

Original Article

Technical Skills, Internship Experience, and Certification Perceptions as Predictors of Employability Readiness Among Technology Graduating Students

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Abstract. Graduate employability is influenced by the extent to which students develop technical competencies, obtain meaningful workplace experience, and acquire industry-recognized credentials. This study examined the extent to which technical skills, internship experience, and certification perceptions statistically predicted employability readiness among graduating students in technology-related programs. The study employed a quantitative, cross-sectional predictive research design. The respondents were 123 graduating students enrolled in the Bachelor of Science in Industrial Technology and Bachelor of Technical-Vocational Teacher Education programs at the University of Southern Mindanao. Proportionate stratified random sampling was used to select respondents from the identified program-specialization strata. Data were collected using a researcher-developed 120-item questionnaire covering technical skills, internship experience, certification perceptions, and employability readiness. The instrument underwent evaluation by three doctoral-level experts in Technology Education Management and pilot testing with 30 students who were excluded from the final sample. Internal consistency coefficients were high across the four constructs, with Cronbach's alpha values ranging from .978 to .990. Descriptive statistics and multiple linear regression analysis were performed using jamovi. The respondents reported high levels of technical skills, internship experience, certification perceptions, and employability readiness. The regression model was statistically significant, $F(3, 119) = 84.20$, $p < .001$, and explained 68.0% of the variance in employability readiness ($R^2 = .680$). Technical skills ($\beta = .308$, $p < .001$), internship experience ($B = .406$, $p < .001$), and certification perceptions ($B = .194$, $p = .005$) were significant positive statistical predictors. Among the predictors, internship experience demonstrated the largest standardized coefficient. The findings suggest that technical competence, meaningful workplace experience, and perceptions of professional certification are important factors associated with perceived employability readiness among technology graduating students. The findings should be interpreted as statistical associations within the study context rather than causal effects.

Keywords: Certification; Employability readiness; Internship experience; Multiple linear regression; Technical skills; Technology education.

Graduate employability has become a central concern among higher education institutions as industries increasingly require graduates who possess not only academic knowledge but also practical competencies, workplace experience, and professional credentials. Contemporary perspectives view employability as a multidimensional construct that encompasses skills, personal attributes, and the capacity to obtain and sustain meaningful employment. McQuaid and Lindsay (2005) emphasized that employability extends beyond individual qualifications and includes factors that enable successful labor-market participation. Likewise, higher education institutions are increasingly expected to produce graduates who are adaptable, competent, and responsive to evolving industry needs.

In the Philippine context, technology and technical-vocational programs play a vital role in preparing a competent workforce that can support national development and industrial growth. Demand for graduates with industry-relevant competencies continues to rise as employers seek workers who can perform technical functions immediately and adapt to technological change. Mariano and Tantoco (2023) reported that TVET graduates who demonstrated strong employability competencies exhibited favorable employment outcomes and were highly regarded by employers. Their findings further highlighted the importance of aligning educational programs with labor-market expectations to enhance graduate competitiveness.

Technical skills remain among the most important determinants of employability readiness for students in technology-related disciplines. Competence in troubleshooting, operating tools and equipment, applying theoretical knowledge, and adapting to workplace demands enables graduates to perform effectively in professional environments. Employers consistently prioritize practical competencies and problem-solving abilities when evaluating prospective employees. Evidence from studies on technical and vocational graduates indicates that mastery of technical skills contributes significantly to employment opportunities, workplace performance, and long-term career development.

Internship experiences likewise provide critical opportunities for students to integrate classroom learning with authentic workplace practice. Work-integrated learning helps students build confidence, professional attitudes, communication skills, and technical competence in real organizational settings. Bawica (2021) found that effective internship programs positively influenced students' employability readiness by enhancing academic preparedness, self-initiative, and workplace competence. The study further emphasized that effective supervision, task clarity, and meaningful work assignments are essential elements of successful internship experiences. These findings support the view that internship programs serve as important mechanisms for strengthening graduate preparedness for employment.

Another significant component of employability readiness is certification perception. Industry-recognized certifications provide objective evidence of competence and signal that graduates possess skills aligned with professional standards. In technical education, certifications reinforce the credibility of academic preparation by validating practical competencies required in specific occupations. Existing studies on TVET graduates suggest that certifications, when complemented by technical proficiency and workplace experience, contribute positively to employment opportunities and professional competitiveness. Consequently, certification serves not only as a credential but also as an important indicator of workforce readiness.

The present study is anchored in Human Capital Theory, which posits that investments in education, training, and skills development increase individuals' productivity and economic value. The theory suggests that competencies acquired through formal education, experiential learning, and professional certification enhance employability and labor-market outcomes. Complementing this perspective, Kolb's Experiential Learning Theory emphasizes the importance of learning through concrete experiences, reflection, and practical application, while Social Cognitive Career Theory highlights the influence of self-efficacy, learning experiences, and environmental factors on career development and occupational choices. Collectively, these frameworks provide a comprehensive foundation for understanding how technical skills, internship experiences, and certification contribute to employability readiness among technology graduating students.

Previous research has established the relevance of individual employability-related factors. Mwita et al. (2024) found that technical skills significantly predicted perceived graduate employability among final-year students. Jackson (2015) demonstrated the importance of work-integrated learning in developing employability skills, while Peón et al. (2023) reported that professional certifications were associated with students' perceptions of

employability. However, these studies examined technical skills, workplace learning, and certification within different analytical and contextual frameworks. The present study extends this literature by examining technical skills, internship experience, and certification perceptions simultaneously as statistical predictors of employability readiness among graduating technology students. It further focuses on graduating students in BSIT and BTVTED programs across technology specializations, providing context-specific evidence on the factors associated with their preparedness for professional employment.

