



Bachelor of Science in Information Technology at Bulacan State University: A Graduate Tracer Study

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Abstract—This study traced the employability of the Bachelor of Science in Information Technology (BSIT) graduates of the Bulacan State University (BulSU) from the batch AY 2015-2016 to AY 2018-2019. The study also aimed to assess the graduates' perceptions of the University's contribution to the graduates' skills development. The Graduate Tracer Study was the primary source of this study. This study used frequency, percentage, and ranking to describe the data gathered from the alumni. The majority of traced alumni were: 20 to 25 years of age, primarily male, single, and are employed. Moreover, most of the employed graduates are regular/permanent, working in the Philippines, found their first job within 1 to 6 months, earning P 10,000.00 to P 20,000.00, and are either professional, technical, or supervisory as their first job level position. I.T. skills were the most acquired and useful skills of the respondents of the College. It implies that I.T. skills were the most useful for the graduates in their job, followed by Problem Solving and Critical Thinking skills. The graduates' job roles are mostly from the primary job roles of BSIT, mainly Web and Application Developer, as referenced to the CMO No. 25 s. 2015.

Keywords—baccalaureate degree, employability, information technology, tracer study.

I. INTRODUCTION

After one or a couple of years, tracking graduates upon joining the workforce is always the higher education institutions' (HEIs) responsibility to get necessary data and feedback of graduates' job-hunting experience and employment status [21]. Employability of graduates is one of the education institutions' successes, making this an essential component of providing quality education to the community [9]. Faculty researchers regularly do this activity to identify some teaching-learning process areas that need improvement based on industries' requirements and demands [10, 19,20]. Implementing curriculum and developing work-related values among students is an essential aspect of learning that this study would like to explore among Bachelor of Science in Information Technology (BSIT) graduates [1,23].

Every year, hundreds of thousands of fresh graduates join the labor force and compete for any entry-level positions in the private and public sectors. They possess different

levels of the acquired skills from their alma mater that are expected to be relevant and matched to the job requirements like technical skills, Information Technology skills, communication skills, entrepreneurial skills, and the like. These are some of the standard or generic skills that the graduate should master or demonstrate before considering the human resource department's further assessment.

Bulacan State University (BulSU) is a Higher Education Institution in Central Luzon of the Philippines. BulSU has 13 colleges in its Main Campus and has four external campuses within the same province. The College of Information and Communications Technology (CICT) is one of the colleges in BulSU which accommodates BSIT students. The mission and goal of the University and the College are to produce globally competent and competitive graduates.

Tracing graduates' employability is an aid to determine how effective the current curriculum being offered by the

College in producing BSIT graduates. With the help of a tracer study, enhancing the curriculum may address the industry sector’s needs and have a better employability result.

II. OBJECTIVES

The study’s main objective is to trace and determine the employability of Bachelor of Science in Information Technology graduates of BulSU Main Campus from 2015 to 2019.

In order to determine the performance of the graduates, specific objectives were considered:

1. To determine the demographic profile of the respondents in terms of:
 - 1.1. Age;
 - 1.2. Gender;
 - 1.3. Civil Status;
 - 1.4. Educational Attainment; and
 - 1.5. Nature of Employment;
2. To determine the employment profile of the respondents in terms of:
 - 2.1. Employment Status;
 - 2.2. Location of Current Work;
 - 2.3. How Long Did the Graduate Find Their First Job;
 - 2.4. Gross Monthly Rate; and
 - 2.5. First Job Level Position;
3. To identify the most acquired skill in the College that the respondents able to apply from their work; and
4. To relate the respondents’ job roles in congruence with the CHED Memorandum Order No. 25 s. 2015.

III. METHODS AND DESIGN

The conceptual framework presented in Fig. 1 displays the variables of the study. The independent variables include the traced graduates’ demographic profile such as age, sex, and civil status. These characteristics may impact employment decisions, according to International Labour Organization [17].

The employment profile is treated as the dependent variable. Employment data includes employment status, current work location, duration of finding a job, gross monthly rate, and first job level position. They are designed to be based on an applicant’s or employee’s

demographic characteristics and qualifications. In addition, the skill and distinguishing characteristics of BulSU-CICT BSIT graduates are determinants of the graduates’ attractiveness to employers [25].

