

Extent of Attainment of the Intended Program Attributes, Retrospection and Satisfaction of BS Industrial Technology Graduating Students from One Campus of a State University in Region 2, Philippines

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Abstract –*The need for competent graduates in their specific discipline who possessed the skills and attributes to deal with the ever-changing work environment in the 21st century is a herculean task assigned to HEIs in the Philippines. The study assessed the level of attainment of the Intended Program Attributes (IPA) of the graduating BS Industrial Technology major in Electronics students and their retrospection and satisfaction of studying at Cagayan State University at Lasam for the SY 2016-2017. The study made use of descriptive survey research method to the 52 respondents. Hypotheses of the study were tested at 0.05 level of significance. Findings of the study revealed that the level of attainment of the IPA is high. It indicates that the knowledge, attitudes and skills outcomes are essential for the respondents to develop and that they can see themselves as future technicians who possess the technical-know how needed in their career and social development. Majority of respondents learned and enrolled the program through the influenced of family and relatives while the major factor that affects the enrolment to the program is the economic condition of the family. Further, the respondents were very satisfied with the quality of services provided by the program. The highest assessment of satisfaction is along with the academic counselling program while the lowest is the physical school environment and adequacy of tools and equipment. Test of difference also showed that family income is the single variable that defined difference on the attainment of IPA while gender, type of high school graduated from, birth order, and family monthly income spelled differences on the level of satisfaction of the respondents. Results of the study have implications for the curriculum development of the BS Industrial Technology Program major in electronics in order to improve the quality attributes of its graduates.*

Keywords –*Program Learning Outcomes, Intended Graduate Attributes, Student Satisfaction*

INTRODUCTION

Technician education as an area in the country's work force and human resources development has the crucial role of training individuals and providing skilled and technical workers required by the economy. National development focused heavily on the productive facilities and skills of the labor force; hence, there should be an effective system of this phase in education to substantially contribute to the acceleration of national growth.

While global challenges merge to be a great concern of the human resources of the country. Growth and development of a country is considered dependent to the quality of labor force as important aspect of production. With this onset of development, the goal of achieving higher levels of employment

becomes even more difficult to reach because of the mismatch between the skills of graduates produce by Higher Education institutions and those required by employers.

The human capital theory of education emphasizes that the most important ideas in labor economics is to produce the set of marketable skills of workers. Among the sources of human capital differences are innate ability, schooling, school quality and non-schooling investment and trainings. Graduate employability is an issue of growing importance in higher education internationally and is of relevance to each of the principal stakeholders; students, their families and sponsors, higher education institutions, employers, professional bodies, national governments and regional entities.

According to Navarro and Santos [1] quality and excellence in Higher education should not only based on the review of processes, infrastructures, and resources of the institution but it should be based on how these institutional elements produce the desired learning outcomes. Hernon and Dugan [2] also affirmed that quality assurance in education should change paradigm from institutional inputs to student learning outcomes. The outcomes-based education makes the important assumption that educational experience of students should match with their competencies and skills the students must demonstrate and manifest when they exit from an institution.

Graduate attributes have been defined as the qualities, skills and understandings a university community agrees its students will desirably develop during their time at the institution and, consequently, shape the contribution they are able to make to their profession and as a citizen [3] Further, Herok, Chuck and Millar [4] also defined that graduate attributes, other than professional knowledge and skills, are now important outcomes for tertiary education.

Youth can be given training in schools according to the needs of the industry, since they are the most impulsive resource of this country. The large number of the youth receiving higher education in the Philippines is the nation's finest potential for growth and development. They are the surest hope for making the right decisions to help and stabilize the economy. The need of manpower that does not only possess basic workplace competencies but higher level of professional and technical skills is necessary need as human resource that will propel the development of the country.

The CHED Memorandum Order (CMO) No. 46, s. 2012 [5] spells out Outcomes-Based Education (OBE) for Higher Education in the Philippines as the competency-based learning standards and outcomes-based quality assurance monitoring and evaluation. It also underscores the importance of quality and quality assurance as urgent need to move significant populations of Filipinos out of poverty and to address local, regional and national development concerns by educating quality leaders, thinkers, planners, researchers, technological innovators, entrepreneurs, and the much needed work force to launch the national economy.

