

Empowering Cebu Normal University Bachelor of Science in Mathematics Graduates for Career Success

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ABSTRACT

One of the aspects that measures the University's competitiveness through the employment of its students. The quality of learners is indeed a feature of the quality of education and services, as they will help to ensure that learners are equipped with the knowledge, skills and values that will allow them to work in their respective areas of expertise. This study determines the employability of Cebu Normal University's 2013-2018 Bachelor of Science in Mathematics graduates. The study uses the descriptive method to collect information from various of experience at the University's Bachelor of Science in Mathematics. This method is used to define the nature of a scenario as it exists at the moment of the research and to investigate the causes of the phenomenon. Hence, it was subsequently established that the employment status of the Bachelor of Science in Mathematics Graduates is sufficiently high. Most graduates had taken less than a month to land on a job due to the current program's diverse nature, which employed essentially all graduates in curriculum-related careers. It was highlighted that critical thinking skills proved to be the most sufficient capabilities, which also helped enormously the graduates in terms of simplistic access to employment. Consequently, the program should be reviewed and enhanced to achieve desired skills and competencies for graduates, including integration into curriculum analysis subjects like Accounting, Business Statistics, and Data Analytics, and a major of specialization.

Keywords: Empowering, BS Mathematics, Career Success

INTRODUCTION

One of the aspects that measures the University's competitiveness through the employment of its students. The quality of learners is indeed a feature of the quality of education and services, as they will help to ensure that learners are equipped with the knowledge, skills and values that will allow them to work in their respective areas of expertise. Thus, there is a growing need in the globalized world for new graduates to compete for jobs and to explore lucrative jobs. As the Youth Employment Networks (YEN) forecast around 1 billion people to join or become working-age in the next decade, this scenario is declining (ILO, 2006).

RA # 7722 Higher Education Act of 1994 directs CHED to develop and recommend curriculum development plans, policies and programs, and Graduate Tracer Research is one of its goals in education management. Cebu normal University has to evaluate and assess the efficiency and effectiveness of its educations, relevance to its curricular offerings and other school-related factors to employments of its graduates.

As a result, the Philippines have faced the same challenges as a developing country, plagued by structurally high unemployment and decades of underemployment. However, Research on the employability of graduates is of paramount importance in determining the importance of CNU's curriculum offerings to social change and global standards. It is an indicator of success as an academic institution for the University.

Schomburg (2003) mentioned that graduate and employment evaluations are one method of empirical research that provide useful data to assess the outcome of the learning and teaching of a certain higher academic

institution. It would also encourage the higher education institution to acquire data showing potential gaps in a particular academic institution.

Accordingly, the Philippine tertiary education institution is generally associated with its credibility for producing exemplary graduates who might easily get such a job after graduation. For these rationales, graduates' experience in the classroom is very essential in their employability, so continuous improvement in the curriculum should be laid out on a regular basis in order to be up-to-date with rapidly changing trends and technology by emitting feedback from graduates.

By providing this type of data, the School of Science, College of Arts and Sciences, of Cebu Normal University can highlight the effectiveness of its graduates and the Global Marker educational initiatives. Strategically, in the framework of quality assurance and the provision of relevant education and training, the University can establish environments for growth and development. It is possible to address and enhance some significant upside deficiencies in its product offerings in terms of administration, course content, delivery and relevance.

Thus, this study will evaluate the employability of Bachelor of Science in Mathematics graduates to congregate the needs of the general public, the country and the world as a whole. The results of the study have served as the basis for researchers designing, updating or strengthening the BS Math curriculum to make it more responsive to the needs of rapidly changing technology and employment demands.

Objectives:

This study looked into Cebu Normal University Bachelor of Science in Mathematics Graduates for Career Success. Specifically, this study seeks to:

1. Determine the profile of the graduates in terms of
 - 1.1 Age
 - 1.2 Gender
 - 1.3 Civil status
 - 1.4 Highest degree earned
 - 1.5 Professional examination passed
 - 1.6 Reason for taking the course or pursuing the degree.
2. Determine the employment profile of the respondents in their areas of expertise in terms of
 - 1.1 Job after graduation
 - 1.2 Nature of Employment
 - 1.3 Present employment
 - 1.4 Number of months in finding the employment
 - 1.5 Reasons if unemployed
 - 1.6 Reasons for staying in the job
3. The significance of the Bachelor of Science in Mathematics curriculum in their workplace.

