

Graduate employability and internationalization in vocational higher education: An integrated institutional framework from a five-year case study

Endang Soelistiyowati , Yohana Ika Harnita Sari * , Shinta Dewi Novitasari 

Universitas Gadjah Mada, Indonesia.

* Corresponding Author. Email: yohanaikahs@ugm.ac.id

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ABSTRACT

Graduate outcome evaluation in Indonesian vocational higher education often emphasizes employment status and waiting time while giving limited attention to how institutional strategies shape employability and internationalization. This study examines how tracer studies, alumni feedback, student mobility, and institutional partnerships reflect strategic efforts at Sekolah Vokasi Universitas Gadjah Mada from 2021 to 2025. Previous research has typically examined tracer studies, partnerships, alumni feedback, and student mobility as separate areas of inquiry. In contrast, this study integrates these institutional evidence sources into a unified employability–internationalization framework. This framework demonstrates that graduate readiness emerges from interconnected institutional mechanisms linking curriculum development, workplace learning, institutional partnerships, alumni feedback, and international exposure. The findings reveal consistently high tracer study participation and a generally positive school-to-work transition, with most graduates securing employment before graduation or within six months after graduation. Student mobility records indicate stronger institutional capacity for internationalization at home than for outbound mobility. Partnership records demonstrate substantial institutional collaboration capacity; however, their contribution depends on effective implementation through internships, curriculum development, professional certification, mobility programs, mentoring, and graduate recruitment activities. This study contributes an integrated employability–internationalization framework that conceptualizes tracer studies, alumni feedback, partnership activation, and student mobility as complementary institutional mechanisms for enhancing curriculum quality, workplace learning, international engagement, and graduate development. As a single-institution case study, the findings are context-specific and do not permit examination of individual-level relationships between participation in mobility or partnership activities and graduate career outcomes.

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INTRODUCTION

Vocational higher education prepares graduates to enter the labor market, adapt to workplace change, and perform in broader professional contexts. Employment status and waiting time remain useful indicators of graduate transition, but they provide a limited view of graduate readiness. Employability should not be reduced to employment outcomes alone because it also reflects graduates' capacity to gain, sustain, and develop employment through learning, skills, personal attributes, and labor-market engagement (Harvey, 2001; Yorke, 2006). Recent Indonesian vocational education research supports this multidimensional view. Kholifah et al. (2025), using a human capital investment perspective, highlight that employability skills strengthen competitiveness, productivity, and long-term career development in the Industry 4.0 labor market. Harjono et al. (2025) also

describe employability as a combination of technical, cognitive, and soft skills that help graduates gain, maintain, and develop employment. These studies indicate that vocational institutions need to connect employment outcomes with learning conditions that build competence and prepare students for professional work.

Graduate employability has long been understood as an educational and institutional process rather than a narrow labor-market outcome. Knight and Yorke (2003) emphasize that employability should be embedded in learning and curriculum design, while Tomlinson (2017) explains employability through different forms of graduate capital that shape graduates' transition into work. Recent studies extend the human capital perspective by linking education, digital skills, certification, workplace-oriented learning, and employability skills to graduates' labor market readiness (Cheng et al., 2025; Kholifah et al., 2025). Employability is shaped by curricular, co-curricular, and extracurricular activities that connect students with workplace learning, mentoring, career support, and professional networks (Jackson et al., 2024). This perspective is relevant to vocational higher education because graduate readiness depends on curriculum design, practical learning, professional exposure, and alignment with labor-market expectations.

Tracer studies provide an important evidence base for understanding graduate transition. Higher education institutions use tracer studies to monitor graduate employment, evaluate curriculum relevance, and collect feedback for program improvement. Sarsale et al. (2024) indicate that tracer study data can explain employment profiles, program contribution to personal and professional growth, curriculum delivery effectiveness, and program relevance toward employment success. Chima et al. (2023) also emphasize the role of tracer studies in assessing program effectiveness, labor-market alignment, career paths, and professional development. Tracer studies can guide curriculum review, quality improvement, and evidence-informed decisions when linked to educational and career development strategies.

Partnerships represent another important mechanism for strengthening vocational education. Collaboration with industry, government, professional associations, and international partners helps institutions align learning with labor-market needs. Mahmudah et al. (2022) demonstrate that vocational partnerships can support school-to-work transition through internships, industrial learning, work-based learning, and experiential learning. They also emphasize the importance of planning, organizing, actuating, monitoring, coordinating, and evaluating in partnership management. Khan et al. (2026) further explain that university-industry collaboration strengthens employability through hands-on experience, career preparation, feedback, mentorship, and industry-aligned certification. Recent Triple Helix studies suggest that collaboration among universities, industry, and government can support talent development, curriculum alignment, innovation, and employment pathways through concrete programs (Ma & Yang, 2024). Formal agreements therefore have limited value unless institutions activate them into learning, career, certification, curriculum, and recruitment programs.