The articulation of graduate attributes in the curriculum development of higher education institutions ensure that students should develop the

necessary skills that will eventually equip them for the work environment and employment. SUCs in the Philippines need to put value on the development of graduate attributes by further seeking better steps to articulate their ultimate purpose in priming the development of the nation thus they have accountability along quality assurance processes. Bridgstock [6] affirmed that among the graduate attributes across many institutions and disciplines in the world, they commonly include professional discipline based knowledge, practice, and commitment. The employers and tertiary educators have an expectation that graduates have obtained discipline knowledge, and in general, this has been a prime focus in university curricula.

In the same manner, Chan [7] noted that the compatibility between graduate attributes and industrial expectations has a direct relationship with graduate employability. The employability rate would automatically rises if graduates fulfill expectations of the industry, be it in terms of technical competencies or soft skills. As such, any incompatibility between what the industry wants and what the graduates really are would lead to an inevitable drop of graduate employability.

Aligned to the Intended Graduate Attributes (IGA) are the Program Learning Outcomes (PLO), these are statements describing what the graduates of a certain education institution will know and be able to do how they graduate from a program. These outcomes are hinged to the credential framework and program. The program outcomes represent broad statements that incorporate many areas of inter-related knowledge and skills developed over the duration of the program through a wide range of courses and experiences. They represent the big picture, describe broad aspects of behavior, and encompass multiple learning experiences.

Moalisi, Oladiram and Uziak [8] claimed the identification of graduate attributes, both technical and generic, within a programme is depicted in the planning and implementation and evaluation of curriculum. Curriculum design, teaching and learning strategies and assessment activities reflect a commitment to supporting students to achieve generic skills and capabilities as well as discipline related knowledge and skills.

The designated learning outcomes are objectively measured to reflect attainment of the targeted levels in each learning components, including 'hard' or

technical competencies and ‘soft’ or desirable graduate skills. These have led to institutional transformation necessary to implement comprehensive competency development among students, with explicit alignment of academic programmes with industrial requirements and market demands [9].

Researches testing demographic factors towards satisfaction, service quality of programs and intended graduate graduates are considered very less in research. In today’s very competitive academic milieu where students are given many choices particularly in educational quality and excellence, the potential factors which will enable educational institutions attract and retain students should be seriously considered as subject of educational research. Higher education intuitions in the Philippines aiming to gain competitive edge in the future should be able to search for effective and creative ways to attract, retain and foster stronger relationship with students. Among the important factors which should be considered are the differences on the students’ extent of attainment of their IGA and level of satisfaction on the service quality of a degree program when grouped according to their demographic profile such as sex, type of high school graduate from, family monthly income, and birth order.

In the same manner, students’ retrospection and satisfaction play a crucial role for the success of a university. According to Kottler [10], satisfaction is a person’s feelings of pleasure or disappointment resulting from comparing a product perceived performance or outcomes in relation to his or her expectations. It means if the performance matches the expectation, the customer will be satisfied. Sario [11] reaffirms that through survey of students’ satisfaction, institutions are able to pinpoint their institutional strength as well as areas in need of improvement. One cannot be productive and excel when the university has poor services. Thus the university strives to clear away any impediment to a student’s ability to function. Student satisfaction is an important part of the effort to successfully market higher education [12] If students are viewed as consumers of higher education, their satisfaction is crucial [13].

The Cagayan State University in the Philippines identified its university graduate attributes by producing graduates of the university who are competent, self-disciplined and universally -adept. These graduate attributes are considered relevant to students, employers and there stakeholders. Among

the eight campuses of the university is CSU-Lasam offering BS Industrial technology major in electronics. Assessing the perceived level of intended graduate attributes, retrospection and satisfaction of the students studying at Cagayan State University at Lasam will serve as a benchmark for their improvement of the program to make it responsive to the attainment of the program educational objectives and to its compliance to the OBE system.

OBJECTIVES OF THE STUDY

The study generally endeavored to assess the perceived level of attainment of the graduate attributes of BS Industrial Technology Electronics and their retrospection of studying at Cagayan State University. Specifically aims to 1) assess the level of attainment of the BS Industrial Technology program attributes; 2) identify the agencies through which the respondents learned about the program; 3) ascertain their reasons of enrolling the program; 4) identify factors that affect enrolment to the program; 5) determine the level of satisfaction of the students along the following services of the program; 6) test the significant difference on the perception of the students on the extent of attainment of their graduate attributes when grouped according to their profile variables; 7) examine the significant difference on the level of satisfaction of the students when grouped according to their profile variables.

