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Employment Trends of the BS Biology Graduates of Liceo de Cagayan University

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ABSTRACT

This tracer and employability study on the Liceo de Cagayan University BS Biology alumni from AYs 2005-2020 endeavored to understand their employment profile and the competency and skill factors involved. Total enumeration was done utilizing a retrospective cross-sectional survey method through an expanded graduate tracer study instrument designed by the Commission on Higher Education. Data indicate that 80.0% of the graduates were employed, of whom 53.3% had a regular or permanent appointment. The majority of those in employment (33.3%) were in the educational sphere, followed by those in the health and social sectors (26.7%). Furthermore, 66.7% of them landed a job within six months of their application. It was revealed that 66.7% of the graduates believe that the curriculum was relevant to their first job, with communication skills and critical-thinking skills as the most useful competencies. The teaching and learning environment at LDCU not only develops the skills of the BS Biology students that will enable them to correctly perform the tasks expected of them in the workplace but also cultivates the traits or attributes that make them more efficient workers. These allow them to succeed and grow in their jobs. The

employability of BS Biology graduates can be greatly increased if a careful audit of the skills required or valued by the employment sector is conducted and the curriculum is adjusted to meet those needs. This may be carried out through actual job market observations and more frequent collaborations with industry representatives.

Keywords: Employability, tracer study, higher education, competencies, biology

INTRODUCTION

Educational institutions need to actively look for means that guarantee superior opportunities for their alumni in the job market. This can be achieved by offering programs that ensure continuous skill development aimed at lifelong learning. This allows graduates to qualify for even the most stringent requirements and adapt to fast-changing working conditions. The industry policies help determine the configuration of the educational system's training and investment strategies, which include the type and content of the courses to be delivered.

Robinson (2000) speaks of those basic skills necessary for getting, keeping, and doing the job well as employability skills. Additionally, Yorke (2004) defined employability skills as a set of achievements, skills, understanding, and personal attributes that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community, and the economy. Graduate employability may be referred to as the possession of a certain level of skills (e.g., communication skills, problem-solving skills, and analytical skills) and mindset, together with the aptitude for using them for job hunting and retention (Nabi, 2015).

Tracer and employability studies can be described as retrospective analyses of graduates through a standardized survey. They are also known as graduate surveys, alumni surveys, or graduate tracking. Normally, the target population is a homogeneous group of students who finished their studies at the same time. These studies are common in higher education but are becoming more and more popular in vocational schools as well ("Tracer studies….", 2017). Aside from providing a snapshot of the graduates' employment rate, these studies can also indicate how far students from a particular program could acquire jobs from outside their main domain as well as the relevance of the degree program they were into concerning the demands of the job market (Zainab et al., 2004; Cañizares, 2015).

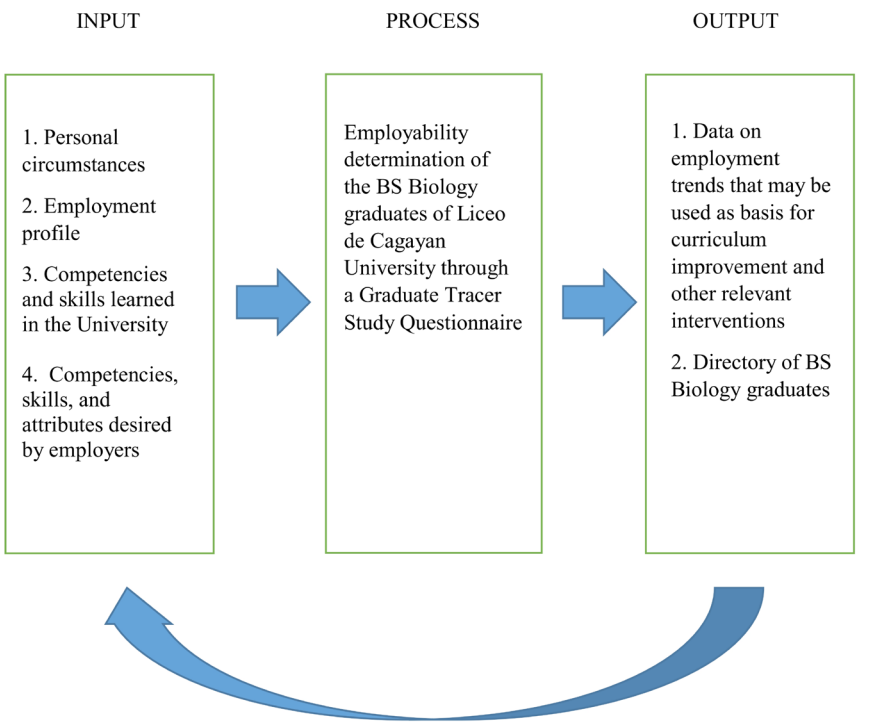
These types of studies present appropriate data for schools, students and their families, and employers. The information derived from them can stimulate education through the revitalization of curricula and training programs, which can then impact employment policies. Students and their parents will have a definite index of how to proceed with their education and future careers. London, as cited by Buama (2018), has mentioned that some of the most important trends in the United States workforce are in education, since the health and effectiveness of the educational system determine the quality of future entry-level workers. Moreover, he indicated that what people learn in college will not be enough to ensure effective performance at work for long.

