Determinants of Performance in the National Achievement Test among Augustinian Schools in Central Luzon

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Abstract— The present study how student, teacher, and administrative factors affect the performance of students in the National Achievement Test (NAT). Every year, the Department of Education undertakes the National Achievement Test to take a snapshot of how students in key learning stages are achieving the desired learning outcomes of the national curriculum. Drawing from various findings in the research literature, the present study aims to clarify how student, teacher, and administrative factors affect performance in standardized testing like NAT. The present study assumed a descriptive correlational study using multiple questionnaires to measure: the following: IQ and emotional profile in students; educational attainment, trainings, and years of service among teachers; perceived support and preparation among administrators; and the actual academic performance in the NAT of Grade 6 and Grade 10 students from across a network of ASAS-affiliated schools in Central Luzon. Results of the study showed that student factors show the largest impact in the NAT performance, while the rest of the variables are not significant. Insights from this study shows the importance of assuring readiness and proper socio-behavioral balance among the students.

Index Terms— National Achievement Test; ASAS schools; Augustinian schools; standardized testing; student performance; Philippine education; teacher factors; administrative factors

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1 INTRODUCTION

The National Achievement Test (NAT) is a set of examinations taken by students in grades 3, 6 and 10. Students are given national standardized test designed to determine their academic leads, strengths and weaknesses. The NAT replaced the National Elementary Achievement Test (NEAT) for the grade school level and the National Secondary Achievement Test (NSAT) for the high school level. The NCEE was abolished in 1994 through Executive Order no. 632 by then education secretary Raul Roco and was replaced by the NEAT and NSAT. When the Department of Education, Culture and Sports (DECS) was officially converted into the Department of Education (Deped), NEAT and NSAT were also abolished and replaced by the National Achievement Test. Both the public and private elementary schools take this exam.

A set of tests is given to Grade 3 where students are assessed in both English and Filipino (these two subjects comprise two thirds of the exam) and Math and Science (these two account for the remaining one third). A different set of tests is given to Grade 6 pupils where each of the following five subjects is assigned 40 items: (Science, Math, English, Filipino and Social Studies). Another set is administered to fourth year high school students. The scores in these exams are reported as percentage of items correctly answered. A mean percentage score (MPS) of 75 percent is currently set as the goal of the DepEd.

Educational scholarship in the Philippines held a large focus on student achievement in the National Achievement Test (NAT). Several studies have isolated different variables and investigated whether those factors influence student achievement for the NAT. The performance of schools in specific subject areas were among the most studied variables concerning the NAT, particularly in specific subjects like Science [1], Mathematics [2, 3] and English [4]. Similar strategies of isolating subjects and relating student achievement with it had been apparent in the international literature [5].

Personal language policies were also seen to affect student academic achievement [3, 6, 7]. Personal characteristics were also mentioned to have an effect in student achievement [8]. Demographics like age and gender were also noticed as important variables [9, 10]. Factors like instruction and learning environments were also identified to influence student outcomes. This had been proven by the supplement of the studies' findings provided in the literature [11].

The current study similarly aims to find the determinants of student achievement as measured by the NAT within the Augustinian Schools of Central Luzon. It is hoped that this study would contribute to improving the performance of schools in high-stakes standardized testing similar to the NAT.

1.1. Theoretical/ Conceptual Framework

The study anchors its theoretical underpinnings with H.J. Walberg's Theory of Educational Productivity. The Wahlberg theory confines the result of student outcomes within three important variables: student aptitude, instruction, and educationally conducive environments [12].

The theory recognizes the economic law of diminishing returns, which imply that there is a "maximum output for every amount of input". Wahlberg locates this with the educational setting and identifies these three variables as the input to which the output of educational outcomes would have derived from. The Wahlberg theory also recognizes the complex-

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ity of human interaction so as for other factors to influence other factors.

The study adapted the principle of Walberg model to its conceptual framework of the study as illustrated in Figure 1. The study anchors itself on identifying determinants of student achievement.

