

Original Article

Sustaining Graduate Futures: An Institutional Tracer Study of Employability, Work Transition, and Competencies in a Philippine Local College

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Received: 16 August 2026; Revised: 25 September 2026;
Accepted: 28 September 2026; Published: 05 October 2026

DOI: <https://doi.org/10.66074/M6H2T5F1Q>

Abstract

This institutional alumni tracer study examined employability, work transition, competency preparation, and institutional contribution among graduates of a participating local college in the Philippines. A descriptive, cross-sectional design was used. Available responses were consolidated, deduplicated, and analyzed as a single institutional tracer dataset comprising 1,264 unique alumni records from eligible cohorts prior to 2026. Participation was voluntary, and valid responses varied across analytical modules. Of 1,258 respondents with classifiable work status, 538 were employed, 81 were self-employed or business owners, and 21 reported both, yielding a combined share of working or enterprise status of 50.9%. This figure should not be interpreted as a conventional employment or unemployment rate. Employment outcomes varied across programs and graduation cohorts, but these differences cannot be attributed to elapsed time since graduation because the design was cross-sectional. Among employed respondents with valid job-relatedness data, 72.9% reported work directly or somewhat related to their degree, while 73.7% of graduates with applicable first-job timing data obtained employment before graduation or within six months afterward. Internship or on-the-job training emerged as the leading reported job source and the highest-rated college component. Common barriers included lack of experience, transportation or location constraints, limited vacancies, low offered pay, skills mismatch, and licensing

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or certification requirements. A paired analysis of 16 competency items among 300 respondents identified small Holm-adjusted differences in digital literacy and responsible technology or AI use, discipline-specific and licensure readiness, and critical thinking. Findings support strengthening integrated career-development and alumni-monitoring systems and triangulating competency results with employer and course-level evidence for future institutional planning.

Keywords: alumni tracer study, competency preparation, graduate employability, institutional quality assurance, on-the-job training, work transition

1. Introduction

Graduate tracer studies provide institutional evidence on whether academic preparation is translated into employment, enterprise, professional development, and service. A recent review concluded that tracer studies are most useful when they connect employment outcomes, competency application, curriculum relevance, technological change, and systematic quality improvement, while openly addressing response rate and data quality limitations (Fahmy et al., 2025). For the participating institution, this evidence supports its commitment to responsive, relevant, and quality education and to producing work-ready graduates.

The institution's goals and learning outcomes emphasize work readiness, graduate employment, entrepreneurship, professional competence, institutional linkages, ethical leadership, responsible stewardship, community service, and lifelong education. These commitments frame employability as more than job acquisition: graduates are expected to demonstrate professional competence, integrity, adaptability, service, and commitment to continuous learning (Participating local college, n.d.).

A recent Philippine study supports a multidimensional approach to graduate outcomes. Alvarez and Cammayo (2023) identified curriculum, student services, and facilities as important contributors to the employability of entrepreneurship graduates, while Lopena and Madrigal (2023) linked quality program delivery to competency development and workplace attributes. Andaya et al. (2024) reported rapid job entry and strong job-skill relevance among computing graduates; Ferolino et al. (2023) identified limited experience, self-confidence, financial pressure, and scarce opportunities as job-search barriers among technology graduates; and Bansiong and Gallardo (2025) found that 68.22% of traced teacher-education graduates obtained work within six months while also calling for stronger experiential learning, student support, facilities, and resources. Garcia et al. (2024) further emphasized critical

thinking, information technology, research, communication, and professional growth as dimensions of curricular relevance.

International research similarly emphasizes work-integrated learning and digital readiness. Jackson and Dean (2023) found that multiple forms of work-integrated learning contribute to graduate employability, while Mseleku (2024) showed that internships can improve work readiness and facilitate the transition to employment, even as access remains unequal. Tee et al. (2024) documented employer-reported digital skills gaps among graduates in Malaysia, and Waring (2024) argued that AI literacy should be combined with critical judgment and interpersonal capability. These studies indicate that employability should be understood as a contextual outcome shaped by discipline, cohort, labor market conditions, practical exposure, career support, and time since graduation, rather than as a single rating of program quality.

The study aimed to describe graduates' current employability by employment status (employment or self-employment), program, and graduation cohort. It also examined employment quality and characteristics, including degree-relatedness, sector, location, work arrangement, and career progression. In addition, the study analyzed the transition from college to work using data on first-job timing, job sources, barriers, training, licensure, and certification. Finally, it assessed perceived preparation and college contribution based on differences between competency preparation and importance and helpfulness ratings.

2. Methodology

2.1 Research Design

The study used a descriptive, cross-sectional institutional alumni tracer design with quantitative analysis of respondent outcomes and paired competency ratings. All available alumni responses were merged, deduplicated, and treated as one unified tracer-study dataset; no outcome was analyzed or reported by source file. The quantitative analysis summarized response coverage, current work status, employment characteristics, transition indicators, barriers, competency ratings, and perceived contributions to the college. Open-ended narratives were retained for a separately validated content-analysis cycle but were not used as evidentiary findings or as the basis for institutional priorities in the present manuscript. The design did not test causal effects, longitudinal change, or whether program differences were attributable to the curriculum.

2.2 Data Sources

Table 1. Data sources and analytical use in the unified tracer study.

Data source	Analytical use in the unified study
Institutional Alumni Tracer Survey responses	Employment status, transition, barriers, competencies, helpfulness ratings, program, graduation year, and voluntary open-ended feedback
Official program alumni rosters	Program-year denominators are used only for response-coverage calculations.

Table 1 confirms that we analyzed the outcomes as a single institutional tracer study. The survey supplied the graduate-level variables (Participating local college, 2026), while official rosters supplied only the program-year denominators used for response coverage (Participating local college, 2020–2025). Because respondents could voluntarily skip items or discontinue after the core questions, later modules have smaller valid-response bases; this reflects item nonresponse within a single study, not separate respondent populations.

Data reconciliation and analytical scope. The manuscript and the supporting Program Employability Trends 2020–2025 workbook use intentionally different scopes. The manuscript's overall estimates use the complete unified pre-2026 dataset: 640 of 1,258 respondents with classifiable work status (50.9%) were working or engaged in enterprise, and 344 of 472 respondents with valid relatedness data (72.9%) reported directly or somewhat degree-related work. The supporting trend workbook is restricted to respondents with known graduation years from 2020 through 2025; it therefore reports 530 of 1,123 (47.2%) and 304 of 421 (72.2%), respectively. These are restricted-period checks, not competing institutional estimates. The manuscript totals are authoritative for overall respondent outcomes, while the workbook totals apply only to the known-year 2020–2025 subset. Separately, the 1,129 of 2,463 coverage calculation is restricted to program-year groups with official roster denominators and must not be treated as an outcome denominator.

