Curriculum, Competencies, and Careers: Insights from the Employment Trends of CBSUA–Sipocot Education Graduates

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ABSTRACT

This study examined the employment outcomes, demographic profile, and employability skills of teacher education graduates from the Central Bicol State University of Agriculture – Sipocot (CBSUA–Sipocot) from 2021 to 2023. A total of 411 graduates from the Bleed, BSEd, and BTLEd programs were analyzed using tracer data and descriptive statistics. Results indicate that the BSEd program registered steady growth across Science, Mathematics, English, and Filipino majors, aligning with national demand for specialized secondary teachers. BEEd output remained stable, while BTLEd experienced transitional volatility due to the shift from BSIE, though recovery was observed in 2023. Demographically, graduates were predominantly female (74.5%), young (20–29 years, 89.5%), and single (92%), reflecting national trends but raising concerns about gender imbalance and limited workforce diversity. Employment outcomes reveal structural challenges: while 92% of graduates were LET-eligible, only 27% secured permanent positions, with the majority absorbed in contractual roles. A notable share of BSEd graduates entered non-teaching fields, suggesting both underemployment and the adaptability of education graduates to cross-sectoral roles. Skills analysis showed strengths in critical thinking, independent learning, and time management, but persistent gaps in technology literacy and teamwork. The findings demonstrate graduates' responsiveness to national education priorities and resilience in teacher production. However, structural employment limitations and competency gaps highlight the need for curriculum recalibration, policy alignment, and inclusive strategies to enhance employability and optimize graduates' contribution to the teaching workforce and beyond.

Keywords— graduate employability, teacher education, tracer study, CBSUA, employment outcomes, competencies

INTRODUCTION

The question of graduate employability in teacher education has become increasingly pivotal within the landscape of Philippine higher education reform. Globally, universities are not only evaluated based on research outputs and instructional quality, but also on their capacity to produce work-ready graduates aligned with national and regional development goals. In the Philippines, this imperative has taken center stage in recent years, as the country navigates the shifting dynamics of a post-pandemic economy, the rollout of the K–12 reform, and increased competition in the education labor market. According to the Commission on Higher Education (CHED), education programs consistently produce the largest number of graduates annually. In 2023 alone, over 90,000 students earned degrees in teacher education (CHED, 2024). However, this significant output does not always translate to proportional absorption in the labor force. The Philippine Statistics Authority (PSA) reported that the unemployment rate among education graduates was 9.4% in 2023, higher than the national graduate average of 6.6%, and that underemployment among licensed teachers, those working in jobs not commensurate with their training, stood at 19.8% (PSA, 2024). These figures point to systemic issues in the alignment between teacher preparation and employment realities, particularly in rural and semi-urban regions like Camarines Sur.

Compounding this is the evolving landscape of the teaching profession in the Philippines. The Department of Education (DepEd) and Professional Regulation Commission (PRC) have imposed increasingly stringent licensing and ranking requirements. At the same time, the implementation of the K–12 Basic Education Program,

the expansion of inclusive and digital education mandates, and the decentralization of teacher hiring through the Department of Budget and Management (DBM) and Local School Boards have all influenced the demand for, and qualification expectations of, teacher education graduates. Further, the Philippine Development Plan (PDP) 2023–2028, under Chapter 2: *Promote Human and Social Development*, calls for an education system that ensures the "seamless school-to-work transition of learners" and the "expansion of employment-ready programs" in higher education institutions (NEDA, 2023). The same plan identifies **"**persistent job-skill mismatches" as a bottleneck in inclusive growth. Meanwhile, the Bicol Regional Development Plan (RDP) emphasizes the need to strengthen teacher competencies and public sector hiring mechanisms to meet the projected rise in school-age population and to mitigate the migration of trained teachers to urban centers or abroad.

In this context, the role of regional state universities such as the Central Bicol State University of Agriculture – Sipocot Campus (CBSUA–Sipocot) becomes critical. As a higher education institution serving a predominantly rural population, CBSUA–Sipocot is tasked not only with expanding access to teacher education but also with ensuring that its graduates are competitive, licensed, and employable. Yet, institutional data suggest inconsistencies in employment outcomes among its education graduates, especially across specializations such as Elementary, English, and Mathematics education.

This study, therefore, seeks to examine the employment trajectories of CBSUA–Sipocot's education graduates from the 2021, 2022, and 2023 cohorts. By mapping employment, underemployment, and unemployment trends across time and programs, the research aims to illuminate how local labor market conditions, curricular structures, and national policy directives converge to shape graduate outcomes. In doing so, the study provides empirical insights into ongoing discussions on educational quality, equity, and responsiveness within Philippine teacher education. The findings are deemed to have significant implications not only for academic planners and curriculum designers but also for policymakers and regional development stakeholders tasked with bridging the education-to-employment divide.

METHODOLOGY

A. Research Design

This study employed a descriptive quantitative research design using a tracer study approach to assess the employment outcomes of teacher education graduates from the Central Bicol State University of Agriculture – Sipocot Campus (CBSUA–Sipocot) across three academic years: 2021, 2022, and 2023. The tracer study method is widely recognized for evaluating the employability, professional integration, and skill relevance of graduates within a given labor market context (UNESCO, 2013; TESDA, 2022). It is particularly suited to examining how graduates transition from education to employment over time, providing insights into institutional performance and policy responsiveness.