FRAMEWORK

The Human Capital Theory, initially formulated by Gary Becker in 1962 as applied to education, stands as the contextual support for this study. It postulates that individual workers have a set of skills or attributes that they can cultivate or hone through training and education. Students, as prospective workers, accrue human capital, which increases their value in the job market as they bring efficacy to their assigned tasks. A thoroughly crafted curriculum is an investment in human capital with repercussions not only in academia and industry but also in the general economy. In sum, a properly educated person is a productive one.

OBJECTIVES OF THE STUDY

This study aimed to explore the demographic profile and employment status of the graduates of Liceo de Cagayan University's (LDCU) BS Biology program. More concrete objectives include the determination of the curriculum's relevance through assessment of the skills and competencies acquired vis-à-vis the perceived needs of their current employers so that definite recommendations can be presented to the officials concerned.



METHODS

A retrospective cross-sectional survey method was utilized in this study to obtain data of interest from the graduates of the BS Biology program of Liceo de Cagayan University, situated in Cagayan de Oro City, Misamis Oriental. The program was granted a certificate of recognition by the Commission on Higher Education (CHED) in 2000, and it is now reaccredited at Level III by the Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA).

Data Gathering Procedure

A total enumeration of the BS Biology graduates of LDCU from the academic years 2005–2020 was employed to identify the respondents. They were identified through records from the program coordinator and invited to join the Messenger Group Chat created specifically to facilitate their participation in the study. A survey questionnaire encoded in Google Forms was posted in the group chat

to be readily accessible to those willing to take part. There were 30 out of the 33 total graduates from the period under consideration who responded to the questionnaire. A descriptive statistical analysis of the responses was then carried out using Data Analysis Tools in Microsoft Excel.

Study Instrument

The instrument is an expanded version of the standard Graduate Tracer Study questionnaire developed by the CHED, then digitized using Google Forms. Apart from the thirty-four (34) items included in the original form, the researchers added four (4) more questions to extract additional data specifically on how to enhance the program curriculum.

Ethical Consideration

Participation in this study was purely voluntary, as permission was secured through the signing of a consent form. The researchers saw to it that no person, natural or juridical, was harmed because of the conduct of the study, and utmost care was taken to ascertain that the individual identities of the respondents remain protected.

RESULTS AND DISCUSSIONS

Demographic Profile

Figure 1-I shows that of the 30 graduates, 20 (66.7%) are female and 10 (33.3%) are male. This composition aligns with the enrollment profile of the BS Biology Program for the past 15 years, where female students have dominated. This pattern holds for graduates of different universities subject to other tracer studies (Gines, 2014 & Cuadra et al., 2019). In the study of Gustafson in 2008, which bears reference to the data published by Yamauchi & Tiongco of De La Salle University, females are likely to receive more schooling than males. It also appears that 16 (53.3%) of the alumni were married, as opposed to 11 (36.7%) who were single at the time this study was conducted (Figure 1-II). This may imply that the respondents' foremost reason for staying on the job is the salaries and benefits that they receive (Figure 4-II), considering that they have immediate family members to support other than themselves.