Internationalization widens vocational learning by exposing students to intercultural interaction, global perspectives, and professional adaptability. Its value depends on program design, academic preparation, language support, curriculum recognition, and structured learning activities. Recent studies show that internationalization now includes mobility and internationalization at home practices that integrate intercultural, collaborative, and technology-supported learning into higher education (Soulé et al., 2025). Student mobility may be associated with faster transition into employment, although its value depends on context and program quality (Pozniak et al., 2025). In Indonesia, short-term mobility programs using English as the medium of instruction still present language challenges, especially in writing and speaking, which highlights the need for stronger preparation and academic support (Simbolon et al., 2025). Mobility records indicate students' international participation and institutional capacity to provide meaningful international learning experiences.

Recent studies have examined employability skills, tracer study data, partnership management, and student mobility. However, these studies usually discuss each area separately. Employability studies tend to focus on skills and workforce readiness. Tracer study research mainly examines employment outcomes, waiting time, curriculum relevance, and alumni feedback. Partnership studies emphasize internships, work-based learning, collaboration, and industry

engagement. Mobility studies highlight international exposure, intercultural learning, and language-related challenges. These studies show that each domain contributes to graduate development, but they do not fully explain how different forms of institutional evidence work together to shape graduate readiness. This limitation is important because tracer study data, alumni feedback, partnership records, and mobility data are often treated as separate administrative outputs. Integrating these sources provides new theoretical insight by reframing graduate readiness as an institutional outcome produced through connected mechanisms of curriculum responsiveness, workplace learning, partnership activation, alumni input, and international exposure.

This study addresses this gap by integrating tracer study data, alumni feedback, partnership activation, student mobility records, institutional policies, and case documentation within a five-year case study of Sekolah Vokasi Universitas Gadjah Mada (SV UGM) from 2021 to 2025. Unlike previous studies that examine these sources separately, this study connects them in one employability–internationalization framework. The novelty lies in showing that graduate readiness is not only reflected in employment outcomes, but also produced through interconnected institutional mechanisms. These mechanisms include curriculum review, workplace learning, partnership activation, career support, alumni input, and international academic engagement.

This study offers empirical, methodological, and conceptual contributions. Empirically, it provides evidence from an Indonesian vocational higher education institution. Methodologically, it demonstrates how multiple institutional data sources can be integrated to analyze employability and internationalization strategies over time. Conceptually, it advances graduate employability literature by shifting the analysis from separate outcome indicators to an institutional learning framework. This framework positions tracer studies, alumni feedback, partnerships, and mobility as complementary mechanisms that support curriculum improvement, workplace learning, international engagement, and graduate development.

Based on this background, this study examines how institutional strategies are reflected in graduate employability outcomes and internationalization practices at SV UGM. Adopting a descriptive case study approach, the study does not seek to establish causal relationships but rather to examine how tracer studies, institutional partnerships, and mobility records function as evidence-informed mechanisms for understanding graduate readiness and informing the development of vocational higher education. Specifically, the study explores the institutional strategies implemented to support employability and internationalization, examines graduate employability outcomes reflected in tracer study data from 2021 to 2025, and analyzes how mobility and partnership practices are associated with the opportunities and limitations of strengthening graduate readiness in vocational higher education.

METHOD

Research Design

This study employed a convergent mixed-methods case study design with a descriptive longitudinal component. The study was conducted at Sekolah Vokasi (School of Applied Sciences), Universitas Gadjah Mada, Indonesia, and drew on quantitative and qualitative institutional data covering the 2021–2025 period. The quantitative component was used to examine longitudinal patterns in graduate employability, student mobility, and institutional partnerships, while the qualitative component provided contextual insights into alumni feedback, institutional practices, and the implementation of partnership and mobility initiatives. The convergent design enabled these complementary forms of evidence to be examined within the same institutional context and time frame, providing a more comprehensive understanding of employability- and internationalization-related practices at SV UGM.

Quantitative and qualitative data were analyzed separately and integrated during interpretation. Quantitative analysis identified patterns in employment waiting time, tracer study participation, student mobility, and partnership records. Qualitative analysis examined alumni feedback, institutional policy documents, and case documentation to explain how these patterns related to employability-oriented and internationalization strategies. The study did not aim to

establish causal relationships. It examined how institutional strategies were reflected in graduate employability outcomes, mobility participation, partnership activation, and alumni feedback. To improve methodological transparency, each research question was explicitly linked to its data sources and analytical procedures, as shown in Table 1.

