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Research Article

Otis-Lennon School Ability Test, Association of Benedictine Schools Achievement Test, and National Achievement Test as Correlates of Academic Performance

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ABSTRACT

Believing that students take several tests whose results help describe these learners, the researcher measured the correlation between the academic performance (AP) and Otis-Lennon School Ability Test (OLSAT), AP and Association of Benedictine Schools Achievement Test (ABSAT), and AP and National Achievement Test (NAT), OLSAT and ABSAT, OLSAT and NAT, and ABSAT and NAT scores of the grade 6 students of a private school in Angeles City. This is a descriptive correlational study. Using frequency and percentage, the researcher described the results of the given standardized tests and the pupils' academic performance using general weighted average. Using descriptive statistics, the researcher learned that participants had average performance in AP and the specified tests. Using Pearson r, the researcher learned that all variables registered positive results, particularly average performance. Thus, the study arrived at significant relationships between participants' academic performance and the named tests. The study also revealed significant relationships between participants' AP and the tests, between OLSAT and NAT, between ABSAT and OLSAT, and between ABSAT and NAT. The study implies that the school must maintain its good teaching and learning practices and innovate to capitalize and improve general performance.

Keywords*: Academic performance, Standardized tests*

Introduction

The ultimate fulfillment of a school is the high academic achievement of learners. Academic achievement is in fact one of the determinants of success in life. Academic achievers have advantages over others who lag behind. Therefore, determining learners' knowledge and skills is necessary to better hone or remedy them once lacking.

Moreover, schools test students to identify their eligibility for support or intervention, group or place them, monitor their progress, and evaluate their program or instruction's effectiveness (Gottlieb, 2006). They usually

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administer standardized tests with high validity and reliability. These tests have been constructed by experts with explicit instructions for administration, standard scoring procedures, and a table of norms for interpretation. They measure individual performance on a group-administered and group-normed test (Moore, 2015).

One type of standardized test is the achievement test. This test is used by the government to monitor the performance of teachers or the school in general through pupil's test results. The National Achievement Test (NAT) is an example of this type. NAT provides empirical data on the achievement level of pupils of grades 6 and 10 to serve as guide to policy makers, administrators, curriculum planners, supervisors, principals, and teachers and determine rate of improvement in basic education.

Association of Benedictine Schools Achievement Test (ABSAT) is another achievement test taken by grades 2, 4, and 6. This test was designed to know the extent to which Benedictine Schools all over the Philippines can maintain a relatively high standard of instruction based on the test scores (Lacson, 2013).

Another type of standardized test is the intelligence test. This test determines skills, abilities, and knowledge. Results of intelligence tests can yield valuable information about a person's ability to process and retrieve information (Pierangelo & Giuliani, 2009).

The Otis-Lennon School Ability Test (OLSAT) is an intelligence test. Pierangelo and Giuliani (Pierangelo & Giuliani, 2009) described OLSAT as an intelligence test that measures the cognitive abilities that relate to a student's ability to learn in school. OLSAT assesses examinee's ability to cope with school learning tasks, to suggest possible placement for school learning functions, and to evaluate achievement in relation to the talents the examinee brings to school learning situations.

Existing studies focus on many other variables such as those affecting academic performance (Bass, 2013; Embse & Hasson, 2012). Other studies correlated different variables such as Scholastic Assessment Test and academic achievement (Fagan et a., 2012), and physical fitness and academic success (Reyes, 2010) while others determined the predictability of academic performance using OLSAT (Lassiter et al., 2013) and the relationship between OLSAT and academic performance (Calaguas, 2012).

Nicolas-Victorino (Liem et al., 2012), on the other hand, identified the relationship between NAT and technology media, study habits, and motivational practices whereas Lacson (House & Telese, 2011) investigated overall psychometric approach, particularly OLSAT and ABSAT results, to monitor academic performance.

Thus, despite patronage of schools, the correlation between the results of standardized tests such as OLSAT, ABSAT, and NAT and academic performance remains a gray area because of varied results of past studies.

