

Academic Performance of Bachelor in Industrial Technology Students

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Abstract - *This study determined the academic performance of students of Pangasinan State University Lingayen Campus under the Bachelor in Industrial Technology students major in Automotive Technology, Mechanical Technology, Food Technology, Garments Technology, Civil Technology, Electrical Technology, Electronics Technology, Ceramics Technology, and Drafting Technology for First Semester of School Year 2015-2016. It found out that Electrical Technology, Automotive Technology and Food Technology are popular specialization in the Bachelor in Industrial Technology program. For the academic performance of Bachelor in Industrial Technology students, the fourth year students earned higher grade point average as compared to lower year levels. It is recommended that the Bachelor in Industrial Technology faculty members with the assistance of the guidance counselors and in-charge of student admission to market the Bachelor in Industrial Technology specializations with less number of students specially the Civil Technology, Garments Technology and Ceramics Technology. A massive campaign to public and private secondary schools is needed to increase the number of enrollees on these specialization courses. In order to motivate and earn high scores in classroom activities and eventually improve the academic performance of first year Bachelor in Industrial Technology students, an orientation on grading system and utilization of instructional strategies appropriate to the subject matter and knowledge background of the students are needed.*

Keywords – academic performance, industrial technology, students

INTRODUCTION

Students' grades are gauges of measurement of academic standing and competence of specific learning goals. It provides an assessment of students' degree of achievement in fulfilling academic requirements. The objective type of assessment of faculty members as revealed in the course syllabus reflects the kind of measurement standard the faculty members follow when it comes to assessing the academic performance of students.

Very good marks indicate very strong academic background of students [1]. There are many reasons for conducting a research about academic performance of students. They could serve as inputs to calculate the probability of students' success in succeeding semesters. It could also be an input to faculty members' performance and enhancement of curriculum where students' found to have low performance.

On the part of the faculty members, they can use students' grades to devise effective and efficient instructional strategies. Selection of instructional strategies that are appropriate to the learners' competency and readiness is important. This kind of research or on-site investigation of students' academic performance is a fulfilling part for the faculty members. If there are data available with regards to academic standing of students and there are mechanisms the faculty members that are ready to implement or execute, the faculty members are already engaged in research.

It is important to note that the functions of faculty members are instruction, research, extension and production. When it comes to students' grades and the satisfaction of faculty members regarding these grades, there is always that desire on the part of the faculty members to improve the academic performance of students.

That is why there is always a discussion on the academic performance of students in the international and national level. For example, the achievement scores of Filipino high school students in international examinations are poor. The National Achievement Test for Grade VI in SY 2009-2010 shows only 69.21% while passing rate for high school is at low as 46.38%. In 2003 Trends in International Mathematics and Science Study, the Philippines ranked 34th out of 38 countries in high school and 43rd out of 46 countries in high school II Science. The Philippines also ranked the lowest in 2008 among the ten participating countries even with only the science high schools joining the advanced Mathematics category [2]. Academic variables which are the second year grades in English, Mathematics and Science have significant effect on the National Achievement Test performance of students [1]. The non-academic variables that have significant effect on National Achievement Test of students are gender, self-confidence, physical inequity, study habit, and interest on Science subject.

A study revealed that the performance of first year college students of University of Luzon in reading comprehension test were not able to reach an average of 75 percent of the points in the totality of the test and in the different specific reading skills [3]. The students have moderate ability in the literal skills, low ability in the reorganizational, inferential, evaluational, and appreciational skills. A study about determining the level of higher order thinking skills practiced by fourth year students of the University of Baguio Senior High School, the Physics intervention materials greatly improved the performance of the students in the experimental class as compared to the control group in which the traditional lecture method was employed [4]. Since the students today are more inclined towards the visual and kinesthetic way of learning, appropriate intervention materials and the activities incorporated in such materials are recommended in this study. A study on the performance of Master in Educational Management students of Polytechnic University of the Philippines Graduate School found out that students earned

average grades during the first and second semester of School Year 2006-2007 and concluded that they were very good in their studies in the graduate school [1].