2.3 Respondents

After cleaning the survey records, 1,695 alumni remained. Because the analysis covered graduation cohorts only through 2025, we excluded 431 records from 2026, leaving 1,264 respondents. We included eight respondents with unreported graduation years in institutional and program analyses but excluded them from cohort comparisons. Of the 2,463 graduates in roster-supported program-year groups, 1,129 matched the survey records, yielding 45.8% coverage. For the detailed competency and college-contribution module supplied for reanalysis, we reviewed 509 consented submissions; excluded 205 records from 2026, removed 4 duplicate submissions by retaining the latest record with a valid exact email, telephone number, or normalized full name, and retained 300 unique pre-2026 respondents. Eight of these 300 reported

graduation year as “others.” All 300 had complete paired ratings for the 16 competency items.

This coverage presents a substantial risk of nonresponse and self-selection bias. To limit overinterpretation, we reported coverage by program and cohort, identified low-response groups, provided actual, valid denominators, and retained unknown or unspecified statuses separately. Findings were interpreted only as respondent outcomes, not population estimates. Nonresponse weighting was not used because the rosters lacked sufficient information to model response probability. These safeguards improve transparency but do not eliminate bias; therefore, we do not claim representativeness of the population.

2.4 Measures and Analysis

Current employment/self-employment share. Respondents classified as employed, self-employed/business owner, or both, were divided by respondents with classifiable current work status.

Degree-related employment. Respondents reporting work as directly or somewhat related to their program, divided by employed respondents with known relatedness information.

Early employment. Respondents obtaining a first job before graduation or within six months divided by respondents with applicable first-job timing information who had obtained work.

Paired competency analysis. For each of the 16 survey competencies, we paired the importance rating with the college-preparation rating for the same respondent ($n=300$ complete pairs). The analysis reported the means and standard deviations for preparation and importance, the respondent-level paired mean difference (importance minus preparation), its 95% confidence interval, and Cohen's d_z . Two-sided paired-samples t tests evaluated whether the mean paired difference differed from zero. We controlled for family-wise error across the 16 tests using Holm's sequential procedure (Holm, 1979) and calculated effect sizes for the within-person design (Lakens, 2013). We retained Wilcoxon signed-rank tests with Pratt's treatment of zero differences and the same Holm correction as an ordinal-data sensitivity analysis. Statistical detectability did not equate to practical importance; we based competency implications on effect magnitude and triangulation, not p -values alone. We computed frequencies, percentages, and means using available-case analysis within each indicator. Missingness was item- and module-specific: some questions were structurally inapplicable due to survey skip patterns, while others were left unanswered voluntarily. A complete-case analysis of the entire questionnaire would have discarded valid core responses, and imputation would have created outcomes that respondents did not report.

We therefore retained available case analysis for descriptive employment indicators. The paired competency analysis was an exception: all 300 retained detailed-module respondents had complete preparation-importance pairs for all 16 items, so no competency value was imputed and a common paired sample was analyzed. Inferential results were restricted to these paired competency ratings and do not correct the broader study's unit nonresponse or self-selection bias.

Open-ended narrative disposition. After removal of blank and non-substantive entries, the raw file contained 240 responses on transition challenges, 260 on helpful educational experiences, 205 on areas the college should strengthen, and 167 on needed career services. No independent second-coder record accompanied the raw file. Consequently, the manuscript does not report rule-based category frequencies, prevalence estimates, or qualitative themes from these narratives. Appendix B provides a prospective category definition and validation protocol, and the accompanying anonymized reanalysis workbook contains the exact term indicators, record-level rule assignments, a deterministic 20% validation sample, and independent-coder fields. Narrative results may be reported only after an independent human coder completes the sample, category-specific agreement and an appropriate chance-corrected intercoder reliability coefficient are calculated, disagreements are reconciled, and the final codebook and record-level audit trail are archived. Until those steps are complete, no qualitative prevalence claim or validated theme is available for reporting.

2.5 Ethical and Interpretive Safeguards

Participation and completion of each survey item were voluntary. Graduates could omit a question or discontinue without penalty, and only the answers they provided were included in the corresponding analysis. We used survey data for institutional research, program review, and service improvement, and reported them in aggregate form. We interpreted findings as outcomes among respondents rather than population parameters because response coverage varied by program and year. The categories 'not employed, status unspecified' and 'unknown' were not treated as official unemployment.

3. Results

3.1 Survey Coverage

Table 2. Response coverage by program.

Program	Official roster	Unique respondents	Coverage
BEED	343	258	75.2%
BSBA	1,179	458	38.8%
BSCRIM	599	220	36.7%
BSHM	342	193	56.4%
Overall	2,463	1,129	45.8%

Overall roster-supported coverage was 45.8%. BEED had the highest coverage (75.2%), followed by BSHM (56.4%), while BSBA (38.8%) and BSCRIM (36.7%) had substantially lower participation. In particular, the BSCRIM estimate is vulnerable to nonresponse bias and should not be generalized to all BSCRIM graduates. The overall rate falls within the 30%–60% response range reported in a recent Philippine tracer study, but comparison with another study does not remove the present sample's selection risk (Andaya et al., 2024). Program- and cohort-specific denominators, targeted follow-up, and sensitivity checks against official rosters are therefore required (Fahmy et al., 2025).

Table 3. Response coverage by graduation year.

Graduation year	Official roster	Unique respondents	Coverage
2020	76	27	35.5%
2021	75	16	21.3%
2022	329	101	30.7%
2023	510	237	46.5%
2024	590	369	62.5%
2025	883	379	42.9%
Overall	2,463	1,129	45.8%

Coverage peaked for the 2024 cohort at 62.5% and was lowest for the 2021 cohort at 21.3%. The pattern may reflect differences in contact recency, alumni-network activity, and willingness to participate rather than differences in graduate outcomes. Cohort-specific outreach and periodic follow-up are therefore preferable to a single general invitation, consistent with current recommendations for systematic and longitudinal graduate tracking (Dzomeku et al., 2024; Fahmy et al., 2025).

