Employability of technology and livelihood education graduates

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ABSTRACT

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Keywords:

Career mismatch Curriculum Employability Industry needs Program relevance Skills This paper examines the job-seeking experiences of the 2019 Bachelor of Technology and Livelihood Education (BTLE) graduates from a teacher education university. Identifying these graduates' employability is vital to the field of educational research, particularly in determining the impact of a higher education institution's BTLE program. Employing quantitative research design through a survey of 50 graduates, this research revealed that great majority of them have been employed, with majority securing education-related jobs within a year after graduation, while some having chosen careers unrelated to their pre-service education. Strategies for job search and reasons for job offer acceptance vary from traditional, economic concerns, to complexities of work opportunities and requirements. They have also reported that the pre-service courseworks they undertaken have, to a great extent, relevance to the improvement of their skills in problemsolving. communication, critical thinking, human relations, knowledge/technical, leadership, research, and information technology thus making it aligned with current employment and/or self-employment demands. Apart from presenting the reasons of their employment acceptance and post-college education undertakings, this paper also outlines the challenges in securing employment. Thus, such issues forwarded by the paper, arising from academic training vis-à-vis actual industry works, are strong points for pre-service BTLE program enhancements.

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1. INTRODUCTION

As educators are the catalyst for change and key persons behind a meaningful learning environment [1] numerous Philippine teacher education universities must offer pre-service teaching programs and training parallel to the real educational field [2] in the pursuit of quality education. However, with the growing demands in such field, intensive training for future professions does not secure teacher education graduates' employability—the ability to obtain initial employment [3], maintain employment [4], and achieve the minimal requirements for a profession or place of employment [5]. Among the recognized factors that contribute to graduates' employability are education qualification, academic performances, and relevant soft and technical skills [6]. Formal schooling must therefore go beyond providing academic training and imparting workplace-relevant skills. Higher education institutions (HEIs), particularly in the teachereducation programs, require faculty members to be aware of current needs and demands of the labor market [6] to instill employability skills among their students. An academic program efficacy can be measured by the graduates' ability to use learned knowledge and experience for economic advancement. One measure of the relevance of curriculum offers in HEIs is employability [7]. The employability of its graduates can be used as the basis for curriculum development, and in turn, as a guide in setting its direction. In the Philippines, every HEI's primary mission is to produce graduates who are prepared for their future. It is therefore important to assess if graduates are employable considering how long they have been able to find work, and whether their employment is related to their field of study and among others [8].

2. LITERATURE REVIEW

Tracer studies are the most appropriate tool to assess the graduates' employability. Such tools evaluate effects of education programs, from medium to long term [9]. Much more, these studies offer feedback on the relevance of the curriculum in the workplace [10] and information to assess education and training quality [11] which improves the marketability of school programs [12]. The knowledge gleaned from a tracer analysis could be used to improve curricular programs considering quality assurance [13]. Furthermore, the findings of tracer studies could help assess the efficacy of the programs and their effectiveness level, hence defining their success or failure [14]. These will collect essential information on graduates' undergraduate experience, career profiles, previous and recent employers, and the value of their scholastic history and skills required in their employment. These studies will also gather data on the curriculum's relevance and graduates' degree of satisfaction with their academic preparedness [12]. In the Philippines, various HEIs, especially state universities involved in teacher education, have been performing research to evaluate their alumni's employability [7], [10], [11], [15]–[19]

Oboza's [10] evaluation of 38 teacher education graduates of a state university found that 21% acquired a job within one to six months, and 42% acquired a job through referrals. Most respondents reported challenges in finding work, such as a lack of job openings and available positions. The results proved that skills in technical knowledge, research, communication, problem solving, leadership, and human relation are beneficial in the job. In Pardo and Pichay's [11] study, 80% on 320 graduates of batch 2016 of a college of teacher education are employed, entailing a high employment rate due to the increased demand for teachers in the Philippines because of the adoption of the K-12 program. The graduates landed their current job in less than a month up to six months after graduation as contractual/provisional work status, with an average monthly income ranging from Php 5,000 to Php 15,000, and they accepted the job because of the salaries and benefits, and its relevance to their course. The respondents found the skills of effective communication, critical thinking, problem solving, and human interactions to be extremely helpful after graduation.

Similarly, Navida's [16] study reported that 89.65% of its secondary education graduates are employed, with 51.72% working as contractual teachers in private schools, 38.5% working as junior high school (JHS) teachers, 11.5% working as college instructors, and a handful working in non-teaching fields. Furthermore, 53.6% of total employed graduates were hired from one to six months. In addition, 39.3% were hired as walk-in applicants while 32.1% were hired through referrals. They acquired necessary skills such as in human relations, communication, and critical thinking that are useful in their job. This suggests that the programs taken by graduates throughout their pre-service training are relevant to the industry's requirement.