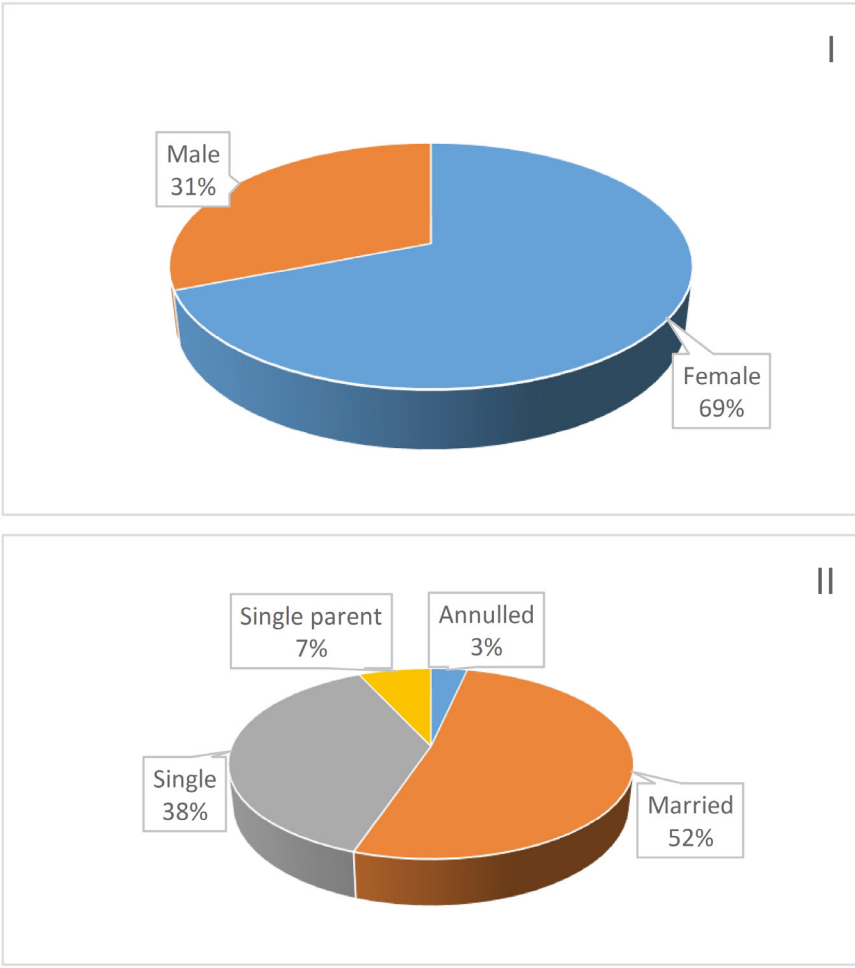


Figure 1. Percentage Distribution of the respondents in terms of I) Sex and II) Civil Status.

Reasons for Enrolling in the Program

The respondents listed both the influence of parents or relatives and being inspired by a role model as the top motivations for enrolling in BS Biology (Figure 2). This presents a situation where most of the graduates did not seem to view BS Biology as their personal choice of a degree or did not perceive themselves as having a penchant for biological sciences.

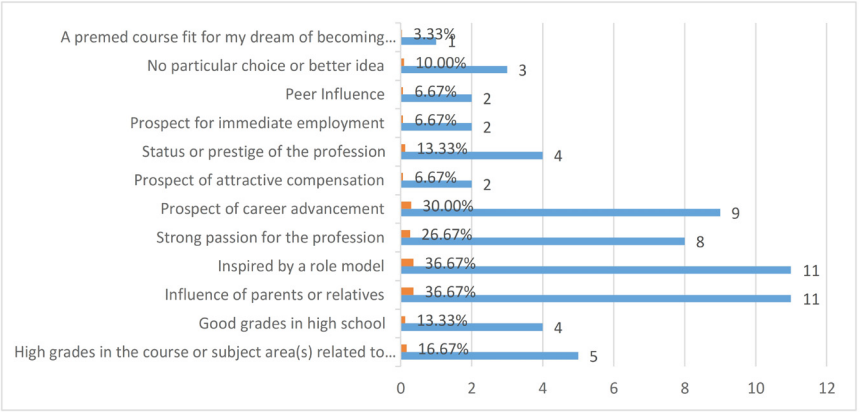


Figure 2. Reasons for pursuing a degree in BS Biology.