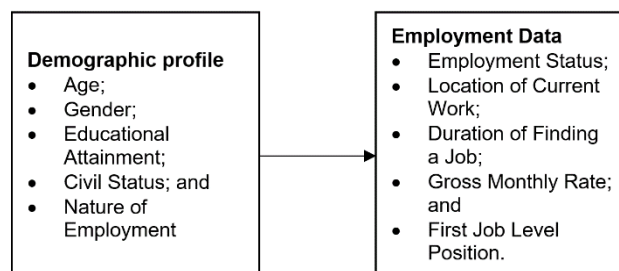


Fig.1: conceptual framework of the study

The descriptive survey method was used to achieve the study’s goals. This study’s primary source is the Graduate Tracer Study (GTS). The researchers used the Commission on Higher Education (CHED) Tracer Questionnaire [8] and the BulSU - Office of Alumni Affairs to create an adaptive questionnaire. Traced graduates are from batches A.Y. 2015-2016 to A.Y. 2018-2019.

The data collection phase began in February 2020. The Office of Alumni Affairs issued a list of BSIT graduates. After receiving the list, the researchers used every available method to contact the alumni. Social media were used to reach the majority of graduates. The researchers also asked College students if they knew someone on the list who could give them the questionnaire.

The researchers used statistical treatment to quantify and explain the data gathered after collecting all relevant documentation. The information collected was tallied, processed, and interpreted. The data collected from the graduates were described using frequency, percentage, and ranking in this report.

Random sampling was used as the sampling technique in the study. Through random sampling, respondents were selected randomly from the population. The graduates from batches A.Y. 2015-2016 to A.Y. 2018-2019 are covered in the study with a total population of 2,143 graduates. The graduates from batches A.Y. 2019-2020 were not included in the survey due to the difficulty of data gathering because of the effects of the Corona Virus 2019 (COVID-19) pandemic. The study’s respondents are presented in Table 1.

Table 1: Respondents of the Study

Year Graduated	Frequency	Percentage
2016	130	15.48%
2017	152	18.10%

2018	208	24.76%
2019	350	41.65%
Total	840	100.00%

Using Slovin’s formula, the computed sample size with a 3% margin of error is 732. The total number of respondents of the study is 840 graduates from the batch A.Y. 2015-2016 to A.Y. 2018-2019. The total number of traced graduates is within the computed sample size.

IV. RESULTS AND DISCUSSION

According to the order and sequence of the problem statement’s questions, the data was divided into four parts. The first part includes the demographic profile of the respondents. The second part presents the employment data of the respondents. The third part discusses the most acquired skills in the College that the graduates can apply from their work. Lastly, the fourth part discusses the graduates’ job roles’ relationship in congruence with the CHED Memorandum Order No. 25 s. 2015 [7].

4.1 Demographic Profile of the Respondents

4.1.1 Age. Table 2 shows the different age ranges of the respondents.

Table 2: Frequency Distribution of the Respondents Rating in terms of Age

Age	Frequency	Percentage
Below 20	23	2.74%
20-25	785	93.45%
26-30	28	3.33%
31-35	3	0.36%
36-40	1	0.12%
Above 40	0	0%
Total	840	100.00%

Most BulSU-CICT respondents were between the ages of 20 and 25, with a percentage of 93.45%.

4.1.2 Gender. Table 3 shows the distribution of gender of the respondents of BulSU-CICT.

Table 3: Frequency Distribution of the Respondents Rating in terms of Gender

Gender	Frequency	Percentage
Male	509	60.60%
Female	331	39.40%

Total	840	100.00%
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The majority of the BulSU-CICT respondents were male, which has a percentage of 60.60%. It is also not to be overlooked that the respondent composition is favorable, as both sexes are adequately represented, even though the distribution is nearly identical.

