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PERCEIVED EMPLOYABILITY SKILLS OF PRE-SERVICE TECHNICAL-VOCATIONAL TEACHERS IN PHILIPPINE HIGHER EDUCATION

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ABSTRACT

Higher education institutions face increasing pressure to prepare technical teachers who possess strong transferable workplace competencies alongside technical trade knowledge. In the Philippines, pre-service vocational educators must demonstrate professional capabilities that satisfy evolving national standards and modern industry requirements. To establish an empirical baseline of these competencies, this study evaluated the perceived employability skills of graduating technical-vocational teacher education students. A descriptive survey design gathered quantitative data from graduating seniors enrolled in the Bachelor of Technology and Livelihood Education and Bachelor of Technical-Vocational Teacher Education programs at North Eastern Mindanao State University. Participants evaluated their capabilities across eight competency dimensions using a validated structured questionnaire. The empirical findings revealed a favorable baseline employability level, yielding an overall grand mean of 4.05 with a standard deviation of 0.863. A comparative examination of competency rankings established a clear developmental hierarchy, where relational and technology-supported skills occupied the upper tier, led by teamwork and collaboration at 4.17 and digital literacy at 4.14. Lower evaluations emerged in self-regulatory and higher-order cognitive domains, where critical thinking and problem-solving alongside self-management recorded identical means of 3.96. Granular indicator analysis showed noticeable hesitation in public speaking at 3.84, managing unexpected workshop disruptions at 3.85, and autonomous leadership decision-making at 3.86. These baseline outcomes demonstrate that university instruction successfully cultivates interpersonal respect and digital literacy but leaves critical gaps in independent problem-solving and self-regulation. Technical teacher educators must therefore integrate scenario-based troubleshooting,

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rotating shop supervisory duties, and deliberate time-management exercises into terminal laboratory courses.

KEYWORDS: TVET, Employability Skills, Technical-Vocational Teacher Education, CareerEDGE Model, Transferable Competencies, Higher Education

1. INTRODUCTION

Higher education plays an essential role in driving national economic productivity by shaping workers who meet industry requirements. Rapid transformations brought about by modern technologies require technical personnel to possess transferable employability skills alongside hands-on trade capabilities (World Economic Forum, 2025). Subject-matter expertise alone no longer guarantees career longevity, making broad competencies like communication, teamwork, and critical thinking vital for continuous employment (Dacre Pool & Sewell, 2007, Yorke, 2006). Preparing teachers for technical and vocational tracks demands special attention because these educators must guide future tradespeople, manage complex school workshops, and maintain active links with local enterprises (Asian Development Bank, 2024, UNESCO-UNEVOC, 2023). In Philippine state colleges, this mandate aligns directly with Commission on Higher Education Memorandum Order No. 46, s. 2012, which directs universities to implement outcomes-based learning for sustained workforce competitiveness.

Achieving competitive employment outcomes becomes difficult when training programs concentrate only on manual skills while overlooking professional behavior. Neglecting these broader personal attributes creates major challenges for novice vocational teachers entering actual schools and training facilities. Industrial firms and secondary schools expect vocational instructors to resolve personal disagreements, adjust to mechanical breakdowns, and deliver clear teaching demonstrations (Dotong et al., 2016, Jackson, 2021). Presenting lessons before large student groups often triggers intense anxiety among beginners who lack regular public speaking practice and independent decision-making opportunities (Robles, 2012, Succi & Canovi, 2020). Without repeated chances to exercise judgment during shop simulations, emerging teachers struggle to manage unpredictable workshop challenges, which can result in early career fatigue and burnout (Tomlinson, 2017).

Early struggles in the workshop reveal a clear diagnostic weakness in current educational research. Most available studies examine graduate employment readiness in commercial business, engineering, and general academic tracks, leaving a noticeable shortage of evidence regarding technical-vocational teacher preparation (Bridgstock, 2009, Jackson & Bridgstock, 2021). Distinct degree programs such as the Bachelor of Technology and Livelihood Education and the Bachelor of Technical-Vocational Teacher Education combine theoretical teaching methods with rigorous manual trade practice. Managing both

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pedagogical duties and technical tool handling creates specific learning demands that existing local literature has rarely evaluated across an eight-dimension employability model. Without detailed baseline assessments across these separate domains, university leaders cannot determine where student confidence falters before graduation.

Addressing this information gap requires a systematic evaluation of student competence within regional training institutions. To establish this empirical baseline, this study examined the perceived employability skills of graduating technical-vocational education majors at North Eastern Mindanao State University. A descriptive cross-sectional survey collected self-evaluation data from graduating seniors enrolled in the Bachelor of Technology and Livelihood Education and Bachelor of Technical-Vocational Teacher Education programs across multiple campuses. The evaluation investigated eight essential competency areas, covering communication, teamwork, critical thinking, digital literacy, leadership, adaptability, professionalism, and self-management. Generating concrete local findings provides university administrators, instructors, and curriculum designers with practical evidence to shape focused enrichment activities. Aligning these instructional improvements with Commission on Higher Education guidelines helps ensure that future vocational teachers enter the workforce equipped with professional discipline, interpersonal maturity, and independent reasoning.