Employment Status

Figure 3-I illustrates the employment status of the respondents, of whom a vast majority are employed (80%). This is almost identical to the employment rate of BS Biology graduates from Visayas State University in a tracer study conducted by Cuadra et al. (2019), where 98 out of 122 students (80.33%) are employed. This is slightly higher than the BS Biology graduates of Cebu Doctors' University from AY 1995–2005, where 77% of the respondents are employed (Aguilar et al., 2011). However, it is markedly lower than the employability rate of BS Biology graduates (AY 2009–2011) from Philippine Normal University, where 40 out of 44 (90.91%) were employed. For the type of work, 53.3% are regular or permanent employees, followed by 20% who are self-employed (Figure 3-II).

When asked for the reasons that kept them from being employed at one point in time, the majority reply was that they decided to pursue advanced or further studies, followed by their decision not to find a job because of family concerns and a lack of work experience. This may suggest that the lack of job opportunities is not much of a concern for BS Biology graduates. The factors influencing non-employment are in more personal contexts. The study by Salvosa (2015) supports the findings since several divisions in the public and private sectors are in dire need of employees. However, the same cannot be said of the job market conditions during the COVID-19 pandemic, where unprecedented global economic and labor market crises severely impacted employment in the Philippines (International Labour Organization, 2020). This stands out against

the findings of Cuadra et al. (2019), where the primary cause of the respondents' unemployment was the shortage of opportunities.

Most of the respondents work in institutions or companies whose foremost lines of business are in education, health, and social work (Figure 3-IV). In an online column by Tucker (2021) published in www.topuniversities.com, it was stated that occupations for biology graduates are wide-ranging and list healthcare and education as among the typical careers they pursue. Ninety percent (90%) of the respondents are deployed within the Philippines, greatly benefiting the local communities with their skills and talents.

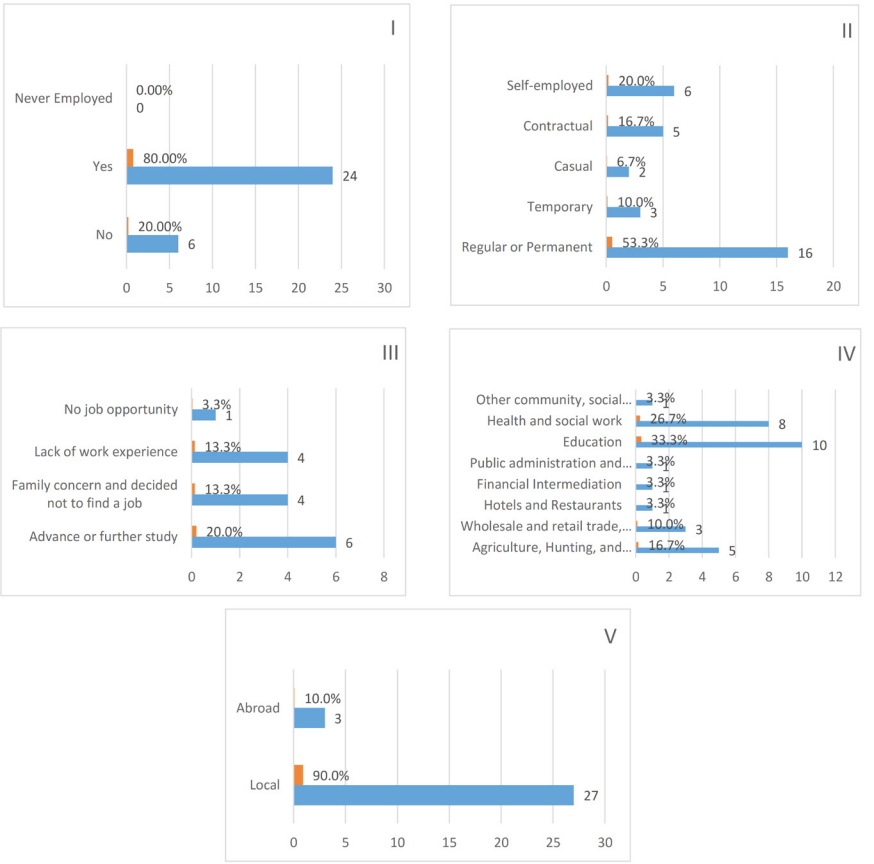


Figure 3. Employment status of the respondents according to I) whether or not they are employed, II) the type or nature of employment, III) the reason(s) for not being employed at one point in time, IV) the major line of business of the employer, and V) place of work.

