability over narrowly defined technical skills. Collectively, these studies suggest that digital workforce preparation must integrate technical expertise with cognitive, collaborative, and psychological competencies.

The present study is anchored on Human Capital Theory and Competency-Based Education (CBE). Human Capital Theory, as articulated by Becker (1993), explains that individuals' skills, knowledge, and competencies enhance productivity and employability, positioning education as an investment that yields labor market returns. Complementing this perspective, Mulder (2017) explained that Competency-Based Education emphasizes the systematic development and assessment of clearly defined competencies aligned with occupational standards and industry expectations. Within this theoretical framework, digital skills proficiency represents a critical form of human capital that is expected to influence the job readiness of IT students, particularly in resource-constrained regional contexts such as Eastern Samar.

International empirical evidence supports the association between digital competencies and employment-related outcomes. In the study conducted by van Laar et al. (2020), higher levels of digital skills were linked to greater adaptability, employability, and confidence in workplace performance. Similarly, Siddiq et al. (2016) found that digital competence development contributes to learners' readiness to engage in technology-mediated professional environments.

Despite these international findings, Philippine-based empirical research examining the multidimensional relationship between digital skills proficiency and job readiness remains limited, particularly in rural and provincial higher education institutions. Existing local studies often focus broadly on graduate employability or urban-based universities and seldom employ correlational and predictive designs that quantify the extent to which specific digital skill dimensions influence job readiness. Consequently, there is insufficient empirical evidence explaining how various digital competencies collectively and individually predict employment preparedness among IT students in rural Philippine contexts.

Addressing these gaps, the present study examines the relationship between digital skills proficiency and job readiness among Information Technology students in Eastern Samar, Philippines. Specifically, it analyzes the predictive contribution of technical digital skills, cognitive and problem-solving digital skills, and digital collaboration and communication skills to overall job readiness. By situating the investigation within established theoretical frameworks and a localized rural Philippine setting, this study aims to generate empirical evidence on how digital competencies influence employment preparedness in underserved regions. The findings are expected to inform curriculum enhancement, institutional policy formulation, and targeted interventions that promote equitable workforce preparation and contribute to inclusive and sustainable national development.

Research Questions

This study sought to address the identified research gap by examining the predictive relationship between digital skills proficiency and job readiness among Information Technology students at Eastern Samar State University–Guiuan Campus. Specifically, this study aimed to answer the following research questions:

1. What is the level of digital skills proficiency of Information Technology students in terms of:
    1.1 technical digital skills;
    1.2 cognitive and problem-solving digital skills; and
    1.3 digital collaboration and communication skills?
2. What is the level of job readiness of Information Technology students in terms of:
    2.1 technical readiness for IT-related tasks;
    2.2 workplace adaptability and learning readiness; and
    2.3 professional communication and teamwork readiness?
3. Is there a significant relationship between digital skills proficiency and job readiness among Information Technology students at Eastern Samar State University–Guiuan Campus?
4. Which digital skills proficiency dimensions emerge as the strongest predictors of job readiness among Information Technology students at Eastern Samar State University–Guiuan Campus?

Methodology

Research Design

This study employed a quantitative descriptive–correlational research design, according to John W. Creswell and J. David Creswell (2018), a quantitative correlational design is appropriate when the objective is to measure variables as they naturally occur and to determine the extent of the relationships among them without manipulation. In this study, the design was used to determine the level of digital skills proficiency and job readiness among Information Technology students and to examine the relationship between these variables. In addition, the design enabled the identification of predictive relationships between dimensions of digital skills proficiency and job readiness through statistical modeling, consistent with the use of correlational designs for prediction purposes as discussed by Barbara G. Tabachnick and Linda S. Fidell (2019).

Descriptive analysis was utilized to determine the respondents' level of digital skills proficiency in terms of technical digital skills, cognitive and problem-solving digital skills, and digital collaboration and communication skills, as well as their level of job readiness in terms of technical readiness, workplace adaptability, and learning readiness, and professional communication and teamwork readiness. As emphasized by David De Vaus (2014), descriptive statistics are essential for summarizing and interpreting the characteristics of respondents and the distribution of variables in quantitative research.

To examine the association between digital skills proficiency and job readiness, Pearson product–moment correlation analysis was employed to determine the strength and direction of the relationship between the variables. Pearson's r is appropriate for continuous data and is widely used to assess linear relationships in educational research (Andy Field, 2018). Furthermore, multiple linear regression analysis was conducted to determine which dimensions of digital skills proficiency significantly predict job readiness among Information Technology students. This analytical approach allows for the examination of the unique contribution of each independent variable while controlling for the effects of the others (Tabachnick & Fidell, 2019).

To ensure that the sample size was adequate for the regression analysis, a statistical power consideration was applied. Following the guideline proposed by Jacob Cohen (1992), a minimum sample size for multiple regression can be estimated using the formula $N \geq 50+8m$, where m represents the number of predictors. With three predictors included in the regression model, the recommended minimum sample size is 74 participants. The study included 95 respondents, which exceeds this threshold, indicating that the sample size is sufficient to detect statistically meaningful relationships and to support the reliability of the regression analysis.

Respondents

The participants of the study were fourth-year Information Technology students enrolled at Eastern Samar State University–Guiuan Campus during the School Year 2025–2026. The total population consisted of 134 officially enrolled fourth-year IT students.

To estimate the required sample size, the researcher initially used the Raosoft sample size calculator with a 95% confidence level and

5% margin of error, which suggested a minimum sample of 100 respondents. However, the study adopted a total enumeration approach, wherein all 134 eligible students were invited to participate. Total enumeration is appropriate when the population size is manageable and when the researcher aims to capture the most comprehensive representation of the target group while minimizing sampling bias.

Out of the 134 invited participants, 95 students returned completed and valid questionnaires, which were included in the final data analysis. The slight shortfall from the estimated sample size was due to voluntary non-participation and non-response. Nevertheless, the obtained sample remained adequate for the statistical analyses employed in the study. Based on the guideline for multiple regression proposed by Jacob Cohen (1992), the minimum recommended sample size is $N \geq 50 + 8m$, where m represents the number of predictors. With three predictors included in the regression model, the minimum required sample size is 74 participants. The final sample size of 95 respondents exceeds this threshold, indicating that the study maintained sufficient statistical power for the regression analysis.

The use of total enumeration helped reduce sampling bias. It ensured that the findings adequately reflected the digital skills proficiency and job readiness of fourth-year IT students at the campus during the study period. Only students who were officially enrolled in the Information Technology program and who voluntarily consented to participate were included in the study.

Instrument

The study employed a researcher-adapted survey questionnaire to assess the digital skills proficiency and job readiness of Information Technology students at Eastern Samar State University–Guiuan Campus. The instrument consisted of two parts and used a four-point Likert scale.