Table 1. Alignment of Research Questions, Data Sources, and Analysis

Research Question	Data Sources	Analytical Procedures
RQ1. What strategies support employability and internationalization in vocational higher education?	Policy documents, partnership documents, mobility records, and case documentation	Document analysis and strategy categorization
RQ2. How do tracer study data reflect graduate employability outcomes from 2021 to 2025?	Tracer study data, employment status, waiting time, and alumni feedback	Descriptive longitudinal analysis and thematic analysis
RQ3. How are mobility and partnership practices associated with the opportunities and limitations of strengthening graduate readiness in vocational higher education?	Mobility records, partnership records, institutional policies, and case documentation	Descriptive analysis, partnership activation analysis, and cross-data interpretation

Source: Authors' construction based on the study design and institutional data sources

Data Sources and Respondents

The study drew upon multiple institutional data sources, including tracer study data, open-ended alumni feedback, student mobility records, partnership documents and activity records, institutional policy documents, and case documentation. The use of multiple data sources allowed the study to examine graduate outcomes and institutional practices from different but connected forms of evidence.

The main quantitative data came from the annual institutional tracer study from 2021 to 2025. The tracer study recorded alumni participation, employment status, and waiting time before first employment. Waiting time was grouped into four categories: employed before graduation, employed within less than three months, employed within three to six months, and employed after more than six months. The tracer study instrument also included an open-ended item asking alumni to provide suggestions for improving the quality of UGM graduates.

The tracer study population consisted of SV UGM graduates in each survey year. All eligible graduates were invited to participate through the official university information system. Across the five-year period, the tracer study involved 6,032 graduates and 5,633 respondents, with an overall response rate of 93.39%. Annual response rates ranged from 87.79% to 98.32%, indicating strong institutional data coverage. Because the study used anonymized secondary institutional data, respondent characteristics were reported at the aggregate level. The findings should therefore be interpreted as institutional tracer evidence rather than individual-level graduate profiling. Table 2 presents the graduate population, number of respondents, and annual response rates.

Table 2. Tracer Study Population and Response Rate, 2021–2025

Year	Graduate population	Number of respondents	Response rate
2021	1,853	1,707	92.12%
2022	1,671	1,643	98.32%
2023	687	650	94.61%
2024	814	749	91.89%
2025	1,007	884	87.79%

Source: Institutional tracer study database of SV UGM, 2021–2025

Open-ended alumni feedback from the 2025 tracer study was used as qualitative data. The feedback came from alumni responses to questions about suggestions for improving the quality of

UGM graduates. These responses were treated as alumni perspectives and were not interpreted as employer assessments.

Student mobility records covered incoming and outgoing students, partner institutions, countries, program types, and funding sources from 2021 to 2025. Partnership data included memoranda of understanding, cooperation agreements, implementation agreements, contracts, and activity records. Institutional policy documents and case documentation were also reviewed to understand employability, mobility, partnership practices, and institutional strategy.

Table 3. Data Sources and Research Focus

Data source	Data Type and Period	Main information	Research focus
Institutional tracer study	Quantitative, 2021–2025	Alumni participation, employment status, and waiting time	Graduate employability and workforce transition
Open-ended alumni feedback	Qualitative, 2025	Alumni suggestions for graduate quality improvement	Curriculum relevance, competence development, and career preparation
Student mobility records	Quantitative, 2021–2025	Incoming and outgoing mobility, partner institutions, countries, programs, funding	Internationalization and mobility programs
Partnership records	Mixed, 2021–2025	Agreement types, partner categories, collaboration focus, implemented activities	Institutional collaboration strategies
Institutional policy documents	Qualitative, current study period	Strategic directions on vocational education, employability, internationalization, partnerships	Institutional strategy and policy alignment
Case documentation	Qualitative, current study period	Examples of mobility and partnership implementation, opportunities, limitations	Challenges, opportunities, and institutional learning

Source: Institutional data and documentation from SV UGM

Data Analysis

Quantitative data were analyzed using descriptive statistics. The analysis focused on frequencies, percentages, annual comparisons, and five-year trends. Tracer study data were used to examine alumni participation, employment status, and waiting time before first employment. Student mobility data were analyzed by comparing incoming and outgoing participants, program types, partner institutions, countries, funding sources, and annual trends. Partnership data were analyzed in two stages. First, partnership documents were counted by year and document type. This step described institutional networking capacity. Second, partnership activity records and case documentation were reviewed. This step identified evidence of partnership activation.

Partnership activation referred to concrete programs implemented through cooperation. These programs included internships, work-integrated learning, curriculum review, guest lectures, practitioner involvement, professional certification, applied projects, mentoring, recruitment activities, and international mobility. This distinction was important because cooperation documents alone do not demonstrate partnership effectiveness. Partnership activation was examined through evidence of implemented activities, not only through document counts.

Qualitative data from open-ended alumni feedback were analyzed using thematic analysis. The analysis began with data screening to remove empty, duplicate, unclear, and non-substantive responses. After screening, 604 substantive responses were included in the analysis. The thematic categorization followed three stages. First, initial codes were developed from recurring words, ideas, and suggestions in the alumni responses. Second, related codes were grouped into broader categories. Third, these categories were refined into themes related to practical learning, career support, curriculum relevance, soft skills, certification, digital competence, facilities, foreign language ability, international exposure, alumni networking, and entrepreneurship.