According to Basagre [19], 86.4% of elementary education graduates of a state university from 2014-2018 are employed, with 61.72% of the employed graduates in permanent or regular positions, 23.4% on a contract basis, and 9.87% on casual, temporary, or self-employed. There were 55.56% of employed graduates landed their first job in less than a month, 29.63% in one to six months, and 14.81% in one year to less than two years. Furthermore, the survey found that skills in communication, critical thinking, and computer operations were the most beneficial for their work.

Such tracer studies presented have common results. First, most education graduates are female, supporting the claim that the teaching career is more appealing to females than males [20]. Second, different skills learned in pre-service training such as in areas of human relations, communication, problem solving, research, and leadership are useful in the workplace [11], [16], [18]. Lastly, most respondents were employed six months at most through recommendations or as face-to-face applicants [15], [16].

With relevance to teaching practice, the teacher education university continuously nurtures innovative teachers. However, no study has been conducted regarding the employability of the Technology and Livelihood Education graduates of the regional campus of this university and how the teacher education training inside the institution contributed to their skills development. Thus, this study sought to determine the employment rate and characteristics of the 2019 Bachelor of Technology and Livelihood Education (BTLE) graduates, to examine their job-seeking experiences, and to assess the relevance of skills learned in college to current employment. Identifying these graduates' employability is vital to the field of educational research, in general, and, in particular, in determining the impact of a specific institutional program offering to its clients to include alumni and the industry employers.

3. RESEARCH METHOD

This research employed the quantitative design through descriptive-survey method of gathering, evaluating, interpreting, and writing a study's findings [21], in this case, in assessing the employability of 50 employed BTLE graduates of 2019 from a certain teacher education university. To identify the respondents, the researchers used a non-probability sampling strategy called convenience sampling. The COVID-19 pandemic crisis has made it difficult to reach a population that needs to be measured; thus, appropriate and most practical data collection techniques enabled the researchers to gather and extract information from the respondents at the most convenient and ethical ways. Using an alumni database and informal social media (Facebook/Messenger) search, researchers were able to connect to the graduates and ask them to voluntarily respond to online survey questionnaire.

The researchers distributed a Google survey questionnaire link to the respondents via Messenger. The questionnaire asked about the relevant respondents' personal data, their employment characteristics, their job-hunting experiences after graduation, and the perceived relevance of skills learned in college to their current employment. Adapted from Oboza's [10] tracer study, the questionnaire was modified based on research needs and on psychometrical validation. With Google Form features, the data that was collected in over a period of three weeks (June 2021), was converted into spreadsheet format, and then analyzed using Jeffreys's amazing statistics program (JASP), a program for statistical analysis that generally produces American Psychological Association (APA) style results, tables, and graphs, and integrates the open science framework and reproducibility by integrating the analysis settings into the results [22]. Based on Table 1, four-fifths of the respondent population was composed of female graduates. Most respondents (84%) aged from 22 and 23 and were single (96%). Qualification-wise, ninety percent passed the licensure examination for teachers (LET), four-fifths majority has qualified for the National Certificate II (NCII), but half of the population has not taken the civil service exam.

Variables	Categories	Frequency	Percentage
Gender	Female	40	80.0
	Male	10	20.0
Age range	20-21	6	12.0
	22-23	42	84.0
	24-25	1	2.0
	26-27	0	0.0
	28-29	0	0.0
	30 and above	1	2.0
Marital status	Single	48	96.0
	Married	1	2.0
	Live-in	1	2.0
LET passer	Yes	45	90.0
	No	4	8.0
	Did not take yet	1	2.0
Civil service passer	Yes	9	18.0
	No	16	32.0
	Did not take yet	25	50.0
NCII holder	Yes	42	84.0
	No	4	8.0
	Did not take vet	4	8.0

4. **RESULTS AND DISCUSSION**

4.1. Respondents' employment characteristics

With respect to education-related occupations, 18% worked as junior high school (JHS) teachers, followed closely in percentage by tutors (16%) and elementary school teachers (14%). While college instructors accounted for 6%, an equal number of senior high school (SHS) teachers and online teachers participated in the study, both comprising 4%. Only one alternative learning system (ALS) literacy volunteer and one SHS joint delivery voucher program (JDVP) trainer served as respondents. This implies that most employed graduates secured a job related to education as field of specialization. This is similar to Albina and Sumagaysay's [23] finding that most of the graduates declared that the curriculum of their college program is indeed relevant. Interestingly, while most graduates who choose teaching as a career, 34% had occupations not specified in the selections: business process outsourcing (BPO) employees, registration officers, office staff, accounting clerk/liaison officer, administrative officer, businessman, client care associate, cooperative secretary, customer service representative, factory worker, firefighter, housewife, pharmacy assistant, receptionist, and service crew. Nonetheless, this shows that though some graduates chose careers unrelated to their major course, they acquired the skills needed for their present occupation.