3.2 Current Employment and Self-Employment

Among 1,258 respondents with classifiable current work status, 538 (42.8%) were employed, 81 (6.4%) were self-employed or business owners, and 21 (1.7%) reported both. These categories total 640 respondents and yield a combined working/enterprise share of 50.9%. The 50.9% figure is therefore not a conventional employment rate and should not be interpreted as an official employment or unemployment rate. Program and cohort results use the same combined classification rule.

Among respondents with classifiable status, BSHM recorded the highest working/enterprise share (69.2%), followed by BEED (58.8%) and BSBA (54.8%); BSCRIM recorded 13.5%. These descriptive differences do not reflect program quality rankings. Uneven program coverage—particularly the 36.7% BSCRIM response rate—and the absence of data identifying why nonrespondents did not participate prevent a population-level or causal interpretation. Recent Philippine tracer studies also show that outcomes vary across settings, but they do not explain the differences

at this institution (Andaya et al., 2024; Bansiong & Gallardo, 2025; Bersano et al., 2025).

Table 4. Current employment or self-employment by program

Program	Respondents	Classifiable	Working / enterprise	Working share
BEED	325	323	190	58.8%
BSBA	507	504	276	54.8%
BSCRIM	223	223	30	13.5%
BSHM	209	208	144	69.2%
Overall	1,264	1,258	640	50.9%

Note. 'Working / enterprise' is a combined indicator, not a conventional employment rate. Overall, it includes 538 employed respondents, 81 self-employed/business owners, and 21 respondents reporting both statuses.

These program differences justify differentiated follow-up rather than a one-institution-wide remedy. BSHM, BEED, and BSBA may examine whether their existing OJT, practicum, certification, and employer-linkage practices are associated with respondents' transitions. For BSCRIM, the present survey does not establish why the working share was low; the immediate priority is a focused follow-up that directly measures active job search, further study, licensure or eligibility preparation, recruitment participation, caregiving, and other labor-force statuses. Across programs, six-, 12-, and 24-month follow-ups should track degree-related work, OJT conversion, certification, and reasons for non-employment. Table 4 supports a program-specific inquiry and quality-improvement agenda without treating respondent outcomes as causal evidence of program performance.

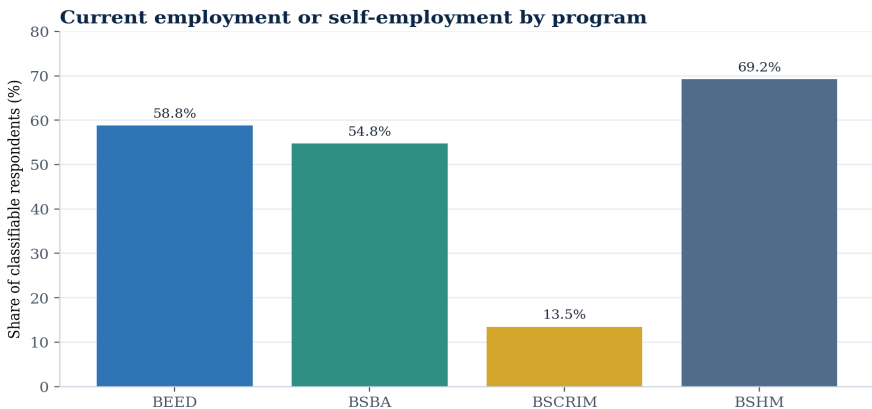


Figure 1. Program-level employment or self-employment shares through 2025.

Figure 1 restates the respondent pattern shown in Table 4. BSHM, BEED, and BSBA each recorded working/enterprise shares above one-half, whereas the BSCRIM

respondent share was much lower. Because BSCRIM coverage was only 36.7% and the survey did not directly measure the cause of the difference in the program, the result warrants focused status verification and follow-up rather than an explanatory conclusion.

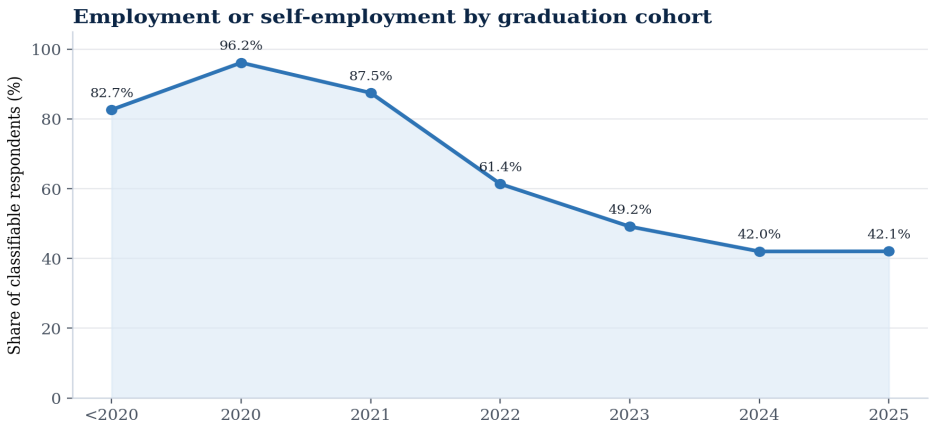


Figure 2. Current employment or self-employment by graduation cohort through 2025.

Figure 2 shows a descriptive cohort gradient through 2025. The working/enterprise share was 42.1% for 2025 graduates, 42.0% for 2024 graduates, 49.2% for 2023 graduates, 61.4% for 2022 graduates, 87.5% for 2021 graduates, 96.2% for 2020 graduates, and 82.7% among respondents who graduated before 2020. Because these are different cohorts observed once—not the same graduates followed over time—the pattern does not confirm an effect of elapsed time since graduation. Cohort-specific labor-market conditions, program composition, historical context, and respondent selection may also contribute. The gradient supports the need for fixed follow-up windows and longitudinal observation, not a causal claim about time.

3.3 Current Employment Status Profile

Table 5 clarifies the composition of the combined indicator: of all 1,264 respondents, 538 (42.6%) reported employment, 81 (6.4%) reported self-employment or business ownership, and 21 (1.7%) reported both. Separately, 555 respondents (43.9%) were recorded as 'not employed, status unspecified.' This unspecified group may include active job seekers, students, caregivers, graduates awaiting a transition opportunity, and others outside the labor force; it cannot be classified as unemployed without evidence of active job search and availability for work. Only 31 respondents explicitly reported being unemployed and seeking work. Accordingly, the 50.9% figure is a combined respondent working/enterprise share, not a conventional

employment rate or an official unemployment rate. Future instruments must require a complete labor-force status classification.

Table 5. Distribution of current employment status.