2. LITERATURE REVIEW

2.1 Theoretical Foundations of Graduate Employability in TVET

Employability extends far beyond academic marks to represent a complex combination of skills, understanding, and personal attributes that help graduates secure meaningful employment (Yorke, 2006). This multidimensional view aligns directly with the CareerEDGE model, which structures career readiness around five foundational elements (Dacre Pool & Sewell, 2007). According to this framework, vocational preparation requires integrating degree subject knowledge, generic transferable skills, emotional intelligence, career planning, and authentic work experience. Gaining hands-on workplace exposure reflects the fundamental principles of Human Capital Theory, which regards education and practical training as direct economic investments that raise worker productivity (Becker, 1993). High economic productivity in technical trades depends not only on physical skills but also on cognitive agency, which Social Cognitive Career Theory explains through the interaction of self-efficacy, outcome expectations, and personal goals (Lent et al., 1994, Lent & Brown, 2020). When prospective teachers develop positive beliefs about their capabilities, they demonstrate greater resilience and persistence when facing instructional challenges in school laboratories (Lent et al., 2017). Integrating technical trade skills with reflective self-management prepares pre-service educators to train future technicians who can adapt to changing workforce needs (Asian Development Bank, 2024, UNESCO-UNEVOC, 2023).

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2.2 Transferable Competencies and the Workplace Skills Hierarchy

Modern employment trends show that industrial employers expect new hires to balance technical craft knowledge with flexible social competencies (World Economic Forum, 2025). Recent labor studies confirm that interpersonal attributes often determine long-term recruitment success more than specialized manual expertise alone (Succi & Canovi, 2020). These essential capabilities encompass eight specific areas of competence, comprising communication, teamwork, critical thinking, digital literacy, leadership, adaptability, professionalism, and self-management (Jackson, 2021). Among these dimensions, communication and collaboration establish the groundwork for productive teamwork, enabling personnel to listen carefully, share ideas respectfully, and resolve operational disputes (International Labour Organization, 2024, Robles, 2012). Managing workplace disputes and complex technical issues simultaneously requires calm reasoning and effective self-regulation, which help workers make sound decisions under tight operational schedules (Tomlinson, 2017). Tight operational schedules and automated production systems also demand continuous digital proficiency and personal flexibility to navigate Industry 4.0 innovations (Organisation for Economic Co-operation and Development, 2024). Mastering this complete hierarchy of competencies enables future technical instructors to guide vocational students effectively while maintaining productive workshop environments (Dotong et al., 2016, Jackson & Tomlinson, 2020).

2.3 Institutional Factors and Vocational Teacher Preparation in Philippine Higher Education

Developing well-rounded technical teachers requires deliberate institutional support and well-planned educational experiences (Darling-Hammond et al., 2020). Creating such an environment depends heavily on curriculum relevance, which ensures that academic training matches the latest technical standards and workplace requirements (Bridgstock, 2019, Sin & Amaral, 2017). In the Philippine higher education system, Commission on Higher Education Memorandum Order No. 46, s. 2012 operationalizes this alignment by requiring state universities to design learner-centered, outcomes-based degree programs. Fulfilling these national learning mandates requires skilled faculty members who provide constructive feedback and active professional mentoring throughout classroom training (Hattie, 2023, Tomlinson, 2017). Beyond campus lectures, structured internships and practice teaching assignments provide real-world immersion where candidates can apply pedagogical concepts in actual school workshops (Jackson, 2018, Jackson & Dean, 2022). Combining supervised workplace exposure with modern laboratory resources allows pre-service educators to build practical confidence across multiple skill areas (Jackson & Bridgstock, 2021, UNESCO, 2023). Evaluating how these comprehensive institutional factors influence graduating cohorts provides an empirical foundation for refining technical teacher education curricula across Philippine regional universities.

3. METHODS

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3.1 Research Design

This study employed a descriptive survey research design to evaluate student competency levels. Utilizing a descriptive survey approach enables researchers to examine existing educational conditions and learner perceptions without altering the instructional environment (Creswell & Creswell, 2018). Gathering self-reported data under natural classroom settings provides an accurate diagnostic assessment of learner capabilities. Such empirical diagnostic data allows researchers to identify relative strengths and developmental gaps across distinct professional competency areas. These diagnostic insights help educational planners design responsive instructional interventions before students enter the labor market.