Three sets of factors served as the independent variables of the study: student factors, teacher factors, and school factors. For student factors, the variables considered were intelligence quotient and emotional profile of students. For teacher factors, the variables educational attainment, trainings, and years of service were considered. For school factors, the variables included administrative support and preparation for the NAT exams. Together these would act as the independent variables of this study. The performance of the Augustinian Schools in the NAT served as the dependent variable of this study.
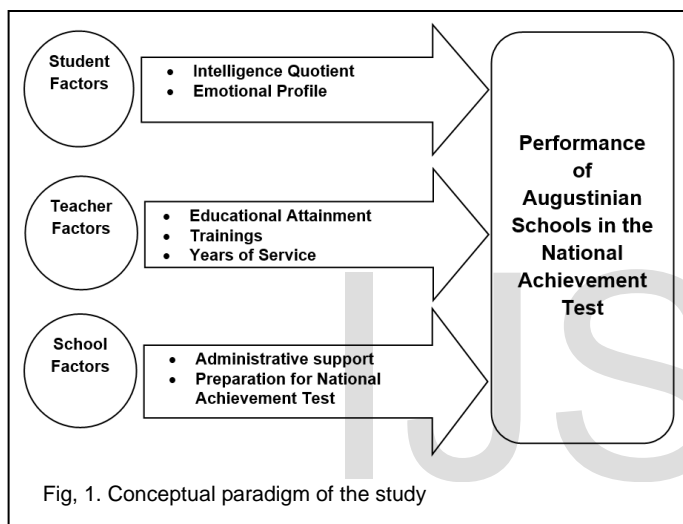

Fig, 1. Conceptual paradigm of the study

1.3. Research Problems

The major concern of the study was to identify the determinants of student achievement in the National Achievement Test among the Augustinian basic education schools in Central Luzon. More specifically, the study sought to find answers to the following problems:

1. What are the demographic information of students in terms of:
   a. Intelligence quotient (IQ); and
   b. Economic profile?
2. What are the demographic information of teachers in terms of:
   a. Educational attainment;
   b. Trainings attended; and
   c. Years of service?
3. What are the pertinent information regarding the school in terms of:

a. Administrative support; and
   b. Preparation for NAT?
4. What are the academic achievement profiles of Augustinian schools in terms of the following subjects:
   a. Mathematics
   b. English
   c. Science
   d. Filipino
   e. Araling Panlipunan/ HEKASI; and
   f. Overall passing rates of Augustinian schools?
5. Which of the following student factors, teacher factors, and school factors singly or in combination may be considered significant determinants of students' performance in the National Achievement Test?
6. What pedagogical implications may be derived in light of these findings?

1.4. Hypotheses of the Study

The following hypotheses will be tested at .05 level of significance.

$H0_1$: *Student factors do not affect the performance of Central Luzon Augustinian schools in the National Achievement Test*

$H0_2$: *Teacher factors do not affect the performance of Central Luzon Augustinian schools in the National Achievement Test*

$H0_3$: *School factors do not affect the performance of Central Luzon Augustinian schools in the National Achievement Test*

2 METHODOLOGY

2.1 Methods and Techniques Used

The study used descriptive correlational methods of research. The design is deemed appropriate in describing status of phenomena. It also seeks to determine relationship between and among variables, and explores cause and effects relationship

As defined by [13], correlational designs enabled researchers "to use the correlational statistic to describe and measure the degree or association (or relationship) between two or more variables or sets of scores". In other words, it sought to find links or relationship between two or more data sets using appropriate statistical tests. This study was non-experimental in nature, and utilized a survey instrument to complement existing document data.

Standardized tests and documentary analysis were used extensively to obtain the data and information requirements of the study.

2.2. Respondents of the Study

The respondents of the study came from the three (3) schools and students currently affiliated within the ASOLC network in Central Luzon, as shown in the Table 1.

TABLE 1
RESPONDENTS OF THE STUDY

School	Respondents					
	Teacher		Grade 6 Students		Grade 10 Students	
	f	%	f	%	f	%
School A	6	37.5	88	32.47	138	35.57
School B	5	31.25	95	35	125	32.21
School C	5	31.25	88	35	125	32.21
Total	16	100%	271	100%	388	100%

As of the writing of the study, three schools are within the ASOLC network of schools in Central Luzon. In these schools, the study involved 16 teacher-advisers, 271 Grade 6 pupils and 388 grade 10 students for a total of 675 respondents.

2.3. Instruments of the Study

Various instruments were used to gather data for the present study. Standardized instruments such as the Shipley-2 Mental Ability Test and Otis-Lennon School Ability Test was used to measure IQ, and Emotions Profile Index for Emotional Profile.

