

Academic Performance of Freshmen Maritime Students: Perspective for Policy Formulation on Student's Development

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Abstract – One significant component to assure quality education is formulation of policies aimed on Student' development. The academic performance of the students may also serve as an evaluation of the quality of education which the institution offers to the students. The study aimed to determine the academic performance of Freshmen Maritime students when grouped according to educational background. It further examined the differences in their performance in the technical courses, general education courses and aptitude for the service. Using percentage, mean and t-test, data are analyzed. Based on the semestral report on grades, the freshmen performed good in the professional subjects and performed very good in both general education courses and aptitude for the service. Further, there is no significant difference between academic performance of those without college background and with college background in the professional and general education courses but those with college background performed better in the aptitude for the service. The result suggests that the administration may explore the possibility of considering crediting the units earned by the students with college background. They should venture on the acquisition of more technical laboratory equipment such as simulators to increase the student's enthusiasm in the professional courses. Also, the school needs to improve its instruction and assessment on the aptitude for the service.

Keywords – Academic performance, maritime, policy formulation, student development, Philippines

INTRODUCTION

Quality education is institutional and collective responsibility highlighting practice, activities and policies essential for student learning outcomes. The academic performance of students serves as one of the defining factor of quality. Therefore, it is the responsibility of the academic institution to identify the trends and influences that may affect the academic performance of every learner and come up with policies and strategies that are necessary in improving students' academic performance.

Various studies have been carried out on the factors that affect students' academic performance or achievement in schools, colleges and universities. Some of the factors identified and reported to have affected the academic performance of students in these different settings are: student effort, previous or prior educational performance, self-motivation, age, the social-economic status of the students' parents, number of hours of study per day, admission points, different entry qualifications, tuition trends and the students' area of residence (rural or urban) [1].

There are also studies that identify and analyze the number of factors that affect the academic performance of the student at school, college and even at university level. Their findings identified students' effort, previous schooling, parent's educational background, family income, self-motivation of students, age of student, learning preferences and entry qualification of students as important factors that have effect on student's academic performance in different setting. The utility of these studies lies in the need to undertake corrective measures that improve the academic performance of graduate students [2]. Miller and Birch as cited in Adamu [3] observed that student's school background is positively related to his or her academic performance at an undergraduate level.

Review of publications indicates comparison of academic performance of transfer (with college background) and direct entry students (High School graduates/without college background).

In a study conducted by Ringland and Pearson [4] on the difference between diploma entrants and direct 'A'-Level entrants and the subsequent performance of each group reported that there was no significant difference

between the groups. In a related study, Mlambo [5] reported that there was no significant difference in the academic performance among students due to differences in the admission criteria employed; the same study observed that while varied, these criteria adequately assessed the potential of students to handle the demands of courses in agriculture.

Acai and Newton [6] concluded that besides being similar in learning approach, the college-transfer and Direct –entry from High school (DEHS) students were also similar in academic performance.

Amasuomo [7] in his study of college entrants with secondary school certificates and those with certificates from technical colleges, the level of academic performance of secondary school certificate and technical certificate groups were unequal, with the secondary school certificate group having a noticeable edge in academic performance over the technical certificate group. There was also a statistically significant difference in the performance of both groups in the five courses: TED 111 (Introduction to Metalwork), TED 112 (Introduction to Woodwork), TED 113 (Introduction to Electrical/Electronics), TED 114 (Introduction to Building) and TED 115 (Introduction to Automobile).

Similarly, Adamu [3] concluded that the level of academic performance of NTC certificate and secondary school certificate groups were unequal, with the NTC certificate group having a noticeable edge in academic performance over the secondary school certificate group.

Mondal and Galbraith [8] in their study on comparing academic success of transfer and traditional students found out that transfer students' overall GPA is higher compared to a non-transfer. The results indicate differences in the GPA based on student demographic characteristics.

In light of the foregoing, the study is an attempt to determine the levels of academic performance of the maritime freshmen without college background or high school graduates and those with college background/transferee groups of students, and formulate policies on student development.