Current status	Count	Share of all respondents
Not employed, status unspecified	555	43.9%
Employed	538	42.6%
Self-employed/business owner	81	6.4%
Unemployed, seeking work	31	2.5%
Employed and self-employed	21	1.7%
Not employed, not seeking	16	1.3%
Not in labor force—caregiving	9	0.7%
Not in labor force—student	7	0.6%
Unknown	6	0.5%

Note. The status table reports separate categories as shares of all 1,264 respondents. Six unknown-status records were excluded when calculating the combined 50.9% working/enterprise share. 'Not employed, status unspecified' indicates no current work but does not show whether the graduate was seeking work or outside the labor force.

3.4 Employment Quality and Work Transition

Table 6. Selected employment-quality and work-transition indicators.

Indicator	Count / valid base	Percentage
Work directly or somewhat related to degree	344 / 472	72.9%
Private-sector employment	234 / 456	51.3%
Government employment	124 / 456	27.2%
Self-employed/freelance sector	65 / 456	14.3%
Domestic work location	460 / 483	95.2%
First job before graduation or within six months	165 / 224	73.7%
Internship/OJT identified as job source	69 / 300	23.0%
Career progress much or somewhat better	157 / 186	84.4%
Attended at least one post-college training	141 / 300	47.0%

Nearly three-fourths of employed respondents with valid job-relatedness data held work directly or somewhat related to their degree (344/472; 72.9%), while 73.7% of graduates with applicable timing data obtained work before graduation or within six months (165/224). These findings are consistent with Philippine studies reporting rapid transition and substantial job-skill relevance, although rates vary by discipline and cohort (Andaya et al., 2024; Bansiong & Gallardo, 2025). Internship/OJT remained the leading reported job source, aligning with international evidence that work-integrated learning and graduate internships strengthen employability and work readiness (Jackson & Dean, 2023; Mseleku, 2024). Denominators vary because detailed items were voluntary and were answered only by applicable respondents.

3.5 Barriers to Employment

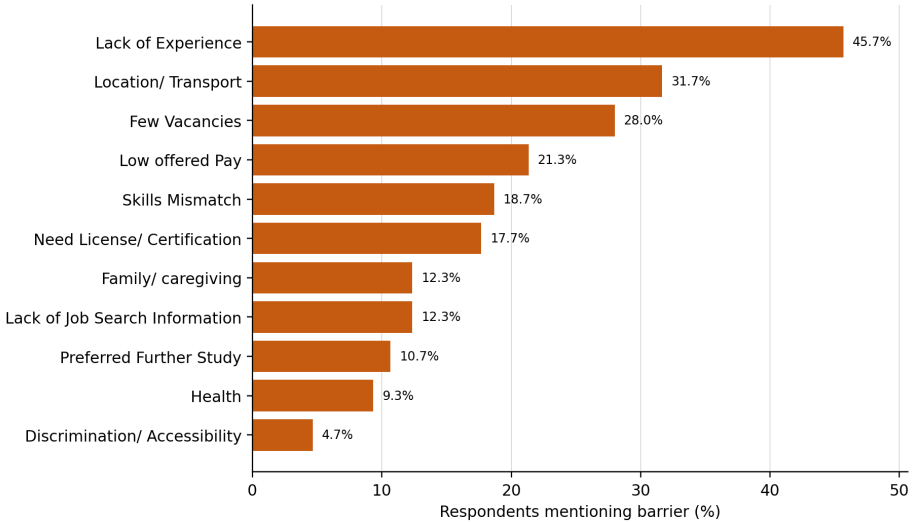


Figure 3. Most frequently reported employment barriers.

Table 7. Leading barriers reported by graduates.

Barrier	Mentions	Percentage
Lack of Experience	137	45.7%
Location/ Transport	95	31.7%
Few Vacancies	84	28.0%
Low offered Pay	64	21.3%
Skills Mismatch	56	18.7%
Need License/ Certification	53	17.7%
Lack of Job Search Information	37	12.3%
Family/ caregiving	37	12.3%

Note. Voluntary multiple-response item; $n=300$ unique respondents after excluding graduation year 2026 and removing four duplicate submissions. Percentages do not sum to 100% because a graduate could report more than one barrier.

Lack of experience was the most frequently reported barrier (137/300; 45.7%), followed by location/transportation (95/300; 31.7%) and few vacancies (84/300; 28.0%). Low pay offers (21.3%), skills mismatch (18.7%), licensing or certification (17.7%), and limited job-search information (12.3%) indicate that both graduate preparation and access to opportunities require attention. Similar evidence from the Philippines identifies limited experience, financial pressure, and scarce opportunities as job-search constraints (Ferolino et al., 2023), while international research shows that internships can improve readiness but may remain unequally accessible (Mseleku, 2024).

3.6 Competency Preparation and College Contribution

Table 8. Complete paired analysis of preparation and importance ratings.

Competency	Preparation M (SD)	Importance M (SD)	ΔM	95% CI	d_z	Holm p
Discipline-specific knowledge, technical/professional skills, and readiness for licensure, eligibility, or certification	3.57 (1.09)	3.73 (1.06)	0.16	[0.08, 0.24]	0.22	.002
Written and oral communication	3.65 (1.02)	3.75 (1.02)	0.10	[0.03, 0.17]	0.15	.100
Critical thinking and problem-solving	3.61 (1.02)	3.76 (1.02)	0.15	[0.08, 0.23]	0.22	.002
Digital literacy and responsible use of technology / AI	3.37 (1.09)	3.56 (1.06)	0.19	[0.11, 0.27]	0.27	<.001
Teamwork and collaboration	3.72 (1.05)	3.81 (1.04)	0.09	[0.02, 0.16]	0.15	.100
Proactive leadership and initiative	3.70 (1.04)	3.77 (1.03)	0.07	[0.00, 0.13]	0.12	.214
Alive entrepreneurial spirit, opportunity recognition, and ability to generate work/ create innovations/ solutions	3.64 (1.01)	3.71 (1.04)	0.07	[0.00, 0.14]	0.12	.214
Research, data literacy, and evidence-based decision-making	3.60 (1.02)	3.67 (1.04)	0.07	[-0.01, 0.14]	0.10	.231
Moral integrity, truth, ethical judgment, and professionalism	3.75 (1.03)	3.82 (1.04)	0.07	[0.01, 0.13]	0.14	.173
Adaptability, resilience, and lifelong education	3.76 (1.04)	3.79 (1.07)	0.03	[-0.03, 0.10]	0.06	.332
Emotional management and interpersonal relations	3.65 (1.02)	3.73 (1.05)	0.08	[0.01, 0.15]	0.13	.173
Gender sensitivity, inclusion, and respect for diversity	3.74 (1.05)	3.78 (1.06)	0.04	[-0.02, 0.10]	0.08	.328
Environmental care, peace orientation, and sustainable practice	3.69 (1.03)	3.75 (1.05)	0.06	[0.00, 0.12]	0.12	.214
Excellent service to the community, responsible citizenship, and service orientation	3.65 (1.02)	3.73 (1.04)	0.08	[0.01, 0.14]	0.14	.173
Responsible stewardship of resources, personal finance, health, and safety	3.61 (1.03)	3.70 (1.06)	0.09	[0.02, 0.16]	0.14	.155
Responsiveness to local and global trends and global competitiveness	3.63 (1.01)	3.72 (1.02)	0.10	[0.03, 0.17]	0.16	.086