Accordingly, this study aimed to examine the extent to which technical skills, internship experience, and certification perceptions predicted employability readiness among technology graduating students. Specifically, it sought to: (1) describe the profile of the respondents in terms of degree program, specialization, internship status, and certification status; (2) determine the level of technical skills in terms of independent performance, troubleshooting ability, operation of tools and equipment, application of theoretical knowledge, accuracy and efficiency, and adaptability; (3) assess the level of internship experience in terms of task relevance, supervision and guidance, hands-on experience, skill development, confidence building, and employment preparedness; (4) determine the level of certification perceptions in terms of certification attainment, certification relevance, competency validation, employer recognition, employability advantage, and future certification intent; and (5) determine whether technical skills, internship experience, and certification perceptions significantly predicted employability readiness in terms of employment confidence, skills match with industry requirements, workplace adaptability, professional readiness, communication and teamwork, and job competitiveness.

Literature Review

Technical Skills and Employability Readiness

McQuaid and Lindsay (2005) conceptualized employability as a multidimensional construct that encompasses knowledge, skills, and personal attributes necessary for obtaining and sustaining employment. Becker (1964) similarly argued that investments in education and training enhance human capital by increasing individuals' productivity and economic value. Complementing these perspectives, Lent et al. (1994) explained that self-efficacy and learning experiences influence individuals' career development and readiness for work. Within technology education, technical skills acquired through formal instruction, laboratory activities, and practical experiences enable students to perform occupational tasks effectively and respond to evolving industry demands. These competencies include troubleshooting, operating tools and equipment, applying theoretical concepts, and adapting to workplace technologies, all of which contribute to employability readiness.

Empirical evidence further supports the importance of technical competence in workforce preparation. Mariano and Tantoco (2023) found that TVET graduates demonstrated high employability competencies and favorable employment outcomes, with employers particularly valuing practical skills and problem-solving abilities. Bawica (2021) likewise reported that experiential and workplace-based learning opportunities significantly enhance students' preparedness for employment and professional practice. Consistent with Kolb's (1984) Experiential Learning Theory, competency development is strengthened through concrete experiences, reflective observation, and practical application. These findings suggest that technology programs such as BSIT and BTVTED, which emphasize competency-based instruction and experiential learning, play a crucial role in developing graduating students' technical proficiency and workplace preparedness.

Internship Experience and Work-Integrated Learning

Work-integrated learning provides students with opportunities to apply classroom knowledge in authentic workplace environments. Internship experiences expose learners to industry practices, professional standards, and real-world problem-solving situations that strengthen their technical and interpersonal competencies. Meaningful workplace engagement also facilitates the transition from academic settings to employment by developing confidence, adaptability, and occupational awareness. Such experiences are increasingly recognized as essential components of graduate employability and workforce preparation (McQuaid & Lindsay, 2005; Generalao et al., 2025).

Recent evidence from the Philippines indicates that the effectiveness of technical and vocational education depends largely on strong industry participation and alignment with labor-market requirements. Limited employer involvement, inadequate workplace exposure, and mismatches between training programs and industry needs may weaken employment outcomes despite formal qualifications (Generalao et al., 2025). Similarly, employer assessments emphasize the importance of practical experience and job-ready competencies in

evaluating graduates entering the workforce (Mariano & Tantoco, 2023). These findings suggest that internship and industry immersion programs within BSIT and BTVTEd curricula play a vital role in enhancing students' employability readiness and professional preparedness.

Certification and Professional Competitiveness

Professional certifications provide formal recognition of competencies and strengthen graduates' competitiveness in the labor market. Certifications serve as signals of verified skills and industry readiness, allowing employers to evaluate applicants beyond academic credentials alone. External credentials also reinforce the alignment between educational programs and occupational standards, thereby enhancing graduates' confidence and employment prospects (Peón et al., 2023). Recent evidence further suggests that credential visibility and skill signaling contribute positively to job attainment and career mobility (Athey & Palikot, 2024).

Empirical studies in the Philippine context likewise demonstrate the value of competency certifications in employment outcomes. Ara Mae T. Cuison (2026) reported that TESDA National Certifications significantly supported graduates' job placement by validating technical competencies and improving entry-level employment opportunities. Similarly, Shirley T. Pamittan et al. (2022) found that professional credentials and licensure performance were associated with stronger employability outcomes among technical teacher education graduates. These findings suggest that industry-recognized certifications constitute an important component of professional competitiveness and employability readiness among technology graduating students.

Employability Readiness of Technology Graduating Students

Employability readiness refers to the extent to which graduates possess the competencies, attitudes, and confidence necessary for successful entry into the workforce. Graduate readiness encompasses technical expertise, communication skills, adaptability, teamwork, and the capacity to respond to changing workplace demands. Research has shown that higher education institutions play a crucial role in developing these competencies through curriculum alignment, industry partnerships, and experiential learning opportunities (Yorke, 2006; Suleman, 2018). The integration of academic preparation and workplace expectations therefore remains fundamental to graduate success.