Hypotheses:

This study tested the research hypotheses in null form at 0.05 level of significance: 1) if there is no significant difference on the satisfaction of students when grouped accruing to their profile variables; 2) there is no significant difference on the perception of the students on the extent of attainment of their graduate attributes when grouped according to their profile variables.

METHODS

Research Design

This study employed a quantitative method using descriptive survey research design in collecting, analyzing and classifying the data along assessment on the extent of attainment of the graduate attributes, retrospection and satisfaction of the BS Industrial technology students. Moreover, Calmorin [14] affirmed that the used of the design is appropriate since word survey was used to gather data regarding

the perceptions of the respondents. Survey is useful in producing the value of facts, and the focus of the attention on the most important things to be reported.

Participants

The respondents of the study were the fifty two (52) fourth year Bachelor of Science in Industrial Technology major in electronics of Cagayan State University at Lasam, Cagayan Province, Philippines during the second semester of SY 2016-2017. Since the number of the population is few complete enumeration of the population was considered.

Instruments and Procedures

A self-made questionnaire was developed by the researcher basing from the identified program graduate attributes of BS Industrial Technology program of Cagayan State University. Part I elicited the personal profile of the respondents. Part II measured the level of attainment of the graduate attributes and Part III identified the retrospection of their studies at Cagayan State University at Lasam.

As an ethical consideration of the study, the gathering of data started with the researcher's permission to conduct the study to the campus authorities. After having sought permission, the researcher administered the questionnaires to the identified respondents. Orientation of the participants as well as obtaining their consent was undertaken prior to the conduct of the study. The respondents were also asked to accomplish the questionnaire honestly to arrive with valid findings of the study.

Data Analysis

After the collection and coding of data, the research used statistical tools. Descriptive statistics such as frequency, rank and percentage were used along with the profile variables. Inferential statistics such as independent sample t-test and one way ANOVA were used to test the hypotheses of the study. All the data gathered were treated using statistical software at 0.05 alpha level. The assessment of the respondents on the level of attainment of their intended Graduate attributes and level of satisfaction the following arbitrary scale: 1.00-1.79 Very Low Extent/ Very Low; 1.80-2.59 Low Extent/ Low; 2.60-3.39 Moderate Extent/ Moderate; 3.40-4.19 High Extent/ High; 4.20- 5.00 Very High Extent/ Very High.

RESULTS AND DISCUSSION

Table 1. Perceived Level of Attainment of the IGA

Intended Program Attributes	Mean	STD	DI
1. Proficient productive and versatile technologist;	3.59	0.734	HE
2. Novel, creative and innovative designers;	3.42	0.887	HE
3. Restrained, passionate and supreme workers	4.02	0.643	HE
4. Integrated individuals	4.23	0.691	HE
5. Can articulate the latest development in her specific field of practice	3.40	0.700	HE
6. Can effectively communicate orally and in writing using both the English/ Filipino language..	3.23	0.532	ME
7. Can work effectively in multi-disciplinary and multi-cultural teams.	4.00	0.855	HE
8. Can demonstrate professional, social, and ethical responsibility, especially in practicing intellectual property rights.	3.61	0.622	HE
9. Can preserve and promote Filipino historical and cultural heritage based on RA 7722	4.38	0.660	VH E
10. Can exhibit broad and rational knowledge and understanding in the various fields of Industrial Technology.	3.78	0.607	HE
11. Can follow specific procedure in problem solving along the major fields of Industrial Technology.	3.88	0.705	HE
12. Can interpret scientific and abstract data and reflect on relevant scientific, technological and ethical issues.	3.52	0.706	HE
13. Can apply basic mathematical application and use appropriate technologies in the development and innovation of products.	3.33	0.816	ME
14. Can communicate technical information, ideas problems, and solutions both, orally and in writing to stakeholders.	3.35	0.850	ME
15. Can design and perform techniques and procedures following health and safety in the laboratory/ shop.	4.50	0.594	VH E
16. Can appreciate the implication of science and technology in everyday life.	4.30	0.643	VH E
17. Can preserve novelty and ingenuity of products.	3.54	0.832	HE
18. Can widen my expertise and mastery in an area of Industrial technology	3.69	0.680	HE
19. Can develop and nourish perception of the vitality and importance of industrial Technology in the modern world using inter-relationships.	4.33	0.786	VH E
Over-all Mean	3.79		High Extent

Legend: 1.00-1.79 Very Low Extent; 1.80-2.59 Low Extent; 2.60-3.39 Moderate Extent; 3.40-4.19 High Extent; 4.20- 5.00 Very High Extent.