Note. $n=300$ complete respondent pairs for every item; 2026 records and four duplicate submissions were excluded. ΔM = mean of respondent-level importance minus preparation differences. CI = two-sided 95% confidence interval. d_z = paired-sample standardized mean difference. Holm p = paired t-test p-value adjusted across all 16 competencies. Wilcoxon-Holm sensitivity results, computed using Pratt's treatment of zero differences, are reported in the accompanying reanalysis workbook.

Preparation and importance ratings were favorable across the complete 16-item competency set ($n=300$ complete pairs). Three paired differences remained statistically detectable after Holm correction: digital literacy and responsible technology/AI use ($\Delta M=0.19$, 95% CI [0.11, 0.27], $d_z=0.27$, adjusted $p<.001$), discipline-specific and licensure readiness ($\Delta M=0.16$, 95% CI [0.08, 0.24], $d_z=0.22$, adjusted $p=.002$), and critical thinking and problem-solving ($\Delta M=0.15$, 95% CI [0.08, 0.23], $d_z=0.22$, adjusted $p=.002$). The remaining 13 differences were not statistically detectable after multiplicity correction. Even the three detectable effects were small, so they indicate areas for triangulation—not institutional deficiencies, proven skills deficits, or automatic curriculum priorities. The Wilcoxon sensitivity analysis confirmed the direction of the leading differences. Still, it differed for teamwork, reinforcing the decision to emphasize magnitude, confidence intervals, and corroborating evidence rather than binary significance labels.

Table 9. Helpfulness of college components.

College component	n	Mean (SD)	Mean interpretation
Internship/ OJT	300	4.17 (0.94)	Very Helpful
Major and Professional Courses	300	4.04 (0.87)	Very Helpful
Career orientation, job-search, or placement assistance	300	4.01 (0.87)	Very Helpful
Research/ Feasibility Study	300	4.00 (0.93)	Very Helpful
General Education Courses	300	3.99 (0.85)	Very Helpful
Faculty mentoring and academic advising	300	3.95 (0.91)	Very Helpful
Student Organizations, leadership and community extension activities	300	3.94 (0.89)	Very Helpful
Laboratory, library, digital, and learning resources	300	3.88 (0.92)	Very Helpful

Note. Anchors: 1 = Not, 2 = Slightly, 3 = Moderately, 4 = Very, and 5 = Extremely Helpful. Mean bands: 1.00–1.49 = Not; 1.50–2.49 = Slightly; 2.50–3.49 = Moderately; 3.50–4.49 = Very; and 4.50–5.00 = Extremely Helpful. $n=300$ per component; 2026 records and four duplicate submissions were excluded.

All eight college components remained Very Helpful, with means from 3.88 to 4.17. Internship/OJT remained the highest ($M=4.17$, $SD=0.94$), followed by major and professional courses ($M=4.04$, $SD=0.87$), career orientation or placement assistance ($M=4.01$, $SD=0.87$), research or feasibility study ($M=4.00$, $SD=0.93$), and general education ($M=3.99$, $SD=0.85$). Faculty mentoring ($M=3.95$, $SD=0.91$), student organizations and community activities ($M=3.94$, $SD=0.89$), and laboratory, library, digital, and learning resources ($M=3.88$, $SD=0.92$) also received favorable ratings. The narrow range supports broad perceived institutional contribution rather than a claim that the relative ordering represents statistically tested differences among components.

The institution may maintain its established OJT and employer partnerships while verifying whether access to learning resources, faculty mentoring, career advising, research and data literacy, and responsible AI integration requires additional action. Component ratings should be disaggregated by program and cohort, and examined alongside job-relatedness, time to first job, and OJT-to-employment conversion. UNESCO's guidance supports human-centered use of generative AI that protects privacy and strengthens critical verification and ethical judgment (Miao & Holmes, 2023); however, any institutional digital or AI plan should be based on triangulated evidence rather than on small descriptive differences alone.

3.7 Disposition of Open-Ended Narrative Data

The four open-ended items yielded 240, 260, 205, and 167 substantive responses, respectively. Because no independent coding record was provided, we removed the exact category percentages and qualitative themes from the Results section. The narratives are retained for the prospective validation workflow in Appendix B and the accompanying anonymized reanalysis workbook; they will not support prevalence estimates or institutional priorities until the independent coder completes the validation sheet, category-specific agreement and an appropriate chance-corrected intercoder reliability coefficient are calculated, disagreements are reconciled, and the codebook is finalized. The incomplete Validation Coding sheet is an audit mechanism, not evidence supporting current themes.

4. Discussion

4.1 Cohort Differences Require Cautious Interpretation

After limiting the analysis to graduation cohorts through 2025, the respondent working/enterprise share was 50.9%. The share was about 42% among 2024–2025 graduates, 49.2% among 2023 graduates, 61.4% among 2022 graduates, and above 87% among the 2020–2021 cohorts. This cross-sectional gradient is compatible with—but does not demonstrate—an elapsed-time explanation, as we surveyed separate graduating cohorts only once. The present design cannot separate cohort-specific labor markets, program mix, historical events, and response selection from time since graduation. The defensible implication is methodological: future institutional reporting should follow the same graduates at fixed six-, 12-, and 24-month intervals and should avoid treating cross-cohort differences as longitudinal change.

The low BSCRIM respondent share requires focused attention but cannot be explained by the present survey. No independently validated, program-disaggregated narrative analysis supports claims about BSCRIM-specific licensure, recruitment, or physical requirements. A follow-up instrument should directly classify labor-force

status and ask graduates about exam preparation, recruitment participation, further study, geographic constraints, and active job search before advancing program-specific explanations.

