Bachelor of Science in Computer Science at Bicol College: A Graduate Tracer Study

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ABSTRACT

The tracer study determines the employment status of Bachelor of Science in Computer Science (BSCS) graduates offered in Bicol College from batch 2019 – 2023. The research determines the job roles of BSCS graduates in Bicol College if is followed as referred in the CMO No. 25 S. 2015 of the Commission on Higher Education (CHED). The purpose of this study is to examine the employability of the Bachelor of Science in Computer Science graduates of College of Computer Studies in Bicol College, Daraga, Albay, Philippines. The study determines the BSCS Graduates of Bicol College in terms of employment status, locations of works, how long they get the first job, their first gross income, and the first job they acquire. The study determines the relevance of school related factors in terms of: Curriculum and Instruction, Faculty and Instruction, Students Services, Organization and Administration, and Community Extension, Linkages and Research, The study created an action plan that enhance the relevance of BSCS program and improve the employability rate of the Bicol College graduates. It will show to the community on how the competitive graduate produce by the Bicol College in the Country.

Keywords: Curriculum, Student Services, Organization and Administration, Community Extension, Linkages and Research, Tracer Study, Philippines

INTRODUCTION

Tracer studies constitute an empirical study which can be considered an appropriate means to evaluate the results of the accounting education and training provided to the graduates. The results can be used as benchmark information for curricular revision and improve instructional methodologies. They provide quantitative-structural data on the employability of graduates, the character and related competencies and information on the professional orientation and experiences of the graduates.   There are several motives for pursuing higher education. For some, it is a stepping stone towards a decent career and the chance to experience a different way of life. However, finishing higher education is not a guarantee because education institutions are often criticized by employers for not preparing the graduates against those required to be competitive in a job setting (GARCIA et Al., 2020). Employers expect graduates to have technical and discipline competencies from their degree and possess a broad range of employability skills who can work flexibly and intelligently in the organization (LOWDEN, 2011).

In the Philippines, holding a diploma is a huge achievement. It is considered the ultimate dream of every parent for their children. Acquiring that piece of paper reflects one of the parents' hidden desires to be recognized by others (Klein, 2014). The Commission and Higher Education (CHED) in the Philippines have mandated universities and colleges to have an industry relationship. Although many institutions have adopted the principle of academe-industry partnership in the Philippines, both private and public, job mismatch remains a critical concern. According to the study of (MOYA, 2018), there are three leading causes of jobs-skills mismatch among the graduates. The research will determine the job roles of BSCS graduates in Bicol College if is followed as referred in the CMO No. 25 S. 2015 of the Commission on Higher Education (CHED). Further, this study sought recommendations to the graduates on how to improve the competencies and skills of the students to enhance their long-term employability.

The research will help the students about the information of employability for the program of Bachelor of Science in Computer Science under the College of Computer Studies in Bicol College. It also gives

information and asses students the relevance of Computer Science program, knowledge, skills and work values acquired by the Bicol College graduates relevant to their employment; it also identifies school related factors that associates professional characteristics and job placement in Computer Science program. It will show to the community on how the competitive graduate produce by the Bicol College in the Country. It will assess HEIS the current and in demand job trainings programs and choose a partner industries which can further provide competent and competitive job training skills to the students.

FRAMEWORK

(Mcleod 2023) Maslow's hierarchy of needs is a motivational theory in psychology comprising a five-tier model of human needs, often depicted as hierarchical levels within a pyramid. From the bottom of the hierarchy upwards, the needs are physiological (food and clothing), safety (job security), love and belonging needs (friendship), esteem, and self-actualization. Needs lower down in the hierarchy must be satisfied before individuals can attend to higher needs.