Table 1 shows the level of attainment of the Intended Program Attributes with an over-all mean of 3.79, this study reveals that the respondents have a high perceived level of attainment of the program attributes of BS Industrial Technology major in electronics.

A closer look at the table, shows that the program attributes having very high extent of attainment are I can design and perform techniques and procedures following health and safety in the laboratory/ shop with a mean of 4.50; I can appreciate the implication of science and technology in everyday life with a mean of 4.30; and I can preserve and promote Filipino historical and cultural heritage based on RA 7722 with a mean of 4.38.

The very high assessment of the respondents on designing and performing techniques and procedures following health and safety in the laboratory/ shop implies that they are aware of what they expect themselves as electronic technicians. They can properly observe the safety standards and procedures when doing tasks. Meanwhile, the very high rating on the program attribute of the respondents on their appreciation on the implication of science and technology in everyday life implies that they can fully recognize that scientific concepts, process skills, attitudes and values are important for them to become competent electronic technicians. Finally, the very high assessment on the attribute I can preserve and promote Filipino historical and cultural heritage based on RA 7722 shows that the respondents are confident that when they graduate from the university they will become contributors for national development.

In the manner, the program attributes rated with high extent level of attainment were being an integrated individual with a mean of 4.23; being restrained, passionate and supreme workers with a mean of 4.02; can work effectively in multi-disciplinary and multi-cultural team with a mean of 4.00; have the ability to wide expertise and mastery in the specific field of specialization with a mean of 3.69; proficient productive and versatile technologist with a mean of 3.59; I can demonstrate professional, social, and ethical responsibility, especially in practicing intellectual property rights with a mean of 3.61; I can exhibit broad and rational knowledge and understanding in the various fields of Industrial Technology with a mean of 3.78; I can follow specific procedure in problem solving along the major fields of Industrial Technology registered a mean of 3.88; I am

a novel, creative and innovative designers with a mean of 3.42; I am proficient productive and versatile technologist with a mean of 3.59; I can interpret scientific and abstract data and reflect on relevant scientific, technological and ethical issues with a mean of 3.52; I can articulate the latest development in her specific field of practice with a mean of 3.40; and I can preserve novelty and ingenuity of products with a mean of 3.44.

The high assessment of the respondents on these graduate attributes indicate that these knowledge, attitudes and skills outcomes are essential for the respondents to develop and that they can see themselves as future technicians who possess the technical-know how needed in their career and social development. They are confident that showing desirable values of simple living, creativity and innovation, modesty, and cooperation are important attributes for them to develop.

Finally, the attributes having moderate level of attainment were the following I can effectively communicate orally and in writing using both the English/ Filipino language with a mean of 3.23; I can apply basic mathematical application and use appropriate technologies in the development and innovation of products with a mean of 3.33, and I can communicate technical information, ideas problems, and solutions both, orally and in writing to stakeholders with a mean of 3.35. Among all the identified graduate attributes, the respondents perceived themselves to have moderate level of oral and written communication skills. This further suggests that there is still a need for enhancement on the communication skills of the respondents.

Table 2. Agencies through which they learned about the program

Agencies through which they learned about the course	f (n= 52)	%	Rank
Friends	15	29	2
Family and relatives	16	31	1
School Campaign	13	25	3
Print Materials	1	2	6
Instructors/ Professors	4	8	4
Website/ radio broadcast	0	0	7
High School Teachers	3	6	5

Table 2 presents the retrospection on the respondents of their study at Cagayan State University at Lasam. The data shows that majority of the respondents learned about the program through family and relatives which is rank first with 31 percent respondents. This means that family and relatives

have large influence in learning about the course offered in the campus.

Meanwhile, friend and relatives was rank second with 29 percent of respondents who learned about the course. School campaign was also ranked 3 with 13 percent of the respondents. Eight percent of the respondents learned the course from the instructors and professors of the campus. And only six percent learned from their high school teachers while no one learned about the course through website and radio broadcast.