B. Locale of the Study

The study was conducted at CBSUA–Sipocot**,** a regional state university campus in the province of Camarines Sur, Philippines. As a teacher education provider located in a semi-rural municipality, CBSUA–Sipocot serves a population of learners who are often first-generation college graduates and are trained primarily for placement in public schools within the region.

C. Participants and Data Sources

The study utilized secondary data collected by the university's internal alumni monitoring system. The dataset covered a total of 411 graduates from the following academic programs:

1. Bachelor of Elementary Education (BEEd)
2. Bachelor of Secondary Education (BSEd) with majors in:
    a. English
    b. Filipino

c. Mathematics

d. Science/Biology

3. Bachelor of Science in Industrial Education (BSIE)/Bachelor of Technology and Livelihood Education (BTLEd)

D. Data Collection Procedure

The original data were compiled by the campus's Alumni Office**,** using online surveys and graduate self-reporting through tracking forms distributed during exit clearance. Verification was conducted through triangulation with department heads and alumni associations. Analysis was performed on this pre-existing dataset. Ethical clearance was obtained from the university's Research Ethics Committee, with secondary use of data permitted under existing data sharing protocols.

E. Data Analysis

The collected data were analyzed using descriptive statistical techniques**,** including:

1. Frequency counts **–** to determine the number of graduates in each employment category;
2. Percentage distributions **–** to compute employment, underemployment, and unemployment rates per program and batch;
3. Comparative trend analysis **–** to assess variations in employment patterns across years and specializations;
4. Program-level synthesis **–** to highlight disparities between BEEd and BSEd majors.

No inferential statistics were used, as the study aimed to provide a diagnostic baseline rather than predictive modeling. The analysis was facilitated using Microsoft Excel, with manual verification for outliers and missing data.

F. Scope and Delimitations

This study focused on the graduate distribution, demographic profile, employability outcomes, and employability skills of CBSUA–Sipocot's BEED, BTLEd, and BSED programs from 2021 to 2023. By integrating quantitative records on enrollment and employment with competency data, the analysis provides a holistic view of program effectiveness and labor market responsiveness. The scope is confined to institutional data, aggregated by year and program, which ensures internal validity but also narrows external generalizability. Several limitations should be acknowledged. First, employment outcomes were based on reported placements within the three-year period and did not account for longitudinal career trajectories; as such, findings may not capture delayed employment absorption or long-term mobility of graduates. Second, the study emphasized employability skills as reflected in grouped institutional records rather than through direct graduate self-assessment or employer feedback, limiting the depth of interpretation regarding workplace performance. Third, while the demographic profile provided valuable insights into age, sex, and civil status, it excluded socioeconomic background and geographic mobility, which may significantly influence employability and career decisions. Finally, the analysis of BTLEd volatility was contextualized through program transition data but did not directly examine student attrition or institutional adaptation mechanisms, leaving these areas open for further inquiry. Despite these constraints, the study offers a substantial contribution by mapping the intersection of graduate output, employability, and competencies within the teacher education landscape. The findings provide a strong basis for policy and curricular recommendations while also identifying areas where future research can expand understanding, particularly in longitudinal tracking, employer perspectives, and socio-demographic influences on graduate employability.

G. Ethical Considerations

In adherence to institutional research ethics policies and data privacy regulations under RA 10173 (Data Privacy Act of 2012)**,** no personal identifiers were used in this analysis. All graduate data were anonymized and handled

exclusively for academic and policy-relevant purposes. The use of internal tracer data was approved by the CBSUA–Sipocot Research Office, ensuring that the secondary use of data adhered to ethical standards.

H. Conceptual Framework

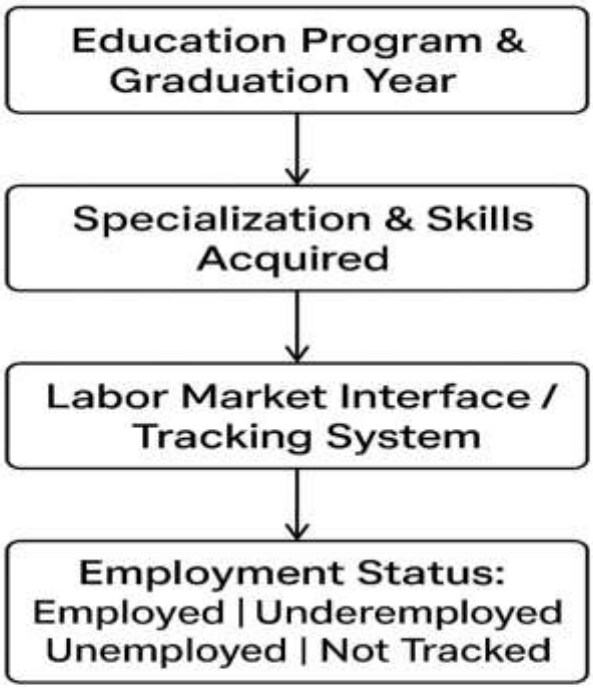


Figure 1. Conceptual Model of Graduate Employability a CBSUA–Sipocot

Figure 1 illustrates the framework that outlines the analytical process employed in this study, examining how educational specialization, year of graduation, and broader employment conditions impact graduate outcomes. It illustrates the pathway from educational attainment to employment outcomes among CBSUA–Sipocot graduates. It begins with the education program and graduation year, which shape the competencies and specializations acquired. These attributes interface with the labor market via tracking mechanisms, which mediate access to employment. The final outcome is categorized into four statuses: employed, underemployed, unemployed, or not tracked. This model is grounded in Human Capital and Education-to-Employment theories, capturing how program quality, specialization relevance, and institutional support influence labor market integration—providing a basis for evaluating graduate outcomes and informing curriculum and policy interventions.