Meanwhile, a locally-constructed questionnaire consisting of two parts was used in the study. Part One dealt with the demographic information about the teachers their educational attainment, trainings, and years of service. Part Two solicited information regarding the school in terms of administrative support and the preparations conducted for the National Achievement Test. A five-point Likert Scale was utilized in seewing the information from the teachers: (1) strongly disagree, (2) disagree, (3) uncertain, (4) agree, and (strongly agree).

The questionnaire was content validated by the competent persons in research and educational management. A graduate school professor of research in a renowned University, a seasoned school administrator, and an experienced guidance counselor. The questionnaire when analyzed using Chronbach Alpha procedure revealed a coefficient of .78, indicating that the questionnaire was a reliable instrument.

2.4. Data Gathering Procedure

Data on the NAT performance of each school were retrieved from the Department of Education (DepEd). A letter was made addressed to pertinent officers regarding the requisition of the pertinent information.

Meanwhile, the questionnaire was administered to the teacher respondents through the assistance of the schools' Guidance Counselor, after securing permission to conduct the study from the School Head. Other necessary student information was also requested such as the IQ Test and Emotional Profile.

2.5. Data Analysis

Demographic information about the students, the teachers and the school were analyzed using descriptive statistics like frequency counts and percentage procedure, mean and standard deviation. These data points are gathered through the locally-constructed questionnaire, and analyzed using the interpretation table below.

Meanwhile, the academic achievement profiles of the Augustinian schools were analyzed using mean and standard deviation procedures. Academic achievement profiles of the schools were analyzed and interpreted using the following table.

The effects of the student factors, teacher factors, and school factors singly and in combination were examined using Pearson-r correlation and regression procedures.

3 RESULTS AND DISCUSSION

3.1. Students' Demographic Information

The following data reflected the pertinent information in terms of the students' backgrounds, particularly in their school ability and emotional intelligence.

Intelligence Quotient. An intelligence quotient or IQ is a score derived from a set of standardized tests of intelligence. Intelligence tests come in many forms, and some tests use a single type of item or question. Most tests yield both an overall score and individual subtest scores. Regardless of design, all IQ tests attempt to measure the same general intelligence.

Research shows that general intelligence plays an important

TABLE 2
SURVEY INTERPRETATION TABLE

Weight	Interval	Verbal Interpretation
1	0.00-0.99	Strongly Disagree
2	1.00-1.99	Disagree
3	2.00-2.99	Uncertain
4	3.00-3.99	Agree
5	4.00-5.00	Strongly Agree

TABLE 3
INTERPRETATION TABLE FOR ACADEMIC PROFILE

Scores	Descriptive Equivalent	Code
96%-100%	Mastered	M
85%-95%	Closely Approximating Mastery	CAM
66%-85%	Moving Towards Mastery	MTM
36%-65%	Average Mastery	AM
15%-35%	Low Mastery	LM
5%-14%	Very Low Mastery	VLM

role in many valued life outcomes. In addition to academic success, IQ correlates with job performance (see below), socioeconomic advancement (e.g., level of education, occupation, and income), and social pathology" (e.g., adult criminality, poverty, unemployment, dependence on welfare, children outside of marriage).

Table 4 shows the Intelligence Quotient (IQ) ratings of the different schools for Grade 10. It must be noted that School C used the Otis-Lennon School Ability Test while the two other schools used a Shipley-2 Mental Ability Test. Hence, differences in ratings were apparent. Only the overall scores were considered for this data.

For the Grade 10 level, the study took a total of 138 students from School A, and 125 students from Schools B and C, respectively. A had a mean mental ability of 69.20, while B had 82.20. The total OLSAT school ability of School C students were at 96.59. The standard deviations for the dataset of School A is 23.12, 13.49 for School B and 13.48 for School C. Table 2 shows the school ability ratings of the different schools for Grade 6.

For the Grade 6 level, 88 students were taken from A and C, while 95 students were taken from B. A had a mean mental ability of 81.36, and B with 75.04. The Grade 6 level of C got an OLSAT school ability average of 91.77.