(Dawis et. Al. 1984) Work Adjustment Theory is a theory of satisfaction and needs, for instance between employers/worker environment (E) and employees/person (P). The theory posits that a person would act on environmental stimuli and the other way round. However, when the correspondence between P and E has reached a certain threshold of imbalance, a worker will act on their environment's demands and the environment will react to a worker's lack of action to its stimuli. For example: (1) when an employer expects too much from a worker or if work is boring and uninspiring, an employee will respond by looking for other work or taking other action if a threshold has been reached, (2) an employer may expect an employee to do certain tasks to a set standard. When the employee is not fulfilling what an employer requires, they can be sacked. Or when an employee doesn't have the skills to do a certain task, the employer may require the employee to engage in additional training, and (3) an employee may have creative ideas to improve the employer's output. The employer responds by implementing the ideas and the employee will have a more interesting job as a result.

The Trait and Factor Theory (Parsons, 1909) is focused on identifying the characteristics of the individual (i.e., traits) and the environment or job requirements (i.e., factors) so job seekers can find a career that closely aligned with their personal characteristics (Chartrand, 1991; Sharf, 2006). Parson's process of matching an individuals' traits with occupational factors included a component of self-knowledge; (1) Understanding of their traits, or own characteristics (e.g., attitudes, abilities, interests, strengths, limitations), (2) Knowledge about the factors, or conditions and requirements of the job (e.g., tasks, pay, advancement, opportunities), and (3) Determine a reasonable match between the traits and factors
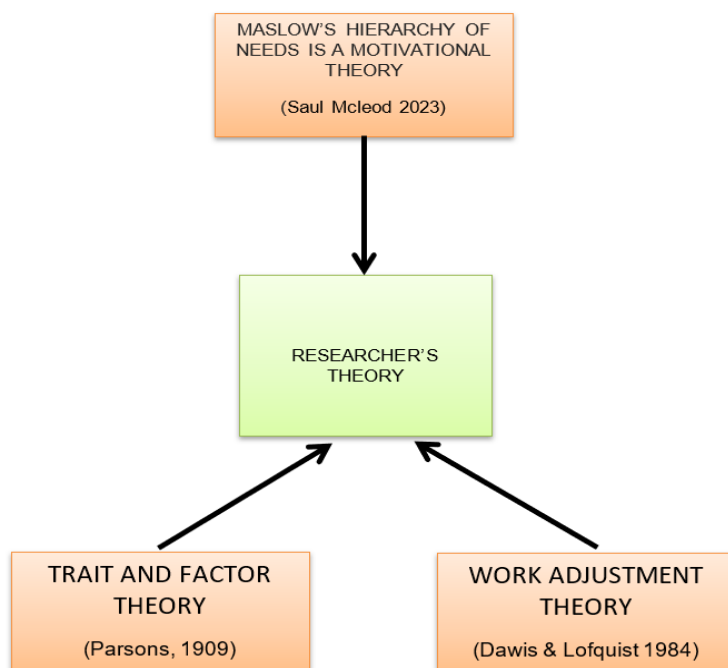

Figure 1 Theoretical Paradigm

OBJECTIVES OF THE STUDY

The purpose of this study is to examine the employability of the Bachelor of Science in Computer Science graduates of College of Computer Studies in Bicol College, Daraga, Albay, Philippines. (1) To determine the employment profile of the respondents in terms of Employment status, Location of current work, how long did the graduate find their first job, Gross monthly salary, and First job level position. (2) To determine the relevance of the following school-related factors to the job placement of the respondents in terms of Curriculum, Instruction, Faculty, Students Services, Organization and Administration, Community Extension, Linkages, and Research. (3) Infer the relationship between job placement and school related factors. (4) To propose an action plan to enhance the relevance of BSCS program and improve the employment rate of its graduate.

METHODOLOGY

Research Design

The researchers used the descriptive method of research. Descriptive research can be explained as a statement of affairs as they are at present with the researchers having no control over variables. Moreover, this type of study can be characterized as simply the attempt to determine, describe, or identify what is (Ethridge, 2004). In addition to that, descriptive research is directed at casting light on current issues or problems through a process of data collection that enables them to describe the situation more completely than was possible without employing this method (Fox and Bayat, 2007).

Research Site

The locale of the study was in the province of Albay in Daraga Albay, which the Bicol College in the College in Computer Studies is offering the programs Bachelor of Science in Computer Science (BSCS) and Bachelor of Library and Information Science (BLIS).