4.1.3 Civil Status. Table 4 shows the distribution of civil statuses of the respondents of BulSU-CICT.

Table 4: Frequency Distribution of the Respondents Rating in terms of Civil Status

Civil Status	Frequency	Percentage
Single	823	97.98%
Married	16	1.90%
Separated/Divorced/ Single Parent	0	0.00%
Widow	1	0.12%
Total	840	100.00%

Most of the respondents are single which has a percentage of 97.98%. Since most graduates are only between the ages of 20 and 30, they are mostly singles [25].

4.1.4 Educational Attainment. Table 5 shows the distribution of educational attainment of the respondents of BulSU-CICT.

Table 5: Frequency Distribution of the Respondents Rating in terms of Educational Attainment

Educational Attainment	Frequency	Percentage
College Graduate	828	98.57%
With Units in Master’s Degree	12	1.43%
Total	840	100.00%

Most of the respondents of BulSU-CICT are college graduates, which has a percentage of 98.57%. It shows that most of the respondents were able to find a job having only a baccalaureate degree. In addition, 12 graduates are pursuing their graduate studies and acquired Units in their Master’s Degree. Most of the graduates who pursue their post-graduate studies are in the field of education, which requires them to have a master’s degree based on CHED’s minimum requirement. Also, this number could be higher, if not because of the pandemic, as the number of enrollees declined in the Philippines [22]. Magsambol [22] reported and quoted the statement of the Philippine Association of

State Universities and Colleges (PASUC) President, Dr. Ronquillo, which states that “common reasons are fear of contamination, financial problem, lack of gadgets, and their residence relative to the university.”

4.1.5 Nature of Employment. Table 6 shows the distribution of the respondents of BulSU-CICT, whether they are employed or unemployed.

Table 6: Frequency Distribution of the Respondents Rating in terms of Nature of Employment

Nature of Employment	Frequency	Percentage
Employed	676	80.48%
Self-Employed	39	4.64%
Unemployed	125	14.88%
Total	840	100.00%

As shown from the table above, overwhelming graduates of the BSIT program could find a job with an outstanding percentage of 80.48% in a span of four years. It also demonstrates that most graduates found a job because they are single [5]. In addition, a total of 4.64% of graduates are self-employed or entrepreneurs. However, 14.88% of the graduates found difficulty in employment because of the current pandemic situation. According to Philippine Statistics Authority (PSA), on their February 2021 release of the unemployment rate, 4.2 million Filipinos were reported jobless, or an 8.8% unemployment rate in the Philippines [6].

4.2 Employment Data of the Respondents

4.2.1 Employment Status. Table 7 presents the Employment Status of the respondents of BulSU-CICT.

Table 7: Frequency Distribution of the Respondents Rating in terms of Employment Status

Employment Status	Frequency	Percentage
Regular/Permanent	409	60.50%
Temporary	74	10.95%
Casual	29	4.29%
Contractual	164	24.26%
Total	676	100.00%

This result is a testament to the quality or employability of BSIT graduates because in a span of 4 years, more than 60% have been placed to permanent/regular status, and 10.95% are in temporary status, which is on their way to permanency, resulting to a total of 71.45%.

4.2.2 Location of Current Work. Table 8 shows the Location of the Current Work of the respondents of BulSU-CICT.

Table 8: Frequency Distribution of the Respondents Rating in terms of Location of Current Work

Location	Frequency	Percentage
Local	659	97.49%
Abroad	17	2.51%
Total	676	100.00%

Most of the respondents of BulSU-CICT responded that they are currently working locally, 97.49% and 2.51% working abroad. This result indicates that most BulSU-CICT graduates work in the Philippines, but not limited to locally, as some work in other countries. The number of BSIT graduates working abroad may be limited due to travel restrictions implemented by the Philippine government [26]. However, others are grabbing opportunities they find here, as working abroad has pros and cons [24]. Moreover, some I.T. companies are already accommodating international clients in the Philippines [13].

4.2.3 The Duration for the Graduate to Find Their First Job. Table 9 shows how long it takes for BulSU-CICT respondents to find their first job.