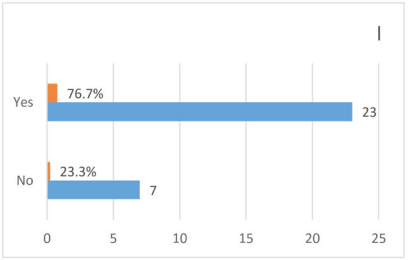
Employment Trends

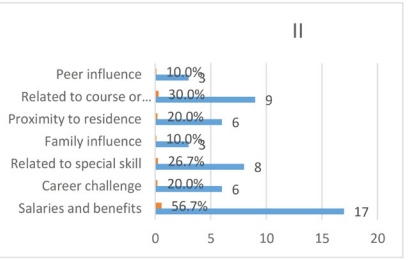
When asked whether their current employment is their first since graduating college, 76.7% of the respondents replied No (Figure 4-I). The main motive for accepting, staying, and transferring to another employment has something to do with the salaries and benefits (Figures 4-II, 4-IV, and 4-V). The top choice mirrored that of the studies by Cuadra et al. (2019) and Aquino et al. (2015), where they revealed that the job retention of respondents was primarily due to the salaries and benefits they received. More than half (53.3%) claimed that their first job is related to the undergraduate degree they earned (Figure 4-III). Several studies show the same pattern of perceived relevance of the respondents' chosen program to their jobs (Alvarez, 2020; Tutor et al., 2019; & Cuadra, 2019). However, a tracer study conducted by Gagalang et al. (2017) presented an instance where less than half of the respondents felt that their educational qualifications matched their jobs.

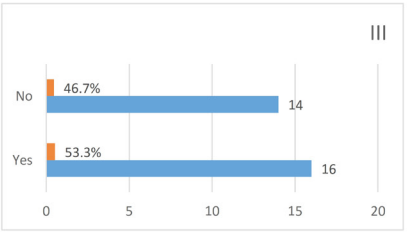
There were 20 respondents (66.67%) who were able to get a job within six months of graduation (Figure 4-VII), and 18 of the respondents (60%) lasted less than four years in their first job (Figure 4-VI). The data could be taken to signify that there is relative ease on the part of BS Biology graduates to land a job; however, they do not settle for long with their first employment, presumably for the very reasons indicated above (i.e., better salaries and benefits, relevance to their academic qualifications, and special skills). The graduates of the BS Biology program at LDCU are likely to land jobs that call for professional, technical, or supervisory qualifications or capabilities (Figures 4-VIII & 4-IX). Since the education sector is a typical career path for BS Biology graduates, they would tend to obtain units in professional education and take the Licensure Examination for Teachers. As in the case of the respondents, 10 of them are licensed professional teachers. In the same vein, as healthcare is also considered a typical career area for BS Biology graduates, it is common that they pursue an advanced degree in medicine or health-related programs. Three respondents are licensed physicians, and one is a registered nurse.

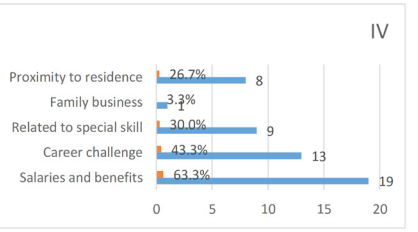
It can be inferred that BS Biology graduates of LDCU have a proclivity for acquiring specialized competencies and skills beyond those provided by the program. This enables them to get better opportunities in terms of promotion and salary, which could then boost their satisfaction with their jobs. Figure 4-X might provide an additional explanation for this tendency towards further professional enhancement. It reveals that more than half of the respondents were earning less than Ph. P. 10,000 as initial gross monthly income for their first

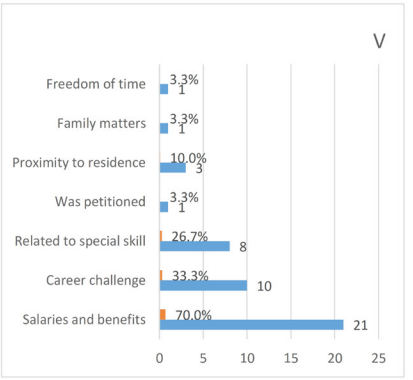
job straight out of college. That is considerably below what an average Filipino earns by way of salary. According to a news column by Lalu (2020) published in Inquirer.net, the average salary of a Filipino is Ph. P. 15,200. In a report sourced from tradingeconomics.com and the ILO, the average monthly wage in the Philippines was more than Ph. P. 12,000 in 2016 and 2017 and exceeded Ph. P. 13,000 in 2018.