Given the lack of research featuring all three standardized tests and correlating them with academic performance, there is a need for this present study that aims to identify the relationship between OLSAT, ABSAT, and NAT and academic performance and between the stipulated tests.

The study aims to identify the correlation between academic performance and OLSAT, ABSAT, NAT scores and the correlation between the stipulated tests. Specifically, the study aims to answer the following questions.

1. How may the participants be described in terms of
    a. Sex,
    b. Otis-Lennon School Ability Test,
    c. Association of Benedictine Schools Achievement Test,
    d. National Achievement Test, and
    e. Academic Performance?
2. Is there a significant relationship between participants' academic performance and test results in
    a. Otis-Lennon School Ability Test
    b. Association of Benedictine Schools Achievement Test, and
    c. National Achievement Test?
3. Is there a significant relationship between the given tests:
    a. Otis-Lennon School Ability Test and National Achievement Test,
    b. Association of Benedictine Schools Achievement Test and Otis-Lennon School Ability Test, and

c. Association of Benedictine Schools Achievement Test and National Achievement Test?

Methods

This study is descriptive research. This study described the participants' sex, results or raw scores in OLSAT, ABSAT, NAT, and their academic performance as well as correlated the results of the mentioned tests with academic performance and the results with one another.

Sample and Sampling Procedure

The study used purposive sampling. The design is based on choosing individuals as samples according to the purposes of the researcher as his controls. The criteria are according to the sound judgment of the researcher. In this study, participants were 287 grade 6 pupils of Holy Family Academy in the school year 2014 to 2015. The participants took the OLSAT, ABSAT, and NAT and were promoted to grade 7. The researcher excluded test takers who were newcomers because they came from different grade levels and were not enough in number. Some of the newcomers also remained applicants and did not enroll in the Academy.

Participants of the Study

The participants were all grade 6 pupils of Holy Family Academy in the school year 2014 to 2015, totaling 287. All of them took all the three standardized tests and were promoted to grade 7. Of the 287, 165 are female, and 122 are male. They were from seven sections, one being the homogeneous section. Aside from newcomers in the Academy, the pupils of this grade level are the only takers of the OLSAT.

Research Instrument

The following are the data utilized in the study. Otis-Lennon School Ability Test. The OLSAT is an intelligence test measuring the cognitive abilities that relate to a student's ability to learn in school. As a standardized test, OLSAT assesses examinee's ability to cope with school learning tasks, to suggest their possible placement for school learning functions, and to evaluate their achievement in relation to the talents they bring to school learning situations. Specifically, the OLSAT used in this study is the 8th edition published in 2003. Its raw scores are used as results in this study.

Association of Benedictine Schools Achievement Test. Developed in 1996, the ABSAT is an achievement test given to grades 2, 4, and 6 pupils of Benedictine Schools aiming to measure learning in English, Mathematics, Science, and Social Studies. Its raw scores are used as results in this study.

National Achievement Test. The NAT is an achievement test given to grade 6 and 10 pupils measuring learning in English, Filipino, Mathematics, Science, and HEKASI. Its raw scores are used as results in this study.

Academic Performance. The academic performance used in this study is based on the final general weighted average of the pupils.

Data Collection Procedures

The researcher went to four different libraries of a state university, two private universities, and the locale of the study to find local and foreign literature and studies. He also made use of the research database EBSCOHost to find articles in refereed journals in digital format. He then reviewed the literature and studies relevant to the current study. After which, he requested data on OLSAT, ABSAT, and NAT results and the general weighted average (GWA) of the participants. With the help of a statistician, the researcher ran the data--GWA, OLSAT, ABSAT, and NAT results--using Statistical Package for the Social Sciences (SPSS) version 22. He later analyzed the results of the statistical treatment.

Statistical Treatment of Data

The study utilized the following statistical tools in analyzing the gathered data.

Frequency. Frequency was used in counting the raw scores under given ranges.

Frequency Distribution. The researcher computed percentages of scores according to prescribed ranges and verbal descriptions.