OBJECTIVES OF THE STUDY

The study is focused on determining the academic performance of the freshmen maritime students and to identify policy on students' development. Specifically it aimed to: determine the academic performance of the freshmen students according to their educational background; test the significant difference in the academic performance of the two groups of respondents

in the Technical/Professional subjects, General Education Subjects and Aptitude for the Service; test the significant difference in the academic performance of the respondents in the Technical/Professional Subjects vs. General Education Subjects and Academic Subjects vs. Aptitude for the Service; and determine the policies that can be formulated for student development.

MATERIALS AND METHODS

The research methods used in the study was the descriptive-quantitative approach. The respondents of the study were one hundred eleven (111) freshmen maritime students who struggle the extensive quasi-military and academic training. Universal sampling was used which identified 69 or 62.16% students with college background and 42 or 37.84% without college background.

The researcher utilized a researcher-made information sheet to identify the profile of the respondents. Semesteral Report on Grades for one semester in the Technical Subjects (Seamanship, Navigation and Deck Watchkeeping); General Education Subjects (Math, English, Basic Computer, Natural Science and Physical Education); and Aptitude for the Service (Leadership and Discipline trainings) were obtained from the Registrar's office. The names and grades of the respondents of this study were treated with utmost confidentiality to protect their interest.

After the data were gathered, the profile of the respondents and the summary of the semester grades were computed using both percentage and mean. SPSS version 20 Levene's T-test $p > .05$ was utilized to describe the difference between the academic performance of the freshmen students in relation to their educational background. Paired samples t-test was used to determine whether there is statistical evidence that the mean difference between paired subject areas is significantly different. This study also utilized the following criteria in determining the performance of the students: 90-100: Excellent; 80-89: Superior; 70-79: Very Good; 60-69: Good; 50-59: Fair; 49-below: Failure

RESULTS AND DISCUSSION

The mean grades distribution of the respondents according to educational level, differences in the performance of the two groups in the different subjects and differences of performance between areas are presented in the succeeding discussions.

In Table 1, the distribution of the mean grades of the respondents is presented. The table reveals that in the technical area, the students without college background

obtained an average of 69.33 while those with college background obtained 69.54. The grades indicate good performance. In the general education courses, students without college background obtained an average of 70.48 while those with college background obtained 71.10. Both grades indicate very good performance. Lastly, in the aptitude for the service area, the students had very good performance with an average of 75.33 obtained by students without college background and an average of 79.16 by those with college background.

The table further shows that among the different subject areas, both groups obtained the highest grades in aptitude for the service, next is in the general education area and lowest grades in the technical subjects.

Table 1. The Mean Grades of the Respondents

Education Level (Background)	Grade	SD	Interpretation
Technical			
No College	69.33	5.92	Good
With College	69.54	6.07	
Gen Educ.			
No College	70.48	7.08	Very Good
With College	71.10	5.82	
Service			
No College	75.33	3.11	Very Good
With College	79.16	4.69	

Table 2. Differences in the performance of the two groups in the Technical Courses

Levene's Test for Equality of Variances	f	.385		
	Sig.	.536		
Equal Variance Assumed	t	-.172		
	Df	109		
	Sig.(2-tailed)	-.864		
	Mean Difference	-.20290		
	Std. Error Difference	1.17822		
	95%confidence interval of the difference	Lower Limit -2.53808	Upper Limit 2.13229	
Equal Variance not Assumed	t	173		
	Df	88.524		
	Sig.(2-tailed)	.863		
	Mean Difference	-.20290		
	Std Error Difference	1.17060		
	95%confidence interval of the difference	Lower Limit -2.52904	Upper Limit 2.12324	

In table 2, the mean Technical Courses grades of the Without College Background group was 69.33 (SD 5.92) and the mean Technical Subject grades of the With

College Background group was 69.54 (SD 6.07). According to the t-test, we failed to reject the null hypothesis. There was not enough evidence to suggest a significant difference between the performance of the two groups of students in the Technical subjects, $t(109) = -.172, p > .05$.