4.2. Graduates' experiences in job searches

The majority (60%) of the respondents confirmed the match between their college degree and their first job. Employers require a sound understanding of fundamental skills related to graduates' profession [24] in hiring new employees. Therefore, the degree from formal schooling in college is beneficial for graduates' employment. In terms of job-seeking tools for the respondents' first jobs, 38% of the respondents were walk-in applicants, 10% higher from the ones hired through recommendations, twice higher than those who responded to advertisements. Furthermore, 12% heard about the job information from their friends, twice as much as those who attended job fairs for employment, while only one had his job arranged by the school's job placement officer. Employers use different recruitment methods in attracting potential employees, such as physical presence interviews, online activities, formal and informal approaches, or combination of methods [25]. While most graduates were employed as walk-in applicants as one of the face-to-face activities valued by job seekers in building rapport and engagement, Pollard *et al.* [25] further argued that requiring physical presence in job interviews is expensive compared to using online job applications from which employers can reach wider audiences.

Less than half of the respondents (42%) were hired in one to six months, almost one-fourth (24%) took 7 to 11 months, one-fifth spent one year to less than three years, and the remaining 14% were employed in less than a month. This clearly predicts that graduates from the teacher education university serving as locale of the study will secure their first job within a year after graduation. This result supports that of 2019 Philippine Institute for Development studies tracer study, which reported that graduates who took license-requiring courses will spend 11 months to land their first job while those who took courses without professional license requirements will take five months after graduation to work on their first job.

Salaries and benefits were the most common reason for accepting one's first job (72%), followed closely by career challenge (64%). Relation to special skill constituted 44% of the total responses, 2% higher than those for relation to one's course. Proximity or the distance to residence contributed 22% to the total responses, followed by family influence (14%) and seeking experience. Reasons with the lowest response rate include both waiting for LET result and no private schools are hiring and waiting for the call from the Department of education (DepEd). The results compliment the conclusion of Abraham *et al.* [26] that monetary gains and benefits exert a highly significant influence in accepting job offers while having to travel four to six hours to work from the household reduces the likelihood of job acceptance.

However, the most common difficulty encountered by the respondents upon searching for a job is the limited vacancies, or positions or items in the educational field (62%). Less than half of the responses (46%) point to inadequate experience, while one fifth is concerned with mismatch to educational training and qualification. Meanwhile, 10% is about falling short in terms of the paper requirements while the lowest frequency is for one respondent who considered personality factors as his or her difficulty. Interestingly, three claim to encounter no difficulties in applying for a job. This reveals that the most common difficulties encountered by graduates are few job vacancies, inadequate experience, and mismatch to their educational training. The limited number of jobs available in the labor market brings about competition among graduates [27] while proximity between firms' requirements and graduates' achievements affects graduates' employability [28] implying inadequate experience as a challenge in job hunting. Therefore, to strengthen employability of university graduates, the educational process must be leveled up and the alignment and realignment of educational training and resources must always be emphasized and prioritized [23], [29]. In effect, graduates with higher level of competencies, skills and experience and graduates with educational training relevant to the job offerings are more likely to get hired than their inexperienced, less competent, and horizontally mismatched competitors.

4.3. Extent of relevance of BTLE program-learned skills to current employment

Table 2 illustrates all skills (and corresponding indicators) used by the graduates in their present work. This research employed the following mean scales for interpretation from the tracer studies of previous studies [10], [20]: 1.00-1.50, interpreted as 'not at all'; 1.51-2.50, 'very limited extent'; 2.51-3.50 'limited extent'; 3.51-4.50, 'some extent'; and 4.51-5.00, 'great extent'.