I.Relevance to National and Regional Development Plans

The theoretical framing aligns with the Philippine Development Plan (PDP) 2023–2028**,** which highlights the need to **"**improve the employability of graduates**"** and **"**address persistent job-skill mismatches**"** through stronger alignment between higher education curricula and labor market needs (NEDA, 2023). Additionally, the Bicol Regional Development Plan (RDP) 2023–2028 emphasizes the need to retain skilled professionals within the region and to expand the pool of qualified teachers in high-demand subject areas such as English, Math, and TLE. This study, therefore, serves as an empirical foundation for assessing how well CBSUA–Sipocot contributes to these macro-regional human capital goals. The study is grounded in robust theoretical models that explain the variation in graduate employability as a function of institutional training, specialization relevance, and labor market responsiveness. It also integrates policy frameworks and regional planning priorities**,** making it both academically rigorous and socially responsive. The application of these theories and models ensures that

the study moves beyond description into meaningful analysis, providing stakeholders with actionable insights into how to bridge the education-employment divide in teacher education.

RESULTS AND DISCUSSION

Employment Status of CBSUA Sipocot Graduates

The distribution of graduates across teacher education programs provides valuable insights into institutional performance, program attractiveness, and alignment with national teacher workforce demands. Examining the graduate outputs of the Bachelor of Elementary Education (BEED), Bachelor of Technology and Livelihood Education (BTLED), and Bachelor of Secondary Education (BSED) over the period 2021 to 2023 offers evidence on the university's capacity to sustain program delivery and respond to emerging needs in the education sector.

Table 1 presents the number of graduates by program, specialization, and year. Overall, the institution produced 411 graduates within three cohorts (2021–2023). Of these, the BSED program accounted for the largest share (268 graduates, 65.2%), followed by the BEED program (101 graduates, 24.6%), and the BTLED program (42 graduates, 10.2%).

Table 1. Graduates by Specialization and Year (BEED, BTLED, BSED, 2021–2023)

Program	Specialization / Major	2021	2022	2023	Total
BEED	General	30	36	35	101
BTLED	Home Economics	10	1	31	42
BSED	Filipino	16	25	31	72
	English	12	30	28	70
	Mathematics	15	22	26	63
	Science	8	26	29	63
	Total BSED	51	103	114	268
Grand Total	—	91	140	180	411

The data reveal distinct patterns of program growth. The BSED program shows consistent expansion, increasing from 51 graduates in 2021 to 114 in 2023 (123.5% growth). This trend is evenly distributed across specializations, with Filipino, English, Mathematics, and Science all contributing substantially to the surge in graduate output. Notably, Science and English registered the highest consistency in 2022–2023, underscoring the sustained demand for specialized teachers in STEM and language education. The BEED program reflects stability, with graduate numbers remaining relatively balanced across the three years (30, 36, 35), suggesting a steady supply of elementary education graduates aligned with baseline demand in primary schooling. The BTLED program, however, shows volatility. After producing 10 graduates in 2021, the number dropped sharply to only 1 in 2022, before dramatically rebounding to 31 in 2023. This trajectory was due to the program transition from BSIE to BTLEd, which was later addressed, leading to significant recovery.

The expansion of BSED graduates reflects the university's strengthening role in secondary teacher preparation, particularly in high-demand subject areas. This growth aligns with the national push for enhanced STEM and language education (CHED Memorandum Orders, DepEd priority programs), indicating institutional responsiveness to labor market signals. The stable output of BEED graduates ensures a continuous pipeline of elementary teachers, complementing the increasing demand at the basic education level.

In contrast, the dramatic shift observed in the BTLEd program may be attributed to the transition from the Bachelor of Science in Industrial Education (BSIE) to the Bachelor of Technology and Livelihood Education

(BTLEd), as mandated by curriculum reforms and CHED policies. The sharp decline in 2022 (only 1 graduate) coincides with the phasing-out of BSIE and the simultaneous introduction of BTLEd, creating a gap in graduate output. However, the remarkable rebound in 2023 (31 graduates) suggests the stabilization of the new program, as enrollees under BTLEd completed their degree requirements.

This transition underscores two key implications: first, that curricular alignment with CHED and DepEd frameworks may cause short-term disruptions in graduate production; and second, that programmatic adjustments can eventually strengthen output sustainability once the transition stabilizes. The analysis indicates that while BTLEd's volatility reflects structural shifts rather than student attrition alone, it also highlights the need for careful transition management in academic programs to ensure continuity in teacher supply, particularly in TLE—a key area under the K to 12 curriculum.