Part I is focused on Digital Skills Proficiency comprised 15 items measuring technical digital skills, cognitive and problem-solving digital skills, and digital collaboration and communication skills. This section was adapted from the Digital Competence Framework for Citizens (DigComp 2.2) developed by Vuorikari, Kluzer, and Punie, with items contextualized to academic and project-based IT tasks.

While Part II is focused on the Job Readiness included 15 items assessing technical readiness for IT-related tasks, workplace adaptability and learning readiness, and professional communication and teamwork readiness. This section was adapted from the Work Readiness Scale developed by Caballero, Walker, and Fuller-Tyszkiewicz and modified to reflect entry-level IT and digital workplace contexts.

The questionnaire's content validity was established through expert review by specialists in IT education and educational research. Experts evaluated each item for clarity, relevance, and alignment with the study objectives, ensuring that the instrument accurately captured the constructs of digital skills proficiency and job readiness. The theoretical grounding of the instrument in the Digital Competence Framework for Citizens (DigComp 2.2) and the Work Readiness Scale further strengthened its construct validity.

Prior to full administration, the instrument was pilot-tested with a group of Information Technology students from a different campus, who were not included in the final study sample. The pilot test aimed to assess item clarity, comprehensibility, and contextual relevance. Feedback from the pilot testing was used to refine the wording of the items and ensure that the instrument was suitable for the target respondents.

The internal consistency of the survey instrument was evaluated using Cronbach's alpha. For Part I: Digital Skills Proficiency, the subscales showed acceptable reliability, with Technical Digital Skills at 0.78, Cognitive and Problem-Solving Digital Skills at 0.81, and Digital Collaboration and Communication Skills at 0.79, yielding an overall alpha of 0.82. For Part II: Job Readiness, the subscales also demonstrated acceptable to good reliability, with Technical Readiness for IT-Related Tasks at 0.80, Workplace Adaptability and Learning Readiness at 0.77, and Professional Communication and Teamwork Readiness at 0.79, resulting in an overall alpha of 0.83. These results indicate the instrument is sufficiently reliable for measuring digital skills proficiency and job readiness among Information Technology students.

Procedure

Prior to data collection, the researcher secured the necessary approvals from the concerned authorities of Eastern Samar State University–Guiuan Campus. Ethical standards were strictly observed, and participation in the study was voluntary.

Data were collected through an online survey using Google Forms, as all fourth-year Information Technology students were deployed to their respective assigned internship stations during the first semester of the School Year 2025–2026. The data collection period spanned from August to December 2025, covering the first semester of the academic year. The online mode ensured accessibility and convenience for the respondents despite their off-campus deployment.

Before answering the questionnaire, participants were informed of the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. An informed consent statement was included at the beginning of the Google Form, and only those who agreed to participate were allowed to proceed with the survey.

The survey link was distributed electronically through official class communication channels, including institutional email and approved messaging platforms. Respondents were given sufficient time to complete the questionnaire, and periodic follow-ups were

conducted to encourage participation.

Upon closure of the survey, responses were automatically compiled by the Google Forms platform. The data were screened for completeness and validity, and only properly completed questionnaires were included in the analysis. All collected data were securely stored and used exclusively for academic research purposes, ensuring the anonymity and confidentiality of the respondents.

Data Analysis

The data collected through the survey questionnaire were encoded, cleaned, and analyzed using an appropriate statistical software package. Descriptive and inferential statistical techniques were employed to address the specific research questions of the study.

To determine the level of digital skills proficiency of Information Technology students in terms of technical digital skills, cognitive and problem-solving digital skills, and digital collaboration and communication skills, descriptive statistics were used. These included the computation of means, which were interpreted using the established scale descriptors to determine the level of proficiency for each dimension. Similarly, descriptive statistics, specifically weighted mean, were employed to determine the level of job readiness of Information Technology students in terms of technical readiness for IT-related tasks, workplace adaptability, learning readiness, and professional communication and teamwork readiness. The computed mean scores were interpreted based on the predefined Likert scale ranges to describe respondents' overall level of job readiness.

To examine whether a significant relationship exists between digital skills proficiency and job readiness, Pearson product–moment correlation analysis was conducted. This statistical technique determined the strength and direction of the relationship between overall digital skills proficiency and overall job readiness scores, as well as between their respective dimensions.

To identify which digital skills proficiency variables significantly predict job readiness, multiple linear regression analysis was employed. The three dimensions of digital skills proficiency were entered as independent variables, with job readiness as the dependent variable. Assumption testing was conducted prior to regression, including checks for normality, linearity, and multicollinearity. Normality was assessed through inspection of Q-Q plots and standardized residuals, confirming that residuals were approximately normally distributed. Linearity was evaluated using scatterplots of predicted versus observed values, which indicated a linear relationship between predictors and job readiness. Multicollinearity was assessed through the Variance Inflation Factor (VIF) values, all of which were below 5, suggesting no significant multicollinearity among predictors. The regression analysis provided R^2 and adjusted R^2 values, indicating the proportion of variance in job readiness explained by the digital skills dimensions, and allowed for a clear interpretation of the predictive strength of each variable.

Ethical Considerations

Ethical standards were observed throughout the study. Approval to conduct the research was obtained from the appropriate authorities of Eastern Samar State University–Guiuan Campus. Participation was voluntary, and informed consent was secured through an online consent statement at the beginning of the Google Forms survey. Respondents were informed of the study's purpose and their right to withdraw at any time without penalty. Confidentiality and anonymity were ensured by not collecting identifying information. All responses were analyzed in aggregate form and stored securely in password-protected files accessible only to the researcher. The data were used solely for academic and research purposes, and the findings were reported honestly and transparently.

Results and Discussion

This section presents the results of the statistical analyses conducted to address the objectives of the study. Descriptive statistics were used to determine the levels of digital skills proficiency and job readiness of Information Technology students. At the same time, inferential statistical analyses were employed to examine the relationship between these variables and to identify significant predictors of job readiness. The findings are presented in accordance with the sequence of the research questions.

Level of Digital Skills Proficiency

Table 1. *Level of Digital Skills Proficiency of Information Technology Students in Terms of Technical Digital Skills*

Statement	*Mean*	*Description*	*Interpretation*
1. I can install, update, and configure software applications needed for school or project tasks.	3	Agree	Moderate Proficiency Level
2. I can troubleshoot common computer or device problems (e.g., connectivity, system errors, app crashes).	2.73	Agree	Moderate Proficiency Level
3. I can manage files effectively (create folders, organize, compress, back up, and retrieve files).	3.27	Strongly Agree	High Proficiency Level
4. I can use productivity tools (documents, spreadsheets, presentations) with advanced features when needed.	2.89	Agree	Moderate Proficiency Level
5. I can apply basic cybersecurity practices (strong passwords, privacy settings, safe browsing, malware awareness).	2.94	Agree	Moderate Proficiency Level
Total Weighted Mean	2.96	Agree	Moderate Proficiency Level

Table 1 shows that Information Technology students demonstrate an overall Moderate Proficiency Level in technical digital skills. This pattern suggests that students possess the necessary operational abilities to perform common academic and digital tasks; however, their skills are not yet consistently demonstrated at a high level associated with advanced technical competence. The results indicate that students are generally comfortable performing routine digital operations but may require further development in more complex and analytical technical tasks that are essential in professional IT environments.