TABLE 4
STUDENTS' IQ PROFILE

	N	Mean	SD	Interpretation
Grade 6				
School A	138	69.20	23.12	Above Average
School B	125	82.20	13.49	Above Average
School C	125	96.59	13.48	Superior
Grade 10				
School A	88	81.36	19.77	Above Average
School B	95	75.04	21.83	Above Average
School C	88	91.77	12.71	Superior

Emotional Profile. Emotional intelligence is very critical to student learning. Emotional intelligence allows the individual to communicate, lead and negotiate with others. A person with emotional intelligence is able to understand his or her own emotions and also the emotions of others. Emotional intelligence actually enables a person to gain more in an educational setting since the individual is able to integrate well both socially and academically. A person with emotional intelligence is a team player, and gains a lot from positive interaction with lecturers and other students (Rupande, 2015)

Table 5 displays the emotional profile of the Grade 6 and Grade 10 students for Assumpta Academy. The study used the Emotions Profile Index by Plutchik and Kellerman.

According to the gathered data, students from School A got high ratings on "Depressed", "Timid", "Aggressive" and "Distrustful", with mean percentiles of 60, 71, 77 and 72 respectively. There was a Neutral response in "Controlled" with 46 mean percentile. The rest of the traits "Trustful", "Dyscontrolled", "Gregarious" and "Bias" were considered low with 21, 33, and 21 each, respectively.

Meanwhile, students from School B got high ratings on "Timid", "Depressed", "Distrustful", and "Aggressive" with mean percentiles of 62, 74, 71 and 79, respectively. A neutral score was documented in the trait "Controlled" with 47 mean percentile. Meanwhile, low scores were documented for the personality traits "Trustful", "Dyscontrolled", "Gregarious" and "Bias" with mean percentiles of 18, 35, 19 and 17, respec-

tively.

Lastly, students from School C have high ratings for "Timid", "Depressed", "Distrustful" and "Aggressive" traits, with mean percentiles of 62, 70, 67, and 73, respectively. On the other hand, they had low recorded ratings for "Trustful", "Dyscontrolled', "Controlled", "Gregarious" and "Bias" with mean percentiles of 29, 21, 34, 29 and 22, respectively.

TABLE 5
STUDENTS' EMOTIONAL PROFILE

Categories	School A		School B		School C	
	M	INT	M	INT	M	INT
Trustful	21	LOW	18	LOW	29	LOW
Dyscontrolled	33	LOW	35	LOW	21	LOW
Timid	60	HIGH	62	HIGH	62	HIGH
Depressed	71	HIGH	74	HIGH	70	HIGH
Distrustful	72	HIGH	71	HIGH	67	HIGH
Controlled	46	NTRL	47	NTRL	34	LOW
Aggressive	77	HIGH	79	HIGH	73	HIGH
Gregarious	21	LOW	19	LOW	29	LOW
Bias	21	LOW	17	LOW	22	LOW

3.2. Teachers' Demographic Information

The following data reflected the pertinent information in terms of the teachers' backgrounds, particularly their educational attainment, trainings and years of service. Details on the teachers' educational attainment and trainings are provided on Table 6.

Educational Attainment. While the instrument provided for a wide range of choices for educational attainment up to "Doctoral Graduate", the highest educational attainment of the respondents was "Masteral Units" with two teachers from School C, and one teacher from Schools A and B each. The rest of the teachers were "Bachelor's Degree" holders, with five teachers from School A, four teachers from School B, and three teachers from School C.

Trainings. Trainings, in this sense, were the different seminars and trainings attended by the teachers. The data on this aspect was divided between trainings attended for their professional growth and trainings for the administration of the NAT. According to the data, on average teachers from School A get two professional trainings, three for School B, and three from School C. It can be said that teachers from School C are the most trained teachers. On the other hand, they did not have any NAT-related training on average, while the other two schools got one training each.

Years of Service. On average, teachers from School A that were directly involved in the NAT had rendered at least 2 years in service. Their most experienced teachers, three of them, had worked for three years each. Two teachers worked for two years, and only one teacher was a novice. Teachers from School B had 3 years of service on average. Their longest-service teacher served for four years, one teacher served for three years, two teachers for two years, and one teacher was a novice. For School C, teachers also served an average 3 years. Their longest-serving teachers, two of them, served for four

years, followed by a teacher with two years, then two novice teachers.

	School A		School B		School C	
	F	%	F	%	F	%
Educational Attainment						
Bachelor's Degree	5	41.67%	4	33.33%	3	25%
With MA Units	1	25%	1	25%	2	50%
Trainings						
Professional Training	2	25%	3	37.5%	3	37.5%
NAT-Related Training	1	50%	1	50%	0	0

3.3. Administrative Support

A closer look at the relationship of specific aspects of school culture to student learning is needed, however. This study identified three categories of schools based on academic achievement of students. These categories are 'Exemplary' schools, 'Recognized' schools and 'Acceptable' schools, as measured by the State of Texas Accountability Rating System. These three categories of schools are then compared on the 10 dimensions of school climate as measured by the Organizational Health Inventory (OHI).