From a broader perspective, these results reveal two interconnected insights. Under Institutional Development and National Workforce Needs, the growth of the BSED program illustrates alignment with national teacher workforce projections, where demand for subject-specialized secondary teachers continues to rise. The institution's ability to expand outputs in English, Science, and Mathematics strengthens its contribution to DepEd and CHED's education priorities. Meanwhile, under Program Resilience and Policy Alignment, the observed volatility in BTLEd outputs underscores the need for resilience mechanisms, such as enhanced student retention initiatives and strengthened faculty support systems. Ensuring program stability not only secures graduate production but also directly addresses the shortage of TLE teachers cited in Department of Education staffing reports, thereby contributing to comprehensive coverage of K to 12 learning areas.

Following the analysis of graduate distribution by specialization and year, it is equally important to examine the demographic profile of graduates across all programs. Table 2 presents the aggregated data from 2021 to 2023, highlighting key characteristics such as sex, age, and civil status. These demographic variables offer a deeper understanding of the graduate pool's composition, providing insights into patterns of participation, diversity, and potential implications for workforce deployment in the education sector.

Table 2. Demographic Profile of Graduates (Aggregate 2021–2023, All Programs)

Category	BEED	BTLED	BSED	Overall
Male	23	5	77	105
Female	78	37	191	306
Age 20–29	87	36	245	368
Age 30–39	14	6	23	43
Single	89	35	254	378
Married	12	7	14	33

The data reveal a pronounced gender imbalance, with female graduates (306) significantly outnumbering males (105), representing nearly three-fourths of the total output. Age distribution is concentrated within the 20–29 category (368), accounting for nearly 90% of graduates, while only 43 graduates belong to the 30–39 bracket. In terms of civil status, the majority are single (378), with a smaller subset of married individuals (33). The predominance of female graduates is consistent with national and international trends in teacher education, where teaching is traditionally perceived as a female-dominated profession (UNESCO, 2022). This gendered pattern may have long-term implications for workforce diversity, particularly in promoting male role models in the basic education sector. Similarly, the age distribution suggests that teacher education programs remain primarily accessed by traditional college-age cohorts, aligning with expectations of direct transition from secondary to tertiary education. However, the smaller proportion of older, married graduates indicates that second-career entrants or mid-life upskillers are not a significant demographic in this dataset, potentially limiting the diversity of perspectives and experiences brought into the teaching profession.

The profile suggests that CBSUA's teacher education graduates are youthful, predominantly female, and unmarried. This composition is advantageous in terms of adaptability, mobility, and long-term service potential, as younger teachers are more likely to remain in the profession longer and adapt to emerging educational reforms, such as the integration of technology in K–12 teaching. However, the underrepresentation of older and male graduates raises questions about inclusivity and balance in the teaching force. The demographic pattern directly links to workforce sustainability**:** a younger, predominantly single cohort suggests that the institution is producing graduates with potentially longer service life, ensuring continuity in meeting the projected teacher demand (DepEd, 2023). Second, the gender imbalance links to policy and societal dynamics**:** the dominance of women in the teaching profession, while reinforcing established trends, also underscores the need for targeted initiatives to encourage male participation in education, particularly in subject areas where male representation could enrich student learning experiences.

The demographic profile of graduates underscores both strengths and gaps in the institution's contribution to the teacher labor market. While the youthfulness and volume of graduates support sustainability, the marked gender imbalance and minimal representation of older entrants highlight areas for policy attention. Ensuring inclusivity in teacher education programs may thus enhance the responsiveness of CBSUA to national and regional workforce needs. Following the demographic distribution of graduates, it is equally important to examine their employment outcomes as indicators of program effectiveness and labor market alignment. Employment data provide insights into how graduates from BEED, BTLEd, and BSED translate their qualifications into professional engagement, particularly in teaching and non-teaching roles. Table 3 presents the aggregate employment outcomes of graduates from 2021 to 2023, offering a comprehensive view of their job placements, employment status, and licensure eligibility.

Table 3. Employment Outcomes of Graduates (Aggregate 2021–2023, All Programs)

Category	**BEED**	**BTLED**	**BSED**	**Overall**
Permanent	41	18	51	110
Part-time/Contractual	56	24	198	278
Not applicable	4	0	19	23
Teaching	86	32	101	219
Non-teaching	9	10	147	166
Not applicable	6	0	18	24
LET Eligible	92	38	250	380
Not Eligible	9	4	18	31

Graduate employability remains a key performance indicator for higher education institutions, reflecting both the relevance of programs and their alignment with labor market demands (Teichler, 2015). Understanding the employment trajectory of graduates is particularly significant for teacher education programs, given the persistent need for qualified teachers in the Philippines' K-12 system. Table 3 reveals that among the 411 graduates from 20 to 1–2023, the majority are employed on a part-time or contractual basis (278), while only 110 have secured permanent positions. Disaggregated by program, BEED graduates show a relatively balanced distribution between permanent (41) and part-time (56), while BTLEd graduates display stronger part-time absorption (24) compared to permanent placements (18). In contrast, BSED graduates overwhelmingly occupy part-time or contractual roles (198) with only 51 in permanent positions. In terms of functional roles, teaching dominates the employment landscape with 219 graduates, while 166 are in non-teaching positions. Moreover, licensure performance indicates that 380 graduates are LET-eligible, with only 31 not meeting the requirement.