3.2 Research Setting and Participants

Evaluating prospective teachers requires an authentic academic setting that delivers technical teacher education. The investigation took place across three constituent campuses of North Eastern Mindanao State University in the province of Surigao del Sur, Philippines. Field data were gathered from the Cantilan, San Miguel, and Bislig campuses, which actively offer undergraduate training in technical-vocational teacher education. The target cohort comprised 113 graduating fourth-year students enrolled in the Bachelor of Technology and Livelihood Education and Bachelor of Technical-Vocational Teacher Education programs during Academic Year 2025-2026. Because graduating seniors represent the primary student body transitioning directly into school classrooms and industrial facilities, the study utilized total enumeration of all eligible fourth-year candidates. Table 1 details the demographic and academic distribution of the participants.

Table 1: Distribution of Research Participants

Demographic Profile	Category	Frequency	Percentage (%)
Age	20 to 21 years old	61	54.0
	22 to 23 years old	34	30.1
	24 years old and above	18	15.9
	Total	113	100.0
Sex	Male	40	35.4
	Female	73	64.6
	Total	113	100.0
Academic Program	Bachelor of Technology and Livelihood Education (BTLED)	49	43.4
	Bachelor of Technical-Vocational Teacher Education (BTVTED)	64	56.6

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	Total	113	100.0
Specialization or Major	Home Economics	49	43.4
	Automotive Technology	21	18.6
	Electrical Technology	20	17.7
	Food Service Management	18	15.9
	Garments, Fashion and Design	5	4.4
	Total	113	100.0
Campus Affiliation	Cantilan Campus	54	47.8
	San Miguel Campus	31	27.4
	Bislig Campus	28	24.8
	Total	113	100.0
Prior Industry Experience	Yes	61	54.0
	No	52	46.0
	Total	113	100.0
National Certification Status	NC I	2	1.8
	NC II	36	31.9
	NC III	4	3.5
	None	71	62.8
	Total	113	100.0
Practical Training Participation	Work Immersion	64	56.6
	Field Study	25	22.1
	Work Immersion and Field Study	24	21.2
	Total	113	100.0

Note. *N* = 113. Percentages are rounded to one decimal place. Practical training categories indicate completed experiential learning coursework prior to graduation.

The empirical distribution in Table 1 reveals that more than half of the respondents were between 20 and 21 years old, accounting for 61 students or 54.0 percent of the total sample. Female students formed the majority of the cohort, representing 73 individuals or 64.6 percent, while male participants accounted for 40 individuals or 35.4 percent. In terms of curricular enrollment, 64 students or 56.6 percent were completing the Bachelor of Technical-Vocational Teacher Education program, whereas 49 students or 43.4 percent were pursuing the Bachelor of Technology and Livelihood Education degree. Across technical specializations, Home Economics enrolled the largest group at 43.4 percent, followed by

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Automotive Technology at 18.6 percent, Electrical Technology at 17.7 percent, Food Service Management at 15.9 percent, and Garments, Fashion and Design at 4.4 percent. Campus representation was led by the Cantilan campus with 54 participants or 47.8 percent, with the San Miguel and Bislig campuses contributing 27.4 percent and 24.8 percent, respectively.

Experiential background variables showed notable patterns across the cohort. More than half of the participants reported having prior industry exposure, comprising 61 students or 54.0 percent. In contrast, national certification records revealed a substantial credential gap, as 71 students or 62.8 percent held no formal TESDA certificate, while 31.9 percent possessed an NC II qualification, 3.5 percent held an NC III, and 1.8 percent attained an NC I. Regarding practical learning activities, all 113 respondents had completed supervised training, with 56.6 percent completing work immersion, 22.1 percent finishing field study, and 21.2 percent completing both experiential learning requirements.

3.3 Research Instruments

Examining student capabilities across these academic tracks required a structured data collection instrument. The study utilized a survey questionnaire adapted from validated employability measures and the CareerEDGE framework (Caballero et al., 2011, Dacre Pool & Sewell, 2007). This instrument evaluated eight core employability dimensions, comprising communication skills, teamwork and collaboration, critical thinking and problem-solving, digital literacy, leadership, adaptability and flexibility, professionalism and work ethics, and self-management. Each dimension contained five indicator statements rated on a five-point Likert scale ranging from 1 for Strongly Disagree to 5 for Strongly Agree. To ensure measurement validity, a panel of five experts in technical-vocational education, curriculum development, and psychometrics evaluated the clarity, relevance, and alignment of the items. Following expert validation, the researchers conducted a pilot test with non-participant vocational students to verify internal consistency reliability. Reliability analysis yielded Cronbach alpha coefficients exceeding 0.85 across all eight dimensions, confirming that the questionnaire produces dependable empirical scores.