Perceived Administrative Support. The succeeding portion is concerned on the information regarding administrative support towards facilitating the NAT.

For the teachers in School A, they strongly agreed with almost all aspects of administrative support, particularly with properly oriented appointed proctors with 4.50; giving parents proper communication before the NAT, arranging and repairing classrooms, and planning with teachers, each item with 4.33; and time allotment and planning for integration with regular class program with 4.17 points each. However, they only agreed with the sufficiency of library sources in their school with 3.33 points.

For the teachers of School B, they strongly agreed with most points in administrative support, particularly with properly orienting proctors and conducting planning session with teachers, with 4.40 points each. They also strongly agreed with the planning of NAT exams to go smoothly with the regular class program, time allotment for preparations, arranging and repair of classrooms, and giving parents proper communication with 4.00 points each. However, they only agreed with slightly lower points for the sufficiency of references in the library with 3.60 points.

The teachers of School C strongly agreed with the administrative support on properly arranging and repairing classrooms for the NAT and orienting proctors, with 4.60 points each. Support in terms of conducting planning sessions with the teachers is also highly rated with 4.40. Planning the NAT to go smoothly with the regular class program, time allotment for NAT preparations, and giving parents proper communication before the NAT was perceived strongly with 4.20 points each. However, a slightly lower agreement goes with the suffi-

ciency of library materials to help students prepare for the NAT, with 3.40 points.

	School A		School B		School C	
	F	%	F	%	F	%
1. The administrators conducted planning sessions with teachers for the conduct of the NAT exams.	4.33	SA	4.40	SA	4.40	SA
2. The NAT exams were planned to go smoothly together with the regular class program.	4.17	SA	4.00	SA	4.20	SA
3. Time was properly allotted for the preparation of students/ pupils for the NAT.	4.17	SA	4.00	SA	4.20	SA
4. Classrooms were properly arranged and repaired, if necessary, for the NAT exams.	4.33	SA	4.00	SA	4.60	SA
5. Appointed proctors were properly oriented for the procedures in the NAT.	4.50	SA	4.40	SA	4.60	SA
6. The library provided sufficient references to help students prepare for the NAT.	3.33	A	3.60	A	3.40	A
7. Parents were given proper communication regarding the NAT.	4.33	SA	4.00	SA	4.20	SA

School's Preparations for NAT. The teachers were also asked to rate the extent of their preparations by indicating what steps they took to ensure students were prepared for the NAT. The responses of the teachers were indicated in Table 8.

	School A	School B	School C
Session for diagnostic test to determine the cognitive aspects of each learners.	6	5	5
Mock tests	6	5	5
Acquiring of diagnostic test booklets/ materials	6	5	5
Orientation on test-taking strategies to students	6	5	5
Orientation of students to NAT environment	6	5	5

Apparently, all teachers from all schools have taken the following activities or measures to prepare their students for

the NAT. They also did not give any further activities besides the ones provided.

3.4. Academic Achievement Profile in the NAT

The National Achievement Test (NAT) used to be called the National Elementary Achievement Test (NEAT) for the grade school level and the National Secondary Achievement Test (NSAT) for the high school level. The NCEE was abolished in 1994 through Executive Order no. 632 by then education secretary Raul Roco and was replaced by the NEAT and NSAT. When the Department of Education, Culture and Sports (DECS) was officially converted into the Department of Education (Deped), NEAT and NSAT were also abolished and replaced by the National Achievement Test. Both the public and private elementary schools take this exam.

After a long year of waiting of other examination since many students and teacher and complaining about some of the longest test examination that the DepEd have, so Dr. Jesli Lapus or the Secretary of DepEd in started of year 2006; he was the first secretary among the all secretaries of the past DepEd years that created this idea.

TABLE 9
SUMMARY OF NAT SCORES FOR GRADE 10 STUDENTS

	School A		School B		School C	
	Mean	INT	Mean	INT	Mean	INT
Math	37.8	AM	46.83	AM	36.45	AM
English	64.5	AM	62.57	AM	62.01	AM
Science	53.25	AM	48.54	AM	52.84	AM
Filipino	62.25	AM	61.46	AM	62.28	AM
AP/HEKASI	61.17	AM	60.35	AM	60.31	AM
Overall	**52.42**	**AM**	**52.77**	**AM**	**51.87**	**AM**

Table 9 shows the performance of the ASOLC schools in Central Luzon in the National Achievement Test for the Grade 9 level.