The above studies only revealed the academic performance of college students in English and Science. That is why this study about the academic performance of Bachelor in Technology students of Pangasinan State University, Lingayen Campus was conducted. The program is offering specializations like Automotive Technology, Mechanical Technology, Food Technology, Garments Technology, Civil Technology, Electrical Technology, Electronics Technology, Ceramics Technology, and Drafting Technology.

The Bachelor in Industrial Technology was developed by the Ministry of Education and Culture in 1975 and is prescribed in MEC Order No.28, s.1975. The Industrial Technology Program imparts a body of knowledge, skills, attitudes, values and experiences that will provide prospective industrial workers with the necessary competencies essential for effective technologists. The curriculum includes a general education component, consistent with the Commission on Higher Education issuance, consisting of language and literature, natural and social sciences, mathematics, humanities, logic and ethics, entrepreneurship and computer proficiency. The Industrial Technology research and managerial subjects include: cooperative management, shop management, project management, and personnel management and safety; labor laws, technical research and group dynamics. The specialization courses or majors equip the industrial technology students with an in-depth knowledge of the context and specific skills in the major field including industry exposure or on-the-job training.

OBJECTIVES OF THE STUDY

The main objective of this study is to determine the academic performance of Bachelor in Industrial Technology students major in Automotive Technology, Mechanical Technology, Food Technology, Garments Technology, Civil Technology, Electrical Technology, Electronics Technology, Ceramics

Technology, and Drafting Technology. The reference of this study includes the technical and non-technical academic performance of first year to fourth year BIT students of Pangasinan State University Lingayen for First Semester of School Year 2015-2016.

MATERIALS AND METHODS

The descriptive research design was used in this study. All Bachelor in Industrial Technology students enrolled during the first semester of SY 2015-2016 were taken as respondents. The distribution per specialization is presented below.

Specialization	Number of Students
Automotive Technology	137
Mechanical Technology	51
Civil Technology	4
Garments Technology	14
Electrical Technology	152
Drafting Technology	72
Ceramics Technology	9
Food Technology	120
Electronics Technology	92
Total	651

The target respondents for this study are 651, however the number of respondents trimmed down to 568 because some of the students are absent during the conduct of the study. Data on the profile and grading sheets of Bachelor in Industrial Technology students from the Registrar’s Office of Pangasinan State University Lingayen Campus for first semester of School Year 2015-2016 were used as primary sources of data. Descriptive statistics like frequency counts, means, percentages were utilized.

RESULTS AND DISCUSSION

The profile of Bachelor in Industrial Technology students of Pangasinan State University enrolled in First Semester of School Year 2015-2016 as to their specialization and year level is described below.

Table 1. Specialization and Year Level of Bachelor in Industrial Technology students

Specialization	Frequency	Percentage
Automotive Technology	116	20.4
Mechanical Technology	55	9.7
Civil Technology	2	.4
Garments Technology	11	1.9
Electrical Technology	140	24.6
Drafting Technology	64	11.3
Ceramics Technology	6	1.1
Food Technology	112	19.7
Electronics Technology	62	10.9
Total	568	100.0
Year Level		
First year	139	24.5
Second year	169	29.8
Third year	123	21.7
Fourth year	137	24.1
Total	568	100.0

There are 140 or 24.6 per cent of Bachelor in Industrial Technology students are enrolled in Bachelor in Industrial Technology program major in Electrical Technology in School Year 2015-2016, 116 or 20.4 per cent Bachelor in Industrial Technology students are enrolled in Automotive Technology, and 112 or 19.7 students are enrolled in Foods Technology major. The high percentage of Bachelor in Industrial Technology students enrolled in the Electrical Technology could be attributed to the popularity of the specialization.

As to the year level, there are 169 or 29.8 per cent second year Bachelor in Industrial Technology students in SY 2015-2016, 139 or 24.5 per cent are first year, 137 or 24.1 per cent are fourth year, and 123 or 21.7 per cent are third year. This could be attributed to the high enrolment of Bachelor in Industrial Technology students during the S. Y. 2014-2015. Based from the records of the Registrars Office, the enrolment for S.Y. 2014-2015 was 718.