3.4 Data Collection Procedure

Gathering empirical data followed three sequential administrative stages to preserve research integrity and uphold ethical standards. During the preliminary stage, the researchers secured official transmittal permits from the university administration and coordinated with campus directors and department heads. Engaging academic administrators allowed the research team to schedule survey distribution without disrupting ongoing student teaching assignments. During the data gathering stage, the researchers administered printed and digital survey forms to graduating students, providing clear explanations regarding the study objectives. Participants signed an informed consent form verifying that their participation was entirely

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voluntary and that their personal details would remain anonymous under national data privacy regulations. During the post-gathering stage, the researchers collected all completed questionnaires, inspected each response for listwise completeness, and encoded the survey records into a centralized digital spreadsheet for statistical computation.

3.5 Data Analysis

Statistical computations were conducted using IBM SPSS version 23. The analysis applied frequency counts and percentage distributions to describe the demographic and academic profile of the respondents. To determine the manifested levels of employability across the eight dimensions, the researchers computed weighted means and standard deviations for individual indicator statements and consolidated constructs. Interpreting the calculated weighted means relied on predetermined evaluation intervals and verbal descriptors established in the institutional research framework. Table 2 presents the scoring criteria, categorical ranges, verbal descriptions, and qualitative interpretations applied in the study.

Table 2: Scoring Criteria and Interpretation

Scale	Categorical Range	Verbal Description	Qualitative Interpretation
5	4.50 to 5.00	Strongly Agree	The skill is always manifested or observed to a very high extent
4	3.50 to 4.49	Agree	The skill is frequently manifested or observed to a high extent
3	2.50 to 3.49	Neutral	The skill is moderately manifested or observed to a moderate extent
2	1.50 to 2.49	Disagree	The skill is seldom manifested or observed to a low extent
1	1.00 to 1.49	Strongly Disagree	The skill is rarely manifested or observed to a very low extent

Note. Scoring categories and qualitative interpretations are adapted from the institutional assessment matrix for technical-vocational teacher education.

4. RESULTS

4.1 Construct Evaluation across Employability Dimensions

Evaluating student capabilities across the survey instrument generated descriptive evidence regarding the specific competencies possessed by graduating pre-service teachers. The evaluation investigated eight distinct dimensions, covering communication skills, teamwork and collaboration, critical thinking

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and problem-solving, digital literacy, leadership, adaptability and flexibility, professionalism and work ethics, and self-management.

4.1.1 Communication Skills

Communication competencies represent fundamental transferable skills required for classroom instruction and industry coordination. Table 3 presents the weighted means, standard deviations, and verbal interpretations for communication skills.

Table 3. Level of Employability Skills in Communication Skills

Item Code	Indicator Statements	Mean	SD	Verbal Interpretation
CS 1	I communicate my ideas clearly during classroom discussions and activities.	4.00	1.000	Agree
CS 2	I listen attentively to others before responding.	4.23	0.973	Agree
CS 3	I can write reports or assignments effectively.	4.05	1.007	Agree
CS 4	I confidently express my opinions in front of a group.	3.84	0.987	Agree
CS 5	I can communicate professionally with teachers, classmates, and industry personnel.	3.90	0.982	Agree
	Summary Weighted Mean	4.01	0.899	Agree

Note. *N* = 113. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

The descriptive measures in Table 3 indicate that communication skills achieved an overall weighted mean of 4.01 with a standard deviation of 0.899, corresponding to an Agree interpretation. This favorable rating shows that prospective vocational teachers perceive their communication abilities as frequently manifested to a high extent. Receptive communication emerged as a clear strength, with attentive listening before responding recording the highest evaluation at 4.23, followed by effective written reporting at 4.05 and clear expression during classroom discussions at 4.00. Expressing ideas before large audiences showed noticeable hesitation, as confident public speaking obtained the lowest score within the domain at 3.84. A comparatively lower score of 3.90 for professional communication with industry personnel reinforces this pattern, suggesting that pre-service educators feel comfortable in routine classroom

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exchanges but experience apprehension during formal public presentations.

4.1.2 Teamwork and Collaboration

Collaborative competence enables vocational instructors to manage shared workshop spaces and guide group projects. Table 4 details the descriptive statistics for teamwork and collaboration.

Table 4. Level of Employability Skills in Teamwork and Collaboration

Item Code	Indicator Statements	Mean	SD	Verbal Interpretation
TC 1	I work well with classmates to accomplish group tasks.	4.13	1.031	Agree
TC 2	I respect the ideas and opinions of other team members.	4.35	1.008	Agree
TC 3	I contribute actively during group activities.	4.16	1.023	Agree
TC 4	I can resolve conflicts peacefully within a team.	3.92	0.937	Agree
TC 5	I willingly cooperate with others to achieve common goals.	4.27	1.029	Agree
	Summary Weighted Mean	4.17	0.926	Agree

Note. *N* = 113. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

As presented in Table 4, teamwork and collaboration obtained a summary weighted mean of 4.17 with a standard deviation of 0.926, interpreted as Agree. This domain recorded the highest aggregate evaluation across the entire investigation, demonstrating that students maintain a strong commitment to collective learning activities. Interpersonal respect anchored this collaborative strength, with respecting team members' opinions yielding the highest individual score at 4.35, followed by willing cooperation toward shared goals at 4.27 and active group participation at 4.16. Navigating interpersonal friction proved comparatively more challenging, as resolving conflicts peacefully within a team registered the lowest mean at 3.92. This contrast indicates that while prospective teachers readily maintain group harmony, managing peer disagreements and negotiating conflicting viewpoints require additional practical development.

