

# Admission Test as Predictor of Student Performance in Political Science and Psychology Students of Rizal Technological University

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**Abstract** – *One gauge of a university's performance lies in the students' capacity to finish an academic program according to the prescribed time frame. This is one of the criteria for the Major Final Output (MFO) for the Performance Based Bonus (PBB) given to State, Universities and Colleges (SUCs). As such it is important to explore variables contributing to this major output. One factor lies in the selection process of a student entering in a university. Hence the focus of this study is in the predictive ability of the admission test scores with academic performance as measured by the first year general weighted average (GWA) among 195 Psychology students and 54 Political Science students of the Rizal Technological University-Pasig Campus. The causal-comparative method and correlational method were applied to get the differences between the scores of both courses and the relationship of the variables. The percentage of drop out and retention of students were also explored. The highest frequency of admission test scores for Psychology was 76% and 74% and 74% and 71% was the highest admission test scores for Political Science. The overall drop-out rate for Political Science is 58.2% and the retention rate is 41.8% whereas the drop-out rate for Psychology is 43.4% and the retention rate is 56.6%. Results showed that there is no significant differences between the admission test scores of the Political Science and Psychology students. No differences in their general weighted average were observed. Regression correlation was used to find the predictive value of the admission test scores and results revealed that the admission test score was significant in predicting the academic performance for both courses.*

**Keywords** – *academic performance, admission test prediction, college entrance examination, drop out and retention rate, entrance test*

## INTRODUCTION

College or university admission test is one of the most anticipated activity of graduating high school students especially in the Philippines. Preparation for the college examinations are popular that the parents even pay for review centers to secure their children's chance to be accepted in a prestigious university.

In theory, all students in the Philippines can gain access to higher education if they meet the admission criteria most especially if they meet the tuition and living cost. However, admission requirements remain dependent upon individual higher education institutions (HEIs). Entrance to HEIs is dependent on the possession of a high school certificate of graduation and in some cases on the result of the National Secondary Achievement Test (NSAT) or National Career

Achievement Examination (NCAE) or in many HEIs the result of their own entrance examination. Admission to public universities can be very competitive in the Philippines, in particular, at the University of the Philippines campuses, which usually accept fewer than 20% of applicants, where performance in the University of the Philippines College Admission Test (UPCAT) and the weighted average of final grades obtained in high school are required for entrance. The top-ranking applicants, based on the quota and cutoff grade set by each campus, qualify. Other universities maintain their own admissions criteria, which may include a school-administered admissions test, secondary school grades, an interview, and a medical examination [1].

Admission test scores is one significant metric in the selection of students who will be successful in their later

professional career and those candidates who are able to study diligently enough to pass all the study requirements, In that sense the selection procedure at admission is selecting in the best available candidates [2].

On the other hand, most universities use high-school grade point average instead of the admission test scores to decide which students to accept in an attempt to find the most gifted and most dedicated students. The basic assumption is that a high school pupil with a high grade point average will achieve high grades at university [3].

Historically, college admission has been determined based on a rather narrow set of measures. However, actual success in college seems to be more dependent on a much wider array of skills, knowledge, attitudes, behaviors, and strategies than are currently considered for admission [4]. Most selective colleges always look at test scores in tandem with grades, essays and other indicators of student's ability [5].

For the past decades some considerable research attention has focused on the examination of the relationship between entry criteria or previous exposure and the subsequent academic performance of students. This relationship has been examined from various angles and levels but the findings of the studies and conclusions on the subject of predictive validity of entry criteria on subsequent academic performance of students are inconsistent, thus making it necessary to study every situation [6].

A study by Atento [7] where factors of gender, program of study and verbal and non-verbal aptitudes based on Otis Lennon School Ability Test (OLSAT) as entrance test were used to predict the grade point average (GPA) for first year first semester shows that the entrance test results failed to predict the students' GPA.

On the contrary, Medallion and Cataquis [8] conducted the same study to verify the OLSAT as an entrance test and predictor of the performance of the freshmen students and demonstrated that the same test has a high degree of positive correlation and indicative that the entrance test is capable to project the grades of the students in their first semester of schooling.

A study by Daitol and Cataquis [9] using the same OLSAT entrance test, showed similar result where the scores of the entrance test are highly related to their performances in Algebra, Trigonometry, English and Filipino, where the entrance test scores can be used to predict the performance of the students in their first year.

In our university, a student who wishes to apply need to submit their Form 137 or their secondary report card, a certificate of good moral character and they need to

pass the RTU Admission Test. Those who are applying for Engineering and Accounting course need to have at least a grade point average (GPA) of 85 and above. For those applying for Psychology, they need to have at least a GPA of 83 and above. For all the other courses they need to pass the RTU entrance examination and once they pass, they will be endorsed to the college of their choice and the department head or representative interviews the candidate and decides if he or she will be accepted.