It can be gleaned in Table 9 that School A outperformed the two other schools. They rated high in English with 64.5, Filipino with 62.25, AP with 61.17, Science with 53.25, and Math with 37.8. They also had an overall rating of 52.42. On the other hand, School B rated high in English with 62.57, Filipino with 61.46, AP with 60.35, Math with 46.83, and Science with 48.54. They also had an overall rating of 52.77. Meanwhile, School C had an overall score of 51.87. They rated high in Filipino with 62.28, English with 62.01, AP with 60.31, Science with 52.84, and Math with 36.45. All of the scores, including the overall scores, were rated as within "Average Mastery".

Results of the NAT scores for the Grade 6 level – taken during the Fifth Grade – are presented in Table 10.

For Table 10, School A also outperformed the other two schools. They rated high in Math with 76.18, Science with 61.47, HEKASI with 54.12, Filipino with 48.97, and English with 45.74. On the other hand, School B had an overall rating

of 65.11. They rated high in Math with 74.09, Science with 70.57, Filipino with 57.39, HEKASI with 49.77, and English with 28.23. School C had an overall rating with 51.40 points. They rated highly in Filipino with 68.59, English with 53.46, Math with 50.22, Science with 48.72, and HEKASI with 36.03. All schools were rated as within "Average Mastery".

TABLE 10
SUMMARY OF NAT SCORES FOR GRADE 6 STUDENTS

	School A		School B		School C	
	Mean	INT	Mean	INT	Mean	INT
Math	76.18	MTM	74.09	MTM	50.22	AM
English	45.74	AM	28.23	AM	53.46	AM
Science	61.47	AM	70.57	MTM	48.72	AM
Filipino	48.97	AM	57.39	AM	68.59	MTM
AP/HEKASI	54.12	AM	49.77	AM	36.03	AM
Overall	**57.29**	**AM**	**65.11**	**AM**	**51.4**	**AM**

TABLE 11
REGRESSION MODEL FOR SCHOOL A – GRADE 6

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
IQ	.014	.736	.025	.019	.987
Emotional Profile	-.263	.545	-.506	-.483	.677
Educational Attainment	24.598	11.408	.927	2.156	.164
Training	1.084	8.371	.052	.129	.909
Years of Service	-1.878	5.480	-.142	-.343	.764
Administrative Support	3.250	30.101	.124	.108	.924

3.5. Analysis of the Predictor Variables on Students' Performance in the NAT

To test for predictor variables on students' performance for the National Achievement Test, the data would come from the data on NAT achievement profiles of the ASOLC schools juxtaposed with their demographic profile. A linear regression model would determine for significant relationships for each school.

Case Study – School A. Tables 11 and 12 shows the results of the regression models made for the Grade 6 and Grade 10 results of School A.

These findings verify the position of the study that school ability, teachers' educational attainment, teachers training, years of service and administrative support are not strong determinants of achievement in NAT.

ing achievement in the subject.

TABLE 12
REGRESSION MODEL FOR SCHOOL A – GRADE 10

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
IQ	.024	.274	.047	.089	.935
Emotional Profile	.295	.250	.624	1.181	.323
Educational Attainment	-19.563	10.091	-.810	-.939	.192
Training	.887	7.405	.046	.120	.916
Years of Service	-1.250	4.848	-.104	-.258	.821
Administrative Support	6.841	13.570	.220	.504	.636

However, students tend to respond better with teachers with certain characteristics. This provides a clear case for the importance of teacher characteristics in student achievement in terms of the teachers' degrees, coursework, test scores. In the light of the findings of the study is the confirmation that emotional profile is highly significant determinant of achievement in NAT, with Beta coefficients equal to .295, with p-value<.05. These Beta coefficients mean that emotional profile influence achievement in NAT by 29.5%. This resulted agreed with the common notion that emotional profile affects students' achievement in NAT and verified more than what the findings say that motivation and confidence (Michell, 2013), is significantly related to students' achievement in NAT.