4.2 Degree Relevance and Work Quality

The finding that 72.9% of employed respondents with known relatedness held work directly or somewhat connected to their degree (344/472) is a positive indication of curricular relevance, but 128 of these 472 respondents reported unrelated work. Studies show that degree-relatedness can vary sharply even when graduates enter employment quickly (Andaya et al., 2024; Bersano et al., 2025). The institution should therefore examine the occupations and reasons within the unrelated-work subgroup to distinguish labor-market constraints, individual choice, salary considerations, geographic access, and gaps in program-to-industry pathways.

Private employment was the largest sector, while government and self-employment also represented important pathways. This mix supports a diversified employability strategy: employer partnerships for private-sector entry, eligibility and licensure support for public-sector careers, and entrepreneurship development for graduates creating their own work.

4.3 Internship and Employer Linkages Are Strategic Assets

Internship/OJT emerged consistently in the quantitative data: it was the most frequently reported first-job source (69/300; 23.0%) and the highest-rated college component ($M=4.17$, $SD=0.94$). This convergence supports treating OJT as a structured employment pathway rather than only a curriculum requirement. Jackson and Dean (2023) found that different forms of work-integrated learning contribute to employability, and Mseleku (2024) reported that internships improve work readiness and transition while also identifying unequal access. Employer feedback, documented competency assessments, referral protocols, equitable placement support, and monitoring of internship-to-employment conversion should therefore be built into the OJT system.

4.4 Paired Competency Evidence and Support Services

The raw paired ratings from 300 respondents permit a more defensible interpretation than differences between rounded aggregate means. Digital/AI literacy, discipline-specific and licensure readiness, and critical thinking retained Holm-adjusted differences, but their standardized effects were small ($dz = 0.22-0.27$). The evidence, therefore, supports targeted verification rather than a deficit narrative. Employer assessments, course-level performance, licensure outcomes, and program-

disaggregated follow-up should determine whether these statistically detectable yet small differences warrant changes to the curriculum or services.

The raw open-ended narratives were not used to estimate prevalence or identify priorities because the reliability of independent coding has not yet been established. The quantitative barriers—particularly lack of experience, transportation, vacancies, licensing, and job-search information—provide the current evidence for service planning. The prospective validation procedure in Appendix B allows the institution to analyze the narrative corpus in a later cycle without overstating the prevalence of unverified categories.

4.5 Alignment with the Institution's VMGO

Table 11. VMGO-aligned interpretation of the tracer findings.

VMGO commitment	Evidence from graduates	Institutional implication
Work-ready, skilled professionals and high graduate employment	50.9% of respondents working/enterprise share; descriptive differences across cohorts through 2025	Track the same cohorts at fixed intervals and strengthen transition support without treating cross-cohort differences as change over time.
Strong linkages with enterprises, tourism, law enforcement, and communities	OJT was the leading reported job source and most helpful college component	Formalize employer pipelines, feedback, referral, and internship-to-employment conversion
Entrepreneurial and globally competitive professionals	81 self-employed plus 21 employed-and-self-employed respondents; three of 16 paired competency differences were statistically detectable after Holm correction, but effects were small ($dz=0.22-0.27$)	Triangulate enterprise and digital/AI needs with employer and course-level evidence before setting priorities
Competence, licensure, eligibility, and certification	Licensing/certification was reported as a barrier by 17.7%; the technical/licensure paired difference was 0.16 with a small effect ($dz=0.22$)	Verify program-specific certification needs and outcomes before expanding review, mapping, or examination support.
Institutional values and lifelong education	Leadership, service, stewardship, ethics, adaptability, and inclusion received favorable preparation ratings; 53.0% reported no post-college training.	Build alumni mentoring and continuing professional development pathways.

The evidence is relevant to the institution's commitments to work readiness, enterprise, professional competence, linkages, institutional values, and lifelong education. It also raises implementation questions: whether fixed-interval outcome tracking, employer pipelines, certification support, enterprise incubation, digital/AI literacy, mentoring, and continuing professional development should be strengthened. These decisions require triangulation with employer evidence, direct assessment, and

longitudinal follow-up; the table is an institution-specific interpretive framework, not a causal test of the VMGO.

4.6 National Evidence and the Mandate for Relevant, Responsive Higher Education

Interpret the tracer findings against national learning evidence. In PISA 2022, only 16% of Filipino 15-year-olds reached at least Level 2 proficiency in mathematics, 24% in reading, and 23% in science, compared with OECD averages of 69%, 74%, and 76%, respectively (OECD, 2023). PISA does not test college students or graduates of the participating institution; it is a pipeline indicator showing that higher education institutions may receive entrants with uneven foundational competencies. The 2024 Functional Literacy, Education and Mass Media Survey likewise estimated functional literacy at 70.8% among Filipinos aged 10–64 and 78.3% among those aged 20–24; it defines functional literacy as the ability to comprehend, integrate information, and make inferences (Philippine Statistics Authority [PSA], 2025).

The Second Congressional Commission on Education's Year Two Report, *Fixing the Foundations: A Matter of National Survival*, identified foundational learning as a system-wide priority and called for coordinated reforms across the education continuum (Second Congressional Commission on Education, 2025). Taken together, these findings explain why higher education institutions cannot assume college readiness from admission alone. Entry diagnostics, bridging and remediation, tutoring, academic advising, information literacy, authentic assessment, and accessible learning resources must operate alongside degree-level teaching without lowering program outcomes.

Under the Higher Education Act of 1994 (Republic Act No. 7722, 1994), CHED is mandated to promote relevant, high-quality higher education; its quality policy also emphasizes the development of locally responsive, innovative, and globally competitive graduates and lifelong learners (Commission on Higher Education [CHED], n.d.). Tables 4, 8, and 9 illustrate how tracer evidence can inform that mandate. The program differences remain descriptive, while three competency differences were statistically detectable but small; neither type of result establishes causation or, on its own, a curriculum priority. Decisions on curriculum, faculty development, student support, employer partnerships, certification, and learning resources should therefore combine the tracer results with employer evidence, direct course-level assessment, and fixed-interval follow-up.

Relevance and responsiveness require every institution to close the loop among national learning evidence, entry-level diagnostics, program outcomes, employer needs, professional and licensure standards, community priorities, and graduate destinations. Higher education institutions should publish disaggregated tracer indicators, review programs with employers and alumni, strengthen OJT-to-work and certification pathways, support foundational and digital learning, and adopt human-centered AI policies that protect critical thinking, academic integrity, privacy, inclusion, and teacher agency (Miao & Holmes, 2023).