A clear pattern emerging from the results is the students' strong familiarity with file management practices, which reflects a high level of proficiency. This suggests that students have developed effective digital organization habits, such as structuring files, retrieving information efficiently, and maintaining organized digital workspaces. Such competence may be attributed to the frequent use of digital platforms in academic settings, where managing files and submitting digital outputs are routine requirements. As noted by Zhao et al. (2021), repeated exposure to structured digital tasks within educational environments often strengthens students' mastery of routine digital operations.

In contrast, several other technical skill areas remain at a moderate proficiency level, indicating functional but not yet advanced competence. Skills related to software configuration, the use of productivity tools, and the application of basic cybersecurity practices appear to be sufficiently developed for everyday academic use but may still lack depth for more demanding professional contexts. This pattern supports the observation of Glasserman-Morales et al. (2024) that digital competence among students is often uneven, as it largely depends on the extent of exposure, opportunities for practice, and institutional support provided by educational programs.

Particularly noteworthy is the moderate level of proficiency in basic cybersecurity practices. While students appear to demonstrate awareness of practices such as using strong passwords, adjusting privacy settings, and maintaining safe browsing habits, the findings suggest that these behaviors may still be applied inconsistently. According to Ismail et al. (2024) and Ahamed et al. (2024), cybersecurity competence requires not only knowledge but also consistent behavioral application, as moderate levels of awareness may still leave users vulnerable to digital risks. This highlights the importance of integrating cybersecurity training into IT curricula to reinforce responsible and secure digital behavior.

Finally, the relatively lower performance in troubleshooting and resolving technical issues suggests a gap in higher-order technical thinking. While students are capable of using technology effectively, they may experience difficulty when faced with system errors, connectivity problems, or application failures that require diagnostic reasoning. This finding reflects a transition point between basic technology usage and greater technical problem-solving skills. Lucas et al. (2022) emphasize that even students enrolled in ICT-related programs may demonstrate limitations in advanced digital competence, particularly in tasks that require analytical thinking and applied problem-solving beyond routine digital use.

The findings indicate that while IT students demonstrate adequate technical digital skills for academic purposes, strengthening problem-solving, system troubleshooting, and cybersecurity practices would further enhance their preparedness for professional IT roles. These areas represent critical competencies that extend beyond routine digital usage and form the foundation of effective technical performance in technology-driven workplaces.

Table 2. *Level of Digital Skills Proficiency of Information Technology Students in Terms of Cognitive and Problem-Solving Digital Skills*

Statement	*Mean*	*Description*	*Interpretation*
1. I can identify reliable online information sources for academic or technical tasks.	3	Agree	Moderate Proficiency Level
2. I can evaluate whether online content is accurate, updated, and appropriate for my purpose.	3.03	Agree	Moderate Proficiency Level
3. I can solve technical or coding-related problems by breaking them into smaller steps.	2.65	Agree	Moderate Proficiency Level
4. I can use digital tools (search engines, forums, documentation, AI tools) to support problem-solving responsibly.	3.18	Agree	Moderate Proficiency Level
5. I can analyze errors or results (e.g., logs, outputs, feedback) and decide the next corrective action.	2.81	Agree	Moderate Proficiency Level
Total Weighted Mean	2.93	Agree	Moderate Proficiency Level

Table 2 indicates that Information Technology students demonstrate an overall Moderate Proficiency Level in cognitive and problem-solving digital skills. This suggests that students possess adequate abilities to search for information, evaluate digital content, and utilize digital tools to assist in solving academic and technical tasks. However, the pattern of responses implies that these competencies are generally functional rather than consistently advanced, highlighting opportunities for further development in areas that require deeper analytical reasoning and structured problem-solving.

A notable pattern in the findings is students' relative confidence in evaluating online information and using digital tools to support problem-solving. This indicates that students are comfortable navigating digital environments and leveraging resources such as search engines, technical forums, documentation, and emerging AI tools when addressing academic or programming-related tasks. Such familiarity reflects the increasing integration of online technical resources in learning environments. As noted by Lucas et al. (2022), students who frequently interact with digital knowledge repositories and online technical communities tend to develop greater

confidence in information searching and tool-assisted problem-solving. However, this observation partially contrasts with findings by Morgan et al. (2022), who reported that many higher education students struggle with critically evaluating digital information, particularly when assessing credibility, bias, and reliability. The participants' background may influence the stronger performance observed in this study in Information Technology, where engagement with technical documentation and online programming communities is more common.

Despite these strengths, the results suggest comparatively weaker performance in skills related to decomposing complex technical problems and analyzing system errors or outputs to determine corrective actions. These competencies represent core aspects of computational thinking, particularly decomposition and debugging, which are essential for effective problem-solving in IT-related tasks. According to Belmar et al. (2019), the ability to break down complex problems into manageable steps and interpret system feedback is fundamental to programming and technical troubleshooting. The moderate proficiency observed in these areas suggests that students may rely more on external tools and resources rather than consistently applying systematic analytical approaches when solving technical issues.

This pattern aligns with the argument of de Jong et al. (2020), who emphasize that higher-order problem-solving abilities rarely emerge solely from general technology use. Instead, they require explicit instructional strategies, guided practice, and opportunities to engage in structured analytical tasks. While students appear capable of utilizing digital tools effectively, the findings suggest that they may still encounter challenges when required to independently diagnose problems, interpret technical outputs, and determine appropriate corrective actions.

Overall, the results highlight the importance of strengthening computational thinking and analytical reasoning skills within IT education. Instructional approaches such as problem-based learning, guided debugging exercises, and real-world technical case scenarios may help students develop stronger diagnostic and decision-making abilities. Furthermore, as digital tools and AI-assisted technologies become increasingly integrated into learning processes, it is important to promote responsible and skill-enhancing use of these tools rather than passive reliance on automated solutions (Grájeda et al., 2023). Enhancing these cognitive and problem-solving competencies can better prepare students for internships and entry-level IT positions where independent analysis, troubleshooting, and adaptive reasoning are essential.

Table 3. *Level of Digital Skills Proficiency of Information Technology Students in Terms of Digital Collaboration and Communication Skills*

Statement	*Mean*	*Description*	*Interpretation*
1. I can collaborate using online tools (Google Workspace/Microsoft 365, shared drives, project boards, LMS).	2.85	Agree	Moderate Proficiency Level
2. I can communicate clearly and professionally through email, chat, and online platforms.	3.13	Agree	Moderate Proficiency Level
3. I can participate in online meetings effectively (proper etiquette, clear sharing of ideas, use of meeting tools).	2.96	Agree	Moderate Proficiency Level
4. I can manage group tasks online (assign roles, set timelines, track progress, and submit outputs).	3.04	Agree	Moderate Proficiency Level
5. I can follow digital etiquette and respect privacy, consent, and responsible sharing in online collaboration.	3.28	Agree	Moderate Proficiency Level
Total Weighted Mean	3.05	Agree	Moderate Proficiency Level

Table 3 indicates that Information Technology students demonstrate an overall Moderate Proficiency Level in digital collaboration and communication skills. This finding suggests that students possess adequate competence in participating in digitally mediated teamwork and communication, which are essential for both academic collaboration and modern technology-driven workplaces. The results imply that students are generally familiar with the use of online collaboration platforms and digital communication practices, although these skills may not yet be consistently demonstrated at a highly advanced or professional level.