Trustworthiness was strengthened through repeated reading, systematic coding, theme refinement, researcher discussion, and cross-data triangulation. The researchers reviewed the coding results to ensure that similar responses were grouped consistently and that the themes reflected the meaning of the alumni feedback. Theme refinement was conducted by comparing initial categories, merging overlapping codes, and checking whether each theme was supported by sufficient evidence from the responses. Preliminary interpretations were discussed among the researchers to reduce individual bias and improve analytical consistency. The emerging themes were also compared with tracer study trends, institutional documents, student mobility records, partnership documents, and partnership activity records.

The final stage involved integrating quantitative and qualitative findings. Quantitative trends showed patterns in employment transition, mobility participation, and partnership development. Qualitative findings provided contextual explanations from alumni feedback, institutional policy documents, and case documentation. Integration was conducted through cross-data interpretation by comparing tracer study findings, alumni feedback, student mobility records, partnership documents, institutional policies, and case documentation. The findings were then organized according to the three research questions.

Ethical Considerations and Data Protection

This study used secondary institutional data with permission from the authorized unit at Universitas Gadjah Mada. The tracer study was conducted through the official university information system. Alumni were informed about its purposes before completing the survey. These purposes included graduate outcome monitoring, accreditation, institutional evaluation, ranking requirements, and improvement of educational processes. The university guaranteed the confidentiality of alumni responses. This study followed this principle by analyzing only aggregated and anonymized data. Personal identifiers were excluded from the analysis. These identifiers included names, student numbers, contact information, usernames, and individual employment details. Open-ended feedback was reported only as themes and summary findings.

The study used anonymized secondary data and involved no direct intervention with participants. The analysis followed institutional permission, confidentiality, data protection, and responsible data use procedures. Data access was limited to the research team. The data were used only for academic purposes.

RESULTS AND DISCUSSION

Institutional Strategies for Employability and Internationalization in Vocational Higher Education

The findings indicate that graduate employability and internationalization function as interconnected institutional processes in vocational higher education. At SV UGM, graduate monitoring, partnership activation, and student mobility operate together to support curriculum improvement, professional preparation, and international learning exposure. This pattern aligns with the view that internationalization integrates international and intercultural dimensions into higher education, while vocational education connects learning, skills development, employment, and societal needs (Hu, 2020; López, 2020; Wang & Cao, 2024).

The first strategy uses tracer studies to strengthen graduate employability through evidence-based institutional improvement. Human Capital Theory explains that education improves labor-market outcomes by developing graduates' knowledge, skills, and productive capacity (Becker, 1982). SV UGM uses tracer studies to assess whether curriculum, internships, practical learning, certification, and career preparation produce competencies that match labor-market needs. Alumni data on employment status, waiting time, career pathways, competency relevance, and workplace feedback help the institution evaluate the alignment between educational processes and graduate outcomes. Tracer study evidence still needs support from employer feedback, competency assessment, and curriculum review because employment outcomes are also shaped by labor-market

conditions, individual choices, and external economic factors. Previous studies also emphasize the role of tracer studies in curriculum evaluation and quality improvement (Chima et al., 2023; Scandurra et al., 2024).

Partnership-based collaboration supports SV UGM in translating vocational education goals into employability-oriented learning. The value of partnerships does not depend on the number of formal agreements. It depends on how the institution activates those agreements to connect curriculum, workplace learning, and graduate development. SV UGM builds partnerships with industries, government agencies, professional associations, communities, and international partners.

These partnerships become meaningful when they lead to internships, applied projects, curriculum review, practitioner involvement, professional training, certification, mobility programs, and recruitment pathways. From a Triple Helix perspective, partnership activation connects higher education, industry, and government in preparing graduates for labor-market demands. Its contribution to employability depends on the integration of collaboration into teaching, curriculum co-design, mentoring, certification, and workplace learning (Li et al., 2024; Wahyudi et al., 2025). This view also aligns with curriculum co-design literature, which emphasizes stakeholder alignment, structured communication, and demand-driven curriculum development (Bari, 2025).

The mobility pattern observed at SV UGM also differs from assumptions commonly associated with internationalization in higher education. International engagement was driven primarily by inbound rather than outbound mobility. This indicates that internationalization in the Indonesian vocational context may rely more heavily on attracting international learning opportunities to the home institution than on sending large numbers of students abroad. Such a pattern reflects practical constraints frequently encountered by vocational institutions, including funding availability, curriculum synchronization, and recognition of overseas learning experiences. Consequently, internationalization at home appears to be a more feasible pathway for strengthening graduate readiness while gradually expanding outbound participation.