Instrumentation

The research instrument was a survey in printed and soft copy form as the primary tool in this study. Data collection was done through a questionnaire and an interview with the Alumni of Bicol College. The soft copy form or the Google Form was sent using Messenger if the focal person was busy or unavailable or far away from Bicol College. Responses were collected on the day of the face-to-face interview, as per their vacancies, or sent a picture of the Interview Guide and Questionnaire via Messenger.

Data Collection

The researcher requested a list of graduates in the College of Computer Studies signed by the Dean and the Program Chair of the Department. The researcher distributed the communication letters and survey instrument personally to the Dean and Program Chair and sends the online instrument via messenger using Google Form to distribute it to the Computer Science graduates. The primary sources of data were the Bachelor of Science in Computer Science Alumni Graduate of the Bicol College under the College of Computer Studies. The study used total population sampling of purposive sampling technique where the researcher choose to examine the entire population that have a particular set of characteristics

RESULTS AND DISCUSSION

The data presentation, discussion, and analysis, were conducted using an online tool such as Facebook, Google Form, and Messenger. Face-to-face interviews also used to the respondents who are available and who are near in the location from the study site.

BSCS Alumni employment profile/status in Bicol College

As a result of the collected data, the respondents participated in the survey. This study conducted to show the results of employment status; location of work current work; how long did find their job; the gross monthly income; and their first job of level position.

Figure 2 shows that thirty-eight (38) computer science graduates are employed out of forty eight (48) graduates from year 2019 to 2023 in Bicol College.
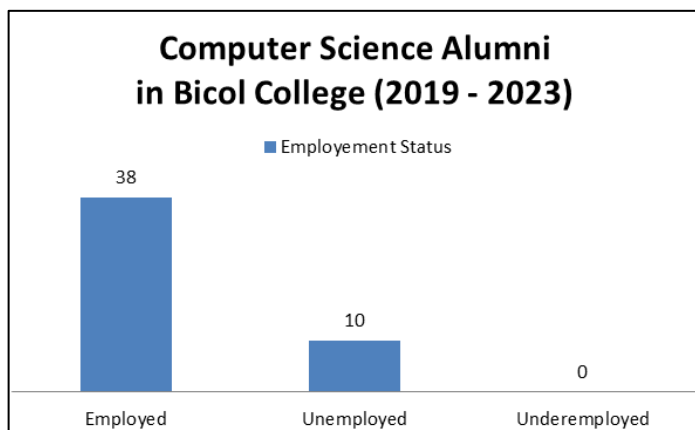

Figure 2 Employment Status

Computer Science graduates in Bicol College shown in Figure 3 that Bicol Region is the highest numbers of location of current work got thirty-six (36) out of forty-eight (48) from the year 2019 to 2023. It is followed by ten (10) from the NCR and two (2) from Abroad.
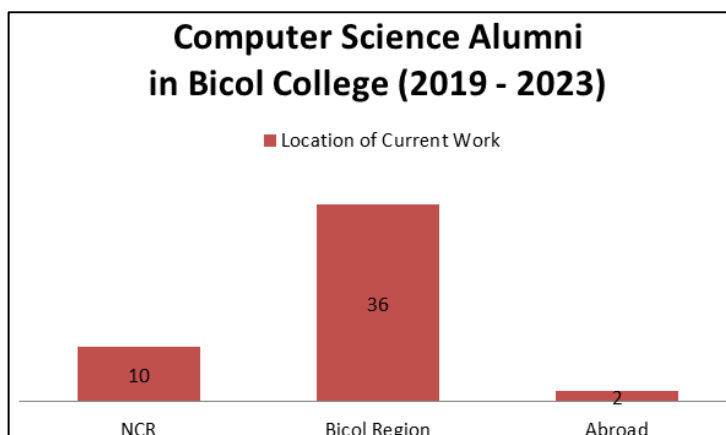