A notable pattern in the findings is the relatively stronger performance in digital etiquette and responsible online behavior. This suggests that students are not only aware of appropriate digital conduct but may also have internalized the social expectations that govern online interaction. From a psychological perspective, this reflects the influence of social-behavioral norms within digital environments. Online spaces function as social ecosystems where individuals continuously monitor and adjust their behavior based on perceived expectations, peer feedback, and the desire to maintain positive digital identities. The Digital Competence Framework for Citizens emphasizes that responsible participation, respect for privacy, and ethical communication are fundamental components of digital competence (Vuorikari, Kluzer, & Punie, 2022). The relatively higher performance in this area suggests that students view digital interaction not merely as a technical activity but as a socially regulated behavior, where maintaining professionalism, respecting consent, and practicing responsible information sharing are important for sustaining trust and positive relationships in online communities. Consistent with this interpretation, Morgan, Sibson, and Jackson (2022) observed that students often demonstrate greater confidence in socially oriented digital practices than in cognitively demanding digital tasks, partly because these behaviors are reinforced through frequent peer interaction and social validation in everyday digital communication.

The remaining indicators, including the use of online collaboration tools, participation in online meetings, and management of group

tasks through digital platforms, were all interpreted at a Moderate Proficiency Level, indicating functional competence but not yet advanced collaborative capability. These results suggest that while students are able to communicate through digital platforms and participate in group work, their collaboration practices may still depend on structured academic settings rather than fully autonomous coordination. Lucas et al. (2022) noted that digital collaboration skills in higher education often remain context-dependent and may not fully develop unless students are exposed to authentic collaborative tasks that require shared decision-making and collective problem-solving. Similarly, Potgieter, Coetzee, and Ferreira (2023) found that students who frequently engage in digitally mediated teamwork develop stronger professional collaboration competencies, highlighting the importance of sustained practice in developing these skills.

Overall, the findings suggest that students are comfortable with routine digital interaction and communication, but there may still be limitations when collaboration requires more complex coordination, leadership, or accountability within digital teams. Contemporary research on digital employability emphasizes that effective collaboration involves not only communication but also skills such as task coordination, conflict management, and shared responsibility in virtual work environments (Pham, 2024). The present results partially support this perspective, indicating that while IT students demonstrate adequate digital communication and collaboration skills, further opportunities for authentic teamwork, project-based collaboration, and leadership within digital environments may help strengthen these competencies and better prepare students for professional IT settings.

Table 4. *Summary on the Level of Digital Skills Proficiency of Information Technology Students*

Digital Skills Proficiency	*Mean*	*Description*	*Interpretation*
1. Technical Digital Skills	2.96	Agree	Moderate Proficiency Level
2. Cognitive and Problem-Solving Digital Skills	2.93	Agree	Moderate Proficiency Level
3. Digital Collaboration and Communication Skills	3.05	Agree	Moderate Proficiency Level
Overall Weighted Mean	2.98	Agree	Moderate Proficiency Level

Legend: 4 – Strongly Agree (3.26–4.00), High Proficiency Level; 3 – Agree (2.51–3.25), Moderate Proficiency Level; 2 – Disagree (1.76–2.50), Low Proficiency Level; 1 – Strongly Disagree (1.00–1.75), Very Low Proficiency Level.

Table 4 presents the overall summary of the digital skills proficiency of Information Technology students. The findings indicate that students demonstrate an overall Moderate Proficiency Level in digital skills, suggesting that they possess adequate and functional competence across technical, cognitive, and collaborative dimensions. This level of proficiency indicates that students are generally capable of performing essential digital tasks required in academic contexts and basic technology-related activities. However, the results also imply that these competencies have not yet reached a consistently high level associated with advanced or professional digital expertise.

A noticeable pattern in the findings is the relatively stronger performance in digital collaboration and communication skills compared with the other dimensions. This suggests that students are more comfortable engaging in digitally mediated interaction, teamwork, and communication within online environments. Such competence may reflect the increasing integration of collaborative platforms, messaging systems, and virtual meetings in academic activities, which frequently require students to coordinate and communicate with peers in digital spaces. Previous studies similarly report that students tend to develop stronger skills in commonly practiced digital interactions, particularly communication and collaboration tasks that are reinforced through everyday technology use (Lucas et al., 2022; Vuorikari et al., 2022). In contrast, cognitive and problem-solving digital skills appear to represent a comparatively weaker area of competence. Although students demonstrate the ability to search for information and utilize digital tools, these results suggest that more complex processes such as analytical reasoning, debugging, and systematic problem decomposition may still require further development. This pattern indicates that while students are capable technology users, the transition from digital consumption and routine use toward deeper computational thinking and independent problem-solving may still be in progress.

Overall, the relatively consistent results across the three indicators reflect a balanced but moderate digital competence profile among IT students. The findings highlight that students possess the foundational digital skills necessary for academic work. However, additional opportunities for advanced practice may be needed to strengthen higher-level technical and analytical competencies. Strengthening curriculum-based training in areas such as complex problem-solving, technical troubleshooting, and professional-level digital practice may help further enhance students' readiness for the demands of contemporary IT workplaces.

Level of Job Readiness

Table 5. *Level of Job Readiness of Information Technology Students in Terms of Technical Readiness*

Statement	*Mean*	*Description*	*Interpretation*
1. I feel ready to perform common IT tasks expected in entry-level roles (support, documentation, basic systems work).	3.25	Agree	High level of job readiness
2. I can apply my programming/technical knowledge to real-world tasks or projects.	2.98	Agree	High level of job readiness
3. I am confident in learning and using new tools, platforms, or programming languages required by a job.	3.01	Agree	High level of job readiness
4. I can follow technical instructions, standards, or workplace procedures accurately.	3.2	Agree	High level of job readiness
5. I can produce quality outputs (e.g., code, reports, documentation) within given requirements.	2.94	Agree	High level of job readiness
Overall Mean	3.07	Agree	High level of job readiness

Table 5 shows that Information Technology students demonstrate a high level of job readiness in terms of technical readiness, indicating that they generally perceive themselves as prepared to perform tasks expected in entry-level IT roles. This encompasses technical support, documentation, basic systems work, and adherence to workplace procedures. The findings suggest that students possess both the confidence and functional competence necessary to meet standard technical expectations in professional IT environments.