Recent empirical studies have emphasized that employability readiness is a multidimensional construct shaped by both individual and institutional factors. Finch et al. (2013) found that employers place significant importance on interpersonal skills, problem-solving abilities, and professional attitudes alongside technical competence. Similarly, Jackson (2014) reported that work readiness is strengthened when students engage in authentic learning experiences that promote self-management, collaboration, and lifelong learning. These findings suggest that technology graduating students who possess strong technical competencies, relevant industry experiences, and recognized credentials are more likely to demonstrate higher levels of employability readiness.

Synthesis of the Literature and Research Gap

Previous studies have established the relevance of technical skills, internship experience, and professional certification to graduate employability (Mwita et al., 2024; Jackson, 2015; Peón et al., 2023). The reviewed literature indicates that technical competencies support occupational performance, internship experiences provide opportunities for authentic workplace learning, and professional certifications provide evidence of competency and industry relevance. However, these factors have generally been examined within separate analytical and contextual frameworks, with limited evidence on their simultaneous statistical contribution to employability readiness among graduating students in technology-oriented programs, particularly within the Philippine higher education context. This study therefore examines technical skills, internship experience, and certification perceptions concurrently as statistical predictors of employability readiness among graduating students in BSIT and BTVTEd programs.

Theoretical Foundations of the Study

This study was anchored on three complementary theories: Human Capital Theory, Experiential Learning Theory, and Social Cognitive Career Theory. These theories provided the theoretical basis for examining how technical skills, internship experience, and certification perceptions were statistically associated with employability readiness among technology graduating students.

Human Capital Theory, developed by Becker (1964), posits that investments in education, training, and skill development increase individuals' productive capacity and economic value. From this perspective, technical skills acquired through formal instruction and practical training represent forms of human capital that prepare students to perform occupational tasks. Professional certifications may likewise represent formally recognized competencies that provide additional evidence of acquired human capital. Thus, Human Capital Theory provides the theoretical foundation for examining technical skills and certification perceptions in relation to employability readiness.

Experiential Learning Theory, proposed by Kolb (1984), explains that learning develops through the transformation of experience into knowledge through concrete experience, reflective observation, abstract conceptualization, and active experimentation. Internship experience provides students with opportunities to encounter authentic workplace situations, apply classroom knowledge, develop practical skills, and reflect on their performance. Accordingly, Experiential Learning Theory provides the theoretical basis for examining internship experience as a predictor of employability readiness.

Social Cognitive Career Theory, developed by Lent et al. (1994), emphasizes the roles of learning experiences, self-efficacy, outcome expectations, and environmental influences in career development. Successful learning and workplace experiences can strengthen students' confidence in their ability to perform career-related tasks and navigate employment environments. In this study, the theory provides a basis for understanding employability readiness as an outcome associated with students' accumulated competencies and learning experiences.

Collectively, these theories provide complementary explanations for the proposed relationships among the study variables. Human Capital Theory explains the value of acquired technical competencies and recognized credentials; Experiential Learning Theory explains how workplace experiences contribute to competency development; and Social Cognitive Career Theory explains how learning experiences and perceived capabilities relate to career preparation. Together, these perspectives provide a theoretical foundation for examining technical skills, internship experience, and certification perceptions as statistical predictors of employability readiness.

Research Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

H₀₁: Technical skills do not significantly predict employability readiness.

H₀₂: Internship experience does not significantly predict employability readiness.

H₀₃: Certification perceptions do not significantly predict employability readiness.

H₀₄: Technical skills, internship experience, and certification perceptions, taken collectively, do not significantly predict employability readiness.

Methodology

Research Design

The study employed a quantitative, cross-sectional predictive research design to examine the extent to which technical skills, internship experience, and certification perceptions statistically predicted employability readiness among graduating students. The quantitative approach was used because the study involved collecting and analyzing numerical data from a structured, researcher-made questionnaire. A cross-sectional design was employed because the data were collected from the respondents at a single period during the conduct of the study. The predictive component was used to determine the statistical contribution of technical skills, internship experience, and certification perceptions to employability readiness through multiple linear regression analysis. The design did not involve experimental manipulation; therefore, the findings were interpreted in terms of statistical prediction and association rather than causal effects.

Respondents and Sampling Procedure

The study involved 171 graduating students enrolled in the College of Industry and Technology of the University of Southern Mindanao, Kabacan, Cotabato, specifically those enrolled in the Bachelor of Science in Industrial Technology (BSIT) and Bachelor of Technical-Vocational Teacher Education (BTVTEd) programs. The population consisted of students from the Electrical Technology, Electronics Technology, Automotive Technology, and Architectural Drafting Technology specializations. The required sample size was determined using the Raosoft Sample Size Calculator, based on the following parameters: population size of 171, margin of error of 5%,

confidence level of 95%, and response distribution of 50%. Based on the sample-size determination, 123 respondents were included in the study. Proportionate stratified random sampling was employed to ensure that each program-specialization group was represented according to its proportion in the population. The resulting sample distribution consisted of 30 BSIT-Electrical Technology students, 18 BSIT-Electronics Technology students, 30 BSIT-Automotive Technology students, 23 BSIT-Architectural Drafting Technology students, 15 BTVTEd-Electrical Technology students, and 7 BTVTEd-Architectural Drafting Technology students. Within each stratum, respondents were selected through simple random sampling using the Wheel of Names, wherein the names of eligible students in each stratum were entered into the random-selection tool and selected randomly.