Table 4. Student Mobility, 2021–2025

Year	Incoming students	Outgoing students	Total
2021	95	64	159
2022	94	124	218
2023	187	68	255
2024	139	146	285
2025	302	43	345
Total	817	445	1,262

Source: Institutional student mobility records of SV UGM, 2021–2025

Table 4 shows that student mobility at SV UGM increased considerably during 2021–2025. This growth indicates stronger institutional commitment to internationalization in vocational higher education. However, the distribution of mobility offers deeper insight than the total number of participants. Incoming students accounted for nearly two-thirds of total mobility participation. This pattern shows that SV UGM has stronger capacity to host international academic programs than to expand outbound opportunities for its own students. The institution has developed internationalization at home through inbound mobility. However, students' direct exposure to academic and professional environments abroad remains more limited. This pattern is important for employability. Incoming mobility can enrich intercultural interaction, collaborative learning, and exposure to international academic perspectives on campus. Outgoing mobility offers different learning value because it places students in cross-cultural academic and workplace settings. Both forms of mobility support graduate readiness through complementary pathways.

The mobility records should be read as evidence of institutional capacity, not direct evidence of employability outcomes. They show expanded opportunities for international engagement, but they do not measure intercultural competence, professional skills, or labor-market success. Future evaluation should connect mobility data with tracer studies, competency assessment, and employer

feedback to explain how international learning contributes to long-term employability (Pozniak et al., 2025).

Graduate Employability Outcomes Based on Tracer Study Data, 2021–2025

The tracer study findings show that graduate employability at SV UGM involves broader institutional dimensions beyond the speed of graduates' entry into the labor market. Alumni participation and employment waiting time provide important evidence of school-to-work transition and labor-market absorption, but they do not fully explain graduate readiness. The findings suggest that employability also reflects curriculum relevance, competency utilization, career preparedness, and graduates' ability to adapt to changing workplace demands. Tracer studies serve as tools for monitoring graduate employment outcomes. They also provide evidence for evaluating educational relevance, improving curricula, strengthening institutional quality assurance, and supporting continuous improvement in vocational higher education (Dewi et al., 2021; Sariah et al., 2025).

The consistently high tracer study participation rates strengthen the credibility of the institutional evidence used to evaluate graduate employability at SV UGM. As shown in Table 5, annual participation remained between 87.79% and 98.32% throughout the 2021–2025 period, indicating sustained alumni engagement and comprehensive graduate tracking. High participation rates strengthen the credibility of institutional evidence by reducing response bias and providing a reliable basis for curriculum evaluation, quality assurance, and evidence-informed decision-making.

Table 5. Tracer Study Participation Rates, 2021–2025

Year	Participation Rate (%)
2021	92.12
2022	98.32
2023	94.61
2024	91.89
2025	87.79

Source: Institutional tracer study database of SV UGM, 2021–2025

Employment waiting time provides important evidence of how effectively graduates transition from vocational higher education into the labor market. This study interprets waiting time as an institutional indicator of school-to-work transition, not as a complete measure of graduate employability. As presented in Table 6, most graduates entered employment before graduation or within six months, indicating relatively effective labor-market absorption among SV UGM graduates. However, employment waiting time should be interpreted within a broader employability perspective because graduates' transition into work is also influenced by internship experience, curriculum relevance, academic performance, job-search behavior, and labor-market conditions (Alemu & Yismaw, 2022).

Table 6. Employment Waiting Time Distribution, 2021–2025 (%)

Year	Before graduation	<3 months	3–6 months	>6 months
2021	31.30	29.35	20.89	18.47
2022	25.82	31.16	36.73	6.29
2023	42.21	23.91	25.36	8.51
2024	27.93	30.91	32.54	8.62
2025	28.46	28.19	33.02	10.34