Table 9: Frequency Distribution of the Respondents Rating in terms of the Duration to Find Their First Job

Duration	Frequency	Percentage
Less than a month	279	41.27%
1 to 6 months	343	50.74%
7 to 11 months	27	3.99%
1 year to less than 2 years	22	3.25%
2 years to less than 3 years	5	0.74%
above 3 years	0	0.00%
Total	676	100.00%

The majority of BulSU-CICT respondents, or 50.74%, had to wait for 1 to 6 months before being hired. It indicates that the respondents get hired few months right after they graduated. The table shows that most of the BSIT graduates, or almost 92%, have found their first job within six months, which is a manifestation of the employability of graduates. Additionally, BSIT graduates can find a job within six months after graduation as there are many job

opportunities, specifically in IT-related jobs, accounting for 28% of job opportunities in the Philippines, according to JobStreet [18]. Grit [14] also listed the top 10 most in-demand jobs in the Philippines, and it shows that five out of the top 10 are IT-related jobs, ranging from developers to consultants.

4.2.4 *Gross Monthly Rate.* Table 10 shows the BulSU-CICT respondents' gross monthly rate on their first job.

Table 10: Frequency Distribution of the Respondents Rating in terms of Gross Monthly Rate

Gross Monthly Rate	Frequency	Percentage
Below P 10,000.00	69	10.21%
P 10,000.00 – P 20,000.00	486	71.89%
P 21,000.00 – P 30,000.00	108	15.98%
P 31,000.00 – P 40,000.00	8	1.18%
P 41,000.00 – P 50,000.00	0	0.00%
P 51,000.00 – P 60,000.00	0	0.00%
P 61,000.00 – P70,000.00	1	0.15%
P 71,000.00 and above	4	0.59%
Total	676	100.00%

According to ASEAN Briefing [2], the average minimum wage in the Philippines is P8,061.06, to which 486 of BSIT graduates are overwhelmingly earning above the minimum wage ranging from P10,000.00 to P20,000.00. Moreover, 108 of the graduates earn P21,000.00 to P30,000.00, which is within the Philippines' average salary of P28,106.00 [3].

4.2.5 *First Job Level Position.* Table 11 shows the first job level position of the BulSU-CICT respondents.

Table 11: Frequency Distribution of the Respondents Rating in terms of First Job Level Position

First Job Level Position	Frequency	Percentage
Rank or Clerical	273	40.38%
Professional, Technical, or Supervisory	373	55.18%
Managerial or Executive	8	1.18%

Self-employed	22	3.25%
Total	676	100.00%

The table shows that more than half or 55.18% of the BSIT graduates fall under either professional, technical, or supervisory as their first job level in the span of four years. In addition, 1.18% of the BSIT graduates are managers and executives despite the requirements to be promoted to higher positions [15] and have limited surveyed graduates in a span of four years. Others are in a rank or clerical job [4], while others are considered self-employed.

4.3 Most Acquired Skills in the College that the Graduates able to Apply from their Work

Table 12 shows the Most Acquired Skills in the College that the BulSU-CICT respondents applied from their work.

Table 12: Frequency Distribution and Descriptive Measure of the Respondents Rating in terms of Most Acquired Skills

Skill	Frequency				Mean	Descriptive Interpretation
	4	3	2	1		
Communication Skills	198	344	134	0	3.39	Highly Useful
Human Relations Skills	251	344	81	0	3.56	Very Highly Useful
Entrepreneurial Skills	93	343	240	0	3.04	Highly Useful
Information Technology Skills	276	334	66	0	3.62	Very Highly Useful
Problem-Solving Skills	257	339	80	0	3.57	Very Highly Useful
Critical Thinking Skills	254	349	73	0	3.57	Very Highly Useful
Total					3.14	Highly Useful

According to CHED, as a BSIT graduate, it is common to have I.T. Skills as the most useful skills. The survey results to the BSIT graduates showed that I.T. skills received a mean of 3.62 with a descriptive rating of *Very High Useful*. The result indicates that the graduates found that having an I.T. skill as its top priority has been deemed helpful in their workplace, and it received the highest rating among the BSIT graduates.