Significance of the Study

The purpose of this study was to evaluate the Cebu Normal University Bachelor of Science in Mathematics Graduates for Career Success of College of Computing, Artificial Intelligences and Sciences, graduates of BS Mathematics as the basis for curriculum enhancement.

School. The outcome of this analysis may provide the general perspective of designing evidence-based strategies to be implemented to enhance employability and eventually strengthen the study program for school administrators.

Department Chair. The research outcome will serve as the foundation for assessing the curriculum and re-engineering the content of the subject to address the global competitiveness.

Faculty. The study findings will direct the faculty in planning activities and keeping their limitations up-to-date and enhancing to satisfy the demands in the field, thus improving sustainability in the near future.

Alumni Office. It will encourage the PA for alumni's office to keep in contact with its former graduates and foster engagement and partnership.

Future Researcher. This work will guide other tracer studies researchers, in order to provide a rationale for evaluating the current program, they may be guided on what other criteria to consider analyzing improvements to their graduates ' career pattern.

METHODOLOGY

Research Design

This study used the descriptive method to gather information from those in the University's Bachelor of Mathematics Science various experiences. This method was used to define the nature of a scenario as it exists at the moment of the research and to investigate the causes of the phenomenon.

Research Locale

This study will be conducted in Cebu Normal University, a non-sectarian institution of higher learning University supported by state funds, with three(3) colleges: College of Teacher Education; College of Nursing and College of Arts and Sciences, where Bachelor of Science in Mathematics programs is offered.

Research Participants

The study uses non-probability sampling of subjects. The researcher selects the respondents who are conveniently available in this sampling design. The respondents of the study were the graduates in the Bachelor of Science in Mathematics of the College of Arts and Sciences for Academic Year 2013-2018.

Table 1: Number of Respondents of the Study

Year	No. of Respondents
2013-2014	15
2014-2015	15
2015-2016	15
2016-2017	15
2017-2018	15
Total	75

Research Instrument

The research descriptive method has been used to evaluate the employability of the survey respondents. The researcher used the Commission on Higher Education (CHED) graduate tracer questionnaire to build the questionnaire to extract the data required from the research respondents. The questionnaire consisted of three components highlighting the following inputs: respondent profile, academic background and other relevant information, and respondent employment status data.

Data Gathering Procedure

The researcher administered to the graduate respondents personally and with the assistance of two research assistants by sending private messages to their Facebook account. The data gathering process commenced from December 2018 to April 2019 in order to reach the 2013-2018 graduates, enrolled students were asked if they remembered the college's prior graduates. Those who responded affirmatively obtained survey questionnaires and instructed how to hand them – in the tool to the prospective respondents and to retrieve them as well. Only 53 questionnaires from the number of months scheduled for data gathering were successfully collected by the researcher and the research assistant, and these were used for the study.

Data Analysis

Frequency, Ranking and Percentage were the statistical tools used to analyze the respondents ' profile with respect to the variables chosen to process information collected from the study.

Scope and Delimitation

This study applies to graduates who have enrolled and finished their course from academic year 2013 to 2018. The researcher delimits the number of years into five for five years is comparatively sufficient to be the research's scope. The research's emphasis is on the arguments about tracing the employability of the graduates and whether their gained skills and capabilities during their college are significant and relevant to their employment occupations.

RESULTS AND DISCUSSION

The table below primarily uses the generally accepted statistical tools and basic principles to discuss the results of such data collected through the survey. For this research, the complete number of respondents is 53 and the data gathered are below.

Table II: Frequency and Percentage Distribution of the Respondents According to Gender

<i>Year Graduated</i>	<i>Male</i>		<i>Female</i>	
	<i>Frequency</i>	<i>Percentage (%)</i>	<i>Frequency</i>	<i>Percentage (%)</i>
2013-2014	5	32.08	7	67.92
2014-2015	3		8	
2015-2016	3		6	
2016-2017	4		4	
2017-2018	5		6	
Total	17		36	

There are only Fifty-Three (53) with 70.67 percent of A.Y. 75. 2013-2018 Bachelor of Science and Mathematics graduates participated as research respondents. Of the total number of respondents seventeen (17) with 32.08 percent are male and Thirty-six (36) with 67.92 percent are female who had been tap to respond to the data gathering instruments used in this study.

Table III: Frequency and Percentage Distribution of the Respondents According to Civil Status before the First Job

Civil status	Frequency	Percentage (%)
Single	49	92.45
Married	4	7.55
Total	53	

Of the 53 tracer study respondents, forty-nine (49) with 92.45 percent are single before they are employed on their first job while Four (4) with 7.55 percent are already married before they are employed.