Source: Institutional tracer study database of SV UGM, 2021–2025

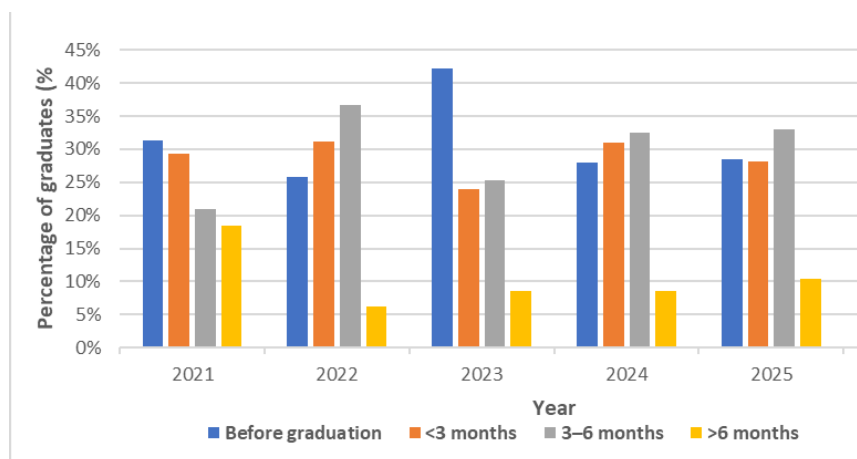


Figure 1. Employment Waiting Time Distribution, 2021–2025

The employment waiting-time pattern shows that SV UGM graduates generally experienced a smooth transition from vocational higher education to the labor market during 2021–2025. Table 6 and Figure 1 indicate that most graduates obtained employment before graduation or within six months. This pattern suggests strong labor-market absorption and a reasonable alignment between graduate competencies and employment opportunities.

Most SV UGM graduates entered employment before graduation or within six months, indicating a generally positive school-to-work transition. However, transition outcomes were not uniform across all graduates. The increase in graduates requiring more than six months to obtain employment in 2025 suggests that some graduates still faced challenges in entering the workforce. These findings indicate that employment waiting time provides useful evidence of school-to-work transition but represents only one dimension of graduate employability. A broader understanding of graduate readiness should also consider learning experiences, competencies, career preparation, workplace learning, and institutional support that enable graduates to adapt to changing labor-market conditions.

Alumni feedback broadens the understanding of graduate employability beyond employment speed. Tomlinson's graduate capital perspective helps explain these findings because alumni feedback points to different forms of capital, including human capital, social capital, cultural capital, and career-related resources that support graduate transition. This study analyzed 604 substantive alumni responses from the 2025 tracer study. The thematic analysis shows that graduates link employability with employment access, learning quality, curriculum relevance, career support, institutional services, and workplace preparation.

These findings show that graduates view employability as an outcome of educational processes. Vocational education should prepare graduates for sustained professional practice, not only for labor-market entry. This perspective aligns with previous studies that position alumni feedback as valuable evidence for improving curriculum, institutional services, learning environments, and the alignment between vocational education and workplace expectations (Bansiong & Alawas, 2024; Sariah et al., 2025).

Table 7. Themes from Open-Ended Alumni Suggestions for Improving Graduate Quality

Theme from alumni feedback	Coding n	% of responses	Main implication for vocational education
Practical learning, internships, and industry exposure	255	42.4%	Learning should provide stronger exposure to real work settings, industry projects, and field-based experience.
Career support and job-market information	226	37.4%	Graduates need clearer access to job information, career preparation, recruitment pathways, and transition support.
Curriculum relevance and learning content	141	23.3%	Curriculum and course content need to be continuously aligned with current workplace and industry needs.
Soft skills and professional attitude	126	20.9%	Communication, leadership, teamwork, problem-solving, adaptability, and work ethic need stronger emphasis.
Alumni networking and mentoring	114	18.9%	Alumni networks can support mentoring, professional information, and graduate transition into work.
Certification and professional training	101	16.7%	Industry-recognized certification and additional professional training can strengthen graduate competitiveness.
Digital and technical competencies	63	10.4%	Graduates need stronger digital, software, data, and technology-related competencies.
Facilities and learning infrastructure	54	8.9%	Practical learning requires adequate facilities, laboratories, tools, and learning resources.
Foreign language and international exposure	36	6.0%	English and international exposure remain important for broader professional readiness.
Entrepreneurship	20	3.3%	Entrepreneurship support can expand graduates' post-study pathways beyond formal employment.

Note. Themes were not mutually exclusive; one response could include multiple suggestions. The 604 substantive responses generated 1,137 coding instances. Percentages were calculated based on the total substantive responses (N = 604), so the total exceeds 100%.

Table 7 shows that alumni recommendations extend beyond employment outcomes and focus on the quality of institutional learning experiences. Practical learning, internships, and industry exposure emerged as the strongest themes. Alumni viewed authentic workplace experience as the foundation of graduate employability, not classroom learning alone. This finding highlights the importance of integrating workplace learning into the vocational curriculum. It also supports evidence that work-integrated learning connects academic knowledge with professional practice and strengthens employability (Adegbite, 2024; Ferns et al., 2025). Alumni also emphasized career support and job-market information. These findings show that career guidance, employer engagement, professional networking, and recruitment support complement practical learning and strengthen graduates' transition into employment.

Additional alumni feedback further supports the importance of practical and work-based learning for early employment transition. Among respondents who had obtained employment before graduation, 71% perceived practical or work experience during their study as very important, while 23% considered it important. This indicates that 94% of early-employed alumni viewed practical or work-based experience as an important factor in supporting their transition into employment. This finding strengthens the interpretation that internships and workplace exposure represent tangible forms of partnership activation between vocational higher education and industry. This evidence should be interpreted as an alumni-perceived contribution rather than causal proof that work-based experience directly led to employment before graduation.