Research Instrument

Data were collected using a researcher-developed questionnaire designed to measure the technical skills, internship experience, certification perceptions, and employability readiness of technology graduating students. The instrument was developed through a systematic process that involved identifying the study constructs from the literature, operationalizing each construct based on the theoretical framework, generating questionnaire items, obtaining expert evaluation, conducting pilot testing, and assessing reliability before final administration.

The questionnaire consisted of two parts. Part I gathered the respondents' demographic and academic profile, including age, sex, degree program, specialization, internship status, certification status, and certification type. Part II contained the four major research constructs with a total of 120 Likert-scale items, distributed equally across the constructs.

Table 1. *Structure of the Research Instrument*

Research Construct	Dimensions	No. of Items
Technical Skills	Independent Performance, Troubleshooting Ability, Operation of Tools and Equipment, Application of Theoretical Knowledge, Accuracy and Efficiency, Adaptability	30
Internship Experience	Task Relevance, Supervision and Guidance, Hands-on Experience, Skill Development, Confidence Building, Employment Preparedness	30
Certification Perceptions	Certification Attainment, Certification Relevance, Competency Validation, Employer Recognition, Employability Advantage, Future Certification Intent	30
Employability Readiness	Employment Confidence, Skills Match with Industry Requirements, Workplace Adaptability, Professional Readiness, Communication and Teamwork, Job Competitiveness	30
Total		120

All items were measured using a five-point Likert scale, where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. Higher scores indicated higher levels of the corresponding construct.

The questionnaire was developed based on the concepts of Human Capital Theory (Becker, 1964), Experiential Learning Theory (Kolb, 1984), and Social Cognitive Career Theory (Lent et al., 1994), as well as previous studies on employability, technical-vocational education, work-integrated learning, and professional certification. The dimensions of each construct were aligned with the operational definitions established in the study to ensure consistency between the conceptual framework and the measurement instrument.

To establish content validity, the researcher-developed questionnaire was evaluated by three experts who hold doctoral degrees in Technology Education Management. The experts assessed the questionnaire using the university's prescribed validation rubric, particularly with respect to the relevance, clarity, appropriateness, and alignment of the items with their intended constructs. Their comments, observations, and recommendations were considered in refining the questionnaire before pilot testing and final administration.

Following expert validation, the questionnaire was pilot-tested with 30 graduating students who possessed characteristics similar to the target respondents but were excluded from the final sample. The pilot data were analyzed using Cronbach's alpha to determine internal consistency. The reliability coefficients were .978 for Technical Skills, .986 for Internship Experience, .990 for Certification Perceptions, and .987 for Employability Readiness, while the overall 120-item instrument obtained a Cronbach's alpha of .993, indicating excellent internal consistency. These coefficients indicate very high internal consistency among the items within the respective constructs. However, the reliability results were interpreted as evidence of internal consistency only and were not treated as evidence of construct validity. The finalized questionnaire was subsequently administered to the 123 graduating students included in the study through proportionate stratified random sampling.

Data Collection Procedure

Before data collection, the researcher secured the necessary permission from the appropriate authorities of the College of Industry and Technology of the University of Southern Mindanao, Kabacan, Cotabato, to conduct the study among graduating students. The researcher then coordinated with the concerned program personnel to identify the eligible respondents based on the established inclusion criteria and sampling frame. The researcher selected the final respondents through proportionate stratified random sampling. After determining the required number of respondents for each program-specialization stratum, the names of eligible students within each stratum were subjected to simple random selection using the Wheel of Names. This procedure ensured that every eligible student within each stratum had an opportunity to be selected. Before administering the questionnaire, the researcher explained the study's purpose, the nature of participation, the confidentiality of responses, and the voluntary nature of participation. The respondents were given sufficient time to complete the researcher-developed questionnaire. The researcher retrieved the completed questionnaires, checked them for completeness, encoded them, and organized them for statistical analysis. The collected data were subsequently encoded and analyzed using jamovi statistical software. The responses were treated confidentially and were used solely for the purposes of the study.

Data Analysis

The data collected from the respondents were encoded, organized, and analyzed using jamovi statistical software. Descriptive and inferential statistical procedures were employed in accordance with the research objectives. Frequencies and percentages were used to summarize the respondents' demographic and academic profiles. Mean and standard deviation were used to determine the levels of technical skills, internship experience, certification perceptions, and employability readiness across their respective dimensions. Prior to the inferential analysis, the normality of the variables was assessed using the Shapiro-Wilk test. The results were considered in determining the appropriateness of the statistical procedures used in the study. Multiple linear regression analysis was employed to determine whether technical skills, internship experience, and certification perceptions significantly predicted employability readiness. The analysis produced the multiple correlation coefficient (R), coefficient of determination (R^2), regression coefficients, standard errors, t -values, and p -values. Statistical significance was evaluated at the 0.05 level. The null hypotheses concerning the individual predictors were rejected when their corresponding p -values were less than .05. For the overall predictive model, the null hypothesis was rejected when the regression model demonstrated statistically significant explanatory power at the 0.05 level of significance.

Ethical Considerations

The study was conducted in accordance with standard ethical research principles. Prior to data collection, permission was secured from the appropriate authorities of the College of Industry and Technology, University of Southern Mindanao, Kabacan, Cotabato. Approval was obtained to ensure that the conduct of the study complied with institutional research policies and guidelines. The respondents were informed of the study's purpose, the voluntary nature of their participation, and their right to withdraw at any time without penalty. The researcher obtained informed consent before administering the questionnaire. The anonymity and confidentiality of the respondents were strictly observed, and no identifying information was collected in the survey. All collected data were used solely for academic purposes. The researcher ensured that the responses were securely stored and were not shared with unauthorized individuals. The study also adhered to ethical standards of honesty, integrity, and respect for participants throughout the research process.