A clear pattern emerges in students' strengths: they reported the highest readiness in performing common IT tasks and following technical instructions accurately. This indicates that students are most comfortable with structured, routine technical activities where expectations and procedures are clearly defined. These results align with Wong et al. (2025), who emphasized that compliance with technical standards and procedural accuracy is a critical marker of employability for digital technology graduates. Similarly, Pham (2024) highlights that graduates who demonstrate functional competence in standard technical tasks transition more smoothly into workplace roles.

Students also showed strong adaptability, reflected in their confidence to learn and use new tools, platforms, or programming languages. This adaptability is increasingly valuable in the dynamic IT field, where technological requirements evolve rapidly (Tee et al., 2024). However, slightly lower performance was observed in applying technical knowledge to real-world tasks and producing quality outputs independently.

Although still within the high-readiness range, these findings suggest that students may benefit from additional opportunities for experiential and project-based learning. Lucas et al. (2022) note that while students often feel competent in theory, translating knowledge into practical outcomes can be challenging, especially in complex or unpredictable scenarios. Conversely, Potgieter et al. (2023) found that repeated engagement with real-world projects strengthens applied technical competence, emphasizing the importance of instructional context in shaping job readiness.

Overall, the findings indicate that IT students are technically prepared for entry-level roles, particularly in structured and procedural tasks, but targeted interventions and hands-on experiences could further enhance their applied competence and ability to manage real-world IT challenges independently.

Table 6. *Level of Job Readiness of Information Technology Students in Terms of Workplace Adaptability and Learning Readiness*

Statement	*Mean*	*Description*	*Interpretation*
1. I can adapt to changes in tasks, schedules, or expectations in a work setting.	3.06	Agree	High level of job readiness
2. I can accept feedback and use it to improve my performance.	3.45	Strongly Agree	Very high level of job readiness
3. I can manage my time well and meet deadlines even when tasks are challenging.	3.22	Agree	High level of job readiness
4. I can work independently when needed and seek help appropriately when stuck.	3.2	Agree	High level of job readiness
5. I am willing to continuously learn new skills to remain competitive in the IT field.	3.42	Strongly Agree	Very high level of job readiness
Overall Mean	3.27	Strongly Agree	Very high level of job readiness

Table 6 shows that Information Technology students demonstrate a very high level of workplace adaptability and learning readiness, with an overall mean of 3.27, interpreted as Strongly Agree. This indicates that students are highly prepared to adjust to workplace demands, manage challenges, and engage in continuous professional development. Such skills are essential in dynamic, technology-driven work environments.

The highest levels of readiness were observed in accepting feedback to improve performance and in the willingness to learn new skills continuously. These results highlight a strong orientation toward self-improvement and lifelong learning, aligning with literature that identifies adaptability, feedback responsiveness, and continuous learning as critical competencies for employability in the digital economy (Pham, 2024; World Economic Forum, 2020). Graduates who embrace these traits are likely to demonstrate resilience, adaptability, and sustained professional growth, qualities valued by employers beyond technical skill alone.

Other indicators, such as adapting to changing tasks and expectations, managing time effectively, and working independently while seeking help when needed, were also rated at a high level. This pattern suggests that students are competent in self-regulation and task management, but their performance may still benefit from structured opportunities to apply these skills in authentic work contexts. Potgieter et al. (2023) note that students with strong adaptability and self-management skills perceive themselves as more work-ready, yet Jackson and Bridgstock (2021) caution that high self-perceived readiness may not always translate into real-world effectiveness unless supported by practical, workplace-based learning experiences.

Overall, the findings indicate that IT students possess strong adaptability and learning readiness, with particularly notable strengths in feedback utilization and continuous skill development. To fully translate these capabilities into professional performance, targeted experiential learning opportunities and real-world practice remain essential.

Table 7. *Level of Job Readiness of Information Technology Students in Terms of Professional Communication and Teamwork Readiness*

Statement	*Mean*	*Description*	*Interpretation*
1. I can explain technical ideas clearly to classmates, instructors, or non-technical individuals.	3	Agree	High level of job readiness
2. I can write professional messages and reports using appropriate tone and structure.	2.89	Agree	High level of job readiness
3. I can work effectively with others by fulfilling my role and supporting team goals.	3.24	Strongly Agree	Very high level of job readiness
4. I can handle disagreements respectfully and help the group reach workable solutions.	3.28	Strongly Agree	Very high level of job readiness
5. I demonstrate professionalism (respect, responsibility, honesty) when working with others.	3.47	Strongly Agree	Very high level of job readiness
Overall Mean	3.176	Agree	High level of job readiness

Table 7 shows that Information Technology students exhibit a high level of professional communication and teamwork readiness, with an overall mean of 3.18, interpreted as Agree. This suggests that students generally perceive themselves as capable of collaborating effectively and maintaining professional conduct in team settings, which are essential competencies in contemporary IT workplaces. The findings indicate a solid foundation in interpersonal and collaborative skills, although not all aspects of professional communication are consistently demonstrated at the highest level.

The strongest areas of readiness were observed in demonstrating professionalism, managing disagreements respectfully, and supporting team goals, all interpreted as very high levels of job readiness. These results highlight that students value ethical conduct, responsibility, and collaborative problem-solving, aligning with research emphasizing professionalism, teamwork, and conflict management as critical graduate attributes, particularly in project-based IT environments (Jackson, 2016; Potgieter et al., 2023). Employers consistently regard these traits as indicators of employability, given the cross-functional and client-oriented nature of many IT roles (Wong et al., 2025).

In contrast, competencies related to explaining technical ideas to non-technical audiences and writing professional messages or reports were comparatively lower, although still at a high readiness level. This suggests that while students are confident in interpersonal collaboration and professional behavior, they may face challenges in technical communication—especially when simplifying complex concepts for diverse audiences. This pattern aligns with prior studies indicating that technical students often struggle more with written and cross-audience communication than with teamwork or peer collaboration (Jackson & Bridgstock, 2021; Pham, 2024).

The results highlight a strong foundation in professionalism and teamwork, which can be leveraged to enhance employability. To address gaps in technical communication, curriculum strategies such as presentation-based tasks, technical writing exercises, and interdisciplinary collaboration projects are recommended. Strengthening these skills alongside existing teamwork competencies will better prepare students for real-world IT roles, where effective communication and collaboration are as critical as technical expertise.

Table 8. *Summary on the Level of Job Readiness of Information Technology Students*

Sub - Variables	*Mean*	*Description*	*Interpretation*
Technical Readiness.	3	Agree	High level of job readiness
Workplace Adaptability and Learning Readiness	2.89	Agree	High level of job readiness
Professional Communication and Teamwork Readiness	3.24	Agree	High level of job readiness
Overall Weighted Mean	3.04	Agree	High level of job readiness

Legend: 4 – Strongly Agree (3.26–4.00), Very High Level of Job Readiness; 3 – Agree (2.51–3.25), High Level of Job Readiness; 2 – Disagree (1.76–2.50), Low Level of Job Readiness; 1 – Strongly Disagree (1.00–1.75), Very Low Level of Job Readiness.