Both Problem-Solving and Critical Thinking Skills received a mean of 3.57% with a *Very Highly Useful*

descriptive rating and are two of the highest among the most acquired and useful skills. Doyle [12] of The Balance Careers stated that:

“problem-solving skills help you solve issues quickly and effectively. It is one of the key skills that employers seek in job applicants, as employees with these skills tend to be self-reliant.”

Moreover, Higgins [16] of the University of Dundee mentioned that:

“critical thinking is imperative for students who will seek a career in technology, regardless of which end of the tech experience and skills spectrum they sit ...some will embark on a more technical path while others will take a business-focused path.”

4.4 Graduates' Job Roles' Relationship in Congruence with the CHED Memorandum Order No. 25 s. 2015

Table 13 shows the Job Roles of the BulSU-CICT respondents.

Table 13: Frequency Distribution of the Respondents Rating in terms of Job Roles

Job Roles	Frequency	Percentage
Primary Job Roles		
Web and Application Developer	125	18.49%
Jr. Database Administrator	8	1.18%
System Administrator	9	1.33%
Network Engineer	5	0.74%
Jr. Information Security Administrator	4	0.59%
Systems Integration Personnel	6	0.89%
IT Audit Assistant	0	0.00%
Technical Support Specialist	103	15.24%
Total Primary Job Roles	260	38.46%
Secondary Job Roles		
QA Specialist	38	5.62%
System Analyst	58	8.58%
Computer Programmer	93	13.76%
Total Secondary Job Roles	189	27.96%
Other Job Roles		
Underemployed	227	33.58%
Total	676	100.00%

Primary Job Roles received a total of 38.46%, which is the highest among I.T. graduates' job roles based on CHED Memorandum Order No. 25 s. 2015 [7]. The result shows that the BulSU-CICT offers a curriculum that would land the graduates to the Primary Job Roles for I.T. Specifically, from the Primary Job Roles, Web and Application Developer received 18.49%, which is the highest among the Primary Job Roles, followed by the Technical Support Specialist with a percentage of 15.24%, which is the second to the highest among the Primary Job Roles. This result indicates that the subject offered by the BulSU-CICT concerning Web and Application development such as Web Systems and Technologies and Mobile Application Development. Other technical subjects related to hardware, software, and computer networking [11], such as Hardware Systems and Servicing, Platform Technologies, Networking, and the like, are highly effective and very useful in the industry. The result also shows that Web and Application Developer and Technical Support Specialist require problem-solving and critical thinking skills [16]. They both received the second-highest rating of useful skills in a job next to I.T. skills. In addition, the Computer Programmer job roles received 13.76%, which is under the Secondary Job Roles for I.T. Graduates based on CHED Memorandum Order No. 25 s. 2015. Computer Programmer is very similar to Web and Application Developer in terms of responsibilities and technicalities, dependent on problem-solving and critical thinking skills [16]. In addition, the other job roles which are not on the list of CHED's Primary and Secondary Job Roles for BSIT graduates based on CMO No. 25 s. 2015 received a total percentage of 33.58%, which can be considered underemployed for I.T. graduates, such as customer service representatives, data encoders, graphic artists and designers, office staffs, 3-dimensional model artists, and the like.

V. CONCLUSION

After all the data have been collected, presented, analyzed, and interpreted, this study found that the traced graduates have different perceptions or views on what skills or competencies helped attain a high position/ranking. In addition to this, the researchers also found out that:

1. The demographic profile of the traced graduates was not the basis for professional development. Moreover, it is accepted that as a person grows, he/she may develop qualities needed in a specific profession.
2. The respondents' educational background was necessary, especially if they want to attain a higher position/ranking.

3. The employment data of the respondents showed different things a graduate can gain after graduation. Moreover, it showed that a position/rank was directly proportional to the salary; as the position/rank becomes high, the salary increases.
4. I.T., problem-solving, and critical thinking skills were the most acquired skills of the traced BSIT graduates. It implies that these skills were the most useful for the graduates in their workplace.
5. The graduates' job roles are mostly from the primary job roles of Bachelor of Science in Information Technology, mainly Web and Application Developer, as referenced to the Commission on Higher Education Memorandum Order No. 25 series of 2015.