Results and Discussion

Profile of the Respondents

Table 2 presents the demographic and academic profile of the 123 graduating students included in the study. Of the respondents, 74 (60.2%) were male, and 49 (39.8%) were female. In terms of degree program, 101 (82.1%) were enrolled in the Bachelor of Science in Industrial Technology (BSIT), while 22 (17.9%) were enrolled in the Bachelor of Technical-Vocational Teacher Education (BTVTEd). Among the BSIT respondents, 30 (24.4% of the total sample) were from Electrical Technology, 18 (14.6%) from Electronics Technology, 30 (24.4%) from Automotive Technology, and 23 (18.7%) from Architectural Drafting Technology. Among the BTVTEd respondents, 15 (12.2%) were from Electrical Technology, and 7 (5.7%) were from Architectural Drafting Technology. These frequencies correspond to the predetermined allocation of respondents across the identified program-specialization strata.

Table 2. Profile of the Respondents

Category	Sub-Category	Frequency	Percentage
Sex	Male	74	60.2%
	Female	49	39.8%
Degree Program	BSIT	101	82.1%
	↳ Electrical Technology	30	24.4%*
	↳ Electronics Technology	18	14.6%*
	↳ Automotive Technology	30	24.4%*
	↳ Architectural Drafting Technology	23	18.7%*
	BTVTEd	22	17.9%
	↳ Electrical Technology	15	12.2%*
	↳ Architectural Drafting Technology	7	5.7%*
Internship Status	Completed	108	87.8%
	Currently Completing	15	12.2%
Certification Status	With TESDA NC	65	52.8%
	Without TESDA NC	58	47.2%
Certification Type	Not Applicable	58	47.2%
	NC II	50	40.7%
	NC I	10	8.1%
	Other Industry Certification	5	4.0%

Note. *Percentages are based on the total N=123.

Regarding internship status, 108 respondents (87.8%) had completed their internship, while 15 (12.2%) were still completing their internship at the time of data collection. This indicates that most respondents had already obtained workplace-based learning experience before completing their degree requirements. In terms of certification status, 65 respondents (52.8%) reported having a TESDA National Certificate (NC) or equivalent certification, whereas 58 (47.2%) did not have such certification. Among the reported certification types, NC II was the most common, with 50 respondents (40.7%), followed by NC I with 10 (8.1%) and other industry certifications with 5 (4.0%). The distribution indicates that certification attainment was relatively balanced between respondents with and without a TESDA NC or equivalent credential.

The respondents' profile provides appropriate context for examining employability readiness because participants varied in their exposure to workplace-based learning and professional certification. However, these profile characteristics are treated as descriptive information in the present study and should not be interpreted as evidence that internship completion or certification status itself predicts employability readiness. The predictive analysis focuses specifically on the measured constructs of technical skills, internship experience, and certification perceptions. The high proportion of students who had completed their internship is consistent with the role of work-integrated learning in providing students with opportunities to apply academic knowledge in authentic workplace settings. Jackson (2015) emphasized that work-integrated learning can facilitate the development of employability skills by allowing students to engage in workplace tasks and develop competencies required for employment. Similarly, McQuaid and Lindsay (2005) viewed employability as involving not only individual skills but also contextual factors and experiences that facilitate participation in the labor market. The relatively balanced distribution between students with and without certification also provides an appropriate context for examining the contribution of professional credentials to employability readiness. Becker's (1964) Human Capital Theory supports the view that education, training, and competency development represent investments that can enhance individuals' productivity and labor-market value.

Level of Technical Skills of Graduating Students

Table 3 presents the respondents' level of technical skills across six dimensions. Among the dimensions assessed, operation of tools and equipment obtained the highest mean ($M = 4.26$, $SD = 0.64$), followed by adaptability ($M = 4.21$, $SD = 0.64$). Both dimensions were interpreted as *Strongly Agree*. Accuracy and efficiency ($M = 4.11$, $SD = 0.62$), application of theoretical knowledge ($M = 4.10$, $SD = 0.66$), independent performance ($M = 4.05$, $SD = 0.62$), and troubleshooting ability ($M = 3.93$, $SD = 0.69$) were interpreted as *Agree*. The findings indicate that the respondents generally reported favorable levels of technical competence. The highest rating for operation of tools and equipment suggests that the graduating students perceived themselves as capable of using technology-related tools and equipment in performing practical tasks. The high rating for adaptability likewise indicates a favorable perception of their ability to adjust to changing workplace conditions and technological requirements. These

competencies are particularly relevant in technology-oriented programs, where students are expected to integrate technical knowledge with practical performance.

Table 3. *Level of Technical Skills of Graduating Students*

Dimension (Sub-Indicator)	Mean	SD	Interpretation
Operation of Tools	4.26	0.64	Strongly Agree
Adaptability	4.21	0.64	Strongly Agree
Accuracy and Efficiency	4.11	0.62	Agree
Application of Theory	4.10	0.66	Agree
Independent Performance	4.05	0.62	Agree
Troubleshooting Ability	3.93	0.69	Agree

Troubleshooting ability obtained the lowest mean among the six dimensions ($M = 3.93$, $SD = 0.69$), although it remained within the *Agree* category. This comparatively lower rating may indicate an area in which students perceive less confidence relative to their other technical competencies. From an educational perspective, this finding highlights the value of providing students with more opportunities to engage in diagnostic tasks, problem-based activities, laboratory exercises, and authentic technical projects that require them to identify problems, evaluate possible solutions, and apply systematic procedures to resolve technical difficulties.