Curriculum relevance, soft skills, certification, and digital competence also emerged as priorities for improvement. Together, these themes show that vocational employability extends beyond technical expertise. Graduates need transferable skills, professional attitudes, digital capability, and career management skills. This finding supports recent evidence that graduate employability develops through discipline-specific competence, transversal skills, digital readiness, and professional dispositions rather than employment status alone (Vlachopoulos & Tsitiridou, 2026).

Alumni also emphasized foreign language ability and international exposure. This finding supports the institutional evidence on student mobility and partnerships discussed earlier. International experiences, intercultural learning, and global professional engagement should become part of vocational education. These elements can strengthen graduates' readiness for increasingly international labor markets.

The tracer study shows that SV UGM graduates enter employment relatively quickly. Alumni feedback also identifies areas that can further strengthen graduate readiness. Together, the quantitative and qualitative findings show that vocational employability is a broader institutional outcome. It is shaped by workplace learning, curriculum quality, career support, international exposure, and continuous competency development. Employment speed represents only one part of this outcome.

Mobility and Partnership Practices: Opportunities and Limitations for Strengthening Graduate Readiness in Vocational Higher Education

Partnership and mobility practices strengthen graduate readiness when SV UGM translates collaboration into meaningful learning experiences. During 2021–2025, the institution expanded partnerships, increased student mobility, and maintained tracer study monitoring. Alumni feedback shows that employability depends on practical learning, industry engagement, career support, curriculum relevance, certification, digital competence, soft skills, and international exposure. These priorities show that partnerships and mobility work best when institutions embed them into curriculum, workplace learning, and continuous improvement. The following discussion explains how institutional collaboration can respond to alumni needs and strengthen graduate readiness in vocational higher education.

Table 8. Institutional Partnership Profile, 2021–2025

Year	MoU	MoA	Contract	Total Partnership Documents
2021	34	25	7	66
2022	39	55	8	102
2023	77	105	6	188
2024	42	97	16	155
2025	28	96	10	134
Total	220	378	47	645

Note. MoU is a memorandum of understanding, while MoA is a cooperation or implementation agreement. Source: Institutional partnership records of SV UGM, 2021–2025.

Table 8 shows that SV UGM built a broad partnership network during 2021–2025. Cooperation and implementation agreements formed the largest part of the partnership portfolio. This pattern indicates that collaboration moved beyond general commitments toward operational activities that could support curriculum development, workplace learning, and graduate preparation. Partnership value depends on how the institution translates agreements into student-centered activities. These activities include internships, applied projects, curriculum co-design, professional certification, mentoring, recruitment pathways, and international learning opportunities. Partnership documents should be read as institutional resources for employability development, not as direct evidence of graduate outcomes.

The partnership portfolio indicates that SV UGM has established substantial institutional capacity for collaboration. Its contribution to graduate employability, however, depends less on the number of agreements than on how effectively those partnerships are translated into meaningful learning opportunities. Partnerships create value when they support curriculum development, work-integrated learning, industry engagement, professional certification, and recruitment pathways that connect academic learning with workplace expectations.

This finding suggests that institutional collaboration strengthens graduate readiness only when employers actively contribute to educational processes rather than remaining external partners. This interpretation aligns with evidence that university–industry collaboration enhances

employability through curriculum co-design, workplace learning, mentoring, and applied projects (Vlachopoulos & Tsitiridou, 2026). Conversely, partnerships that lack employer co-ownership, curriculum integration, and institutional commitment are less likely to produce meaningful educational outcomes (Nopas, 2026).

Student mobility shows how SV UGM operationalizes institutional partnerships. The mobility pattern indicates stronger capacity to host international programs than to expand outbound participation. This condition supports internationalization at home through intercultural interaction, collaborative learning, short courses, and international academic engagement. Lower outbound mobility highlights the need to improve student access, funding, academic recognition, and program availability. Mobility can strengthen graduate readiness when international experiences are embedded into curriculum, applied projects, intercultural learning, and work-related activities. This approach also supports inclusive internationalization by making international learning accessible to more students (Soulé et al., 2025; Van Mol & Perez-Encinas, 2022).

A concrete example of partnership implementation is the Temasek Foundation Specialists' Community Action and Leadership Exchange (TF SCALE) program, developed through collaboration between SV UGM and several Singapore polytechnics. The partnership evolved from lecturer and institutional engagement into reciprocal mobility involving students and lecturers. This progression shows how institutional collaboration can turn formal agreements into authentic learning, intercultural interaction, and professional exposure that support graduate readiness.

The TF SCALE program also demonstrates that the value of international partnerships depends on how collaboration is translated into learning activities. Effective partnerships require shared goals, clear roles, continuous communication, and collaborative curriculum development (Rebelo et al., 2023). Reciprocal mobility, joint modules, co-taught courses, and applied projects provide practical mechanisms for connecting international collaboration with workplace learning and employability development. These activities shift the value of partnerships from institutional networking toward measurable student learning and graduate readiness.