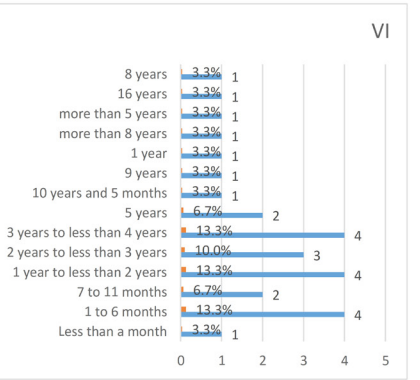












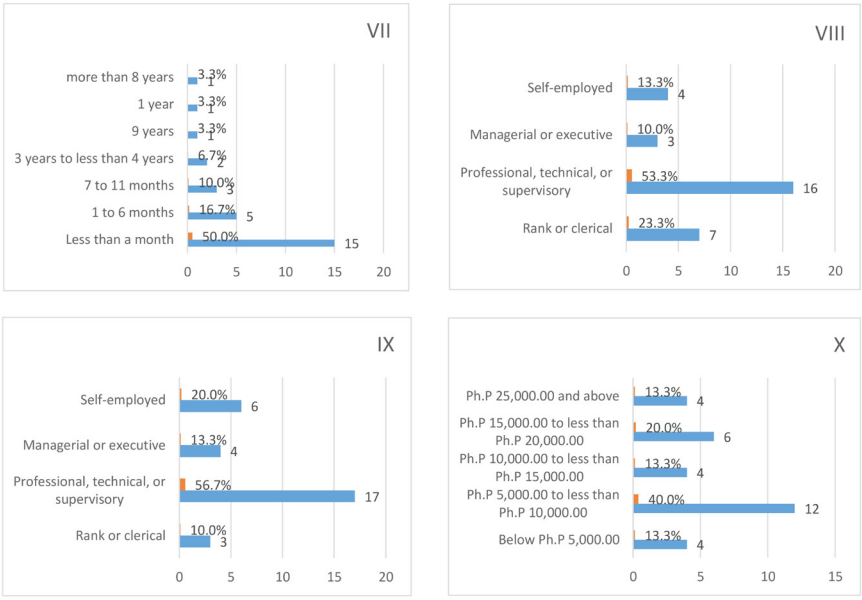


Figure 4. Employment trends of the respondents concerning I) whether or not the current job is their first job after college, II) the reasons for staying on their current job, III) whether or not their job is related to the degree they took up in college, IV) the reason(s) for accepting the job, V) the reason(s) for changing jobs, VI) the length of time they stayed in their first job, VII) how long it took them to get their first job, VIII) the nature of work in their first employment, IX) the nature of work in their current employment and X) their initial gross monthly earnings for their first job.

Applicability of Curriculum and Competencies/Skills

The data in Figure 5-I indicate that 66.7% of the respondents find their college curriculum relevant to their first job. This is encouraging for the BS Biology Program of Liceo de Cagayan University since it offers the appropriate teaching strategies and learning experiences. Tran (2018) posits that one of the reasons there are skills gaps among graduates and indifference on the part of the students in developing their careers is the impractical university curriculum and other factors like constant changes in the labor market. In the tracer study by Alvarez (2020), 68.02% of the graduates believed that the education and training they had in the university applied to their current job, and an additional 27.12% thought that the curriculum was very relevant. Additionally, about 68.12% of BS

Biology graduates from Philippine Normal University remarked that the training they received in their undergraduate program was very much related to the tasks they are performing in their current job (Gines, 2014).

Figure 5-II sets out the top competencies/skills acquired by the respondents while in college, which they think were very useful to their jobs. Communication skills and critical thinking skills appeared in the uppermost bracket, followed by human relations and problem-solving skills. This would perfectly fit with the employment profile of the respondent, considering that most of them are in education, healthcare, and social work. In these lines of occupation, the ability to connect with people effectively coupled with a methodical and perceptive approach to solving problems and issues is very desirable. One study reveals that communication skills are also considered the leading competency by most of the respondents (Albina & Sumagaysay, 2020). According to Martin (2014), competencies in communication contribute immensely to developing the new graduates' potential both in the social and occupational dimensions. He continued to aver that the employability and productive force of future graduates may be enhanced if the importance of communicative competencies is included in the new educational context.