The findings are consistent with previous studies emphasizing the importance of practical competence and workplace adaptability in graduate employability. David Jackson found that work readiness is enhanced when students develop technical competence, self-management skills, and adaptability through authentic learning experiences (Jackson, 2014). Similarly, Michael Yorke emphasized that employability extends beyond disciplinary knowledge to include the effective application of skills in diverse professional settings (Yorke, 2006). Furthermore, Lee Harvey argued that graduates who demonstrate practical proficiency, independence, and problem-solving abilities are more capable of meeting employer expectations and sustaining long-term career success (Harvey, 2001). Overall, the results suggest that the graduating students perceived their technical skills favorably, particularly in the operation of tools and equipment and adaptability. However, the comparatively lower rating for troubleshooting ability indicates a potential area for further development. Strengthening opportunities for authentic problem-solving and diagnostic activities may help technology programs further develop students' readiness to handle technical challenges in actual work environments.

Level of Internship Experience of Graduating Students

Table 4. *Level of Internship Experience of Graduating Students*

Dimension (Sub-Indicator)	Mean	SD	Interpretation
Hands-on Experience	4.52	0.58	Strongly Agree
Skill Development	4.48	0.59	Strongly Agree
Task Relevance	4.41	0.62	Strongly Agree
Employment Preparedness	4.38	0.61	Strongly Agree
Confidence	4.35	0.63	Strongly Agree
Supervision	4.34	0.62	Strongly Agree

Table 4 presents the level of internship experience of the graduating students across six dimensions. All six dimensions obtained mean scores within the *Strongly Agree* range, indicating that the respondents generally perceived their internship experiences positively. Hands-on experience obtained the highest mean ($M = 4.52$, $SD = 0.58$), followed by skill development ($M = 4.48$, $SD = 0.59$) and task relevance ($M = 4.41$, $SD = 0.62$). Employment preparedness ($M = 4.38$, $SD = 0.61$), confidence building ($M = 4.35$, $SD = 0.63$), and supervision and guidance ($M = 4.34$, $SD = 0.62$) also received high ratings. The results indicate that respondents generally viewed their internship experiences as relevant to developing practical competencies and preparing for employment.

The highest rating for hands-on experience suggests that respondents particularly valued the opportunities their internship provided to engage in actual workplace tasks. The high rating for skill development likewise indicates that the internship was perceived as contributing to the enhancement of competencies relevant to their respective fields. The relatively high rating for task relevance further suggests that students perceived the activities assigned during their internship as appropriate to their academic and occupational preparation. Although supervision and guidance obtained the lowest mean among the six dimensions, its rating remained within the *Strongly*

Agree category, indicating that respondents still viewed the guidance received during their internship positively.

The results support existing literature on work-integrated learning and graduate employability. Jackson (2015) reported that internship experiences facilitate the development of professional competencies, self-efficacy, and workplace adaptability among university students. Silva et al. (2018) likewise found that meaningful industry placements enhance employability by fostering technical proficiency and transferable skills required by employers. Furthermore, Fleming and Haigh (2017) emphasized that effective supervision, mentoring, and authentic workplace engagement significantly contribute to students' confidence, professional identity, and readiness for professional practice.

Level of Certification Perceptions of Graduating Students

Table 5. *Level of Certification Perceptions of Graduating Students*

Dimension	Mean	SD	Interpretation
Future Certification Intent	4.35	0.59	Strongly Agree
Employability Advantage	4.30	0.61	Strongly Agree
Certification Relevance	4.28	0.62	Strongly Agree
Competency Validation	4.22	0.64	Strongly Agree
Employer Recognition	4.18	0.68	Agree
Certification Attainment	4.15	0.65	Agree

Table 5 presents the respondents' level of certification perceptions across six dimensions. Future certification intent obtained the highest mean ($M = 4.35$, $SD = 0.59$), followed by employability advantage ($M = 4.30$, $SD = 0.61$), certification relevance ($M = 4.28$, $SD = 0.62$), and competency validation ($M = 4.22$, $SD = 0.64$). These dimensions were interpreted as *Strongly Agree*. Employer recognition ($M = 4.18$, $SD = 0.68$) and certification attainment ($M = 4.15$, $SD = 0.65$) were interpreted as *Agree*. Overall, the results indicate that the respondents held favorable perceptions regarding the relevance and potential value of professional certification to their career development and employability.

The highest rating for future certification intent suggests that the respondents expressed a strong willingness to pursue additional certifications. This may indicate that students recognize certification as part of continuing professional development beyond the completion of their academic programs. The high ratings for employability advantage and certification relevance likewise suggest that respondents perceived professional credentials as relevant to their future employment prospects and career preparation. Competency validation also received a high rating, indicating that respondents viewed certification as a means of demonstrating or validating technical competencies.

Employer recognition and certification attainment obtained comparatively lower mean scores, although both remained positively rated. The lower rating for employer recognition may indicate that respondents were somewhat less certain about the extent to which employers recognize certification as a basis for employment decisions. Similarly, the relatively lower rating for certification attainment may reflect differences in respondents' actual exposure to certification opportunities. These findings should be interpreted as perceptions rather than direct evidence of employers' actual recognition of certification or the labor-market effects of certification.