4.1.3 Critical Thinking and Problem-Solving

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Critical thinking and problem-solving skills enable educators to identify technical faults and adapt instructional plans during laboratory simulations. Table 5 presents the descriptive statistics for critical thinking and problem-solving.

Table 5. Level of Employability Skills in Critical Thinking and Problem-Solving

Item Code	Indicator Statements	Mean	SD	Verbal Interpretation
CT 1	I analyze problems before making decisions.	4.04	0.963	Agree
CT 2	I generate possible solutions when faced with challenges.	3.94	0.975	Agree
CT 3	I evaluate different options before choosing the best solution.	4.04	1.026	Agree
CT 4	I remain calm while solving difficult tasks.	3.90	1.060	Agree
CT 5	I use logical reasoning when making decisions.	3.88	0.989	Agree
	Summary Weighted Mean	3.96	0.914	Agree

Note. *N* = 113. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

The results in Table 5 show that critical thinking and problem-solving yielded a summary weighted mean of 3.96 with a standard deviation of 0.914, interpreted as Agree. Tied for the lowest aggregate ranking among the eight domains, this score highlights an important developmental boundary in higher-order cognitive processing. Preliminary problem examination and option evaluation registered the highest ratings, both achieving identical means of 4.04. Executing logical choices under pressure proved more difficult, with using logical reasoning during decision-making dropping to 3.88 and remaining calm during difficult tasks recording 3.90. The wide standard deviation of 1.060 for maintaining composure under difficulty suggests that students experience emotional strain when equipment malfunctions or practical procedures deviate from standard laboratory guides.

4.1.4 Digital Literacy

Digital literacy competencies prepare technical teachers to utilize modern instructional technologies and navigate trade-specific computer applications. Table 6 summarizes the descriptive findings for digital literacy.

Table 6. Level of Employability Skills in Digital Literacy

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Item Code	Indicator Statements	Mean	SD	Verbal Interpretation
DL 1	I can effectively use computers and digital devices for academic tasks.	4.07	1.024	Agree
DL 2	I use online resources to support my learning.	4.20	1.010	Agree
DL 3	I can use productivity software (Word, Excel, PowerPoint) effectively.	4.17	1.017	Agree
DL 4	I practice responsible use of digital technologies.	4.15	0.993	Agree
DL 5	I can adapt to new digital applications when necessary.	4.09	1.023	Agree
	Summary Weighted Mean	4.14	0.965	Agree

Note. *N* = 113. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

The data displayed in Table 6 indicates that digital literacy achieved a summary weighted mean of 4.14 with a standard deviation of 0.965, corresponding to an Agree interpretation. Ranking second overall, this high evaluation confirms that graduating students actively integrate technology into their academic routines. Accessing web-based educational materials recorded the highest score at 4.20, followed closely by operating standard productivity software at 4.17 and observing responsible digital citizenship at 4.15. Adjusting to novel software platforms proved slightly more challenging, with adapting to new digital tools yielding a lower score of 4.09. This subtle difference suggests that while pre-service teachers readily manipulate familiar office applications, encountering specialized industrial software and computerized diagnostic programs introduces operational uncertainty.

4.1.5 Leadership

Leadership capabilities prepare pre-service educators to organize laboratory activities, direct peer teams, and model professional conduct. Table 7 presents the descriptive evaluation for leadership skills.

Table 7. Level of Employability Skills in Leadership

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Item Code	Indicator Statements	Mean	SD	Verbal Interpretation
LS 1	I willingly take responsibility during group activities.	3.93	1.100	Agree
LS 2	I encourage others to participate in accomplishing tasks.	4.12	0.974	Agree
LS 3	I can motivate my classmates toward achieving goals.	4.06	1.020	Agree
LS 4	I can make sound decisions when leading a group.	3.86	0.990	Agree
LS 5	I demonstrate initiative without being told what to do.	4.01	1.013	Agree
	Summary Weighted Mean	4.00	0.933	Agree

Note. *N* = 113. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

The statistical measures in Table 7 demonstrate that leadership skills obtained a summary weighted mean of 4.00 with a standard deviation of 0.933, interpreted as Agree. This moderate position within the competency distribution reflects a separation between motivational influence and decisive authority. Motivating peers toward collective success and encouraging team participation scored highly, registering means of 4.12 and 4.06, respectively. Exercising managerial judgment proved more daunting, as making sound decisions when directing a group recorded the lowest score at 3.86. Taking direct responsibility during team tasks yielded the largest standard deviation at 1.100 alongside a modest mean of 3.93, indicating that students vary considerably in their willingness to assume personal accountability for collective outcomes.