As seen in Table 2, the indicator under communication skills with the highest perceived relevance to a great extent is listening objectively to understand others' ideas with 4.68 weighted mean. Rane [30] discussed that work-related issues arise because of a lack of listening capacity at all levels of an organization. Thus, employees must work hard to break their poor listening habits to be effective and productive at work through active listening and better communication. With 4.54 weighted mean, using grammatically correct language and vocabulary is also perceived to be greatly necessary. Writing communication skills include grammatical accuracy and clear and precise communication [31]. However, graduates considered communication skills to be important to some extent as indicated by its weighted mean of 4.5. This result runs contrary to with what Williams [32] pointed out that communication skills as the most significant essential soft skills that most students needed to improve. New graduates struggle to interact with coworkers, therefore academic institutions should guarantee that students have excellent communication skills [33]. Furthermore, their ability to communicate effectively can have a significant impact on their career development in the future workplace [34] academic institutions should pay attention to the development of communication skills of the students.

Also, critical thinking skills were rated beneficial to some extent as indicated in its mean of 4.38, but with evaluating the situation and information thoroughly as its top indicator, greatly necessary to the graduates as indicated by its 4.58 weighted mean. Even so, critical thinking has been highlighted as an essential educational outcome that can lead to success in both college and the workplace. According to Desai, Berger, and Higgs [35], American and United States (US) based companies desire graduates with critical and creative thinking in vocal and written communication. These findings imply that faculty members should have a solid knowledge of critical thinking to impart to their students.

Interestingly, the graduates perceive all indicators under problem-solving skills to be important only to some extent, as indicated in its overall mean of 4.47. Nevertheless, problem solving skills are prioritized by employers [36]. This skill requires identifying issues in a problem as well as flexibility in times of unexpected problems. Problem solvers must be able to analyze available knowledge, plan a series of tasks, and provide instructions for themselves [37]. When carrying out action plans, they must check that the instructions are appropriate and, if the need arises, change them [38].

In contrast, all indicators under information technology skills were perceived to be greatly important. Therefore, information technology skills are generally important too, based on its 4.6 overall mean. In consonance, Patacsil and Tablatin's research [39] found that the top-ranking abilities such as understanding standard software programs, computer hardware, and networking were highly evaluated by both students and industry, suggesting the industry's focus on hardware operation, document processing, and maintenance skills, which are the fundamental operations of all service-oriented transactions. Thus, information and technology (IT) abilities are beneficial in the modern world or work.

In terms of human relations skills, exhibiting cooperative and supportive relations with others received the highest perceived significance to a great extent among graduates with 4.76 weighted mean. Collaboration is essential for modern organizations' success because it is used to complete critical work in almost every sector of the economy. In fact, more than half of US employees report spending most of their workday in collaborative groups [40]. Generally, the graduates considered human relations skills greatly important, as indicated by its 4.59 overall mean. Employers are generally satisfied with their workers' skills to work with others. Therefore, human relations skills are needed in the workplace, and furthermore, universities and other academic institutions in pre-service should prepare their students to acquire these skills.

Likewise, knowledge/technical skills were rated greatly necessary as indicated in its 4.56 overall mean, with application of knowledge to practice as its indicator with the highest perceived importance to a great extent, with 4.66 weighted mean. Moreover, proficiency in basic computing skills (Word processing, database, and other utilities) is also regarded greatly vital, having earned 4.58 weighted mean. In general, information and technical skills are crucial for students to learn in preparation for the world of work. To assist students become effective and competent practitioners, training in self-awareness, information acquisition, and skill growth is necessary [41]. Relationship building, investigating, or questioning, empowering, and challenging are all necessary abilities for practitioners. The capacity to learn and apply information via practice is a necessary extra talent.

Taking responsibility and risks in decision-making and people and task organization and coordination to achieve organizational goals are both the top leadership skills, equally vital to a great extent for the graduates, with weighted mean of 4.64. Taking responsibility and taking risks in every decision is needed in a job as well as managing the people to achieve the goals of an organization. Additionally, teamwork is one of the key soft skills for students to learn [14]. In general, the respondents considered leadership skills to be greatly beneficial as indicated in its 4.53 overall mean. The industry perceived the necessity for future managers with leadership qualities [39]. With this view, soft skills, which also includes leadership, communication, functioning in a team environment, and management abilities, should be part of the educational curriculum. On the other hand, the graduates reported research skills to be generally vital to a great extent as indicated in its 4.56 overall mean. Among the numerous ways in which research and information directly connected to their work duties are the following: noting the necessity of research to inform choices and recommendations; build programs, goods, or services; choose partners; or draw other conclusions [42].