The findings are generally consistent with studies emphasizing the perceived value of professional and industry-recognized credentials in graduate employability. Athey and Palikot (2024) discussed the role of non-traditional and industry-based credentials as signals of competencies relevant to employment and career development. Peón et al. (2023) likewise reported that students viewed professional certifications as valuable for strengthening employability and aligning competencies with workplace expectations. In the Philippine context, Pamittan et al. (2022) highlighted the relevance of professional credentials and competency certification in workforce preparation among technical teacher education graduates.

Taken together, the results suggest that the graduating students generally viewed certification favorably, particularly in terms of their intention to obtain future certifications, perceived employability advantage, and relevance to their career preparation. These perceptions provide the descriptive basis for examining, in the subsequent regression analysis, whether certification perceptions significantly predict employability readiness when considered alongside technical skills and internship experience.

Level of Employability Readiness of Graduating Students

Table 6. *Level of Employability Readiness of Graduating Students*

Employability Readiness Dimension	Mean	SD	Interpretation
Employment Confidence	4.35	0.61	Strongly Agree
Skills Match	4.32	0.63	Strongly Agree
Adaptability	4.35	0.64	Strongly Agree
Professional Readiness	4.33	0.65	Strongly Agree
Communication and Teamwork	4.34	0.61	Strongly Agree
Job Competitiveness	4.27	0.66	Strongly Agree

Table 6 presents the level of employability readiness of the graduating students across six dimensions. All dimensions obtained mean scores within the *Strongly Agree* range, with values ranging from 4.27 to 4.35. Employment Confidence and Adaptability obtained the highest mean scores ($M = 4.35$, $SD = 0.61$ and 0.64 , respectively), followed by Communication and Teamwork ($M = 4.34$, $SD = 0.61$), Professional Readiness ($M = 4.33$, $SD = 0.65$), and Skills Match ($M = 4.32$, $SD = 0.63$). Job Competitiveness obtained the lowest mean score ($M = 4.27$, $SD = 0.66$), although it was still interpreted as *Strongly Agree*. Overall, the results indicate a high level of perceived employability readiness among the respondents across all six dimensions.

The relatively high ratings for employment confidence and adaptability suggest that the graduating students perceived themselves as capable of entering the workforce and adjusting to changing workplace demands. The similarly high ratings for communication and teamwork, professional readiness, and skills match indicate that respondents also perceived themselves as possessing competencies relevant to professional practice. Although job competitiveness obtained the lowest mean, its rating remained within the *Strongly Agree* category. This may indicate that, despite generally positive perceptions of their employability, students may still perceive some uncertainty regarding their ability to compete effectively in the labor market. Institutional initiatives such as career preparation, job-search skills development, portfolio building, industry engagement, and professional certification opportunities may therefore complement students' existing competencies.

The findings are consistent with the multidimensional conceptualization of employability proposed by McQuaid and Lindsay (2005), who argued that employability involves individual skills and attributes together with the ability to navigate employment-related contexts. The strong ratings for adaptability and professional readiness are also consistent with Jackson (2015), who emphasized that authentic workplace learning can help students develop and demonstrate employability skills required in professional environments. Similarly, Finch et al. (2013) found that employers consider a combination of technical and interpersonal competencies important when evaluating graduate employability, supporting the high ratings observed for skills match, communication and teamwork, and professional readiness.

Multicollinearity Assessment

Table 7. *Collinearity Statistics (VIF) for Predictor Variables*

Predictor Variable	Tolerance	VIF
Technical Skills	0.490	2.04
Internship Experience	0.425	2.35
Certification Perceptions	0.374	2.67

Note. VIF = Variance Inflation Factor.

Before interpreting the multiple linear regression model, multicollinearity among the predictor variables was assessed using Variance Inflation Factor (VIF) and Tolerance statistics. As shown in Table 7, the VIF values ranged from 2.04 to 2.67, while the corresponding Tolerance values ranged from 0.374 to 0.490. These values were within the commonly used criteria for indicating the absence of problematic multicollinearity, with VIF values below 5.00 and Tolerance values above 0.20 (Hair et al., 2014; Menard, 2002). The results indicate that multicollinearity was not a substantial concern among Technical Skills, Internship Experience, and Certification Perceptions. The predictor variables therefore provided sufficiently distinct information for inclusion in the multiple regression model. This supports the interpretation of the individual regression coefficients because the overlap among statistics did not indicate excessive overlap among predictors.

Multiple Linear Regression Analysis

Table 8. Multiple Linear Regression Analysis of Technical Skills, Internship Experience, and Certification Perceptions as Predictors of Employability Readiness

Model Fit Measures				
Model	R		R ²	
1	0.824		0.680	
Note. Models estimated using sample size of N=123				
Model Coefficients - Employability				
Predictor	B	SE	t	p
Intercept	0.457	0.2623	1.74	0.084
Technical Skills	0.308	0.0756	4.08	<.001
Internship	0.406	0.0844	4.81	<.001
Certification Perceptions	0.194	0.0682	2.85	0.005
Note. R = .824, R ² = .680, F(3, 119) = 84.20, p < .001. B = unstandardized regression coefficient; SE = standard error.				