Figure 3 Location of Work

From year 2019 to 2023, the Computer Science graduates surveyed how long did their find its job; it shows in the Figure 4 that thirty eight (38) out of forty eight (48) graduates find their first job in months and only ten (10) find their first job in a year.
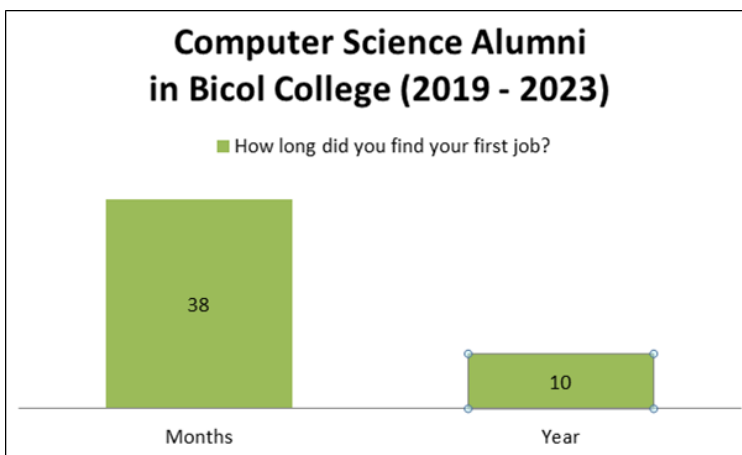

Figure 4 How long did find the first job

Computer science graduate were surveyed regarding their gross monthly salary. The Figure 5 shows that thirty eight (38) out of forty eight (48) graduates from 2019 to2023 had 20k below gross monthly salary, followed by ten (10) 30k below and two (2) 30k above monthly income salary.
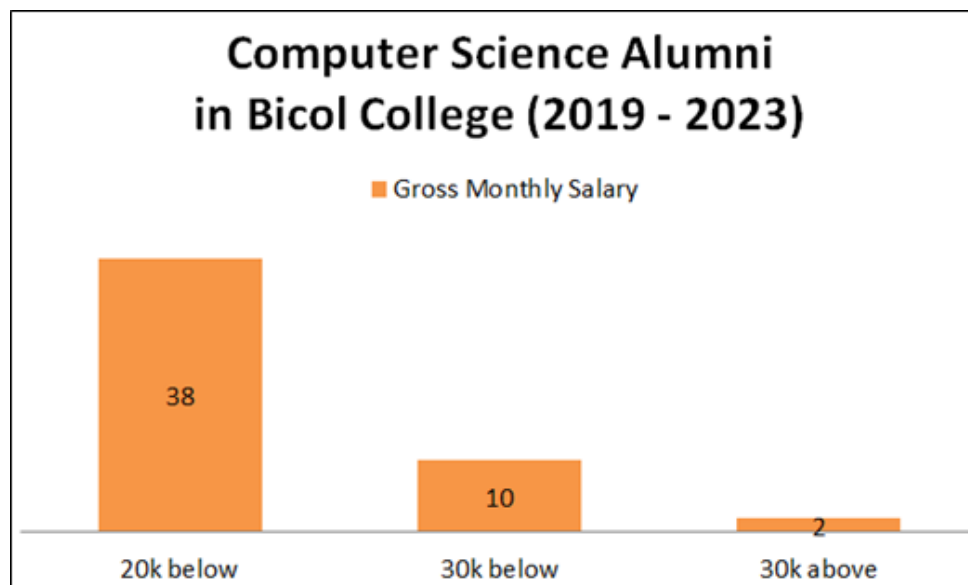