According to Conley [10], large state universities pay much less attention to each individual's credentials beyond reviewing the course titles present on their transcripts, calculating grade point averages derived from course grades, and considering admissions test scores. They tend to accept a much higher proportion of applicants. Notable exceptions to this generalization can be found at state flagship research universities, but admission rates for in-state students are generally significantly higher than at the most selective private universities. Third, public universities have a number of trap doors available to them that allow them to admit students on the margins or for whom some legitimate reason exists to grant an exception. Part of this is motivated by the desire not to exclude any potentially successful student, and part is dictated by the reality of needing to fill the freshman class each year, regardless of the composition of the applicant pool. This is not to say that state universities admit unprepared students necessarily, only that they draw from a pool consisting of students with a much wider degree of variance in their preparation than do colleges and universities in the more selective tiers.

It is important for colleges to understand the relationship between students' entrance examination record and their academic performance in college. College administrators can make proper arrangements for students while planning the curriculum preparing teaching materials, and for setting up class evaluation standard; etc. [11].

The admission test studies showed different results and the admission test as a tool for selecting student is very crucial especially starting this school year where the Free Tuition Fee Law in SUCs will take full implementation [12]. The first batch of the senior high school students will be the beneficiary of the Free Tuition Fee Law and selection criteria in addition to the admission test scores should be holistic considering that the students came from different academic and non-academic strands. As such, this warrants the study of the

RTU Admission Test in predicting the students' performance in our university.

**OBJECTIVES OF THE STUDY**

This study aims to determine the predictive value of the Admission test of the college level students to their academic performance as measured by GWA in Psychology and Political Sciences degree programs at the Rizal Technological University Pasig Campus for school year 2012-2016. It also defines the differences of the admission test scores and GWA of both courses. In addition, the drop-out rate and retention rate for the same period was also examined.

**MATERIALS AND METHODS**

The research employed correlational method specifically the prediction studies since the purpose of the study was to determine the predictive validity of the RTU Admission Test. This also utilized the causal-comparative or ex-post-facto since it attempts to determine the differences between the admission test scores and the GWA of the two courses.

**Sampling and Population**

This study utilized the data of the whole population of the Psychology and Political Science students enrolled in the school year of 2012 except for those missing data which was eliminated. There were 67 students enrolled in AB Political Science; there were 13 that had no admission test result giving a sample of 54 students. For the BS Psychology students, 249 students were enrolled in first semester of 2012, out of the 249 students there were 195 students with admission test results.

**For the BS Psychology students, 249 students were enrolled in first semester of 2012, out of the 249 students there were 195 students with test results.**

**Instrument**

**RTU Entrance Test.** This admission test consisted of 150 items that measures the general intelligence of student applicant. This test was a result of a researcher-made test of a faculty from the RTU Laboratory High School. The validity and reliability of the test was established during the test preparation and this was discussed by the university Psychometrician and verified by the Director of Guidance Services.

**Statistical Analysis**

Frequency was used to describe the scores of the RTU Admission Test scores when grouped according to

course and grade point averages. It was also used to show the retention and drop-out rate of the students. T-test was utilized to check for significant difference between the admission test and academic performance of both courses. Lastly, linear regression was used to compute for the predictive value of the admission test to the student's academic performance. The Microsoft Excel – Data Analysis function was used in the computation.

**Data Gathering and Procedure**

A letter was submitted to the head of the MIC Department to request for a report of students enrolled for the school year 2012 showing their subject grades and GWA. A letter was submitted to the Guidance Office to get the record and profile of students enrolled in 2012 and their test results. Records were checked and tabulated to get the desired data for analysis.

**RESULTS AND DISCUSSION**

Table 1. Frequency of the RTU Entrance Exam Scores When Grouped According to Course

Admission Test Score	Psychology Frequency	Political Science Frequency
65-66	4	0
67-68	8	0
69-70	17	3
71-72	29	13
73-74	34	9
75-76	24	8
77-78	22	9
79-80	23	3
81-82	20	8
83-84	4	1
85-86	6	0
87-88	0	1
89-90	0	0
91-92	1	0
<b>Total</b>	<b>195</b>	<b>54</b>

Table1 presents the scores of the Political Science and Psychology students who were enrolled in the school year 2012-2016. The highest score in the entire entrance test was 91% from BS Psychology and the highest score for Political Science was 87%. The score with the highest frequency for Psychology was 76% and 74% and 71% for Political Science.