Pearson R. The Pearson Product-Moment Correlation Coefficient is the most widely used computational formula for correlation. It is used to determine the relationship between two variables that are usually of the interval type of data.

This research paper used Pearson R to tell the significant relationship between the academic performance of participants and their OLSAT, ABSAT, and NAT results and the relationship between OLSAT and NAT, ABSAT and OLSAT, and ABSAT and NAT.

Results and Discussion

Description of the Participants

a. Sex of the Pupils

122 or 43% out of the 287 participants are male while 165 or 57% are female.

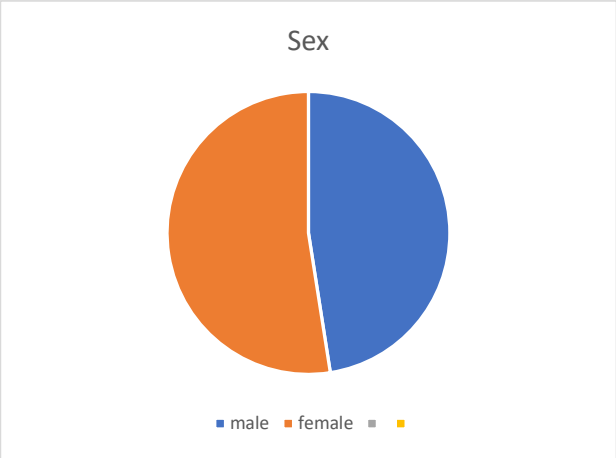

Figure 1. Sex of the participants

b. Participant's Otis-Lennon School Ability Test Results

The table presents the turnout of the OLSAT taken by the participants. Based on the verbal descriptions of the OLSAT Manual (2003), most of the participants (71.43%) faired average in the OLSAT, with raw scores of 29 to 47 out of 72 items. The results describe that most of the pupils have average academic potential since OLSAT is a test of takers' ability to learn in scholastic set up. This result contradicts that of Lacson's (Lacson, 2013) in which grade 4 pupils had low scholastic potential determined by the same test.

Table 1. Participants' Otis-Lennon School Ability Test (OLSAT) Results

Raw Score	Stanine	Verbal Description	Frequency (F)	Percentage (%)
0-28	1-3	Below Average	49	17.07
29-47	4-6	Average	205	71.43
48-72	7-9	Above Average	33	11.50
Total			287	100.00

c. Participants' Association of Benedictine Schools Achievement Test Results

Based on the descriptions of administration manual of the ABSAT, results of the said test are as follows. Table 2 indicates that the majority (72.12%) of the participants scored between 225 and 366 out of 450 items thus fairing average in the test. Although only one pupil scored 358 with Stanine score of 6.5 described at expected grade equivalent, 11.50% got more than the target score and Stanine. On the contrary, in the study of Lacson (Lacson, 2013), pupils performed poorly registering below the expected grade equivalent especially in the Social Studies component.

Table 2. Participants' Association of Benedictine Schools Achievement Test (ABSAT) Results

Raw Score	Stanine	Verbal Description	Frequency (F)	Percentage (%)
0-224	1-3.99	Below Average	47	17.07
225-366	4-6.99	Average	207	71.43
367-450	7-9.99	Above Average	33	11.50
Total			287	100.00

d. Participants' National Achievement Test Results

Participants rendered average performance in the NAT which is the test of takers' learning. Particularly, 37.28% having the percentile rank 35 to 65 while none closely approximated mastery and mastered the achievement test according to national standards. Second in rank are those who performed low, registering 32.75%. The NAT does not cover academic subjects such as Religion, MAPEH, Computer, and Work Education which the pupils also learned in their elementary.

In conclusion, participants averagely learned from the classroom activities and had complex understanding of concepts and did not simply memorize them. The result of the study of Reyes (Reyes, 2010) is parallel since students therein also did well in NAT, but those in the research of Nicolas-Victorino (Nicolas-Victorino, 2011) had low NAT performance for two school years, 2010 to 2011. Half of the participants in Sangil's (Sangil, 2012) paper belonged to the top performing schools in the NAT while the other half placed their schools below the ranks.