Critical thinking, along with problem-solving skills, was given an excellent rating by the respondents in the study by Cañizares (2015). A tracer study done by Alvarez in 2020 placed critical thinking and human relations skills at the top of the list of perceived important competencies/skills. These may be rationalized through the findings of Siraye et al. (2018), where it has been found that employees who can identify problems and their components in the workplace are preferred by supervisors.

A significant portion of the respondents listed the following abilities as having been acquired while they were students at Liceo de Cagayan University: planning, time management, critical thinking, a positive attitude toward their work, and a strong work ethic (Figure 5-III). On most occasions, critical thinking came out on top when the respondents were asked to rank the most useful skills among those they had listed. The BS Biology Program at Liceo de Cagayan University combines effective teaching methods with strategies that emphasize student initiative and creativity. The teachers put a premium not only on the quality or merit of the output but on the efficiency of the process being carried out as well. Fieldwork and laboratory exercises are almost always done by groups or teams. All of these factors may have trained the students to become better planners, leaders, and workers. Moreover, it made them more conscious of the value of

time. It is noted that most of the previously mentioned attributes are soft skills. Hence, they would fit into every job that an individual is engaged in. Soft skills allow a worker to adapt and survive in an organizational environment. They supplement the hard skills and would likely see a person thrive in the job than somebody struggling to be attuned to a particular organization's way of doing business (Mtebula, 2014). Furthermore, with changing economic conditions and global challenges, the added value of effective personal qualities and core skills cannot be overemphasized. These are likely to emerge as important traits for new graduate recruits (Saunders, V. & Zuzel, K., 2010).

Sense of responsibility and time management were the employability skills/ attributes perceived by a majority of the respondents as being sought after by their employers (Figure 5-IV).

The motivation was also consistently ranked as the most desired by employers. It was mentioned by Mtebula (2014) that there is a significant global consensus on the skills and attributes that employers expect from their potential workers. The study by Zey et al. (1999) reveals that employers only emphasize a few skills. Furthermore, two of the most important skills required by employers are the ability to interact in groups and self-development (Kazilan, 2009). Since it may be fair to assume that BS Biology graduates of LDCU are reasonably prepared for entry-level positions, enough motivation for self-development, coupled with a few other personal attributes and general business skills like responsibility and time management, may catch the attention of the employers and get them promoted to higher positions.

Archer & Davison (2008) conducted research involving 233 employers representing over 750,000 employees. They discovered that 86% of these employers consider good communication skills to be essential and that soft skills such as teamwork are vital and even more important than most hard skills. The same study holds that while communication skills were ranked as the most important, they were ranked only 16th in terms of employer satisfaction. Moreover, those skills that were rated relatively low in terms of importance, such as IT skills, a post-graduate qualification, and a good degree classification, were ranked 1st, 2nd, and 3rd, respectively, in connection with the satisfaction level of the employer. This is a typical incompatibility scenario between what the employer wants and what the employee can deliver, thus pressing the need for a collaborative effort to review and revise the curriculum of higher education institutions to be more responsive to the requirements of the employment sector.