The findings suggest several trends. First, the dominance of part-time and contractual positions underscores the structural employment challenges faced by teacher education graduates, particularly in public schools where

plantilla items remain limited. This trend resonates with broader national labor statistics showing the prevalence of non-regular employment in education (Philippine Statistics Authority, 2023). Second, the significant proportion of non-teaching employment, particularly among BSED graduates (147), may reflect the versatility of subject-specialized competencies, allowing graduates to find opportunities beyond the classroom (e.g., corporate training, content development, or administrative roles). Third, the consistently high licensure eligibility across programs (92 BEED, 38 BTLEd, 250 BSED) demonstrates that the majority of graduates are formally qualified to enter the teaching profession, though structural bottlenecks in permanent hiring constrain their absorption.

These findings highlight a paradox: while graduates possess the qualifications and credentials to engage in teaching, the institutional labor market has not kept pace with their supply. For BEED, the relative balance between permanent and part-time employment indicates stable demand for elementary teachers. BTLEd's stronger part-time absorption suggests a transitional stage for the program, consistent with its recent shift from BSIE to BTLEd, as employers recalibrate recognition of TLE qualifications. Meanwhile, the BSED program, despite producing a high number of graduates and achieving strong LET eligibility, faces an employment mismatch, where many graduates are underemployed in non-teaching or contractual roles.

Two important linkages emerge. First, there is a policy linkage: the findings affirm the need for CHED, DepEd, and local government units to align graduate output with plantilla creation, ensuring that LET-eligible graduates are not underutilized. This resonates with DepEd's recognition of teacher shortages, particularly in Science, Mathematics, and English, despite graduates' contractual employment. Second, there is a labor market linkage: the high presence of BSED graduates in non-teaching fields suggests opportunities for cross-sectoral mobility, reflecting the broader adaptability of teacher training to knowledge-based industries. This aligns with UNESCO's framework on teacher professional development, which views education graduates as knowledge workers capable of serving multiple sectors.

The employment outcomes of CBSUA–Sipocot graduates underscore both opportunities and challenges. While the programs successfully produce licensure-eligible graduates capable of filling critical teaching shortages, employment patterns reveal systemic reliance on non-permanent positions and cross-sectoral absorption. Strengthening policy alignment and institutional partnerships may therefore be critical in ensuring that teacher education graduates not only sustain the teaching workforce but also maximize their potential in broader labor market ecosystems.

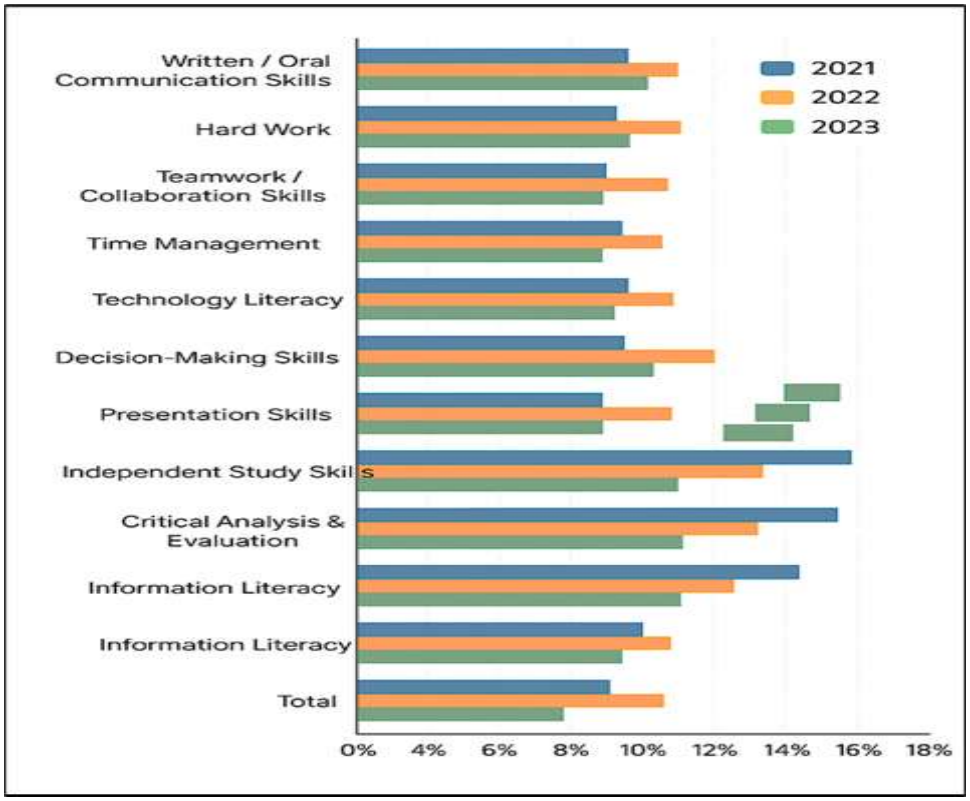
To further understand graduate readiness beyond employment outcomes, it is essential to examine the specific employability skills demonstrated by BSED graduates across the three-year period. Table 4 presents the grouped totals and percentages of key competencies, encompassing both cognitive and non-cognitive skills, such as communication, collaboration, time management, and critical analysis. This skills-based perspective complements earlier findings on employment status by highlighting the competencies that underpin graduates' labor market adaptability and professional performance.