Figure 5 Gross Monthly Salary

The Bicol College graduates from Computer Science from 2019 to 2023, shown if Figure 6 that thirty eight (38) out of forty eight (48) graduates is contractual as their first job level position and followed by ten (10) as regular as first job position.
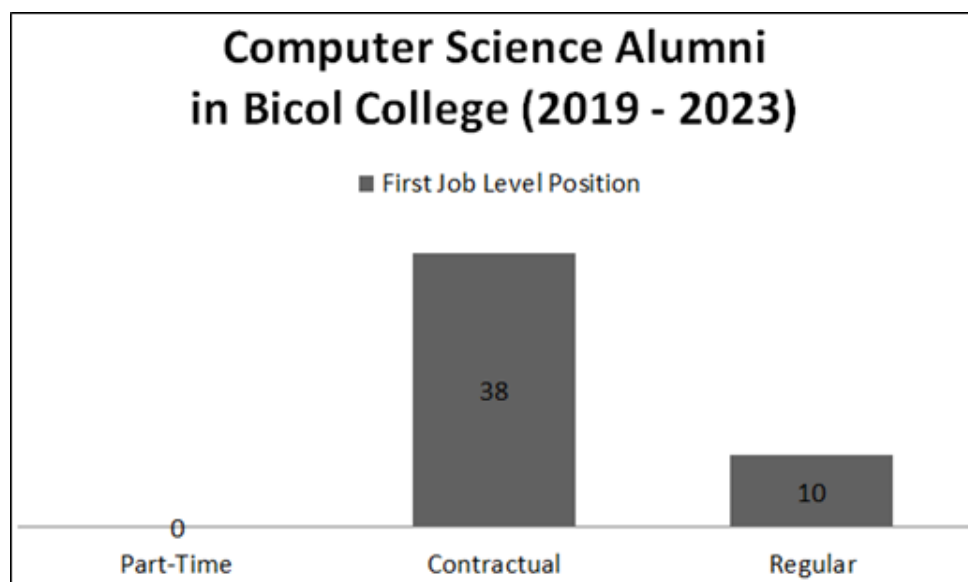

Figure 6 First Job Level Position

(National Economic and Development Authority 2021) published that the employment rate in the Bicol Region in January 2018 was considerably high at 96% (from 95.4% in 2017). Consequently, the unemployment rate stood at 4% while underemployment was estimated at 33.8%.

The relevance of the school related factors to the job placement of the respondents

As a result of the collected data, the respondents participated in the survey was calculated. Table A illustrates the status of the school related factors from their job placement during the data gathering. It shows that school related factors from the graduate of Computer Science in Bicol College are more related on their job

placement. (1) Curriculum with a weighted average of 3.71 shows that it is more effective as one of school related factor in the job placement of Computer Science graduate. (2) Instruction with a weighted average of 4.01 shows that it is more effective in the job placement. (3) Faculty got 3.79 weighted average shows that this school related factor is more effective in the job placement of computer science graduate. (4) Student Service with a weighted average of 3.75 shows that it is more effective in the job placement.

Table A The relevance of the school related factors to the job placement of the respondents

INDICATORS	2019	2020	2021	2022	2023	School Related Factors	
	WM	WM	WM	WM	WM	**WA**	**INT**
1. Curriculum	3.62	3.64	3.88	3.55	3.87	**3.71**	**MR**
2. Instruction.	3.75	4.07	4.11	4	4.12	**4.01**	**MR**
3. Faculty	3.62	3.71	4	3.66	4	**3.79**	**MR**
4. Student Services	3.37	3.64	4	3.77	4	**3.75**	**MR**
5. Organization and Administration	3.75	3.5	4.11	3.77	4.12	**3.85**	**MR**
6. Community Extension	3.87	3.78	4	3.66	4	**3.86**	**MR**
7. Linkages	3.25	3.85	3.66	3.33	3.62	**3.54**	**MR**
8. Research	3.37	3.78	3.66	3.66	3.62	**3.61**	**MR**

Legend: VR – Very Related (4.5 – 5.0) WM – Weighted Mean

MR – Much Related (3.5. – 4.49) INT – Interpretation

R – Related (2.5 – 3.49) WA – Weighted Average

LR – Less Related (1.5 – 2.49)

NR – Not Related (0.5 – 1.49)

(5) Organization and Administration with a weighted average of 3.85 shows that it is more effective in the job placement. (6) Community Extension with a weighted average of 3.86 shows that it is more effective in the job placement. (7) Linkages with a weighted average of 3.54 shows that it is more effective in the job placement. (8) Research with a weighted average of 3.61 shows that it is more effective in the job placement.

(Chavez et. Al. 2016) recommends that the College Dean's Office services was perceived very relevant to the job placement of the graduates as the office rendered directly the assistance in coordinating with the companies and providing as character reference. The Department heads also possessed positive attitude towards work, staff and students that gave additional impact and support to the job placement of the graduates.