Table 3. Reasons of enrolling the program

Reasons of enrolling the program	f (n=52)	%	Rank
1. Peer influence	4	8	4.5
2. Influence of parents and relatives	16	31	1
3. Inspired by a model	13	25	2
4. Strong passion for the course	7	13	4
5. No better idea or particular choice	4	8	4.5
6. Good grades in High School subjects	0	0	6
7. Prospect for immediate employment	8	15	3

Table 3 presents the reasons of the respondents of enrolling the degree program. Finding of this study showed that majority of the respondents enrolled the program because they were influenced by their parents and relatives with 31 percent; 25 percent were inspired by a role model, 15 percent enrolled the program due to prospect for immediate employment, and 8 percent said were influenced by peer and no better idea or particular choice.

The influence of parents in career planning of children is evidential in this study. Hewitt [15] noted that most people are influenced by careers that their parents favor. Furthermore, it is reported that parents are deeply involved and influential to their high-achieving children's college choices. The studies presented are important to the present study since the studies explain the importance of taking parents' advice and permission in choosing a college course.

Table 4 presents the factors that affect the enrolment of respondents the degree program. Finding showed that the major factor that affect the enrolment of the course is the economic condition of the family which was ranked first with 27 percent; 19 percent

said it is due t the demographics and proximity to home; 17 percent of them is due to affordable tuition fee; 12 percent for parents satisfaction; 10 percent for availability of scholarships; and 2 percent for the admission program of the university. The finding generally means that family monthly income; geographic locations are important factors that affect college enrolment of the BS Industrial technology program.

Table 4. Factors that affect enrolment to the course

Factors that affect enrolment to the course	F (n=52)	%	Rank
1. Parents' satisfaction	6	12	5
2. Demographics and proximity to home	10	19	2
3. Reputation of the University	7	13	4
4. Affordable Price of Tuition fee	9	17	3
5. Economic conditions of family	14	27	1
6. Availability of scholarships	5	10	6
7. Admission program of the university	1	2	7

Table 5 also presents the satisfaction of the respondents on the services provided by the program. This study reveals that the over-all level of satisfaction of students on the quality of services of the program was with a mean of 3.68 described as high. The finding implies that a greater number of respondents believed that the services provided to them are highly satisfactory. The need for continuous improvement along with the services to continue the effective delivery of the program is important in this finding. The effectiveness of carrying out a meaningful program lies on the service quality and sufficiency of faculties and equipment for instruction.

Perusing the table shows that the highest mean level of satisfaction of the respondents is along academic counseling and guidance program obtained 4.42 and standard deviation of 0.85. This finding implies that the provision of service along with this area was highly perceived by the respondents having highly adequate and relevant quality. This frontline service of the university provides students different activities and programs to develop them holistically.

Meanwhile, topic contents of courses obtained the second highest mean of 4.38 and standard deviation of 0.62 interpreted as very high. The respondents showed very high level of satisfaction in terms of the topics and competencies they learned in the different

subjects of the technology program. Hence, the respondents were able to recognize the high relevance and responsiveness of the topics in their future profession. In like manner, the respondents also showed a very high level of satisfaction on the quality of instructors and professors handling the different subjects of the program as evidenced from the mean of 4.33 and standard deviation of 0.68. This means that the faculty members have the adequate specialization in the subjects they teach, they use appropriate teaching methods and strategies, and they can maintain good relationship with students as they manage to foster an atmosphere of understanding to teach.

Additionally, the respondents also showed a high level of satisfaction on the provision of research and extension services as evidenced with the mean of 4.16 and standard deviation of 0.79. This high assessment of the respondents may be credited to the strong integration of research and extension services of the program in which the students were highly involved. In like manner, it is interesting to note that the respondents have high level of satisfaction on the structure of the degree program registered with the mean of 4.00. This shows that academic structure and process of administration of the program is good. It is also interesting to note that the college dean is qualified in terms of experience and academic preparation while presence of teachers, and support staff help in the daily smooth operation of the program.

The data also reveal that along testing and grading system, the respondents have high level of satisfaction as reflected with the mean of 3.85 and standard deviation of 0.71. This conveys that appropriate processes of assessment in the degree program are observed by teachers particularly on the methods of learning performance output and outcomes assessment. Also, scheduling of classes was rated by the respondents with a mean of 3.57 and standard deviation of 0.96. This finding means that the students have high level of satisfaction on the process of scheduling and assigning classrooms for the students. As to the quality of library resources, the respondents have high level of satisfaction as substantiated from the mean of 3.66 and standard deviation of 0.90. The finding may be attributed to the availability of books, learning materials and other resources present in the campus library.