These findings show that emotional profile is good determinant of achievement in NAT while school ability, teachers' educational attainment, teachers training, years of service and administrative support are not significant factors in determin-

TABLE 13
REGRESSION MODEL FOR SCHOOL B – GRADE 6

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
IQ	-1.119	.954	-.711	-1.17	.362
Emotional Profile	.193	.468	.251	.413	.720
Educational Attainment	49.960	33.493	1.216	1.492	.376
Training	16.093	9.669	.959	1.665	.344
Years of Service	-3.810	11.841	-.236	-.322	.802
Administrative Support	1.325	30.596	.024	.043	.969

TABLE 14
REGRESSION MODEL FOR SCHOOL B – GRADE 10

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
IQ	.164	.156	.519	1.047	.372
Emotional Profile	.366	.568	.320	.645	.565
Educational Attainment	-12.920	22.984	-.759	-.562	.674
Training	-3.178	6.635	-.458	-.479	.716
Years of Service	-.555	8.126	-.083	-.068	.957
Administrative Support	-3.218	15.286	-.094	-.210	.842

Case Study – School B. Tables 13 and 14 shows the results of the regression models made for the Grade 6 and Grade 10 results of School B.

Data in Table 14 showed that intelligence quotient and emotional profile are highly significant determinant of achievement in NAT, with Beta coefficients equal to .519, and ,320 with p= <.05. These Beta coefficients mean that school ability and emotional profile influence achievement in NAT by 51.9% and 32% respectively.

This study therefore declared that school ability and emotional profile are good determinant of achievement in NAT while teachers' educational attainment, teachers training, years of service and administrative support are not significant factors in determining achievement in the subject.

Data in Table 13 showed that teachers' educational attainment, and teachers' training are highly significant determinant of achievement in NAT, with Beta coefficients equal to 1.216, and ,959 with p= <.05. These Beta coefficients mean that school ability and emotional profile influence achievement in NAT by 121.6% and 95.9% respectively.

This study therefore declared that teachers' educational attainment and teachers training are good determinant of achievement in NAT while school ability, intelligence quotient, years of service and administrative support are not significant factors in determining achievement in the subject

Case Study – School C. Tables 15 and 16 shows the results of the regression models made for the Grade 6 and Grade 10 results of School C.

Findings from Table 15 show that school ability, intelligence quotient, teachers', teachers training, years of service and administrative support are not significant factors in determining achievement in NAT in School C. Meanwhile, intelligence quotient, emotional profile, teachers' educational attainment, teachers training, years of service and administrative support are not significant factors in determining

achievement in NAT scores of Grade 10 students in School C.

TABLE 15
REGRESSION MODEL FOR SCHOOL C – GRADE 6

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
IQ	-.030	.592	-.051	-.051	.964
Emotional Profile	.021	.547	.044	.039	.972
Educational Attainment	14.190	19.870	.666	.714	.605
Training	8.883	17.208	.834	.516	.697
Years of Service	-1.620	9.935	-.211	-.163	.897
Administrative Support	-.249	23.472	-.011	-.011	.992

TABLE 16
REGRESSION MODEL FOR SCHOOL C – GRADE 10

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
IQ	-.030	.592	-.051	-.051	.964
Emotional Profile	.021	.547	.044	.039	.972
Educational Attainment	14.190	19.870	.666	.714	.605
Training	8.883	17.208	.834	.516	.697
Years of Service	-1.620	9.935	-.211	-.163	.897
Administrative Support	-.249	23.472	-.011	-.011	.992

Regarding the $H0_2$: "Teacher factors do not affect the performance of Central Luzon Augustinian schools in the National Achievement Test", the evidence is unanimous in its interpretation. All of the schools showed no significant relationship between teacher-factors and student achievement in the NAT. As such, the null hypothesis $H0_2$ is accepted.

Regarding the null hypothesis $H0_3$: "School factors do not affect the performance of Central Luzon Augustinian schools in the National Achievement Test", the data on the table is unanimous in its interpretation. All of the ASOLC school did not have any significant relationship with perceived administrative support and NAT performance. Hence, the null hypothesis $H0_3$ is accepted.

4. DISCUSSION AND CONCLUSIONS

The National Achievement Test, as a nationally administered standardized test, provides schools with a solid context from which they can compare their school's achievement to local/ national standards. As such, it would have been productive to reflect on a school's performance and address the shortcomings. This study identified the determinants to student achievement in the NAT. With careful consideration, it has ruled out that only student-factors like school ability and emotional profile that affected student achievement in the NAT. More than this, the study had also identified a number of problems that can be addressed by this major finding of the study.