It can be gleaned from the table that students admitted into the Psychology and Political Science courses had admission test result of below 75%. This is not a very ideal score. In reality, the Filipino value of pakikisama and padrino system may be at work here. Referrals from local government officials, relatives of employees and

other “special request” to admittance were accommodated. Holt, Bleckmann and Zitman [13] stated that admissions committees use objective and subjective information as they make these selection decisions and one subjective information can be from essays, letters of recommendation, and interview.

Though this is still the prerogative of the department head or the faculty-in-charge for interviewing the applicant.

There is also a need to increase the university’s revenue since more students translates to more income. Conley [10] mentioned that state universities admit unprepared students necessarily, only that they draw from a pool consisting of students with a much wider degree of variability in their preparation.

This will not be the case this year since the Free Tuition Fee Law will be fully implemented and admission into the courses will be highly selective.

Table 2. Frequency of Grade Point Average of Political Science and Psychology Students

GWA	COURSES	
	Political Science frequency	Psychology frequency
1.5 – 1.99	6	17
2.00-2.19	10	46
2.20-2.49	21	90
2.50-2.75	7	24
2.75-2.99	3	9
3.00-4.99	6	4
5.00	1	5
<b>Total</b>	<b>54</b>	<b>195</b>

*1.00 – Excellent, 1.25 – Very Good, 1.50 – Very Good, 1.75 – Good, 2.00 – Good, 2.25 – Fair, 2.50 –Fair, 2.75 – passing, 3.00 – passing, 4.00 – conditional, 5.00 - failure*

Table 2 showed the grade point average of the Political Science and Psychology students for the first semester of 2012. It can be gleaned from the table that majority of the students enrolled in both courses has a grade point average of 2.20-2.49 which has a verbal interpretation of “fair”. This implies that students in both courses can handle the academic performance of the course. There were some students for both Political Science and Psychology who got a General Point Average of 5.00 which is a failing grade. This could signify that some students failed to meet the requirement of the course or some may have not completed the subjects hence they got a grade of 5.00.

Table 3. Frequency and Percentage of Retained and Drop-out Political Science Students in the school year 2012-2016

Semester	Retained	%	Drop out	%	TOTAL
2012-1 <sup>ST</sup>	67	100	0	0	67
2012-2 <sup>ND</sup>	45	67.2	22	32.8	67
2013-1 <sup>ST</sup>	37	55.2	30	44.8	67
2013-2 <sup>ND</sup>	36	53.7	31	46.3	67
2014-1 <sup>ST</sup>	35	52.2	32	47.8	67
2014-2 <sup>ND</sup>	26	38.8	41	61.2	67
2015- 1 <sup>ST</sup>	30	44.8	37	55.2	67
2015-2 <sup>ND</sup>	28	41.8	39	58.2	67

Table 3 showed that there were 67 students originally enrolled in the Political Science course in the school year 2012 first semester. Nearly 61.2% or 41 students were not enrolled during the second semester of 2014. Majority of the student drop out in the second semester of 2012, due to transferring to another department since this course served as a buffer for students who failed to enroll in their first choice and were advised to take Political Science or Psychology and transfer to their desired course in the second semester. Those students who drop out maybe good enough to earn a living since they are cognitively capable. The Student Attrition Model emphasizes the role of external factors in the form of family approval of institutional choice, friends' encouragement to continue enrollment, finance attitudes, and perceptions about opportunity to transfer to other institutions on withdrawal decisions. Factors other the academic grades in the first semester would explain why these students drop out [14].

Table 4. Frequency and Percentage of Retained and Drop-out Psychology Students in the school year 2012-2016

Semester	Retained	%	Dropout	%	Total
2012 1 <sup>ST</sup>	249	100	0	0	249
2012 2 <sup>ND</sup>	206	82.7	43	17.3	249
2013 1 <sup>ST</sup>	174	69.9	75	30.1	249
2013 2 <sup>ND</sup>	161	64.7	88	35.3	249
2014 1 <sup>ST</sup>	157	63.1	92	39.9	249
2014 2 <sup>ND</sup>	154	61.8	95	38.2	249
2015 1 <sup>ST</sup>	141	56.6	108	43.4	249
2015 2 <sup>ND</sup>	141	56.6	108	43.4	249

Table 4 presents the number of Psychology students enrolled in the school year of 2012-2016. Similar with the AB Political Science students, almost half the students drop out of college failing to earn a degree or transfer to other colleges or department. The department generally loses 17.3% or 43 of its student in the second

semester of 2012 and nearly 43.4% or 108 students were not enrolled in the year 2015. Compared to AB Political Science students, the Psychology department has a higher retention rate. It could be explained that those who enrolled in the Psychology course learned to like or persist in the course. High drop-out rate may also be due to transferring to another course, failing and incomplete grades and other personal or external reasons not measured by this study. One factor that may also contribute to the increase in drop-out rate for both courses is the requirements in their subject that would require purchasing of items for project or purchasing of required books for the subject.