The table further reveals that that the areas having the moderate level of students satisfaction are along with the quality and sizes of classrooms obtaining the mean of 3.26 and standard deviation of 1.06 and quality of equipment in the laboratories with the mean of 2.71 and standard deviation of 1.04. This finding would imply that there is still a need for the university to put priority on the provision of more facilities and equipment in the campus. Finally, the area obtained the lowest level of satisfaction from the respondents is the physical school environment as reflected with the mean of 2.66 and standard deviation 0.81.

Table 5. Satisfaction of the respondents on the quality of services of the Program

Satisfaction along the following services of the college	Mean	Std. Dev.	Interpretation
Structure of the degree program	4.00	0.73	High
Topic contents of courses	4.38	0.62	Very High
Testing and grading system	3.85	0.71	High
Quality of instructors and professors	4.33	0.68	Very High
Physical school environment	2.66	0.81	Low
Academic counseling and guidance program	4.42	0.85	Very High
Quality of library resources	3.66	0.90	High
Quality of equipment in the laboratories	2.71	1.04	Moderate
Scheduling of classes	3.57	0.96	High
Quality and size of rooms	3.26	1.06	Moderate
Provision for research and extension	4.16	0.79	High
	Mean 3.68	High	

Legend: 1.00-1.79 Very Low; 1.80-2.59 Low; 2.60-3.39 Moderate; 3.40-4.19 High; 4.20- 5.00 Very High

The table generally reveals that the highest assessment of satisfaction of the students is along academic counseling program while the lowest are along with the physical school environment and quality of equipment in the laboratories. This indicates that the administration has to work to improve the physical environment of the Campus by putting up more buildings and purchase more adequate technological tools for electronic technology. This construes the finding of Ocampo [16] that among the three campuses offering electronics course in Cagayan State University, Lasam campus had the lowest number of tools and equipment considering of its young existence and the newest established campus of the Cagayan State University. This implies that Lasam campus had the least number

of tools and equipment and at the same time having few school buildings compared to other campuses.

It can be inferred that realizing the importance of school environment is a factor to enhance the academic capabilities of students. The effectiveness of carrying out meaningful program depends on the sufficiency of physical environment in an institution. Such physical resources are necessary to improve the capability of students. The adequacy of tools, equipment, and facilities in electronics may directly affect the competency of students. Since students who were exposed to modern facilities had given the chance to acquire better skills, and have better chance to be employed.

Table 6. Difference on the attainment of Intended graduate attributes when grouped according to their profile variables

Profile Variables	IGA
gender	0.830 ns
Type of HS Graduated	0.560 ns
Father's Occupation	0.890 ns
Mother's Occupation	0.564 ns
Birth Order	0.195 ns
Father's Education	0.410 ns
Mother's Education	0.153 ns
Family Monthly Income	0.030 *

*= significant at 0.05 level; ns= not significant at 0.05 level

Table 6 presents the test of difference on the perceived level of attainment of the intended program attributes of the respondents when grouped according to their profile variables. Hence, the null hypothesis of the study is accepted at 0.05 alpha level. As clearly seen in the table, family monthly income spelled difference on the attainment of intended graduate attributes of the BS industrial Technology students. Post- Hoc Tukey test revealed that the respondents having a higher family income bracket perceived themselves to have higher attainment of the IGA. It can be practically explained that economic status is a variable that affects student's perceived level of creativity and ability.

Further, when the respondents were taken as a whole, no significant differences on the level of attainment of the IGA when grouped according to gender, type of HS graduated from, parents' occupation, birth order, and parents' education.

The non-significant difference of the extent of attainment of the IGA of the respondents when grouped according to gender implies that both male

and female can consider the importance of developing these skills for them to become productive graduates. Meanwhile, type of schools where the respondents graduated irrespective whether public or private schools shows that the respondents s manifested a great deal of putting importance of the graduate attributes of BS Industrial technology program. In like manner, regardless of the parents' education and occupation of the respondents, they manifested a high assessment on their intended graduate attributes. These findings of the study generally show that the respondents are aware about the importance of developing their different intended program attributes of their career choice.

This study further reveals that gender, type of HS graduated from, parents' occupation and education, and birth order of the respondents do not significantly spell differences on the extent of attainment of the IGA of BS Industrial Technology program o Cagayan State University at Lasam.