This means that the performance of those with college background and without college background groups of freshmen maritime students in the Navigation, Deck Watchkeeping and Seamanship courses do not significantly vary. This finding is similar to that of Ringland and Pearson.

In table 3, the mean of general education grades of the Without College Background group was 70.48 (SD 7.08) and the mean of general education grades of the With College Background group was 71.10 (SD=5.82). According to t-test, we accept the null hypothesis. There was not enough evidence to suggest a significant difference between the performance of the two groups of students in the General education subjects, $t(109) = -.505, p > .05$.

Table 3. Differences in the performance of the two groups in General Education Subjects

Levene's Test for Equality of Variances	f	2.685		
	Sig.	.104		
Equal Variance Assumed	t	-.505		
	Df	109		
	Sig.(2-tailed)	.614		
	Mean Difference	-.62526		
	Std. Error Difference	1.29743		
	95%confidence interval of the difference	Lower Limit -3.07702	Upper Limit 1.82650	
Equal Variance not Assumed	t	-.482		
	Df	74.077		
	Sig.(2-tailed)	.631		
	Mean Error Difference	-.62526		
	Std. Error Difference	1.29743		
	95%confidence interval of the difference	Lower Limit -3.21041	Upper Limit 1.95989	

This means that the performance of those with college background and without college background in both groups of freshmen maritime students' performance level in Math 1(College Algebra), English 1(Study and Thinking Skills), Basic Computer (Application and Networking), Natural Science 1 (General Physics) and Physical Education 1 (Basic Swimming) do not significantly vary. This finding is also similar to that of Pearson & Mlambo and Acai & Newton.

Aptitude for the service or Leadership and discipline consist mainly of training in the regimental life which is designed to provide leadership development and experience. The students are trained in a strictly organized and controlled environment. Daily routine is bound by a schedule that demands strict compliance where positive attitude, discipline and a sense of responsibility are instilled among the students.

The Department of Midshipman Affairs handle the 24-hour monitoring of the students' activities which includes sports, cultural, civic and other extra/co-curricular activities.

In table 4, the mean Aptitude for the Service grades of the Without College Background group was 75.33 (SD 3.11) and the mean Aptitude for the Service grades of the With College Background group was 79.1594 (SD=4.69). According to t-test, we reject the null hypothesis. There was enough evidence to suggest a significant difference between the performance of the two groups of students in the Aptitude for the Service area, $t(109)=-4.687, p < .05$.

Table 4. Differences in the performance of the two groups in the Aptitude for the Service

Levene's Test for Equality of Variances		f	1.757
		Sig.	.188
Equal Variance Assumed	t	-4.667	
	Df	109	
	Sig.(2-tailed)	.000	
	Mean Difference	-3.82609	
	Std. Error Difference	.81637	
95%confidence interval of the difference		Lower Limit	Upper Limit
		-	-
		5.44410	2.20808
Equal Variance not Assume	t	-5.158	
	Df	108.141	
	Sig.(2-tailed)	.000	
	Mean Difference	.74180	
	Std Error Difference	-5.29645	
95%confidence interval of the difference		Lower Limit	Upper Limit
		-	-
		5.29645	2.35573

Table 4 further shows that the students with college background performed better in Aptitude for the Service (Leadership and Discipline). With the rigorous training, the older students (with college background) are more mature and thus can cope up better in the regimental life. They were able to supervise and control their group and displayed obedience to regimental rules and regulations.

This finding is similar to the study of Adamu and Modal and Galbraith. A possible explanation for this is the impact point of maturity and developmental differences. The wide range of ages in school means older students will be far more mature [9]. Consequently, every human using his reasoning "requires suitable facilitating emotions to be efficacious in their actions or reasoning in order to be a high achiever [10].

Difference in Performance between Courses

In table 5, paired sample t-test was conducted between the different subject areas. The Sig. (2-Tailed) value in our sample is 0.000 for pair 1, pair 2 with .042 and pair 3 is .000. This value is less than .05. We reject the null hypothesis which says that there is no difference in the academic performance of the students between areas. This means that there is a significant different between the performance of the freshmen maritime students in the different areas.