Table 8 presents a summary of the overall job readiness of Information Technology students, revealing a high level of preparedness with an overall weighted mean of 3.04. This indicates that students generally perceive themselves as capable of handling entry-level IT responsibilities, adapting to workplace expectations, and functioning effectively in professional and collaborative environments. The findings reinforce the notion that job readiness in the digital age is multidimensional, encompassing technical competence, interpersonal professionalism, and broader employability capacities that enable graduates to meet workplace demands (Pham, 2024).

Among the variables, professional communication and teamwork readiness emerged as the strongest areas, suggesting that students are relatively more confident in interpersonal collaboration, maintaining professional conduct, and contributing to team objectives. This pattern aligns with employability research emphasizing that teamwork, professional identity, and collaborative performance are crucial for successful workplace transitions, particularly in contexts where collective problem-solving and cross-functional interaction are routine (Jackson, 2016).

Technical readiness also reflects high competence, indicating that students feel adequately prepared to perform typical IT tasks such as system support, documentation, and following operational procedures. However, the overall rating remaining "high" rather than "very high" suggests that while students have functional technical skills, there is still room to strengthen applied proficiency through practical, hands-on experiences.

Workplace adaptability and learning readiness, though still high, showed slightly lower relative strength. This suggests that while

students are generally open to adjusting to new tasks and acquiring new skills, the development of these attributes may be influenced by the extent of authentic exposure to real-world work contexts. Evidence highlights that employability outcomes improve when students engage in meaningful curricular and co-curricular experiences that simulate workplace conditions, as these opportunities help translate self-perceived readiness into tangible workplace competence (Jackson & Bridgstock, 2021; Potgieter et al., 2023).

Overall, the results highlight that IT students possess a solid foundation of job readiness across technical, adaptive, and collaborative dimensions. However, continuous engagement in experiential learning and reflective practice is essential to advance their readiness to a very high level, fully preparing them for the dynamic demands of contemporary IT environments.

Relationship Between Job Readiness and Technical Digital Skills, Cognitive and Problem-Solving Skills, Digital Skills, and Digital Collaboration and Communication Skills

Table 9. *Relationship Between Job Readiness and Technical Digital Skills, Cognitive and Problem-Solving Skills, Digital Skills, and Digital Collaboration and Communication Skills of Information Technology Students at Eastern Samar State University–Guiuan Campus*

Variable	*Correlation Coefficient*	*Interpretation*	*P – Value*	*Interpretation*
Technical digital skills	0.8088	Very strong positive relationship	.00001	Significant
Cognitive and problem-solving digital skills	0.7592	Strong positive relationship	.00001	Significant
Digital collaboration and communication skills	0.8140	Very strong positive relationship	.00001	Significant

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

Table 9 shows that all three dimensions of digital skills proficiency are strongly and positively associated with job readiness, and each relationship is statistically significant at the 0.05 level (2-tailed). Technical digital skills yielded a correlation coefficient of 0.8088 with a probability value of 0.00001, indicating a very strong positive and significant relationship. Digital collaboration and communication skills produced the strongest association with job readiness, with an r value of 0.8140 and the same probability value of 0.00001, likewise reflecting a very strong positive and significant relationship. Cognitive and problem-solving digital skills also demonstrated a robust relationship with job readiness; the correlation coefficient reached 0.7592, and the probability value was 0.00001, indicating a strong positive and significant relationship.

The pattern of results is consistent with the findings of van Laar et al. (2017), who emphasized that job readiness in technology-oriented fields extends beyond basic digital tool usage. Their systematic review of digital skills and 21st-century competencies highlights that workforce-relevant digital competence is inherently multidimensional, encompassing technical skills, critical thinking and problem-solving abilities, and digital communication and collaboration skills. These skill domains collectively enable individuals to perform complex tasks, adapt to evolving technological environments, and function effectively within digitally mediated workplaces. The strong associations observed in the present study between each digital skills dimension and job readiness support this framework, reinforcing the view that comprehensive digital proficiency is a critical foundation for employability in contemporary IT-driven work settings.

Notably, the strongest relationship was found for digital collaboration and communication skills, with an r value of 0.8140, indicating a very strong association with job readiness. According to van Laar et al. (2017), modern work environments increasingly require graduates to collaborate through digital platforms, communicate effectively across various digital channels, and participate in team-based workflows. These competencies are considered essential for effective performance in technology-enabled workplaces. Similarly, the World Economic Forum (2020) emphasized that collaboration and communication skills supported by digital technologies are among the most critical skills demanded in contemporary and future labor markets.

The very strong relationship between technical digital skills and job readiness (r = 0.8088) is also expected in Information Technology contexts. According to Albina (2020), technical competence—including proficiency in software tools, systems operation, and IT-related applications—directly reflects a graduate's ability to perform role-relevant tasks and meet workplace performance expectations. This reinforces the idea that strong technical skills contribute substantially to students' readiness for employment in IT-focused professions.

In addition, the strong relationship between cognitive and problem-solving digital skills and job readiness (r = 0.7592) is consistent with research emphasizing that digital competence goes beyond operational skills. According to Ng (2012) and Ferrari (2013), digital literacy includes higher-order cognitive processes such as critical thinking, problem solving, and decision-making in digital contexts. These scholars further noted that learners often require explicit instructional preparation to effectively apply these cognitive digital skills in both educational and professional settings, which helps explain their strong association with job readiness observed in this study.

Predictors of Job Readiness

Table 10 presents the results of the multiple regression analysis examining the predictive influence of digital skills proficiency variables on job readiness among Information Technology students. The findings indicate that technical digital skills, cognitive and problem-solving digital skills, and digital collaboration and communication skills all emerged as statistically significant predictors of job

readiness, confirming that digital competence plays a critical role in preparing students for employment in technology-driven contexts.

Table 10. *Results of Multiple Regression Analysis for Variables That Singly or in Combination Best Predict Job Readiness*

Predictor Variables	*Unstandardized Coefficient*	*Standard Error*	*t*	*p-value*	*Interpretation*
Technical digital skills	0.985	0.29804195	3.3067	0.0013	Significant predictor
Cognitive and problem-solving digital skills	0.5438	0.259237002	2.0979	0.0386	Significant predictor
Digital collaboration and communication skills	1.0693	0.273727452	3.9064	0.0001	Significant predictor

Among the examined predictors, digital collaboration and communication skills emerged as the strongest contributor to job readiness, as reflected by the highest unstandardized coefficient of 1.0693 and a statistically significant p-value of 0.0001. This finding indicates that students who demonstrate stronger abilities in collaborating and communicating through digital platforms tend to report higher levels of readiness to meet workplace demands. According to van Laar et al. (2017), effective digital collaboration and communication are core components of 21st-century skills, enabling individuals to function productively in team-based and technology-enabled work environments. Similarly, the World Economic Forum (2020) emphasized that communication and collaboration supported by digital technologies are among the most in-demand competencies in contemporary and future labor markets, especially in remote and hybrid work settings. The prominence of this predictor highlights the increasing importance of interpersonal effectiveness in digitally mediated professional environments.