Table 7. Difference on level of satisfaction when grouped according to their profile variables

Profile Variables	Satisfaction level
Sex	0.000**
Type of HS Graduated	0.464 *
Father's Occupation	0.682 ns
Mother's Occupation	0.283 ns
Birth Order	0.013 *
Father's Education	0.597 ns
Mother's Education	0.433 ns
Family Monthly Income	0.001 **

*= significant at 0.05 level; **= significant at 0.01 level
ns= not significant at 0.05 level

Table 7 shows the test of difference on the level of satisfaction of the students when grouped according to their profile variables. Result of the test of difference showed that there is a significant difference on the level of satisfaction of the students when grouped according to the profile variables, hence the null hypothesis of the study is rejected as 0.05 alpha level.

It can be seen from the table that gender, type of high school graduated from, birth order, and family monthly income spelled differences on the level of satisfaction of the students. The finding along gender difference in the level of satisfaction contradicts the finding of Zullig, Huebner & Patton [17] that gender were not related to any of the school satisfaction variables. Further, B ibi et al [18] finding on the non-significant differences in life-satisfaction in reference

to sex or university status. Therefore, this study asserts that male gender have higher satisfaction level compared to female since the BS Industrial Technology program is a male-oriented program. Moreover, the students belonging to higher birth order, family income and type of high school graduated from have higher level of satisfaction.

The significant difference on the level of satisfaction of the respondents when grouped according to birth order implies that students belonged to higher birth order manifested higher level of satisfaction compared to the students who were in the lower birth order. This finding may be attributed to the reason that older students have felt higher sense of satisfaction in schooling. This study negates the finding of Carey [19] who noted that birth factor is found to have no significant difference on the level of satisfaction of students. Meanwhile, the respondents who graduated from public schools manifested higher level of satisfaction compared to those who graduated from private high schools. The finding may be attributed to the different schooling experiences of students who graduated from different types of high school.

Further, post hoc tukey also revealed that those students who have lower family monthly income tend to manifest higher level of satisfaction on the services offered by the program.

CONCLUSION AND RECOMMENDATIONS

The level of attainment of the Intended Program Attributes (IPA) is high as perceived by the respondents. Among all the identified graduate attributes, the respondents perceived themselves very high along designing and performing techniques and procedures following health and safety in the laboratory, while they have moderate level of attainment on oral and written communication skills. The retrospection of the respondents in studying showed that majority of them learned about the program through family and relatives. Majority of them enrolled the program because they were influenced by their parents and relatives. Further, the major factor that affects the enrolment of the program is the economic condition of the family. The respondents were very satisfied with the quality of services provided to them by the program. The highest assessment of satisfaction of the students is along academic counseling program while the lowest is the physical school environment and adequacy of tools

and materials in the laboratory. Test of difference showed that family income is the single variable that defines difference on the attainment of intended graduate attributes of BS Industrial Technology program while gender, type of high school graduated from, birth order, and family monthly income spelled differences on the level of satisfaction of the students.

Basing from the conclusion of the study, it is recommended that result of the study should serve as a basis in upgrading the Electronics Technology Program: First, the Electronics Technology Program of the Campus should continuously upgrade and integrate the IGA to its curricular content to promote and to strengthen the quality of BS Industrial Technology electronics graduates of the Campus making them more aware of their attributes to develop as skills; Second, to further develop the IGA of the students, the Campus should improve the training programs offered to the BSIT Electronics students in terms of the development of their oral and written communication skills, including the mathematical skills, manipulative skills and the right attitude towards work as identified in this study. Such plans can be implemented through: a) Integration of academic skills, like communication skills and mathematical skills; b) Increased number of trainings or laboratory hours for students to develop psychomotor skills; and c) Inculcate of the proper attitudes towards work and manual labor through values education; Third, since parents and relatives play a very influential role in the decision of the students in choosing BS Industrial Technology course, the Campus should consider career guidance to parents of high school students; Fourth, the acquisition of the Campus with modern or high tech tools, equipment and provision of better facilities should be given top priority to enhance the services of the program. It is also recommended that all the services offered by the campus should be based on the feedback coming from the students who are the primary customers of the institution.

This study is only limited to the descriptive assessments of the respondents on the level of attainment of the IGA, satisfaction, retrospection of BS Industrial technology graduating students from one campus of the state university in Region 2, Philippines, hence, a follow-up study must be conducted regarding the attainment of the IGA when the respondents will have their jobs to validate the results of this study with the inclusion of larger scope

of variables. Further, longitudinal tracking of graduates' cohorts should be conducted to generate concrete data on how beneficial is the BS industrial Technology Program major in electronics in terms of the identification and development of necessary graduate attributes for employability and graduate employment outcomes.