Table 2. Extent of relevance of skills in current work based on respondents' perception	
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Relevant skills and indicators	Weighted mean	Interpretation
Communication skills		
Express ideas clearly and logically	4.42	Some extent
Use various forms and styles of written communication	4.34	Some extent
Use grammatically correct language and vocabulary	4.54	Great extent
Listen objectively to understand others' ideas	4.68	Great extent
Overall mean	4.50	Some extent
Human relations skills		
Demonstrate effective social behavior in various setting and circumstances	4.64	Great extent
Respond to colleagues' needs	4.6	Great extent
Apply effective conflict resolution skills	4.34	Some extent
Foster professional relationships in the workplace	4.62	Great extent
Exhibit cooperative and supportive relations	4.76	Great extent
Overall mean	4.59	Great extent
Knowledge/technical skills		
Manifest basic knowledge of the profession/field	4.44	Some extent
Demonstrate capacity to apply knowledge to practice	4.66	Great extent
Proficient in basic computing skills (Word processing, database, and other programs)	4.58	Great extent
Overall mean	4.56	Great extent
Problem-solving skills		
Identify the underlying issues in a problem	4.46	Some extent
Analyze different solutions and strategies to make an informed decisions on problems	4.48	Some extent
Develop a clear plan to solve the problem	4.44	Some extent
Evaluate action for making future decisions	4.50	Some extent
Overall mean	4.47	Some extent
Critical thinking skills		
Evaluate the situation and information thoroughly	4.58	Great extent
Provide open expression of thesis or problem	4.06	Some extent
Find reasons and evidence behind opinions	4.44	Some extent
Exhibit broad-mindedness in making decisions and interpretations	4.44	Some extent
Overall mean	4.38	Some extent
Leadership skills		
Stimulate collaborative efforts with colleagues	4.52	Great extent
Motivate, mobilize, and inspire people to move toward organizational goals	4.56	Great extent
Organize and coordinate people and tasks to achieve the organization's goal	4.64	Great extent
Facilitate effective implementation of programs of the departments/school/organization	4.3	Some extent
Maintain self-control amid stressful encounters with group members	4.54	Great extent
Take responsibility and risks in making decisions	4.64	Great extent
Overall mean	4.53	Great extent
Research skills		
Willingness to discover, compile, analyze, interpret, and assess information	4.68	Great extent
Capable of suggesting new solutions in adapting to the ever-changing world	4.46	Some extent
Order to create a solution to a problem or an answer to a query	4.54	Great extent
Overall mean	4.56	Great extent
Information technology skills		
Efficient in critical information and communication technologies functions	4.56	Great extent
Communicate and participate in collaborative networks via the internet	4.62	Great extent
Enjoy learning new things and genuinely wanting to know how things work	4.62	Great extent
Overall mean	4.60	Great extent

5. CONCLUSION

This paper examines the job-seeking experiences of graduates in year 2019 from a teacher education university. Identifying these graduates' employability is vital to the field of educational research, particularly in determining the impact of a higher education institution's BTLE program. This research revealed that the great majority of the graduates have been employed, with the majority securing education-related jobs within a year after graduation, while some having chosen careers unrelated to their pre-service education. Strategies for job search and reasons for job offer acceptance vary from traditional, economic concerns to complexities of work opportunities and requirements. Overall, they have also reported that the pre-service coursework they undertaken have, to a great extent, relevance to the improvement of their skills in problem-solving, communication, critical thinking, human relations, knowledge/technical, leadership, research, and information technology thus making it aligned with current employment and/or self-employment demands.

As a baseline information, this study may serve as potential outlook for BTLE graduates' turnout in job searches and reference points in upskilling of critical competencies, although a more intensive tracer study is needed involving more participants, cohorts and relevant variables (e.g., program delivery and internship) as scope of future work. The involvement of a relatively small number of participants using convenience sample and the self-report nature of the instrument used also pose other risks for its

generalizability. Thus, the study is particularly applicable to the 2019 graduates only. Because the study did not cover the relationships of relevant demographic items, employability, and focused related skills, future researches may delve into their connections and how they are interrelated. Moreover, the effects of the pandemic on BTLE graduates in finding a job or livelihood can be considered as interesting topic for future investigation.

Apart from presenting the reasons of graduates' employment acceptance and post-college education undertakings, this paper also outlines the challenges they experienced in securing employment. Making teacher education preparations responsive to the needs of its current students, future graduates, and work areas, it is critical to review or assess the BTLE program seriously. Thus, such findings forwarded by this paper, arising from academic program vis-à-vis actual industry work, are strong points for pre-service BTLE program enhancements. To assure success in the changing labor market, curriculum designs should be kept aligned to the demand of the market while promoting and emphasizing the significance of core competencies and skills as investment.

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