The academic performance of Bachelor in Industrial Technology students of Pangasinan State University Lingayen Campus enrolled in First Semester of School Year 2015-2016 is shown in succeeding tables.

Table 2. Academic Performance of Bachelor in Industrial Technology Students major in Automotive Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	2.50	2.25	2.25
Second year	2.00	2.25	2.00
Third year	2.25	2.25	2.25
Fourth year	1.75	-	1.75
Overall GPA			2.00

The fourth year Bachelor in Industrial Technology major in Automotive Technology students got the highest overall GPA of 1.75 while the first year and third year students got the lowest overall GPA of 2.25. The slightly lower over GPA of lower year levels could be attributed to their readiness in class activities as compared to much older or higher year level wherein they made adjustments and have familiarity in terms of their study habit, time management, social aspect and teaching strategies of faculty members and campus activities.

Table 3. Academic Performance of Bachelor in Industrial Technology Students major in Mechanical Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	2.25	2.50	2.25
Second year	2.00	3.00	2.50
Third year	2.25	2.50	2.25
Fourth year	1.75	-	1.75
Overall GPA			2.25

The fourth year Bachelor in Industrial Technology major in Mechanical Technology students got the highest overall GPA of 1.75 while the second year students have the lowest overall GPA of 2.50 for the first semester of

School Year 2015-2016. This suggests that much older or higher level students have made some adjustments in their college life making their academic performance more manageable as compared to lower year levels that are just starting to know the teaching strategies of teachers, the campus activities, and the style of teachers' assessment of student performance.

Table 4. Academic Performance of Bachelor in Industrial Technology Students major in Civil Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	1.75	2.25	2.00
Second year	1.00	1.25	1.00
Third year	2.25	2.5	2.25
Fourth year	-	-	-
Overall GPA			1.75

The second year Bachelor in Industrial Technology major in Civil Technology students got the highest overall GPA of 1.00 while the third year has the lowest overall GPA of 2.25 for the first semester of School Year 2015-2016. The results suggest that sophomore students major in Civil Technology have already familiarized the teaching strategies and student assessment styles of their faculty members that lead to more confidence and competence in studying the technical and non-technical courses. This supports a previous study wherein self-confidence was found to be significantly related to the performance of students. Other non-academic variables that significantly affected the performance of students are gender, physical equity, study habit and interest on Science subject [1].

Table 5. Academic Performance of Bachelor in Industrial Technology Students major in Garments Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	2.50	2.00	2.25
Second year	2.25	2.25	2.25
Third year	2.25	2.50	2.25

Fourth year	2.00	-	2.00
Overall GPA			2.25

The fourth year Bachelor in Industrial Technology major in Garments Technology students got the highest overall GPA of 2.00 while the rest of the year levels garnered the same overall GPA of 2.25. This suggests that graduating students are more confident and competent in dealing with their technical courses. The non-enrolment of non-technical courses for graduating students could also be a factor. There might be non-technical courses that the lower year level students find them difficult, thus having an effect on their overall GPA. In mathematics, for example, the weaknesses of pupils were application of the four fundamental operation or fractions and in solving word problems [5]. In a separate study, Grade V pupils are very weak in addition and subtraction of dissimilar fractions, reduction of fractions, converting one unit of measurement to another, problem solving involving conversion of measurement units, identifying names of polygons, and problem solving involving areas and volumes of polygon [6]. Moreover, the common errors committed by high school students at Saint Louis School-Aurora Hill were combination of terms, improper distribution, cancellation, removing grouping symbols and sign errors [7].