Table 4. BSED Graduates' Employability Skills (Part III, Grouped Totals with Percentages)

Skills / Competencies	**2021**	**%**	**2022**	**%**	**2023**	**%**
Written / Oral Communication Skills	10	11%	12	8%	18	10%
Hard Work	7	7%	12	8%	14	8%
Teamwork / Collaboration Skills	11	12%	9	7%	12	6%
Time Management	10	11%	17	12%	28	16%
Technology Literacy	10	11%	9	7%	12	6%
Decision-Making Skills	10	11%	20	14%	16	9%
Presentation Skills	10	11%	8	6%	14	8%

Independent Study Skills	7	8%	22	16%	24	13%
Critical Analysis & Evaluation	8	9%	19	13%	28	16%
Information Literacy	8	9%	12	9%	14	8%
Total	91	100%	140	100%	**180**	100%

The data in Table 4 reveal distinct patterns in the distribution of employability skills among BSED graduates from 2021 to 2023, providing insights into the competencies most developed during their academic preparation and their relevance to professional practice. The results show that across all three cohorts, certain core competencies consistently appear, but their relative weight shifts over time. Written and oral communication skills, while relatively stable (11% in 2021, 8% in 2022, and 10% in 2023), remain a foundational competency, underscoring the centrality of effective communication in the teaching profession. By contrast, skills such as *critical analysis and evaluation* (9% in 2021, 13% in 2022, and 16% in 2023) and *time management* (11% in 2021, 12% in 2022, and 16% in 2023) show significant upward trends, indicating a strengthening in higher-order cognitive abilities and organizational competencies over time. Conversely, *technology literacy* and *teamwork/collaboration skills* reflect declining proportions, dropping from 11% and 12% respectively in 2021 to only 6% each in 2023. This decline may suggest either an assumption of baseline proficiency in these areas or reduced explicit emphasis in the latter stages of the program.



The most notable pattern is the shift from baseline, generalist skills toward higher-order analytical and independent learning competencies**.** For instance, *independent study skills* increased sharply from 8% in 2021 to 16% in 2022, stabilizing at 13% in 2023, while *critical analysis* and *decision-making* also rose substantially. This pattern aligns with the pedagogical transition in higher education toward learner autonomy and critical inquiry, competencies essential for adapting to the demands of curriculum reform, 21st-century learning frameworks, and outcome-based education.

The upward trajectory in time management, critical thinking, and independent study skills suggests that the BSED program increasingly cultivates reflective and adaptive educators capable of handling complex classroom realities. This is critical given the demands of the K–12 curriculum, where teachers are not only content experts but also facilitators of inquiry-based and learner-centered pedagogies. Meanwhile, the relative stagnation or decline in teamwork and technology literacy may indicate areas requiring curricular recalibration. With

technology integration and collaborative practices being cornerstones of 21st-century teaching, the program must ensure that these competencies remain sufficiently reinforced.

Two implications arise from these patterns. First, the development of higher-order skills such as critical analysis and independent learning aligns with national teacher standards (e.g., PPST Domains 2 and 4), reflecting institutional responsiveness to policy imperatives. Second, the decline in teamwork and technology-related skills suggests a potential gap between graduate competencies and the Department of Education's emphasis on digital literacy and collaborative professional practice, which are vital for effective implementation of blended and inclusive learning environments. These findings connect directly with the earlier employment outcomes (Table 3), where a significant proportion of BSED graduates enter part-time or contractual teaching positions. Such positions often demand high adaptability, self-regulation, and analytical decision-making in contexts with limited institutional support, underscoring why these skills are critical for employability. Additionally, the observed decline in technology and collaboration skills is linked to broader national discourses on digital equity and professional learning communities. If not addressed, such gaps may hinder graduates' effectiveness in advancing the Department of Education's digital transformation agenda.

Meanwhile, Table 5 presents the overall Distribution of graduates' employability skills. It consolidates the employability skills of graduates from 2021 to 2023, highlighting the relative strengths and gaps across key competencies.

Table 5: Overall Data Distribution of Graduates' Employability Skills (Aggregate 2021–2023)

Skills / Competencies	**2021**	**2022**	**2023**	**Total Freq.**	**% (of 411)**	**Mean**	**Rank**
Written / Oral Communication	10	12	18	40	9.73%	13.33	5
Hard Work	7	12	14	33	8.03%	11.00	8
Teamwork / Collaboration	11	9	12	32	7.78%	10.67	9
Time Management	10	17	28	55	13.38%	18.33	2
Technology Literacy	10	9	12	31	7.54%	10.33	10
Decision-Making Skills	10	20	16	46	11.20%	15.33	4
Presentation Skills	10	8	14	32	7.78%	10.67	9
Independent Study Skills	7	22	24	53	12.89%	17.67	3
Critical Analysis & Evaluation	8	19	28	55	13.38%	18.33	2
Information Literacy	8	12	14	34	8.27%	11.33	7
Total	91	140	180	**411**	**100%**	—	—