Table 5. Paired Differences of Academic Performance

Pair 1 General Education- Technical subjects	Mean	1.40541
	Std. Deviation	7.17873
	Std. Error Mean	.68137
	95% Confidence interval of the difference	
	Lower Limit	2.75573
	Upper limit	.05508
	t	2.063
	df	110
	Sig(2-tailed)	.042
	Pair 2 General Education- Aptitude for the service	Mean
Std. Deviation		7.66835
Std. Error Mean		.72785
95% Confidence interval of the difference		
Lower Limit		-5.40442
Upper Limit		-8.28927
t		-9.407
df		110
Sig. (2-tailed)		.000
Pair 3 Technical Subjects- Aptitude for the service		Mean
	Std. Deviation	5.75321
	Std. Error Mean	.54607
	95% Confidence interval of the difference	
	Lower Limit	-7.17007
	Upper Limit	-9.33444
	t	-15.112
	df	110
	Sig. (2 tailed)	.000

Because of this, we can conclude that there is a statistically significant difference between the grades of

the freshmen maritime students in the Technical subjects and General Education subjects. Paired Samples Statistics box revealed that the Mean for the General Education subjects was greater than the Mean for the Technical Subjects, we can conclude that students significantly performed better in the General Education subjects than in the Technical subjects.

We can also conclude that there is a statistically significant difference between the grades of the students in the Aptitude for the Service and General Education subjects. Paired Samples Statistics box revealed that the Mean for the Aptitude for the service was greater than the Mean for the General Education Subjects; we can conclude that students significantly performed better in the Aptitude for the service than in the General Education subjects.

Moreover, we can conclude there is a statistically significant difference between the grades of the freshmen in the Aptitude for the Service and Technical subjects. Paired Samples Statistics box revealed that the Mean for the Aptitude for the service was greater than the Mean for the technical subjects, we can conclude that students significantly performed better in the Aptitude for the service than in the Technical subjects.

The data shows that the freshmen significantly performed best in the Aptitude for the service: Leadership and Discipline trainings; better in the General Education subjects; and least in the Technical subjects. This implies that the Academy should identify a more dynamic, integrated and relevant teaching plan for the technical subjects to increase students' interest and eventually improve in their academic performance in the said area. Active learning has a valuable contribution to the development of independent learning skills and the ability to apply knowledge. It creates interest in the curriculum and to prepare students for their future careers [11].

Proposed Policy for Students' Development

The Academy has four existing councils: Executive, Academic, Research and Administrative, which are independent but interrelated bodies that formulate policies, and plan programs, activities and projects applied across the institution. These policies, programs, activities and projects support the school's vision, mission and values.

The Councils can address the issue on the academic performance of the students by revising existing policies on teacher's evaluation, classroom instruction and program implementation such as:

1. Implement a continuous-periodic program of evaluating the teaching and learning situation in the classroom.
2. Consider crediting the units earned of the "transfer students" or those with college background who have taken the general education core subjects such as English, Math, Filipino, Sciences.
3. Acquisition of more/additional technical laboratory equipment to increase students' interest in the technical subjects.
4. Implement regular-scheduled utilization of the technical laboratory equipment in connection to integration of theoretical and practical aspects of lessons in the technical subjects.
5. Intervention and support program for students without college background to improve leadership and training skills.

CONCLUSION AND RECOMMENDATION

The Freshmen Maritime Students performed good in the technical subjects and very good in both general education subjects and aptitude for the service (Leadership and Discipline). There is no significant difference in the performance of the Without College background group and With College background group in both technical subjects and general education subjects. However, the students with college background performed better than those without college background in the aptitude for the service. Comparing the academic performance of the student in the different areas, the students performed better in the general education subjects than in the technical subjects; they performed in the aptitude for the service than in the technical subjects; likewise, they performed better in the aptitude for the service than in the general education subjects.

Furthermore, it is recommended to look into other factors that may affect the academic performance of the students aside from educational background. These may include factors such as economic status, type of school, non-curricular activities and others.

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