Technical digital skills likewise emerged as a strong and statistically significant predictor of job readiness, as indicated by a unstandardized coefficient of 0.985 and a p-value of 0. 0013. This finding is expected in Information Technology programs, as technical competence directly reflects students' ability to perform job-related tasks, apply technical knowledge, and meet performance standards required by the industry. According to Albina (2020), technical proficiency is a key determinant of employability among IT graduates in the Philippine context, as employers prioritize graduates who can effectively use technologies relevant to their field. The present result reinforces the notion that mastery of technical digital skills enhances students' confidence and preparedness to enter the workforce.

In addition, cognitive and problem-solving digital skills were found to significantly predict job readiness with an unstandardized coefficient of 0.5438 and a p–value of 0.0386, although with a comparatively smaller contribution. This suggests that students' ability to analyze digital information, solve problems, and make informed decisions in technology-rich environments contributes meaningfully to their readiness for employment. According to Ng (2012) and Ferrari (2013), digital competence extends beyond operational skills and includes higher-order cognitive abilities that allow individuals to adapt to complex and dynamic workplace challenges. These skills are particularly important in IT-related professions, where problem-solving and critical thinking are essential for managing systems, troubleshooting issues, and innovating solutions.

The results indicate that job readiness among Information Technology students is best explained by a combination of technical competence, cognitive capability, and digital collaboration skills, rather than by any single dimension of digital proficiency. The findings support existing literature that emphasizes the multidimensional nature of digital skills and their central role in graduate employability. While the regression results demonstrate predictive relationships, they should be interpreted cautiously, as prediction does not imply causation. Nonetheless, the results underscore the importance of integrating comprehensive digital skill development into IT curricula to enhance students' readiness for the evolving demands of the workplace.

Conclusions

This study examined the levels of digital skills proficiency and job readiness among Information Technology students and assessed their relationship and predictive links. Results showed that students demonstrated an overall Moderate Proficiency Level of digital skills across technical, cognitive, problem-solving, and digital collaboration and communication domains, indicating functional competence but not consistently advanced proficiency. Students also reported a high level of job readiness, suggesting general preparedness for entry-level employment demands. Correlation analysis revealed that all digital skills dimensions were strongly and positively associated with job readiness, confirming that higher digital competence corresponds to greater perceived work preparedness. Multiple regression further indicated that the three digital skills domains were significant predictors of job readiness, with digital collaboration and communication skills emerging as the strongest predictor, followed by technical digital skills and cognitive/problem-solving skills.

These findings underscore that job readiness in IT contexts is shaped by a multidimensional digital competence profile that extends beyond tool use to include higher-order thinking and digitally mediated teamwork. Strengthening curriculum-embedded opportunities for authentic collaboration, applied technical performance, and structured problem-solving may therefore enhance graduates' readiness for evolving technology-driven workplaces.

While this study focused on IT students, the findings highlight a multidimensional digital competence framework with broader applicability, particularly for non-urban or rural disciplines such as agriculture, healthcare, natural resource management, and community development. Across these fields, digital collaboration and communication skills, alongside cognitive problem-solving

abilities, are critical for remote consultation, tele-services, and technology-mediated teamwork, often compensating for limited physical infrastructure and traditional mentorship opportunities. The predictive strength of digitally mediated collaboration suggests that vocational and professional programs should integrate authentic, structured collaborative projects and problem-solving exercises to mirror real-world, technology-driven work environments. Ultimately, regardless of discipline or geographic context, job readiness in the contemporary economy depends on an integrated skill set that combines technical competence, higher-order thinking, and digital social engagement, providing a transferable framework for preparing graduates in both urban and non-urban settings.

Based on the findings of the study, the following recommendations are proposed:

Since digital collaboration and communication skills emerged as the strongest predictor of job readiness, Information Technology programs should intentionally integrate collaborative, technology-mediated activities such as team-based projects, agile workflows, peer code reviews, and digital project management tasks to simulate real workplace environments. Although students demonstrated utilized technical and cognitive digital skills, lower indicators in troubleshooting, debugging, and applied problem solving suggest the need for more structured, hands-on learning experiences. Problem-based learning, guided debugging exercises, and real-world case simulations may help develop higher-order technical competence. Given the moderate level of cybersecurity practice, targeted and repeated instruction on cybersecurity principles should be embedded across subjects rather than treated as a standalone topic to promote consistent professional behaviors.

Internships, industry-linked projects, and capstone experiences are recommended to strengthen the transition from perceived to demonstrable job readiness. The Commission on Higher Education (CHED) and comparable higher education governance bodies should consider mandating the integration of multidimensional digital competence frameworks into program accreditation standards and curriculum guidelines. Policies should encourage institutions to move beyond isolated technical training toward competency-based outcomes that explicitly include digital collaboration, cognitive problem-solving, and cybersecurity literacy across all technology-related disciplines. Institutional quality assurance mechanisms should be strengthened to monitor the implementation of authentic, work-integrated learning experiences and ensure alignment with evolving industry standards. Future research may examine additional predictors of job readiness, use multi-source assessments, or employ longitudinal designs to capture skill development over time.

References

Ahamed, B., Polas, M. R. H., Kabir, A. I., Sohel-Uz-Zaman, A. S. Md., Fahad, A. A., Chowdhury, S., & Rani Dey, M. (2024). Empowering Students for Cybersecurity Awareness Management in the Emerging Digital Era: The Role of Cybersecurity Attitude in the 4.0 Industrial Revolution Era. Sage Open, 14(1). https://doi.org/10.1177/21582440241228920

Aryasandy, N., Arwizet, A., Ambiyar, A., Sukardi, S., & Rozi, F. (2025). Analyzing the Influence of Critical Thinking Skills, Self-Efficacy, Digital Literacy, and Industrial Internship on Students' Work Readiness: SEM-PLS Approach. Jurnal Pendidikan MIPA. https://doi.org/10.23960/jpmipa.v26i1.pp721-735.

Asian Development Bank. (2021). Improving digital skills in the Philippines. https://www.adb.org

Belmar, C., Grandi, F., & Fernández, M. (2019). Computational thinking: A systematic review of interventions in higher education. IEEE Revista Iberoamericana de Tecnologías del Aprendizaje, 14(2), 67–75. https://doi.org/10.1109/RITA.2019.2911528

Caballero, Catherine Lissette, et al. "The Work Readiness Scale (WRS): Developing a Measure to Assess Work Readiness in College Graduates." Journal of Teaching and Learning for Graduate Employability, vol. 2, no. 1, June 24, 2011, p. 41, https://doi.org/10.21153/jtlge2011vol2no1art552

Cohen, J. (1992). Statistical power analysis. Current Directions in Psychological Science, 1(3), 98–101. https://doi.org/10.1111/1467-8721.ep10768783

Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage Publications.