The relationship between job placement and school related factors.

Based on collected data, Figure 7 shows that Linkages is the most school related factor in the job placement of Computer Science graduate got 7.29, it is followed by 7.22 in Curriculum, 7.08 in Instruction, 7.02 in Organization and Administration, 6.79 in Faculty, 6.77 in Community Extension, 6.68 in Research, and 6.45 in Student Services. School related factor as input to job placement of the graduates is an integral part and mission of the academic community to serve the students with quality (Dotong. 2014).
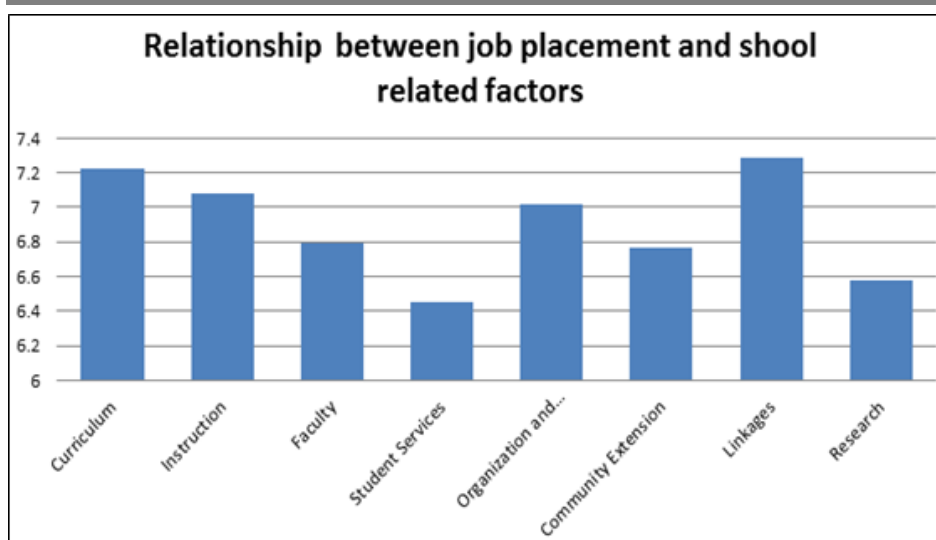
Figure 7 Relationship between job placement and school related factors

Additionally based from the survey from Computer Science graduate in Bicol College 2019 - 2023, the researcher identifies the job positions as follows; (1) Information Officer, (2) Data Analyst, (3) Utility Attachment Management Associate, (4) BPO - Wrap Code Auditor, (5) Technical Support Engineer, (6) Front End Web Developer, (7) Office Secretary / HR Assistant, (8) Free Lance Animator, (9) Sales Representative Excel Reporting, (10) Instructor, (11) Call Center, (12) Technical Staff, (13) Customer Service Representative, and (14) Sales Assistant.

In 2022, the top contributors to student success include the availability of internships and externships and the use of educational technology, as well as the availability of technology, engaging content, hands-on instruction, the quality of the faculty, and the flexibility of faculty to teach as desired (In Higher Education: Philippines 2022).