VI. RECOMMENDATIONS

Based on the findings and conclusions, this study forwards the following recommendations:

1. 1.Trace as many graduates of the Bachelor of Science in Information Technology of the Bulacan State University to have more accurate results.
2. The institution should continue to endorse periodic tracking of graduates through tracer studies to track their jobs and productivity, which can be used to enhance the curriculum and instruction to produce more successful graduates.
3. The College may consider forming an Industry Board to evaluate and monitor any potential curriculum enhancement program concerning professional industry needs.
4. Develop a personalized tracer study for CICT based on the CHED Tracer Questionnaire.

REFERENCES

- [1] Albina, A. &Sumangay, L. (2020). Employability tracer study of Information Technology Education graduates from a state university in the Philippines. *Social Sciences & Humanities Open*, 2(1), 1-6. DOI: <https://doi.org/10.1016/j.ssaho.2020.100055>
- [2] ASEAN Briefing. (2021). *Minimum Wages in ASEAN for 2021*. Retrieved April 13, 2021, from <https://www.aseanbriefing.com/news/minimum-wages-in-asean-for-2021/#philippinesHeader>
- [3] Average Salary Survey. (2021). *Philippines Salary*. Retrieved March 5, 2021, from <https://www.averagesalarysurvey.com/philippines>
- [4] Bean-Mellinger, B. (2019). *What is a Rank-and-File Employee?* Retrieved May 1, 2021, from <https://smallbusiness.chron.com/rankandfile-employee-24601.html>
- [5] Censky, A. (2012). *Why the Jobs Recovery Favors Single Workers*. Retrieved March 5, 2021, from https://money.cnn.com/2012/08/15/news/economy/jobs-single-workers/index.html?fbclid=IwAR0u1rF-gtCJ48YuwcA4BUTV4j5bgPQj9O3mgdLYDFAJXmAq_m45EfORq_0
- [6] CNN Philippines. (2021). *Unemployment Worsens with 4.2 million Jobless in February — PSA*. Retrieved April 13, 2021, from <https://cnnphilippines.com/news/2021/3/30/PSA-unemployment-worsens-4.2-million-Filipinos-February.html>
- [7] Commission on Higher Education Memorandum Order No. 25 series of 2015
- [8] Commission on Higher Education Tracer Questionnaire
- [9] De Castro, E.L., Prenda, M.T.B., &Dotong, C.I. (2017). Employability of Computer Engineering Graduates during Academic Year 2015-2016 and their Lifelong Learning Options. *Asia Pacific Journal of Academic Research in Social Sciences*, 2. Retrieved February 16, 2021, from <https://research.ipubatangas.edu.ph/wp-content/uploads/2018/12/Employability-of-Computer-Engineering-for-2016.pdf>
- [10] Dorji, N. & Singh, K.B. (2020). Tracer Study: An analysis of 2018 Graduates of Gedu College of Business Studies, Bhutan. *International Journal of Advanced Science and Technology*, 29(6), 1680-1686.
- [11] Doyle,A. (2020), *Important Skills for Tech Support Jobs*. Retrieved April 13, 2021, <https://www.thebalancecareers.com/tech-support-skills-list-2063774>
- [12] Doyle,A. (2020), *What Are Problem-Solving Skills?* Retrieved April 13, 2021, <https://www.thebalancecareers.com/problem-solving-skills-with-examples-2063764>
- [13] Gallimore, D. (2021). *Philippines: The Top Outsourcing Destination*. Retrieved April 13, 2021, <https://www.outsourceaccelerator.com/articles/philippines-the-top-outsourcing-destination/#:~:text=It%20has%20taken%20a%20risk,outso%20urcing%20destinations%20in%20the%20world.&text=The%20BPO%20sector%20has%20been,2015%2C%202422%20billion%20in%20revenue>
- [14] Grit. (2020). *Top 10 Most In-Demand Jobs in the Philippines 2020*. Retrieved April 13, 2021, <https://grit.ph/in-demand-jobs/>
- [15] Heathfield, S. (2021). *Sample Manager Job Description*. Retrieved April 13, 2021, from <https://www.thebalancecareers.com/sample-manager-job-description-1919126>
- [16] Higgins, J. (2018). *Critical thinking skills needed for I.T. skills shortage*. Retrieved May 1, 2021, from <https://edtechnology.co.uk/comments/critical-thinking-skills-needed-for-it-skills-shortage/#:~:text=Critical%20thinking%20is%20imperative%20for,take%20a%20business%2Dfocused%20path>