4.1.6 Adaptability and Flexibility

Adaptability enables vocational teachers to manage shifting curricular demands, technological changes, and diverse classroom settings. Table 8 displays the descriptive evaluation for adaptability and flexibility.

Table 8. Level of Employability Skills in Adaptability and Flexibility

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Item Code	Indicator Statements	Mean	SD	Verbal Interpretation
AF 1	I easily adjust to changes in classroom or workplace situations.	3.97	0.959	Agree
AF 2	I remain productive despite unexpected challenges.	3.85	0.975	Agree
AF 3	I am willing to learn new knowledge and skills.	4.32	0.966	Agree
AF 4	I accept constructive criticism positively.	4.13	0.996	Agree
AF 5	I adapt to different work environments effectively.	4.09	0.969	Agree
	Summary Weighted Mean	4.07	0.889	Agree

Note. *N* = 113. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

As shown in Table 8, adaptability and flexibility registered a summary weighted mean of 4.07 with a standard deviation of 0.889, corresponding to an Agree interpretation. This fourth-ranked domain reflects a highly receptive attitude toward personal and professional growth. Eagerness to acquire fresh knowledge recorded the highest evaluation at 4.32, supported by positive acceptance of constructive criticism at 4.13 and effective adjustment to diverse work environments at 4.09. Sustaining operational momentum during unexpected disruptions achieved the lowest evaluation within the construct at 3.85. This pattern suggests that while graduating candidates maintain an open disposition toward instructional improvement, unexpected equipment failures or material shortages create operational delays that impede productivity.

4.1.7 Professionalism and Work Ethics

Professionalism and ethical commitment provide the moral and behavioral framework necessary for safe workshop management and teaching excellence. Table 9 presents the descriptive statistics for professionalism and work ethics.

Table 9. Level of Employability Skills in Professionalism and Work Ethics

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Item Code	Indicator Statements	Mean	SD	Verbal Interpretation
PW 1	I arrive on time for classes and activities.	3.87	0.996	Agree
PW 2	I complete assigned tasks responsibly.	4.08	0.918	Agree
PW 3	I demonstrate honesty and integrity in my academic work.	4.10	1.000	Agree
PW 4	I follow school rules and regulations.	4.26	0.998	Agree
PW 5	I show respect toward teachers, classmates, and supervisors.	4.35	1.026	Agree
	Summary Weighted Mean	4.13	0.920	Agree

Note. *N* = 113. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

The data in Table 9 shows that professionalism and work ethics achieved a summary weighted mean of 4.13 with a standard deviation of 0.920, interpreted as Agree. Ranking third among all dimensions, this favorable result demonstrates that pre-service educators internalize institutional standards and workplace norms. Respect for faculty, peers, and workplace supervisors achieved the highest individual mean at 4.35, followed by strict adherence to institutional regulations at 4.26 and academic honesty at 4.10. Maintaining consistent punctuality represented the primary behavioral limitation, as arriving on time for classes and activities recorded the lowest mean at 3.87. This time-keeping deficit suggests that external commuting factors and personal scheduling difficulties challenge students, requiring reinforcement prior to full-time employment.

4.1.8 Self-Management

Self-management enables future teachers to organize instructional responsibilities, control emotional stress, and maintain personal productivity. Table 10 details the descriptive evaluation for self-management skills.

Table 10. Level of Employability Skills in Self-Management

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Item Code	Indicator Statements	Mean	SD	Verbal Interpretation
SM 1	I manage my time effectively.	3.88	1.070	Agree
SM 2	I set goals for my academic improvement.	4.05	1.051	Agree
SM 3	I complete tasks before deadlines.	3.98	1.052	Agree
SM 4	I remain motivated despite difficulties.	3.96	1.089	Agree
SM 5	I manage stress effectively during academic responsibilities.	3.96	1.064	Agree
	Summary Weighted Mean	3.96	1.000	Agree

Note. *N* = 113. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

As indicated in Table 10, self-management yielded a summary weighted mean of 3.96 with a standard deviation of 1.000, interpreted as Agree. Sharing the lowest composite rank alongside critical thinking, this domain points to challenges in personal organization. Establishing goals for academic improvement recorded the highest score at 4.05, followed by meeting deadlines at 3.98, while sustaining motivation and coping with academic stress tied at 3.96. Personal time allocation registered the lowest score at 3.88, accompanied by an elevated standard deviation of 1.070. This elevated variation shows that prospective teachers experience substantial differences in their capacity to balance heavy shop projects, academic courses, and off-campus internships.