Table 5 presents the aggregate distribution of employability skills among graduates from 2021 to 2023, offering a comprehensive view of the competencies most frequently demonstrated. By examining the frequency, percentage, mean, and ranking, the table provides empirical evidence of graduates' skill sets and highlights areas of strength and opportunities for improvement in higher education training. The results show that *time management* (55, 13.38%) and *critical analysis & evaluation* (55, 13.38%) emerged as the most dominant competencies, both attaining the highest rank with a mean of 18.33. Following closely were *independent study skills* (53, 12.89%, M = 17.67), reflecting graduates' ability to learn autonomously and adapt to varied professional contexts. Meanwhile, *decision-making skills* (46, 11.20%) and *written/oral communication* (40, 9.73%) occupied the middle ranks. In contrast, *technology literacy* (31, 7.54%) and *teamwork/collaboration skills* (32, 7.78%) scored lowest, suggesting that digital proficiency and cooperative competencies remain comparatively underdeveloped among graduates.

The dominance of cognitive-oriented skills such as *critical analysis & evaluation* and *independent study skills* signals that graduates are equipped with higher-order thinking and research-oriented capacities aligned with academic training in teacher education programs. This finding is consistent with the literature, which

emphasizes the growing importance of critical thinking and self-directed learning as indispensable attributes in the 21st-century workforce (OECD, 2020). However, the relatively lower performance in *technology literacy* reflects a critical gap, particularly in the context of post-pandemic digital transformations in education, where technology integration is considered a core teaching competency (UNESCO, 2021). The distribution suggests that while CBSUA graduates demonstrate strong foundational cognitive and adaptive skills, their practical competencies in digital literacy and collaborative work require reinforcement. This imbalance between higher-order thinking and applied digital/soft skills may affect their competitiveness in labor markets increasingly defined by technology-enabled collaboration. The trend also suggests that although the curriculum strengthens analytical and independent skills, it may require recalibration to integrate digital pedagogy and collaborative problem-solving more systematically.

Two important linkages emerge from this data: the prevalence of *critical and independent skills* links directly to the graduates' preparation for professional examinations such as the Licensure Examination for Teachers (LET), where analysis, comprehension, and independent learning are vital for success. This indicates that the university's academic rigor translates into competencies aligned with licensure performance. The underrepresentation of *technology literacy* and *teamwork* links to employability outcomes, as modern teaching requires proficiency in digital tools and collaborative practices with peers, administrators, and stakeholders. This gap may partly explain why a significant proportion of graduates still fall under part-time or contractual employment, as noted in the employment outcomes data. The data demonstrate that CBSUA graduates possess strong analytical, time management, and independent learning skills, yet they exhibit deficiencies in digital and collaborative competencies. These findings underscore the need for curriculum adjustments that balance cognitive development with applied employability skills to enhance graduates' readiness for the evolving demands of the educational and professional sectors.

Meanwhile, Table 6 shows the Comparative Distribution of Employability Skills Across Graduate Demographics.

Table 6. Comparative Distribution of Employability Skills Across Graduate Demographics (Aggregate 2021–2023)

Demographic Category	**Subgroup**	**Frequency**	**% of Total (N = 411)**	**Linkage with Employability Skills (Table 5)**
Sex	Male	105	25.55%	Male graduates, although fewer in number, reflect stronger clustering in critical analysis and time management (Table 5, Rank 2), aligning with analytical tasks often demanded in teaching.
	Female	306	74.45%	Female graduates dominate the pool, and their higher representation reinforces competencies like independent study skills (Rank 3) and decision-making (Rank 4), showcasing adaptability and leadership in educational settings.
Age Group	20–29	368	89.54%	Younger graduates (majority) are strongly associated with technology literacy and teamwork/collaboration despite their lower ranks (Ranks 9–10), indicating these skills are still emergent but tied to generational exposure to ICT and group learning.
	30–39	43	10.46%	Older graduates, though fewer, are likely contributing more consistently to hard work and oral/written communication (Ranks 5 and 8), reflecting experience and maturity as

				career enablers.
Civil Status	Single	378	91.97%	Single graduates comprise the vast majority, correlating with higher emphasis on time management and critical analysis & evaluation (Rank 2). Their availability and career mobility allow for stronger investment in self-development.
	Married	33	8.03%	Married graduates show smaller representation; however, their employability skills suggest strength in decision-making (Rank 4), reflecting responsibilities carried into professional contexts.

The comparative distribution of employability skills across sex, age, and civil status provides a nuanced understanding of how demographic characteristics intersect with the competencies demonstrated by BSED graduates. Table 6 highlights the relational patterns between demographic prevalence and employability skill performance aggregated from 2021 to 2023. Results show that female graduates (74.45%) far outnumber males (25.55%), while the younger age group (20–29 years, 89.54%) dominates the cohort compared to older graduates (30–39 years, 10.46%). Similarly, the majority of graduates are single (91.97%), with married graduates representing only 8.03%. These demographic concentrations correspond with the higher frequencies of key employability skills such as *time management* (55, 13.38%) and *critical analysis & evaluation* (55, 13.38%).