For one, it was noticed that in the NAT achievement profile of each school, Grade 6 students lagged behind the languages (English and Filipino) while the Grade 9 level needed working on technical subjects (Math and Science). As these can be defined by student factors, it is important for teachers to improve their teaching of the languages in the primary levels. Another identified problem in the NAT results was that the overall scores never made it past the 60% mark. Designing programs that are more responsive to local competencies may address this problem.

The finding that student-factors were the primary determinants of student achievement in the NAT had been a pretty big finding, considering the fact that it clarified how farther teacher-factors and school-factors had been put away by the results. Should schools aim to improve their standardized test findings, it must start with a survey of students' capabilities.

4.1. Summary of Findings

The study aimed to find out which factors can be considered as determinants of student achievement in the National Achievement Test in the different ASOLC schools in Central Luzon. It successfully answered the aforementioned problems of the study in Chapter 1.

1. *Student demographic information*. Students in boh grade levels in the three schools have shown Above Average to Superior intelligence quotients. Meanwhile, behaviors exhibiting emotions such as "Timid", "Depressed", and Distrustful" appear to be manifesting across the student demographic.
2. *Teacher demographic information*. Around 75% of the teacher-respondents have bachelor's degree, while only 25% of them have units in graduate education (i.e., Master's program). They had at least one training related to administering the NAT, but twice the number of other professional trainings. On average, the teacher-respondents are already in their second to third year of service.
3. *Administrative support and preparation*. The teachers saw that administrative support was evident, but it should be noted that library services were not as highly perceived to be useful in preparing students for the NAT. Moreover, the teachers also admitted to taking different steps in ensuring that students are prepared for the NAT,

which includes conducting diagnostic test for each subject, mock testing, acquisition of diagnostic test booklets/ materials; orientation on test-taking strategies; and orientation of students in the NAT environment.

4. *NAT Performance.* All students in both Grade 6 and Grade 10 levels in the three schools have exhibited an "Approaching Mastery" level or 36%-65% rating in almost all subjects. Highest rated subjects gathered "Moving Towards Mastery" ratings of 66%-85% are on the Grade 6 NAT scores: School A – Math; School B– Math, Science; and School C – Filipino. School A outperformed the other schools in the Grade 10, while School B outperformed the rest in the Grade 6 level.

5. *Significant determinants*. Using the multiple linear regression, the study eliminated teacher-factors and school factors as important determinants of student achievement in the National Achievement Test. Hence, it found out that student factors are singly the most important determinants of student achievement for the NAT performance.

4.2. Conclusions

Considering the findings of this study, the following null hypothesis of the study is thereby rejected:

$H0_1$: *Student factors do not affect the performance of Central Luzon Augustinian schools in the National Achievement Test*

Also, the following hypotheses are thereby accepted:

$H0_2$: *Teacher factors do not affect the performance of Central Luzon Augustinian schools in the National Achievement Test*

$H0_3$: *School factors do not affect the performance of Central Luzon Augustinian schools in the National Achievement Test*

4.3. Recommendations

In light of the preceding conclusions of the study, the following recommendations are put forth.

- The study identified student factors as singly the most important determinant for student achievement in the NAT. As such, it is important to design the curriculum to be responsive of local and national competencies, to which the NAT is based. Should administrators want to bolster their schools' rankings on the NAT, they should design or conduct diagnostic test to determine the cognitive aspects of the learners in English, Math, Science, Araling Panlipunan, and Filipino subjects.
- Related to that previous remark, the study also found out how the Grade 6 level needed more coaching towards the languages. Perhaps academic coordinators or school officials related to academic functions must notice how the language subjects are taught in the primary level and the subjects are taught in the secondary level. Tutorial programs may help provide an impetus to the learners when they customize their learning experiences on a personal level.
- While the null hypothesis H01 had been rejected, there had been lapses to its rejection. This includes the

conflicting findings of the student factor determinants. While this study provided a cursory view to its correlation, further studies may want to inspect how student factor determinants work more closely in experimental research designs.

- Moreover, many other variables were met by the researcher that would provide improvement or supplement to this study. For instance, variables like study habits/ attitudes maybe considered as one variable in itself. Another variable for consideration would be a teacher's method in teaching the NAT-related subjects.

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