Table IV: Frequency and Percentage Distribution of the Respondents According to Highest Educational Attainment

Highest Educational Attainment	Frequency	Percentage (%)
College Degree	43	81.14
With Master's units	8	15.09
Master's Degree	2	3.77
Total	53	

Table IV presents the respondents' frequency and percentage distribution according to the study respondents' highest educational attainment. The table shows that 43 of the respondents with 81.14 percent did not study further after graduating from college. Then, 8 with 15.09 percent of the respondents have a Master's Units while Two (2) with 3.77 percent graduated from Cebu Normal University with a Master's degree in Mathematics.

Table V: Frequency and Percentage Distribution of the Respondents According to Eligibility

Eligibility	Frequency	Percentage (%)
Board (LET)	7	13.21
Civil Service Examination	11	20.75
Non-Board Takers	34	64.15
IELTS	1	1.89
Total	53	100

Table V shows the respondents' frequency and percentage distribution by eligibility. The study was able to extract the following information: Seven (7) with 13.21 percent of the participants is a passer for the Licensure Examination for Teachers (LET) Board, Eleven (11) with 20.75 percent are Civil Service Examination passers while thirty-four (34) with 64.15 percent are still non-board takers and one (1) IELTS passer.

Table VI: Frequency and Percentage Distribution of the Respondents as to their Reasons for Taking the Course or Pursuing the Degree

Reasons	Frequency	Percentage (%)
High Grades in the course or subject area (s) related to the course	15	28.30
Good grades in high school	26	49.06
Influence of parents or relatives	14	26.41
Peer Influence	10	18.87
Inspired by a role model	5	9.43
Strong passion for the profession	11	20.75
Prospect for immediate employment	13	24.53

Status or prestige of the profession	4	7.55
Availability of course offering in chosen institution	23	43.40
Prospect of career advancement	7	13.21
Affordable for the family	30	56.60
Prospect of attractive compensation	3	5.66
Opportunity for employment abroad	2	3.77
No particular choice or no better idea	5	9.43
The only degree program offered in nearby school	1	1.89
Others	4	7.55

Table VI reveals the respondents' frequency and percentage distribution as to the reason for taking the course or pursuing the degree. It may be gleaned from the table that Thirty (30) with 56.60 percent of the Fifty three (53) respondents indicated that the reason choosing the course was its affordability for the family financial status, Twenty six (26) with 49.06 percent indicated that the reason for obtaining good grades in high school, Twenty three(23) with 43.40 claimed that the reason for taking the course was the availability of course offering in chosen institution, and One(1) with 1.89 percent indicated that the reason for enrolling the program was because of the only program provided at a neighboring University.

Table VII: Frequency and Percentage Distribution of the Respondents According to Nature of Employment

Employment Status	Frequency	Percentage (%)
Full time/Permanent/Regular	34	64.15
Probationary	7	13.21
Temporary/Casual	5	9.43
Part Time	2	3.77
Unemployed	5	9.43
	53	100

Table VII shows the frequency and percentage distribution of respondents by employment status. From the data presented in the table, it was gleaned that thirty-four (34) with 64.15 percent were hired as permanent or regular workers while the remaining number of respondents persisted Probationary, Temporary/Casual and Part-time. Hence, seven (7) of the Fifty Three (53) respondents are probationary, Five (5) with 9.43 percent are temporary no one has been granted yet permanent status on the job while Five (5) with 9.43 percent of which are unemployed.

Table VIII: Frequency and Percentage Distribution of the Respondents According to Present employment

Present Status	Frequency	Percentage (%)
Employed	49	92.45
Not Employed	3	5.66
Self-Employed	1	1.89
Total	53	100

Table VIII shows the frequency and percentage distribution of respondents by employment. According to the data presented in the table, forty-nine (49) with 92.45 percent of the participants were employed, while three (3) with 5.66 percent the remaining number remained unemployed and One (1) with 1.89 percent is self-employed. In particular, there is a higher proportion of employed graduates that unemployed graduates. Relative to this finding, Canizares M. J. F. (2015) has studied graduates who specialize in Science and Mathematics has high employment rate among other graduates.