Table 6. Academic Performance of Bachelor in Industrial Technology Students major in Electrical Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	2.00	2.50	2.25
Second year	2.25	2.50	2.25
Third year	2.75	2.25	2.50
Fourth year	1.75	-	1.75
Overall GPA			2.25

The fourth year Bachelor in Industrial Technology major in Electrical Technology students has the highest overall GPA of 1.75 while the third year students got the lowest overall GPA of 2.50. This suggests that third

year students major in Electrical Technology found both their technical and non-technical courses difficult. For technical courses, more advanced topics and class requirements are needed. This could lead to lower scores in class activities.

Table 7. Academic Performance of Bachelor in Industrial Technology Students major in Drafting Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	2.50	2.25	2.25
Second year	2.00	2.50	2.25
Third year	2.50	2.00	2.25
Fourth year	1.50	-	1.50
Overall GPA			2.00

The fourth year Bachelor in Industrial Technology Drafting Technology students got the highest overall GPA for the first semester of School Year 2015-2016 while other year levels have the same overall GPA of 2.25. This implies that graduating students are more confident and capable of earning high scores in class activities. Familiarity with the teaching and assessment styles of faculty members might be a factor on better managing of studies.

Table 8. Academic Performance of Bachelor in Industrial Technology Students major in Ceramics Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	1.75	2.50	2.00
Second year	1.75	2.50	2.00
Third year	2.25	2.50	2.25
Fourth year	1.75	-	1.75
Overall GPA			2.00

The fourth year Bachelor in Industrial Technology major in Ceramics Technology students got the highest overall GPA of 1.75 while the third year students garnered the lowest overall GPA of 2.25. The advanced courses and projects as requirements to pass all the courses might be a factor for low performance of third year students. As to the graduating students, the

reason for their high performance could be their concentration to technical courses as well as their familiarity to teaching, assessment and evaluation styles of faculty members.

Table 9. Academic Performance of Bachelor in Industrial Technology Students major in Food Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	2.25	2.50	2.25
Second year	2.25	2.50	2.25
Third year	2.25	2.50	2.25
Fourth year	1.50	-	1.50
Overall GPA			2.00

The fourth year Bachelor in Industrial Technology major in Food Technology students garnered the highest overall GPA of 1.50 while the rest of the year levels got an overall GPA of 2.25. This suggests that graduating students managed to earn high scores in their courses as compared to other year levels. The non-inclusion of non-technical courses as well as the familiarity with their faculty members might lead to their higher academic performance.

Table 10. Academic Performance of Bachelor in Industrial Technology Students major in Electronics Technology

Year level	GPA Technical	GPA Non-technical	Overall GPA
First year	2.25	2.25	2.25
Second year	2.25	2.25	2.25
Third year	2.00	2.00	2.00
Fourth year	2.00	-	2.00
Overall GPA			2.00

The third year and fourth year Bachelor in Industrial Technology major in Electronics Technology students got the highest overall GPA of 2.00 for first semester of School Year 2015-2016 while the other lower year levels garnered the low overall GPA of 2.25. This suggests that the lower year level students found their courses difficult.

CONCLUSION AND RECOMMENDATION

Based on the findings of the study, it could be inferred that Electrical Technology, Automotive Technology and Food Technology are popular specialization in the Bachelor in Industrial Technology program. The enrolment in these specializations could also attribute to the booming industries of food and car manufacturing. When it comes to the academic performance of Bachelor in Industrial Technology students, the fourth year students are well adjusted in terms of familiarity with the teaching, evaluation and assessment styles of faculty members as compared to the first year students.

It is recommended that the Bachelor in Industrial Technology faculty members with the assistance of the guidance counselors and in-charge of student admission to market the Bachelor in Industrial Technology specializations with less number of students like Civil Technology, Garments Technology and Ceramics Technology. A massive campaign to public and private secondary schools is needed to increase the number of enrollees on these specializations. For the academic performance of Bachelor in Industrial Technology students, orientation on grading system, resource or library facilities and materials, and evaluation and assessment is needed for first year students is needed. This is to familiarize the students about the things they need to do to motivate them and have high scores in all classroom activities and eventually earned high academic performance. Utilization of varied instructional strategies appropriate to the subject matter and the background knowledge of the students is also recommended.

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