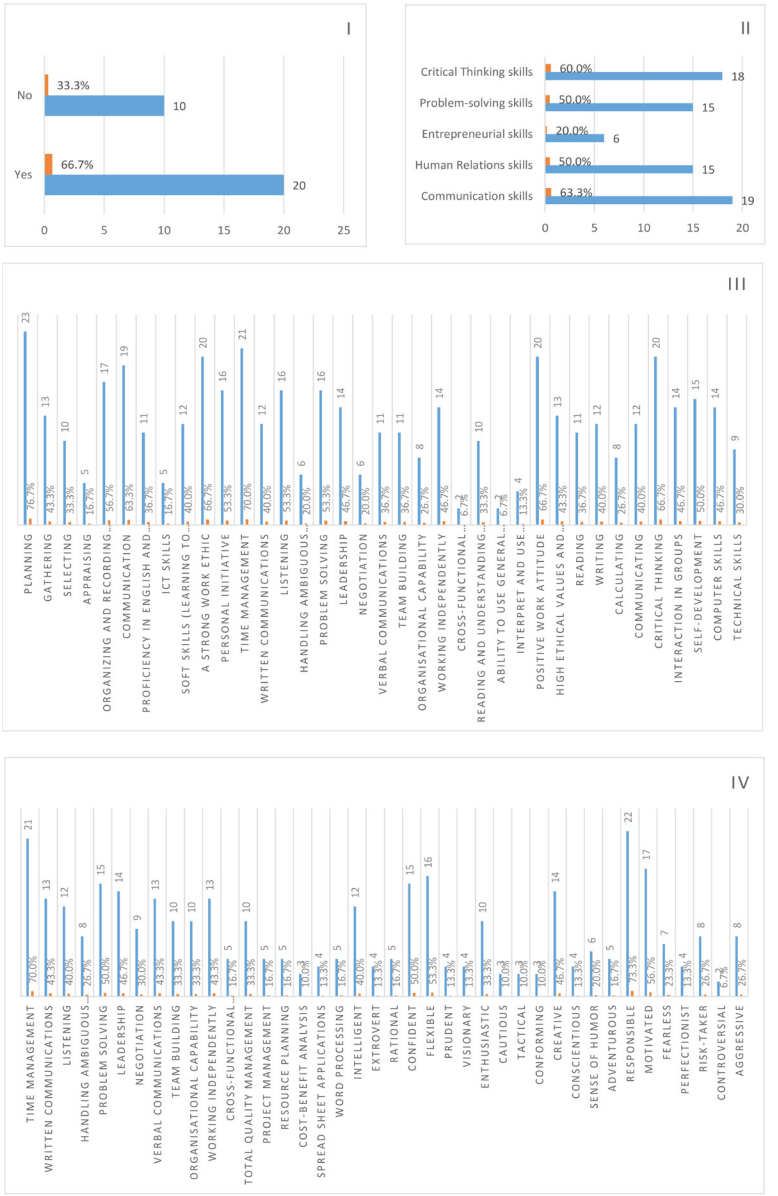


Figure 5. Percentage distribution of respondents in terms of I) whether or not they perceive the BS Biology curriculum as relevant to their first job, II) the competencies learned in college that they find very useful in their first job, III) the skills that were developed while pursuing their undergraduate degree at Liceo de Cagayan University, and IV) the types of employability skills/attributes they perceive as being sought after by their employer.

CONCLUSIONS

There is a high rate of employment for BS Biology graduates of Liceo de Cagayan University. Most of them are in careers that are considered typical for their degree qualifications, suggesting that there are a lot of opportunities in the job market that match the skillsets they have already developed. These lines of work, a majority of them felt, are relevant to their undergraduate degree, thus indicating that LDCU can satisfactorily bridge the gap between curriculum and employability. The teaching and learning environment at LDCU not only develops the competencies of the BS Biology students to allow them to correctly perform the tasks expected of them in the workplace but also cultivates the traits or attributes that make them more efficient workers. These enable them to succeed and grow in their jobs. It appears that the supposed skills and attributes desired by the employers, both in this study and others that were cited, seem to concur with those that were acquired by the respondents during their stay at LDCU. Therefore, it can be said that LDCU's collaborative approach to education involving three stakeholders, namely the institution, industry, and students, as well as the type of learning strategy offered that includes periods of theoretical study alternating with work-related experience, have prepared the students for the class-to-work transition.

RECOMMENDATIONS

To further boost the employability of the BS Biology alumni of Liceo de Cagayan University, the following items are hereby recommended:

1. The University should establish a job placement office to serve as the initial source of available jobs before and after graduation;
2. The Natural Sciences Department should integrate extracurricular and co-curricular programs that nurture the general business skills and personal attributes of BS Biology students;
3. The instructors need to give precedence to the most relevant and authentic lessons and activities that could help the students establish a strong connection between what has been learned in the classroom and real-life situations;
4. Increase the number of weeks required to comply with the internship or OJT;
5. Set up a dialogue with employers biannually to find out their needs in a constantly changing environment;

6. Faculty members should also be engaged in industry immersion annually to observe firsthand the emerging and changing needs and competencies required in the employment sector. This will provide the input necessary for the revision of the curriculum for a better fit; and

7. Tracer and employability studies should be conducted by the Natural Sciences Department at least every other year, covering a wider scope in terms of graduates from previous years and variables to be analyzed to be able to generate more robust data.

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