Table 3. Participants' National Achievement Test (NAT) Results

Raw Score	Stanine	Verbal Description	Frequency (F)	Percentage (%)
0-75	0-4	Absolutely no mastery	13	4.53
76-98	5-14	Very low	62	21.60
99-123	15-34	Low	94	32.75
124-153	35-65	Average	107	37.28
154-176	66-85	Moving Towards Mastery	11	3.84
177-195	86-95	Closely Approaching Mastery	0	0
196-205	96-100	Mastered Average	0	0
Total			287	100.00

e. Participants' Academic Performance

According to the descriptions in the Holy Family Academy Student Handbook (2012), general weighted averages of pupils may be classified using the ranges below. Most of the pupils (86.06%) had a GWA of 75 to 89.99 while nearly 10% had 90 to 90.99 or could qualify as "with honors". The title, however, comes with other qualifications such as co-curricular grade and minimum final grade (i. e. no grade below 85 in any subject). A minority of the pupils, or 4.18% had 91 to 92.00 GWA and possibly graduated with high honors or with highest honors considering other requirements of the titles. In the graduation ceremonies, 41 pupils were awarded because of an average of at least 90; 10 of these learners were in the top 10 and 31 others were considered academic achievers. Overall, pupils did well academically since more than 80% had average performance.

The findings are opposite with those in the work of Reyes (House & Telese, 2011) though centered on Mathematics II grades while they differ from those in Tiamson's (Tiamson, 2005) research who are gifted learners and in Tablante-Alva's (Tablante-Alva, 2014) who barely passed in their academics. They however did as well as those in

Lacson's (Lacson, 2013) who marked impressive academic performance.

The studies of Liem et al., (2012), House and Telese (2011), and Van Boekel and Martin (Van Boekel & Martin, 2014) provide explanations behind good grades, which are achievement motivation, security, and conformity; distraction avoidance; and successful coping with academic pressure respectively.

Table 4. Participants' Academic Performance

General Weighted Average	Frequency (F)	Percentage (%)
75-89.99	247	86.06
90-90.99	28	9.76
91-92.00	12	4.18
Total	287	100.00

Relationship between Participants' Academic performance and Test Results in

a. Otis-Lennon School Ability Test

Table 5 proves that there is a significant relationship between academic performance and OLSAT results. Thus, pupils' academic potentials are aligned with their actual academic performance.

Notably, OLSAT yields to positive correlations with actual academic performance as compared to GAMA as found in the study of Lassiter et al. (2013).

The same results are evident in the study of Tiamson (Tiamson, 2005) though participants therein were from grades 4 and 6 and the research of Medallon (Medallon, 2011) though she involved freshmen learners and focused on grades in Mathematics and English only. In the same manner, Calaguas (Calaguas, 2015) proved significant difference as well but dealt with college freshmen.

Table 5. Pearson Correlation Test Results for Academic Performance and OLSAT

Components	Pearson r Coefficient of Correlation	p-value
Academic Performance and OLSAT	0.515	0.000

b. Association of Benedictine Schools Achievement Test

The next table specifies that there is a significant relationship between academic performance and ABSAT. The relationship shows that the pupils garnered average grades and performed on the average level in the ABSAT.

Likewise, in Lacson's (Lacson, 2013) work, learners' ABSAT scores and academic performance matched and had significant relationship though performance in ABSAT is classified poor.

Table 6. Pearson Correlation Test Results for Academic Performance and ABSAT

Components	Pearson r Coefficient of Correlation	p-value
Academic Performance and ABSAT	0.772	0.000

c. National Achievement Test

There is a significant relationship between academic performance and NAT as shown in the next table. NAT results of the participants and their academic performance are both average.

However, Reyes (2010) recorded alternative conclusions. Nicolas-Victorino (Nicolas-Victorino, 2011), on the other hand, had the same results as this present study though had more variables including technology, extra-curricular activities, media study habits, and motivational practices of the family.