Table 5. T-test Result of Admission Test and Academic Performance of Political Science and Psychology Students

Course	Admission Test		Academic Performance	
	Political Science	Psych	Political Science	Psych
Mean	75.83	75.42	2.4691	2.4076
SD	4.54	4.77	0.5795	0.5715
N	54	195	54	195
p-value	0.5652		0.5392	
VI	Not Significant		Not Significant	

VI\* Verbal Interpretation

Table 5 presents the t-test result for the admission test and academic performance of Political Science and Psychology students. The p-value of 0.5652 for the admission test result for Political Science and Psychology showed a not significant result. This would mean that the performance of the students in the admission test does not differ. Similarly, the result for the difference in the academic performance for both courses does not differ. We cannot claim that one course performs better than the other course. Ideally, the Psychology students should have performed better than the Political Science students because the department has a strict requirement for admission because it is a board course. In this case, 29 psychology students with an admission test score that range from 65-70 were accepted. This has an impact on the over-all academic performance of the Psychology department. The criteria of having an 83 GPA in high school and a percentage passing score of 75 and above was not strictly implemented. McCarey, Barr and Rattray (2007) demonstrated that students with higher entry qualification attained consistently better grades than those with lower level qualifications [15].

Table 6. Regression correlation between the admission test scores and academic performance of Political Science and Psychology students

Psychology					
	df	SS	MS	F	Significance F
Regression	1	2.45507	2.45507	7.820	0.00568
Residual	193	60.587	0.313922		
Total	194	63.0427			
	Coefficient	Standard Error	T Stat	p-value	
Intercept	4.1877	0.63759	6.568009	4.612	
X Variable	-0.0235	0.00843	-2.79654	0.005	

A simple linear regression was calculated to predict the Psychology student's GWA based on the admission test score. A significant regression equation was found ( $F(1, 193) = 7.820, p < 0.00568$ ), with an  $R^2$  of 0.0389. Students' predicted GWA is equal to  $4.1877 + (-0.02359)$  (admission test score). GWA increased - 0.02359 for each admission test score.

This result showed a high significant level that suggests that the admission test scores has a significant relationship with academic performance. The higher the admission test result, the higher the academic performance. The reverse is also true for low scores on the admission test.

Table 7. Regression correlation between the admission test scores and academic performance of Political Science and Psychology students

Political Science					
	df	SS	MS	F-value	p-value
Regression	1	1.62100	1.62100	5.210	0.026
Residual	52	16.1778	0.31111		
Total	53	17.7988			
	Coefficients	Standard Error	T Stat	p-value	
Intercept	5.3842547	1.2825325	4.19814	0.00010	
X Variable	-0.038537	0.0168828	-2.2826	0.02657	

A simple linear regression was calculated to predict the Political Science student's GWA based on the admission test score. A significant regression equation was found ( $F(1, 52) = 5.210, p < 0.02657$ ), with an  $R^2$  of 0.091. Students' predicted GWA is equal to  $5.38425 + (-0.0385371)$  (admission test score). GWA increased - 0.0385371 for each admission test score.

This result showed a high significant level that suggests that the admission test scores has a significant relationship with academic performance. The higher the admission test result, the higher the academic

performance. The reverse is also true for low scores on the admission test.

### CONCLUSION AND RECOMMENDATION

The admission of students who did not pass the entrance test has a major impact on the over-all performance of the students in the Psychology and Political Science department. This may also contribute to the drop-out rate of 32% for Political Science and 17% for Psychology students in the 2<sup>nd</sup> semester of the school year 2011-2012. Admission test score is one significant metric in the selection of students who are able to study diligently enough to pass all the requirements. Since this study supports the predictive value of the admission test, it is recommended that policies on admission be strictly implemented and accept students who have a high school grade of 83 and above and an admission test score of at least 75%. The practice of admitting students into the Psychology and Political Science department just to fill in the freshman class each year leaves the department with students that have a low to average admission test scores. Implications of this practice suggests that these students have poor fit that create stress and they may encounter difficulty in their subjects because it is not their preferred course. Since one of the gauge of university's performance lies in the student's capacity to finish an academic program according to the prescribed time and having students with low to average academic performance, it is recommended that periodic monitoring, preferably every end of semester be undertaken to follow students with academic deficiency. Lastly, one limitation of this study is that it does not consider student attributes like needs, attitudes, goals and expectations and the environmental demands, support and pressure in the student's academic journey, it is recommended that these factors be explored for future investigations as it can also contribute to the student's success and failure in their academic goal.

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