4.2 Consolidated Summary of Employability Skills

Comparing the eight competency areas reveals an empirical hierarchy that defines the employability profile of graduating vocational teacher candidates. Table 11 presents the consolidated rankings, composite means, standard deviations, and qualitative interpretations across all evaluated domains.

Table 11. Summary of the Employability Skills of the Student Respondents

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Rank	Employability Skills Dimension	Mean	SD	Verbal Interpretation
1	Teamwork and Collaboration	4.17	0.926	Agree
2	Digital Literacy	4.14	0.965	Agree
3	Professionalism and Work Ethics	4.13	0.920	Agree
4	Adaptability and Flexibility	4.07	0.889	Agree
5	Communication Skills	4.01	0.899	Agree
6	Leadership	4.00	0.933	Agree
7	Self-Management	3.96	1.000	Agree
8	Critical Thinking and Problem-Solving	3.96	0.914	Agree
	Overall Grand Mean	4.05	0.863	Agree

Note. $N = 113$. Summary values represent composite means across all item indicators per construct. Scale ranges are 4.50 to 5.00 (Strongly Agree), 3.50 to 4.49 (Agree), 2.50 to 3.49 (Neutral), 1.50 to 2.49 (Disagree), and 1.00 to 1.49 (Strongly Disagree).

The consolidated measures in Table 11 demonstrate that pre-service vocational educators possess a high baseline level of perceived employability, yielding an overall grand mean of 4.05 with a standard deviation of 0.863. Examining the distribution reveals a clear structural division between external relational competencies and internal self-regulatory abilities. The upper half of the skill distribution features social and technology-assisted domains, led by Teamwork and Collaboration at rank 1 with a mean of 4.17, Digital Literacy at rank 2 at 4.14, Professionalism and Work Ethics at rank 3 at 4.13, and Adaptability and Flexibility at rank 4 at 4.07. These high ratings confirm that training curricula succeed in fostering interpersonal respect, rule compliance, and general computer proficiency among trainees.

Cognitive, supervisory, and individual regulatory skills occupy the lower tier of the competency hierarchy. Communication Skills ranked fifth with a mean of 4.01, followed by Leadership at rank 6 with 4.00, while Self-Management and Critical Thinking and Problem-Solving tied for the lowest positions at ranks 7 and 8, both recording composite means of 3.96. This developmental lag demonstrates that while students cooperate effectively in teams and follow established shop rules, they encounter difficulties when required to make independent decisions, manage complex schedules, and solve technical dilemmas without teacher guidance. Identifying this internal-external skill divide provides vital empirical direction for university faculty to enrich vocational teacher education curricula before students enter the teaching profession.

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5. DISCUSSION

5.1 The Relational and Cognitive Disconnect in Vocational Teacher Education

The empirical hierarchy observed across the eight competency dimensions reveals a pronounced separation between external social compliance and autonomous cognitive reasoning. Graduating students reported their highest evaluations in collaborative and ethical behaviors, reflecting the communal learning culture emphasized in Philippine higher education. Working in structured shop teams encourages mutual respect and cooperative participation, allowing trainees to share laboratory tools and assist peers during practical demonstrations (Succi & Canovi, 2020, World Economic Forum, 2025). This strong cooperative orientation contrasts sharply with lower evaluations in independent critical thinking and self-management, both of which tied for the lowest rank at 3.96. Within critical problem-solving, applying logical reasoning during decision-making recorded a modest mean of 3.88, while remaining calm during difficult tasks scored 3.90. This cognitive hesitation stems from traditional laboratory instruction, where students frequently follow teacher-directed procedural sheets rather than resolving unscripted mechanical breakdowns. Following rigid laboratory manuals builds routine operational familiarity, but it prevents trainees from engaging in higher-order diagnostic thinking (Darling-Hammond et al., 2020, Hattie, 2023). Moving beyond rote laboratory procedures requires teacher educators to expose pre-service candidates to simulated equipment failures, enabling future vocational instructors to cultivate the analytical judgment demanded in modern industrial workshops (Becker, 1993, Jackson, 2021).

5.2 Communication Apprehension and Pedagogical Delivery in Technical Classrooms

Evaluating communication competencies revealed a clear internal tension between receptive listening and expressive public speaking. Receptive capabilities achieved positive evaluations, as attentive listening obtained a high score of 4.23, demonstrating that pre-service teachers absorb classroom instructions and accept supervisory guidance willingly (Robles, 2012). Expressive confidence showed substantial vulnerability, with public speaking before large groups recording the lowest score in the domain at 3.84. Experiencing anxiety during oral presentations poses a critical challenge for prospective technical educators, whose professional duties require continuous lesson delivery, tool demonstrations, and workshop safety briefings (Dotong et al., 2016). In technical-vocational tracks, students feel secure explaining manual operations during informal peer exchanges, but speaking before a full class triggers verbal hesitation and stage fright (Succi & Canovi, 2020). This expressive gap confirms the assertions of Dacre Pool and Sewell (2007) in the CareerEDGE framework, which links oral fluency directly to emotional self-efficacy. Developing strong verbal self-efficacy demands regular classroom opportunities where vocational teacher candidates lead micro-teaching simulations, defend laboratory projects, and communicate technical concepts clearly before their peers (Jackson & Tomlinson, 2020).