4.7 Limitations

Voluntary participation, uneven response coverage, self-reported outcomes, item nonresponse, incomplete labor-force classification, and unequal time since graduation limit the findings. BSCRIM coverage was only 36.7%, and 43.9% of all respondents had an unspecified non-working status; these limitations materially constrain program-level and labor-force interpretations. Available-case analysis preserved observed answers but did not correct self-selection bias. The detailed competency reanalysis used 300 complete paired records and supplied variability estimates, confidence intervals, effect sizes, paired tests, and multiplicity adjustment; nevertheless, the effects were small and remain perception-based. The open-ended narratives were withdrawn from evidentiary reporting because independent coding reliability was unavailable. Finally, the cross-sectional design prevents cohort differences from establishing longitudinal change. Findings require verification through fixed-interval follow-up, employer evidence, direct assessment, and independently validated qualitative analysis. Future cycles should compare respondent and roster composition and present sensitivity scenarios for nonrespondents; these checks quantify robustness but do not eliminate nonresponse bias.

5. Conclusion

The study's central contribution is not a single institutional employment rate but a differentiated picture of graduate transition supported by transparent denominators and a complete paired competency reanalysis. Among employed respondents with valid relatedness data ($n=472$), the findings showed a substantial degree-related work effect; among respondents with applicable first-job timing data ($n=224$), they showed a substantial early job entry effect. OJT was the leading reported first-job source among the 300 detailed-module respondents and the highest-rated college component in that same module. Three competency differences among 300 complete pairs remained statistically detectable after Holm correction, but all effects were small and should guide verification rather than deficit claims or automatic curriculum decisions. Participation remained uneven; many non-working graduates lacked complete labor-force classification; cross-cohort differences cannot be read as change over time; and unvalidated narrative categories were withdrawn. The results, therefore, support cautious, program-specific inquiry rather than causal judgments or rankings. The actionable message is to integrate curriculum, OJT, employer partnerships, certification, entrepreneurship, career guidance, and alumni tracking into a single graduate-transition system. The Office of Student Affairs and Services, through its career guidance and alumni functions, should serve as the operational lead, with Academic Affairs, the Institutional Research Office, the Registrar, and program deans responsible for curriculum response, data quality, fixed-interval follow-up, and

documented quality-assurance action. This governance arrangement converts tracer evidence into accountable support while the institution strengthens the evidence base. For Philippine higher education institutions, relevance and responsiveness require a disciplined evidence cycle: define labor-force status clearly, follow comparable cohorts at fixed intervals, triangulate alumni perceptions with employer- and course-level evidence, and document how findings inform program and service changes. Human judgment, ethics, inclusion, data privacy, and lifelong learning should remain explicit safeguards as digital and AI-enabled work evolves (CHED, n.d.; Miao & Holmes, 2023).

6. Recommendations

Based on the findings, the institution may strengthen its alumni tracer and graduate support systems by setting program- and cohort-specific response targets, improving contact and follow-up procedures, and assessing nonresponse before generalizing employment outcomes. OJT may be strengthened as an employment pathway through employer feedback, referral systems, and internship-to-job monitoring. Program-specific transition support may also address job search, licensure, certification, further study, and entrepreneurship needs. Competency findings should be interpreted cautiously and triangulated with employer feedback, course performance, licensure outcomes, and other evidence before curriculum priorities are established. Narrative findings should undergo independent coding validation before they are reported as established themes. The institution may also expand foundational learning support, responsible AI guidance, job placement services, certification pathways, entrepreneurship assistance, and alumni-accessible professional development. Finally, graduate outcomes may be incorporated into annual quality assurance reviews using clear indicators, evidence sources, responsible offices, targets, actions, and documented follow-up.

Acknowledgment

The authors sincerely thank the peer reviewers for their valuable comments and constructive suggestions, which contributed to the improvement of this manuscript.

Conflict of Interest Statement

The authors declare no conflict of interest.

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Author Contributions: Apor, E.; Quitariano, M. R.; Lapinig, C.; Villardo, N. S.; Guimaras, J. L.; Study design, method conception, data collection, data analysis, and manuscript writing. All authors have read and approved the final version of the manuscript and agreed to be accountable for the integrity and scholarly content of the work.

Appendix A. Adaptable Graduate Outcomes Quality-Assurance Framework

Table A1. Adaptable indicators for institutional alumni monitoring.

Indicator	Adaptable benchmark	Measurement
Survey coverage	Institution-defined minimum by program and cohort	Unique respondents / official alumni roster
Status completeness	Near-complete classification using defined labor-force categories	Records with employed, seeking, not seeking, studying, caregiving, or other defined status
Fixed-interval working/enterprise outcome	Baseline and improvement target set for each follow-up window	Employed/self-employed at six, 12, and 24 months / respondents followed at each interval
Degree-related work	Baseline-informed target with program-specific interpretation	Directly or somewhat related / working respondents with known relatedness
OJT conversion	Program baseline followed by documented improvement	Graduates hired by or referred through OJT partners / graduates completing OJT
Certification or eligibility	Program-specific target based on applicable standards	Graduates passing identified license, eligibility, or certification / eligible respondents
Career-service reach	Institution-defined access and participation benchmark	Students or graduates receiving job-readiness, placement, or enterprise support / eligible cohort

Note. The framework is intentionally adaptable. Each institution should set benchmarks after validating its roster, labor-market context, professional pathways, baseline performance, and data-governance capacity.

The framework translates tracer evidence into a repeatable quality-assurance cycle without prescribing universal numeric targets. Table A1 identifies adaptable indicators; Table A2 operationalizes each of the seven criteria through criterion-specific evidence and four performance anchors. Programs must retain the denominator, disaggregation, responsible office, action, and closure record supporting every score.

Table A2. Criterion-specific graduate outcomes quality-assurance rubric.