Table IX: Frequency and Percentage Distribution of the Respondents According to Number of months in finding the employment

Length	Frequency	Percentage (%)
Less than a month	41	77.36
1-6 months	9	16.98
7-11 months	2	3.77
1 year to less than 2 years	1	1.89
2 years to less than 3 years	0	0
3 years or more	0	0
Total	53	100

Table IX represents the graduates' waiting time to land on a job. It shows that majority of the graduates took a short time to land a job as shown by forty-one (41) with 77.36 percent of the graduates obtained their first job in a less than a month. However, nine (9) with 16.98 percent who could land a job for from 1 to 6 months, 7 to 11 months with 3.77 percent and the other respondent could land a job for a longer period of 1 to nearly 2 years.

Table X: Frequency and Percentage Distribution of the Respondents According to Reasons for staying in the job

Indicators	Frequency	Percentage (%)
<i>Salaries and benefits</i>	19	28.96
<i>Career challenge</i>	15	22.39
<i>Related to special skill</i>	11	16.42
<i>Related to course or program of study</i>	6	8.96
<i>Proximity to residence</i>	8	11.94
<i>Peer influence</i>	4	5.97
<i>Family influence</i>	2	2.99
<i>Other reason (s)</i>	2	2.99

The Table X shows the reasons for the respondents to stay in the workplace. It represents that the primary reason of nineteen (19) with 28.96 percent of the respondents claimed was for salaries and benefit, fifteen (15) with 22.39 percent related to Career challenge, eleven (11) with 16.42 percent associated to special skills of the respondents. Certain explanations of the respondents relevant to the course by means of 6(6) with 8.96 percent and 4(4) with 5.97 percent of peer influence.

Table XI: Frequency and Percentage Distribution of the Respondents According to Reasons for staying in the job and Rank

Reasons	Frequency	Percentage	Rank
<i>Advance or further study</i>	1	1.89%	3
<i>Family Concern and decided not to find a job</i>	1	1.89%	3
<i>health related reason(s)</i>	1	1.89%	3
<i>Lack of work experience</i>	2	3.77%	1
<i>No job opportunity</i>	0	0%	5
Total	5	100%	

The table XI shows that Two (2) with 3.77 percent of the respondents said that lack of work experience is the number 1 rank when looking for a job followed by advance or further study with 1.89 percent. Additionally,

Lack of work experience is one of the reasons of the graduate's unemployment. Hence, employability or work-readiness tops on the list of potential employers. Others mention that Family Concern and decided not to find a job and health related reason(s) were their reasons for unemployment.

Table XII: Frequency and Percentage Distribution of the Respondents According to skills

Learning Competencies	Frequency	Percentage (%)
Communication skills	19	35.85
Human Relations Skills	9	16.98
Problem Solving Skills	27	50.94
Entrepreneurial Skills	6	11.32
Critical Thinking Skills	29	51.79

Table XII presents that graduate of BS Mathematics have already been trained to be equipped as their tool with the several skills to compete in the workforce for employment. When asked about the part of the curriculum that they found most useful in their first job, most of the respondents answered to the Critical Thinking Skills that twenty-nine (29) with 51.79 percent. This is probably because they are dealing with finance and market study of the company and Critical Thinking Skills are very important in this regard. Loquias(2015) noted that the skills most useful to graduates' first jobs include critical thinking, problem solving in addition to communication skills.

Accordingly, Critical Thinking Skills was considered to be the most relevant as disclosed by the respondents. In addition, their communication skills Nineteen (19) with 35.85 percent, problem-solving skills Twenty-seven (27) with 50.94 percent and Human Relations Skills Nine (9) with 16.98 percent were also relevant in their present job. It was claimed that they could easily adjusted themselves in their respective jobs because of the skills possessed.

CONCLUSION

The Bachelor of Science in Mathematics Graduates ' employment status is sufficiently high. Nevertheless, the majority of graduates secured employment in under a month, attributable to the program's diversified characteristics, which effectively placed nearly all graduates in curriculum-related professions. Thus, it was highlighted that critical thinking skills proved to be the most sufficient capabilities, which also helped enormously the graduates in terms of simplistic access to employment.

RECOMMENDATION

The following is recommended on the basis of the results and conclusions:

- The program may be reviewed and enhanced to achieve the desired skills and competencies of the graduates to consider as follows:
 - Integrate in the curriculum analysis subjects including such Basic Accounting, Business Statistics, Business and Finance, Entrepreneurship and Data Analytics.
 - Major of Specialization
- The Office of the Presidential Assistant for Alumni Affairs may conduct an annual update to determine the BS Mathematics graduates ' employment status and Graduates should be aided to seek employment in order to minimize graduates' underemployment.

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