The gender disparity reflects broader enrollment trends in teacher education, where females continue to be the majority. This demographic advantage likely strengthens competencies tied to autonomy (*independent study skills, Rank 3*) and decision-making (*Rank 4*), reinforcing findings from employability studies that emphasize women's persistence and multitasking in educational professions. Meanwhile, the smaller proportion of males may explain their visible clustering in analytical and time-bound competencies, such as *time management*, although they are underrepresented in softer skills like teamwork. For age, the dominance of the younger group (20–29) suggests strong potential for adaptability, especially in *technology literacy* (Rank 10), although this skill remains relatively low overall. This indicates that despite generational familiarity with ICT, pedagogical integration remains underdeveloped. Older graduates, though fewer, strengthen foundational skills such as *written/oral communication* and *hard work*, bringing maturity and professional stability into their employability profile. Civil status introduces another layer: single graduates, who are highly mobile and career-focused, appear aligned with the most critical employability skills (*time management* and *critical analysis*). Married graduates, although fewer in number, indicate strengths in *decision-making*, possibly linked to balancing personal and professional responsibilities.

These demographic patterns suggest that employability skills are not equally distributed but are influenced by both structural (sex representation in education) and situational (age and civil status) factors. They imply that while younger, single females dominate numerically and in terms of skill, underrepresented groups—males, older graduates, and married individuals — bring complementary strengths that enrich the professional teaching landscape. The correlation between female dominance and high performance in *independent study skills* aligns with CHED's emphasis on autonomy and lifelong learning in teacher preparation. The relatively low ranking of *technology literacy*, despite the youth-majority demographic, reflects a gap with DepEd's ICT integration policies, suggesting the need for stronger digital competency training in preservice teacher education. The comparative analysis underscores the demographic shaping of employability skills and highlights both strengths and gaps. These findings suggest the need for targeted interventions in ICT integration, gender-sensitive training, and career development programs that capitalize on demographic diversity as a resource for teacher employability.

CONCLUSION

The findings reveal that CBSUA–Sipocot's teacher education programs demonstrate both resilience and responsiveness to national educational priorities. The steady output of BEED graduates ensures a continuous

pipeline of elementary teachers, while the robust growth of BSED, particularly in Science, Mathematics, English, and Filipino, underscores alignment with DepEd and CHED's demand for subject-specialized secondary educators. Although BTLEd displayed transitional volatility due to program restructuring, its recent recovery affirms the capacity of curricular reforms to stabilize graduate production in critical TLE areas. Demographically, the graduate pool is predominantly young, female, and single, reflecting broader national patterns in teacher education. This composition offers advantages in adaptability and long-term service potential but also signals persistent gender imbalance and underrepresentation of older entrants and males in the profession—factors with implications for workforce diversity. Employment outcomes highlight a paradox: despite high licensure eligibility, most graduates remain in contractual or non-permanent roles, with a notable share of BSED graduates absorbed in non-teaching fields. This points to structural constraints in plantilla creation and the need for stronger alignment between graduate output and teacher deployment policies. Nonetheless, the presence of graduates in non-teaching domains reflects adaptability and cross-sectoral relevance of teacher education training. Competency analysis reveals that graduates excel in critical thinking, independent learning, and time management, reflecting the program's strength in cultivating higher-order skills aligned with national teacher standards. However, relatively lower performance in technology literacy and collaboration suggests gaps in digital pedagogy and teamwork readiness, both of which are essential for effective implementation of 21st-century and blended learning frameworks. The CBSUA–Sipocot's teacher education programs significantly contribute to sustaining the teacher workforce while reflecting the challenges typical of the Philippine higher education and employment landscape. The results underscore the importance of policy coordination, curriculum recalibration, and demographic inclusivity in optimizing graduates' impact on addressing both educational system priorities and broader labor market needs.

RECOMMENDATION

The analysis yields several critical recommendations for policy, curriculum, and institutional practices. First, the sustained growth of BSED graduates in high-demand disciplines such as Science, Mathematics, and English should be matched by closer coordination with DepEd and CHED to ensure the creation of plantilla positions and targeted deployment strategies. Without such policy alignment, the risk of contractual underemployment among otherwise qualified graduates will persist. Second, the volatility observed in BTLEd graduate output highlights the need for stronger transition management mechanisms when programs undergo curricular restructuring. Institutions should establish bridging interventions, retention initiatives, and faculty support systems to mitigate short-term disruptions and maintain stability in the graduate supply, especially in TLE, a priority area in the K-12 curriculum. Third, the demographic composition of graduates, predominantly young, female, and single, suggests both opportunities and challenges. While advantageous in terms of long-term service sustainability, this imbalance necessitates more inclusive recruitment and retention strategies that aim to increase male participation and attract second-career or older entrants, thereby diversifying perspectives within the teaching profession. The skills profile of graduates highlights the need for curricular recalibration. While strengths in critical analysis, independent study, and time management align with 21st-century teaching demands, the persistent weakness in technology literacy and teamwork signals a gap in readiness for digital transformation and collaborative professional practice. Integrating more robust ICT-based pedagogy, digital assessment, and structured collaborative learning into the curriculum would help bridge this divide. Finally, the adaptability of teacher education graduates, evidenced by their absorption into non-teaching roles, suggests opportunities for cross-sectoral partnerships. Universities may strengthen linkages with industries, local government units, and NGOs to broaden pathways for employment, professional development, and lifelong learning. Such strategies would not only enhance graduate employability but also reinforce the institution's contribution to regional and national development.

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