- [17] International Labour Organization. (2009). Youth employability surveys in the Philippines: An integrative report. *ILO Asia-Pacific Working Paper Series*. Retrieved March 5, 2021, from http://www.ilo.org/wcmsp5/groups/public/@asia/@ro-bangkok/@ilo-manila/documents/publication/wcms_142969.pdf
- [18] JobStreet. (2020). *The Year Ahead: The Trends, In-Demand Jobs and Skills to be #Futureready for 2021*. Retrieved April 13, 2021, <https://www.jobstreet.com.ph/en/cms/employer/laws-of-attraction/inspirations/the-year-ahead-the-trends-in-demand-jobs-and-skills-to-be-futureready-for-2021/>
- [19] Loquias, R.T. (2015). Employability of the Bachelor of Science in Electronics Engineering graduates of Camarines Sur Polytechnic Colleges. *Asia Pacific Journal of Multidisciplinary Research*, 3 (4), 33-40. Retrieved February 16, 2021, from https://www.academia.edu/41226255/Employability_of_the_Bachelor_of_Science_in_Electronics_Engineering_Graduates_of_Camarines_Sur_Polytechnic_Colleges
- [20] Macatangay, L. (2013). Tracer study of BSCS graduates of Lyceum of the Philippines university from 2004-2009. *Academic Research International*. 5 (5), 361-377. Retrieved February 16, 2021, from <https://www.semanticscholar.org/paper/TRACER-STUDY-OF-BSCS-GRADUATES-OF-LYCEUM-OF-THE-Macatangay/60c3c1d698c3162471193893257e08e766ac4973/figure/5>
- [21] Maderazo, J.D. (2016). Tracer Study of Dentistry Graduates of one Higher Education Institution in the Philippines from 2008 to 2012. *Asia Pacific Journal of Multidisciplinary Research*, 4(3). Retrieved February 16, 2021, from <http://www.apjmr.com/wp-content/uploads/2016/08/APJMR-2016.4.3.19.pdf>
- [22] Magsambol, B. (2020). 44,000 college students won't enroll during pandemic, says group. *Asia Pacific Journal of Multidisciplinary Research*, 4(3). Retrieved April 13, 2021, from <https://www.rappler.com/nation/college-students-wont-enroll-pandemic-pasuc>
- [23] Mina, J., Reyes, E.J., & Salas, R. (2020). A Tracer Study of Bachelor of Science in Information Technology (BSIT) Graduates of Nueva Ecija University of Science and Technology (NEUST), San Isidro Campus. *International Journal of English Literature and Social Sciences*, 5(4), 1337-1344. DOI: 10.22161/ijels.54.77
- [24] Pinoy-ofw. (2019). *Is Working Abroad for You? Check Out These Pros and Cons*. Retrieved April 13, 2021, from <https://www.pinoy-ofw.com/news/41038-work-abroad-pros-cons.html>
- [25] Tagiobon, R.M., Moreno, E.A., Juan, T.J.E., Langomez, R.F., Sagarino, E.V., Palmes, M.K.L., & Cabisas, R.A.B. (2017). A tracer study on the University of the Immaculate conception graduates of bachelor of music. *Journal of Advances Research in Social Sciences and Humanities*, 2 (5), 298-310. DOI: <https://dx.doi.org/10.26500/JARSSH-02-2017-0503>
- [26] UNWTO. (2020). *Covid-19 Response: 96% of Global Destinations Impose Travel Restrictions*, *Unwto Reports*. Retrieved April 13, 2021, <https://www.unwto.org/news/covid-19-response-travel-restrictions>