Alumni feedback identifies key learning experiences for employability, including practical learning, career guidance, curriculum relevance, soft skills, certification, digital competence, and foreign language ability. These priorities show that partnerships and mobility create greater value when they support structured learning. Industry partnerships can strengthen internships, mentoring, certification, and recruitment, while international partnerships can expand intercultural learning, collaborative projects, and global academic engagement. Employer participation also adds workplace feedback and discipline-specific preparation (O'Regan et al., 2023).

Tracer study evidence complements these findings by showing how institutional collaboration can respond to graduate needs. Most graduates entered employment before graduation or within six months, indicating a relatively effective school-to-work transition. Alumni feedback, however, highlights opportunities to strengthen graduate competencies beyond employment speed. This pattern suggests that tracer studies should guide the design and evaluation of partnership and mobility programs. Graduate feedback can help institutions prioritize initiatives such as digital training, career mentoring, professional certification, workplace projects, and employer-led learning activities.

The results demonstrate that partnerships and mobility strengthen graduate readiness when they function as integrated learning mechanisms rather than institutional performance indicators. SV UGM has established substantial institutional capacity through its partnership network and international mobility programs. The remaining challenge lies in demonstrating their educational impact. Future evaluation should document learning outcomes, curriculum innovation, employer engagement, academic recognition, and graduate competency development, not only agreements and mobility numbers. This approach positions partnerships, mobility, tracer studies, and alumni feedback as interconnected components of a continuous institutional employability system.

These findings show that partnerships and mobility strengthen graduate readiness when institutions embed them into curriculum and learning processes. Effective partnerships support workplace learning, curriculum innovation, professional engagement, and international collaboration. Mobility expands these benefits through intercultural learning, academic exchange, and professional exposure. Their value depends on the quality of learning integration, not only on

the number of agreements or participants (Bartel-Radic & Cucchi, 2025). Together, partnership records, mobility data, tracer study findings, and alumni feedback provide evidence for aligning institutional collaboration with graduate employability and continuous curriculum improvement.

CONCLUSION

The findings indicate that SV UGM supports employability and internationalization through interconnected institutional strategies. Tracer studies, partnership activation, work-integrated learning, student mobility, curriculum improvement, certification, mentoring, and recruitment-oriented collaboration function as mechanisms for strengthening graduate readiness. Graduate readiness is shaped by the integration of curriculum, industry collaboration, international engagement, and continuous alumni feedback. Evaluating vocational higher education only through employment rates, partnership counts, or mobility participation provides a partial understanding of institutional performance. A more meaningful evaluation should examine how these strategies create authentic learning experiences and sustained graduate development.

Tracer study data from 2021 to 2025 show a relatively positive school-to-work transition. This is reflected in high alumni participation and the large proportion of graduates entering employment before graduation or within six months. Yet, employment status and waiting time remain limited indicators. Graduate employability should also be assessed through job relevance, competency utilization, salary, job satisfaction, career advancement, employer feedback, and long-term career development.

Mobility and partnership practices provide opportunities to strengthen graduate readiness, but their value depends on program activation. Student mobility supports international and intercultural learning. Lower outbound mobility indicates the need for better access, funding, academic recognition, and program availability. Partnership records show collaboration capacity, not direct effectiveness. Their value depends on activation into concrete learning, career preparation, and employment-related pathways.

The main contribution of this study is an integrated institutional employability-internationalization framework. This framework connects tracer studies, alumni feedback, partnership activation, and mobility as mechanisms for curriculum improvement, workplace learning, international exposure, and graduate development. The study adds an institutional perspective to Human Capital Theory by showing that graduate readiness is shaped not only by individual skills but also by institutional systems. It also supports the Triple Helix perspective by showing that collaboration becomes valuable when activated into concrete learning and employment-related pathways.

Vocational higher education institutions should move beyond reporting employment rates, waiting time, partnership numbers, and mobility participants. They need evaluation systems that assess learning outcomes, employer engagement, curriculum innovation, professional certification, workplace exposure, and graduate transition support. This study is limited to one institution and aggregated data. It cannot test individual-level links between mobility, partnership participation, employment quality, and career progression. Future research should use longitudinal individual-level data to assess employment quality, job relevance, salary, job satisfaction, competency use, intercultural competence, and long-term career development.

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AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Endang Soelistiyowati	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Yohana Ika Harnita Sari	✓	✓		✓	✓	✓		✓	✓	✓	✓			
Shinta Dewi Novitasari	✓				✓	✓		✓	✓	✓	✓			

C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

Vi : Visualization

Su : Supervision

P : Project administration

Fu : Funding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known competing financial or non-financial interests that could have appeared to influence the work reported in this paper.

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