As an implication of the present study, for Philippine universities to effectively engage with the graduate employability agenda particularly for technology programs, putting emphasis to the development of the intended program attributes should be seriously embedded on the realm of lifelong career development. The University must strengthen its interface collaboration to work with other agencies and social units in order to enable its graduates to be adaptive to the turbulent year to come while putting importance to the immediate feedback of the students regarding to the services of the program to ensure its relevance and responsiveness. Moreover, this study expands that demographic profile of students spelled differences on the level of attainment of intended graduate attributes and level of satisfaction in which universities should be able to draw up integrated plans for curriculum mapping, planning and evaluation. Further, this paper attempted to present research literature by providing findings on the demographic profile of students and their extent of attainment of their intended learning outcomes. Hence, this study is helpful in the development of a research-based policy framework with regards of institutional learning outcomes.

REFERENCES

- [1] Navarro R. L & Santos, R. G. (2011). *Research-Based Teaching and Learning*. Lorimar Publishing Incorporated. Quezon City, Manila
- [2] Hernon P., & Dugan R. (2004). *Outcomes-Based Education in Higher Education*. Westport Libraries Unlimited.
- [3] Bowden, J., Hart, G., King, B., Trigwell, K., & Watts, O. (2000). *Generic capabilities of ATN university graduates*. Canberra: Australian Government Department of Education, Training and Youth Affairs. <https://goo.gl/rBj2To>
- [4] Herok, H. G., Chuck J., Millar J. T., (2013). *Teaching and Evaluating Graduate Attributes in Science Based Disciplines*. Scientific Research. Creative Education
- [5] CHED Memorandum Order (CMO) No. 46, s. 2012
- [6] Bridgstock, R. (2009). *The graduate attributes we've overlooked: Enhancing graduate employability through career management skills*. Higher Education Research and Development, 28, 31-44. doi:10.1080/07294360802444347
- [7] Chan M. C. (2016). *Engineering Postgraduate Students' Perspective on their Preparedness for the Job Market: Employability Attributes*. Proceedings of the 2016 International research Conference on Industrial Engineering and Operations Management, Kuala Lumpur, Malaysia, March 8-10, 2016
- [8] Moalosi, R., Oldiram T., & Uziak J. (2012). *Students' perspective on the attainment of graduate attributes through a design project*. Global Journal of Engineering Education, 14(1)
- [9] Azevedo, A., Apfelthaler, G., & Hurst, D. (2012). *Competency development in business graduates: An industry-driven approach for examining the alignment of undergraduate business education with industry requirements*. *The International Journal of Management Education*, 10(1), 12-28.
- [10] Kottler, Ph (2000). *Marketing Management-Millennium Edition*, Prentice Hall, Englewood Cliffs, NJ.
- [11] Sario L. P (2015). *Students' satisfaction survey on PNU-NL services*. Journal of Arts, Science and Commerce
- [12] Hermans, C. H., Haytko, D. L., & Mott-Stenerson, B. (2009). *Student Satisfaction in Web-enhanced Learning Environments*, Journal of Instructional Pedagogies, 1:1-19
- [13] Moro-Egido, A. I. & J. Panades (2010). *An Analysis of Student Satisfaction: Full-Time versus Part-Time Students*. Social Indicators Research, 96(2), 363-378.
- [14] Calmorin, L. P. & Calmorin M. A. (2007). *Research methods and thesis writing*. Rex bookstore Inc.
- [15] Hewitt, J. (2010). *Factors influencing career choice*. Cited from www.ehow.com on 15/02/2020.
- [16] Ocampo, F., O. (2008). *matching industry-based competencies with school training: towards enrichment of the bachelor of science in industrial technology program major in electronics*. Unpublished doctoral dissertation, Cagayan State University- Aparri
- [17] Zullig, K. J., Huebner, E. S., Patton, J. M. (2011). *Relationships among school climate domains and school satisfaction*. Psychology of Schools, Vol. 48 (2), 2011
- [18] Bibi, F., Chaudhry, A. G., & Awan, E. A.(2014). *Impact of Gender, Age And Culture On Life Satisfaction*. Pakistan Association of Anthropology, Islamabad, Pakistan
- [19] Carey, K., Cambiano, R. L. & De Vore, J. B. (2002). *Student to faculty satisfaction at a Midwestern university in the United States*. HERDSA, 93-97.

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