The proposed action plan model with the 5w1h method will enhance Bicol College graduates' employability rate and improve the BSCS curriculum's relevancy.
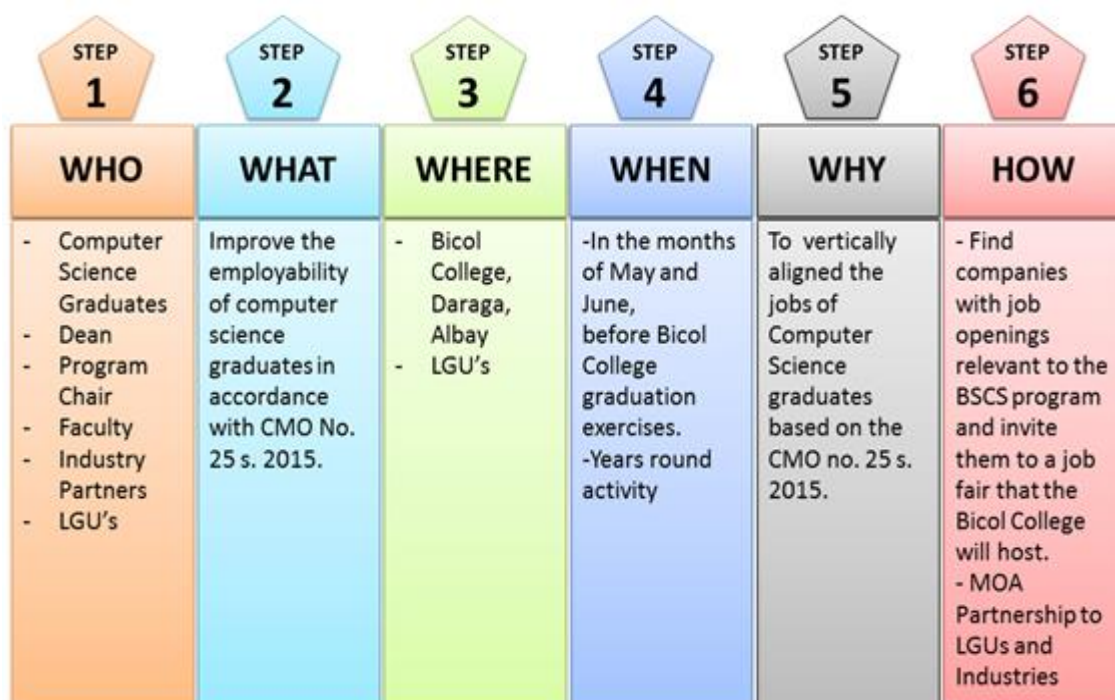

Figure 8 -The proposed action plan model with the 5w1h method

In order to enhance the employability rates of Bicol College graduates and improve the relevance of the BSCS curriculum in jobs, a proposed action plan with the 5w1h method is recommended for Bicol College.

STEP 1, the action plan involves the faculty, the dean, the program chair, and graduates in computer science for step 1. STEP 2, will improve the employability of computer science graduates in accordance with CMO No. 25 s. 2015. STEP 3, It refers to the graduates' location inside Bicol College, Daraga, Albay. STEP 4, the ideal time to arrange was between May and June, just before graduation ceremonies at Bicol College, Daraga, Albay in step 4. STEP 5, is to vertically align the jobs of Computer Science graduates based on the CMO no. 25 s. 2015. STEP 6, will find companies with job openings relevant to the BSCS program and invite them to a job fair that the Bicol College, Daraga, Albay will host in step 6.

CONCLUSION

Based on the foregoing findings of the study, the following conclusions have been identified: (1) The majority of graduates from the BSCS program at Bicol College find employment in the Bicol region immediately after graduation; however, most of these jobs are contractual and pay less than 20,000 pesos per month. (2) The school-related factors from the Bicol College computer science graduates are more related to their job placement; among the curriculum, organization and administration, faculty, community extension, research, and student services, instruction is the most related. (3) Linkages have been identified as the school-related factor of job placement for computer science graduates with the greatest relationship with education. Furthermore, it had been determined that there were graduate job positions at companies that were vertically aligned in the CMO No.25 s. 2015. (4) The collected data and information will be a big help in the construction of the action plan model, which can be adapted by the target beneficiaries of the study.

TRANSLATIONAL RESARCH

The findings of this study may provide the State Universities and Colleges (SUCs) and Higher Education Institutions (HEIs) with ideal information about BSCS graduate jobs that are contractual and pay less than 20,000 pesos per month in the Bicol Region, as well as graduates find jobs immediately. The findings of this study, among BSCS graduates, Instruction is the factor that is most closely related. The results of this study will show State Universities and Colleges (SUCs) and Higher Education Institutions (HEIs) that linkage is a key to graduates getting jobs quickly and has a significant relationship with education. The action plan model may be adopted by the State Universities and Colleges (SUCs) and Higher Education Institutions (HEIs).

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