Department of Labor and Employment. (2022). JobsFit labor market information report. DOLE. https://jobsfit2022.wordpress.com/

Glasserman-Morales, L. D., et al. (2024). Demographic and school factors associated with digital competences in higher education students. Contemporary Educational Technology, 16(2), ep498. https://doi.org/10.30935/cedtech/14288

Grájeda, C., Castañeda, L., & Selwyn, N. (2023). Artificial intelligence in higher education: Critical perspectives on emerging practices and implications for learning. Educational Technology Research and Development, 71(5), 2451–2468. https://doi.org/10.1007/s11423-023-10231-2

Intaratat, K. (2021). Digital literacy & digital skills scenario of ASEAN marginal workers under & post COVID-19 Pandemic. Open Journal of Business and Management. https://doi.org/10.4236/ojbm.2022.101007.

Ismail, M., et al. (2024). Cybersecurity activities for education and curriculum design. Internet of Things and Cyber-Physical Systems https://doi.org/10.1016/j.chbr.2024.100501.

Jackson, D. (2016). Re-conceptualising graduate employability: The importance of pre-professional identity. Higher Education Research & Development, 35(5), 925–939. https://doi.org/10.1080/07294360.2016.1139551

Jackson, D., & Bridgstock, R. (2021). What actually works to enhance graduate employability? The relative value of curricular, co-curricular, and extra-curricular learning and paid work. Higher Education, 81(4), 723–739. https://doi.org/10.1007/s10734-020-00570-x

Khan, N., Sarwar, A., Chen, T., & Khan, S. (2022). Connecting digital literacy in higher education to the 21st century workforce. Knowledge Management & E-Learning: An International Journal. https://doi.org/10.34105/j.kmel.2022.14.004.

Kholifah, N., Nurtanto, M., Sutrisno, V., Majid, N., Subakti, H., Daryono, R., & Achmadi, A. (2025). Unlocking workforce readiness through digital employability skills in vocational education: Graduates: A PLS-SEM analysis based on human capital Theory. Social Sciences & Humanities Open. https://doi.org/10.1016/j.ssaho.2025.101625.

Koyuncuoglu, D. (2022). Analysis of digital and technological competencies of university students. International Journal of Education in Mathematics, Science, and Technology (IJEMST), 10(4), 971–988. https://doi.org/10.46328/ijemst.2583

Lee, Y.-F., Altschuld, J. W., Tseng, P.-K., & Hung, H. S. (2023). Assessing study skill needs for information technology and computer science students in technical and vocational universities. Heliyon. https://doi.org/10.1016/j.heliyon.2023.e20915

Lucas, M., Bem-Haja, P., Siddiq, F., Moreira, A., & Redecker, C. (2022). Digital proficiency: Sorting real gaps from myths among higher education students. Computers & Education, 176, 104360. https://doi.org/10.1016/j.compedu.2021.104360

Morgan, A., Sibson, R., & Jackson, D. (2022). Digital demand and digital deficit: Conceptualising digital literacy and gauging proficiency among higher education students. Journal of Higher Education Policy and Management, 44(2), 189–203. https://doi.org/10.1080/1360080X.2021.1978075

Mulder, M. (2017). Competence-based vocational and professional education. In M. Mulder (Ed.), Competence-based vocational and professional education (pp. 1071–1106). Springer. https://doi.org/10.1007/978-3-319-41713-4

Ng, W. (2012). Can we teach digital natives digital literacy? Computers & Education, 59(3), 1065–1078. https://doi.org/10.1016/j.compedu.2012.04.016

Pascua-Valenzuela, A. (2025). Digital Literacy and Transformation in ASEAN: A Call for Education Policy Reforms ASEAN Socio-Cultural Community Policy Brief No. 19 (2025) ASCC Research and Development Platform on The Future of Education. https://asean.org/wp-content/uploads/2025/05/ASCC-RD_Policy-Brief_FoE-19_2025_Digital-Literacy-and-Transformation.pdf

Pham, L. T. T. (2024). Work readiness of graduates in the digital age: A literature review. Ho Chi Minh City Open University Journal of Science: Social Sciences, 14(2), 120–128. https://doi.org/10.46223/HCMCOUJS.soci.en.14.2.2820.2024

Potgieter, I. L. (2023). University students' digital world of work readiness in relation to perceived employability competencies. Journal of Learning Development in Higher Education. https://doi.org/10.47408/jldhe.vi27.922

Rakowska, A., & De Juana-Espinosa, S. (2021). Ready for the future? Employability skills and competencies in the twenty-first century: The view of international experts. Human Systems Management, 40, 669 - 684. https://doi.org/10.3233/hsm-201118.

Siddiq, F., Scherer, R., & Tondeur, J. (2016). Teachers' emphasis on developing students' digital information and communication skills. Computers & Education, 98, 148–160. https://doi.org/10.1016/j.compedu.2016.03.006

Suhada, S., Idries, F., Wulandari, N., Oktariantara, I., Romandhani, A., & Riyadho, A. (2025). Digital skills and work readiness: unveiling the mediating effect of digital self-efficacy. Jurnal Akuntansi dan Manajemen. https://doi.org/10.36406/jam.v23i1.262.

Tayco, R. O., Supat, P. S., & Estrope, C. P. (2022, March 1). Employability of a State University Graduate in the Philippines. https://www.researchgate.net/publication/363842912_Employability_of_a_State_University_Graduates_in_the_Philippines

Tee, P. K., Wong, L. C., Dada, M., Song, B. L., & Ng, C. P. (2024). Demand for digital skills, skill gaps, and graduate employability: Evidence from employers in Malaysia. F1000Research, 13, 389. https://doi.org/10.12688/f1000research.148514.1

van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2020). Determinants of 21st-century digital skills. Computers in Human Behavior, 102, 156–168. https://doi.org/10.1016/j.chb.2019.08.017

Vuorikari, R., Kluzer, S., & Punie, Y. (2022). DigComp 2.2: The Digital Competence Framework for Citizens—With new examples of knowledge, skills and attitudes (EUR 31006 EN). Publications Office of the European Union. https://doi.org/10.2760/115376

Wong, L.-C., Chang, Y.-H., & Ho, C.-Y. (2025). Enhancing digital technology graduates' employability in the Fourth Industrial Revolution from employers' perspectives. Sustainability, 17(4), 2110. https://doi.org/10.3390/su17042110

World Bank. (2022). Philippines digital economy report. https://www.worldbank.org

World Economic Forum. (2020). The future of jobs report 2020. World Economic Forum. https://www.weforum.org/publications/the-future-of-jobs-report-2020/

Zhao, Y. (2021). Digital competence in higher education: Students' perceptions and influencing factors. Sustainability, 13(21), 12184.

Affiliations and Corresponding Information

Mikko John C. Cablao
Eastern Samar State University – Philippines
mikko.cablao1992@gmail.com