Table 8 presents the results of the multiple linear regression analysis examining whether technical skills, internship experience, and certification perceptions significantly predict employability readiness among technology graduating students. The regression model produced a multiple correlation coefficient of $R = .824$ and a coefficient of determination of $R^2 = .680$. This indicates that technical skills, internship experience, and certification perceptions collectively accounted for 68.0% of the variance in employability readiness. The remaining 32.0% of the variance may be attributed to other factors not included in the model.

The regression coefficients indicate that technical skills significantly and positively predicted employability readiness ($B = 0.308$, $SE = 0.0756$, $t = 4.08$, $p < .001$). This indicates that, holding the other predictors constant, an increase in technical skills was associated with an increase in employability readiness. Internship experience also significantly and positively predicted employability readiness ($B = 0.406$, $SE = 0.0844$, $t = 4.81$, $p < .001$). Among the predictors, internship experience had the largest unstandardized regression coefficient, indicating a comparatively greater change in the predicted employability readiness score for a one-unit increase in the predictor, while holding the other predictors constant. Certification perceptions likewise significantly and positively predicted employability readiness ($B = 0.194$, $SE = 0.0682$, $t = 2.85$, $p = .005$).

At the overall model level, the regression model was statistically significant, $F(3, 119) = 84.20$, $p < .001$. This result indicates that the combined set of technical skills, internship experience, and certification perceptions significantly predicted employability readiness. Accordingly, the null hypotheses stating that technical skills, internship experience, and certification perceptions do not significantly predict employability readiness were rejected. The null hypothesis concerning the overall regression model was likewise rejected.

The findings suggest that employability readiness among technology graduating students is associated with the combined contribution of technical competence, workplace experience, and perceptions of professional certification. The significant positive coefficient for technical skills indicates that students who reported higher levels of technical competence also tended to report higher levels of employability readiness. Similarly, the significant contribution of internship experience highlights the importance of authentic workplace exposure in preparing students for employment. The significant relationship between certification perceptions and employability readiness further indicates that students' perceptions of the value and relevance of professional credentials are associated with their perceived preparedness for employment.

The substantial explanatory power of the model ($R^2 = .680$) suggests that the three predictors collectively provide a strong statistical explanation of differences in employability readiness within the present sample. However, the findings should be interpreted as predictive associations rather than evidence of causal effects because the study employed a non-experimental research design. In particular, the regression results do not establish that increasing internship experience, technical skills, or certification perceptions would necessarily cause a corresponding increase in employability readiness.

The findings are consistent with the literature emphasizing the role of practical competencies and workplace experiences in graduate employability. Jackson (2015) highlighted the contribution of work-integrated learning to the development of professional competencies and workplace capabilities. Finch et al. (2013) likewise emphasized

the importance of technical and transferable competencies in employers' assessment of graduate employability. Suleman (2018) further argued that employability encompasses disciplinary knowledge, transferable skills, and other forms of human capital that facilitate graduates' transition into employment. The present findings extend this perspective by demonstrating that technical skills, internship experience, and certification perceptions, when considered simultaneously, significantly predict employability readiness among technology graduating students.

Conclusion

The study concluded that technology graduating students reported high levels of technical skills, internship experience, certification perceptions, and employability readiness. The respondents particularly reported strong competence in operating tools and equipment and adapting to workplace demands, while their internship experiences were characterized by substantial hands-on exposure, skill development, and task relevance. The respondents also expressed positive perceptions of professional certification, particularly regarding future certification intent, employability advantage, and certification relevance. Overall, the findings indicate a high level of perceived readiness among the graduating students for transition from higher education to employment.

The multiple linear regression analysis further showed that technical skills, internship experience, and certification perceptions significantly and positively predicted employability readiness. Internship experience had the largest unstandardized regression coefficient among the three predictors, while technical skills and certification perceptions also made significant positive contributions to the prediction of employability readiness. Collectively, the three predictors accounted for 68.0% of the variance in employability readiness, indicating substantial explanatory power within the present sample.

The findings underscore the importance of integrating technical skills development, meaningful work-integrated learning experiences, and professional certification opportunities within technology education programs. In particular, the significant association between internship experience and employability readiness highlights the value of authentic workplace exposure in complementing classroom-based technical preparation. However, because the study employed a non-experimental design, the findings should be interpreted as predictive associations rather than evidence of causal effects. Other factors not included in the present model may also contribute to graduates' employability readiness.

Based on the findings and conclusions of the study, the following recommendations are offered:

1. The College of Industry and Technology should continue strengthening competency-based instruction and laboratory activities to further enhance students' technical skills, particularly in troubleshooting and problem-solving, which obtained relatively lower ratings than other dimensions.
2. Academic programs should sustain and expand industry partnerships to provide students with meaningful internship experiences that emphasize hands-on learning, relevant workplace tasks, effective supervision, and opportunities for professional growth, given the significant influence of internship experience on employability readiness.
3. The institution should encourage and support students in obtaining industry-recognized certifications, such as TESDA National Certificates and other professional credentials, through review programs, competency assessments, and financial assistance mechanisms to improve graduates' competitiveness in the labor market.
4. Curriculum planners and program administrators should integrate employability competencies, including adaptability, communication, teamwork, and lifelong learning, into instructional activities to ensure that graduates remain responsive to evolving industry demands.
5. Future researchers may investigate additional factors influencing employability readiness, such as communication skills, digital literacy, entrepreneurial orientation, and employer expectations, to develop a more comprehensive model of graduate employability among technology students.

Contributions of Authors

Author: conceptualization, data gathering, data analysis, results and discussion

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Conflict of Interests

Not indicated

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