Criterion	Required Evidence	Beginning (1)	Developing (2)	Proficient (3)	Sustained (4)
Roster Coverage	Verified alumni roster; unique matched respondents; program- and cohort-specific denominator	No verified roster denominator; invitations and counts are ad hoc.	Roster and deduplication process are defined, but some cohorts or disaggregation remain incomplete.	Verified roster and unique matches produce program/cohort coverage; gaps have assigned actions and owners.	Comparable coverage is repeated across cycles; prior coverage gaps show documented improvement and closure.
Labor-force-status Completeness	Defined employed, self-employed, seeking, not seeking, studying.	Status categories are undefined or dominated by unspecified records.	Defined categories exist, but completion is optional or missingness remains substantial.	Applicable respondents have near-complete defined status; unknowns are disclosed, and	Repeated cycles demonstrate sustained completeness, validation checks, and closure of earlier status-data gaps.

	caregiving, other, and unknown categories			corrective action is documented.	
Fixed-interval Follow-up	Same graduates followed at six, 12, and 24 months; valid base and attrition at each window	Only a one-time cross-sectional survey is conducted.	A follow-up schedule and protocol exist, but windows or cohort retention are incomplete.	The same cohort is followed at all defined windows with denominators, attrition, and program results reported.	Multiple cohorts are followed consistently; window-specific results drive action, and prior actions are closed.
Degree-related Work	Directly, somewhat, and not-related responses among working graduates with known relatedness	Relatedness is not collected or lacks an applicable valid base.	Relatedness is collected, but missingness or program/cohort interpretation is incomplete.	Applicable denominator and disaggregation are reported; unrelated work is examined, and action is assigned.	Repeated results are triangulated with occupation/employer evidence and documented improvements are closed.
OJT-to-employment Conversion	OJT completers; hires or referrals through OJT partners; program and partner identifiers	OJT placement is recorded without employment/referral follow-up.	Employer feedback or referral tracking exists for only some programs or partners.	Conversion is measured by program and partner with a valid denominator; low conversion triggers documented action.	Conversion is tracked across cycles; partner and program improvements are evidenced, and prior actions are closed.
Certification or Eligibility	Applicable license, eligibility, or certification; eligible graduates; attempts and successful outcomes	Applicable requirements and eligible graduates are not mapped.	Requirements and support are mapped, but outcome tracking or denominators are incomplete.	Eligible-base results are reported by program; support and corrective actions are evidence-based.	Repeated outcomes show maintained or improved performance and closure of earlier support gaps.
Career-service Reach	Eligible cohort; participants in job-readiness, placement, referral, enterprise, and mentoring services	Activities are listed without participant records or an eligible denominator.	Services and attendance are defined, but reach or equity analysis is partial.	Reach, access gaps, and outcomes are reported against the eligible cohort; actions and owners are documented.	Repeated reach and outcome evidence show improvement, equitable access, and closure of prior service gaps.

Appendix B. Prospective Category Definitions and Independent-Validation Protocol

Scope and status. The supplied raw workbook contains the original open-ended narratives, but no independent second-coder file. Accordingly, this manuscript omits category percentages and qualitative themes. This appendix defines a prospective rule-based framework derived from direct review of the raw response corpus and the previously reported category labels. It is not used to generate current findings. Before reporting, the exact term list must be frozen, rule-based assignments must be archived, a blinded independent human coder must assess the prespecified 20% sample, category-specific agreement must be calculated, and disagreements must be reconciled and documented.

Table B1. Prospective category definitions and decision rules.

Open-ended item	Prospective category	Inclusion concept	Exclusion or ambiguity rule
Transition challenges	Adjustment, confidence, or workplace pressure	Explicit reference to adjustment, confidence, or pressure in entering or performing work.	Do not infer from a general negative statement without a stated adjustment, confidence, or pressure concept.
Transition challenges	Job availability and competition	Explicit reference to job availability, limited opportunities, vacancies, or competition.	Do not code an unrelated skills statement unless an opportunity or competition concept is also present.
Transition challenges	Experience or skills gaps	Explicit reference to lack of experience, inadequate skills, or readiness gaps.	Do not treat a request for future training alone as proof of a past gap.
Transition challenges	Financial constraints	Explicit reference to finances, costs, low pay, or inability to fund transition requirements.	Do not infer financial constraint from transportation or location alone unless cost is stated.
Education helped most	Internship, OJT, or practical exposure	Explicit reference to internship, OJT, practicum, immersion, or hands-on exposure.	Do not code a generic course reference unless practical exposure is identified.
Education helped most	Academic knowledge	Explicit reference to academic knowledge, concepts, or general learning gained.	Do not double-count a clearly major/technical-course statement unless general academic knowledge is also stated.
Education helped most	Major or technical courses	Explicit reference to major, professional, technical, laboratory, or discipline-specific courses.	Do not infer a specific course category from a generic statement that education helped.
Education helped most	Values, discipline, or professionalism	Explicit reference to values, discipline, work ethic, conduct, or professionalism.	Exclude vague praise that does not identify a value, behavior, or professional attribute.
College should strengthen	Practical or technical content	Explicit request for more hands-on, applied, technical, laboratory, practicum, or industry-relevant content.	Do not code a facilities-only request unless content or practical instruction is also identified.

College should strengthen	Facilities or resources	Explicit request concerning laboratories, equipment, library, connectivity, digital access, or learning resources.	Do not infer facility need from a general request to improve teaching.
College should strengthen	Career guidance, OJT, or linkages	Explicit request for career guidance, placement, internship support, employer links, or industry exposure.	Do not code a general employment concern unless an institutional career/OJT/linkage response is requested.
College should strengthen	Digital technology or AI	Explicit request concerning digital skills, technology, software, online tools, or artificial intelligence.	Do not infer AI from a generic technology statement; preserve the broader digital category when AI is not explicit.
Career services needed	Placement, fairs, referrals, or counseling	Explicit request for job placement, job fairs, vacancy information, referral, application help, or career counseling.	Do not code training-only requests unless you also request placement or counseling.
Career services needed	Professional training or certification	Explicit request for training, review, licensure, eligibility, certification, or continuing professional development.	Do not infer certification from a generic request for job placement.
Career services needed	Alumni networking or mentoring	Explicit request for alumni networks, mentors, peer support, or alumni-to-graduate connections.	Do not code a generic employer-linkage request unless the request mentions alumni or mentoring.
Career services needed	Entrepreneurship support	Explicit request for enterprise, business start-up, livelihood, incubation, mentoring, or related assistance.	Do not classify self-employment status alone as a request for entrepreneurship support.

Required validation before reporting. Conceal the rule-based assignments from the independent coder; code the prespecified 20% sample at the category-response level; report category-specific agreement and an appropriate chance-corrected coefficient; reconcile every disagreement; revise and freeze the codebook; rerun all records; and archive the exact term list, version history, record-level assignments, and decision log. Do not report qualitative frequencies or themes until this sequence is complete.