In connection, Sangil (Sangil, 2012) found a significant relationship between NAT results and teaching strategies but learned the opposite between NAT and teacher's profile.

Table 7. Pearson Correlation Test Results for Academic

Components	Pearson r Coefficient of Correlation	p-value
Academic Performance and NAT	0.772	0.000

Performance and NAT

Relationship between the given tests

a. Otis-Lennon School Ability Test and National Achievement Test

The next table reveals that there is a significant relationship between the OLSAT and the NAT. Although the OLSAT generally assesses a taker's ability to learn in school and the NAT determines overall classroom learning, both yielded related results. Thus, how much a learner can acquire may be predicted by the OLSAT and how much s/he attains from schooling are statistically similar. Tables 1 and 3 confirm this finding.

Table 8. Pearson Correlation Test Results for OLSAT and NAT

Tests	Pearson r Coefficient of Correlation	p-value
OLSAT and NAT	0.561	0.000

b. Association of Benedictine Schools Achievement Test and Otis-Lennon School Ability Test

According to Table 9, there is a significant relationship between OLSAT and ABSAT results. Regardless of the dissimilar nature of the tests, OLSAT and ABSAT scores are statistically related. Hence, school ability is predictive of performance in the achievement test. In tables 2 and 3, pupils had average performance in the tests. In addition, Lacson (Lacson, 2013) recorded parallel findings**.**

Table 9. Pearson Correlation Test Results for OLSAT and ABSAT

Tests	Pearson r Coefficient of Correlation	p-value
ABSAT and NAT	0.802	0.000

c. Association of Benedictine Schools Achievement Test and National Achievement Test

The final table illustrates that there is a significant relationship between ABSAT and NAT results. Since both tests are achievement tests, their outcomes show accumulated learning. Both also registered average performance.

Table 10. Pearson Correlation Test Results for ABSAT and NAT

Tests	Pearson r Coefficient of Correlation	p-value
OLSAT and NAT	0.672	0.000

The positive correlations between academic performance and the three standardized tests are related to the findings of Embse and Hasson (Embse & Hasson, 2012) stating that familiarity with testing brings no anxiety. These pupils have been exposed to standardized tests as these had to be taken in the locale.

Interestingly, stronger correlations (both 0.772) were found between academic performance and ABSAT and academic performance and NAT compared with academic performance and OLSAT (0.551). ABSAT and NAT are

direct measures of academic achievement which must also be congruent with actual classroom performance reflected through grades. When correlated, the two achievement tests also have a very strong coefficient correlation of 0.802.

Conclusion

There are more female participants than male in this study. The participants had average performance in the OLSAT or showed average potential of learning. Most of them registered average performance in the ABSAT. On the other hand, the participants had an average rating in the NAT. Most of them had average academic performance. In terms of significant relationships, the study arrived at the following conclusions. There is a significant relationship between academic performance and OLSAT. There is a significant relationship between academic performance and ABSAT. There is a significant relationship between academic performance and NAT. Moreover, the researcher computed for significant relationship and concluded the following. There is a significant relationship between OLSAT and NAT results. There is a significant relationship between OLSAT and ABSAT results. There is a significant relationship between ABSAT and NAT results.

Recommendations

The locale must maintain its good quality of education, especially the grading system since the grades of the learners are related to their performance in standardized tests. Lessons that pupils learn in the classroom are the ones appearing in achievement tests so they must remain relevant and strongly mastered. The locale may also conduct consistent mastery sessions such as enrichment classes to earn more than average performance in achievement tests. The same sessions may also help motivate pupils with high performance in the OLSAT, NAT and ABSAT. Likewise, teachers may construct more intellectually stimulating and challenging activities and tests to further elevate the performance of their learners in standardized tests. Also, parents must learn about their children's OLSAT results and must be coached on how to help the latter achieve full potential in learning. Finally, future researchers may group participants into gender, section, or other components to know how these factors affect performance in academics and in standardized tests.

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