5.3 Behavioral Self-Regulation, Commuting Realities, and Workplace Adaptation

Managing personal time and maintaining productivity under unexpected disruptions represent persistent

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challenges for graduating vocational teachers. While participants expressed strong respect for institutional rules and peer opinions, personal punctuality dropped to a lower mean of 3.87 within professionalism, while personal time allocation recorded 3.88 within self-management. This recurring time-keeping deficit is closely associated with geographic and economic conditions in provincial training institutions. In regional university campuses across Surigao del Sur, many students travel long distances from rural farming and fishing municipalities, depending on irregular public transit systems that cause unforeseen arrival delays (Dotong et al., 2016, International Labour Organization, 2024). Commuting fatigue compounds the heavy workload experienced by vocational teacher education majors, who must complete extensive technical shop fabrications alongside academic education courses and off-campus practice teaching (Lent et al., 2017, Tomlinson, 2017). Heavy academic schedules leave little room for unexpected events, explaining why remaining productive despite sudden challenges obtained a low mean of 3.85 in adaptability. Experiencing operational delays during power outages or material shortages disrupts student concentration, highlighting the need for structured self-regulation training (Asian Development Bank, 2024, Organisation for Economic Co-operation and Development, 2024). University programs must therefore incorporate deliberate time-management coaching and scenario-based crisis exercises into terminal courses, equipping prospective educators to navigate unpredictable workplace demands with professional resilience (Lent et al., 1994, Lent & Brown, 2020).

6. CONCLUSION

Graduating pre-service technical-vocational teachers demonstrate a high baseline level of perceived employability, marked by a pronounced structural divide between communal cooperation and individual self-regulation. Strong interpersonal competencies and digital familiarity reflect the collaborative culture and technology integration emphasized across state university campuses. These social strengths enable prospective educators to work productively in group settings, follow established workshop safety guidelines, and access online learning materials effectively. In contrast to these cooperative attributes, candidate self-confidence declines noticeably during tasks requiring autonomous decision-making, oral teaching delivery before large groups, and logical troubleshooting under time constraints. Relying on structured, teacher-led laboratory manuals limits opportunities for trainees to practice diagnostic reasoning and manage unexpected machine disruptions independently. Technical-vocational teacher education programs cannot rely solely on manual skills drills and group assignments to ensure career readiness. Fostering true employment capability requires academic institutions to complement collaborative training with deliberate instructional activities that strengthen individual accountability, public speaking confidence, and analytical problem-solving.

7. RECOMMENDATIONS

Translating these empirical diagnostic findings into practical curricular improvements requires coordinated action among faculty members, academic administrators, and institutional curriculum planners. Technical instructors should modify conventional laboratory exercises by integrating unscripted

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equipment fault-injection tasks and problem-based scenarios. These shop floor exercises must require pre-service teachers to diagnose mechanical failures, calculate repair options, and execute logical solutions without immediate teacher assistance. Developing independent diagnostic skills should be supported by mandatory micro-teaching sessions where students regularly deliver technical demonstrations, explain safety rules, and defend project designs before their peers to overcome public speaking apprehension. Enhancing student presentation confidence also depends on campus administrators, who must establish structured time-management coaching and introduce rotating shop-foreman responsibilities during terminal laboratory courses. Assigning rotating managerial roles allows graduating seniors to practice directing workshop workflow, enforcing punctuality standards, and resolving peer conflicts in authentic training environments. Institutional leaders should also consider the commuting barriers experienced by rural students across Surigao del Sur by adjusting laboratory schedules and expanding open-shop access during weekends. These targeted institutional enhancements provide strong empirical justification for implementing the proposed EMPOWER Program across technical teacher education departments. Future researchers should expand this investigation by conducting longitudinal tracer studies that track how these baseline employability dimensions influence actual licensing examination performance, initial job placement, and long-term retention among vocational teachers in Philippine secondary and tertiary institutions.

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ETHICAL STATEMENT

This study strictly observed the research ethics guidelines established by the North Eastern Mindanao State University Research and Development Office. The research protocol adhered to national and institutional ethical research standards approved under protocol review procedures. The researchers obtained voluntary signed informed consent forms from all participants prior to survey administration. Participant confidentiality, data protection, and complete institutional anonymity were maintained throughout data collection, encoding, and statistical computation.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no financial, commercial, or personal relationships that could inappropriately influence the conduct, analysis, or reporting of this research. No external commercial

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organization or funding body dictated the design, analysis, or interpretation of the findings. The researchers conducted the investigation with complete academic independence.

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