



## ANALYZING SCHOOL BUDGET AND NATIONAL ACHIEVEMENT TEST (NAT)

Oleh

**Ma. Germie F. Gain, Inero V. Ancho**

Philippine Normal University – Manila

[ancho.iv@pnu.edu.ph](mailto:ancho.iv@pnu.edu.ph)

diterima 5 November 2018, direvisi 24 Pebruari 2019, diterbitkan 28 Februari 2019

### *Abstract*

*This study analyzes how the allocation and utilization of school budget of selected schools in a City Schools Division in the Philippines relates with student achievement in the National Achievement Test (NAT). Data were obtained from the participating schools for school years 2012-2013 to 2014-2015 and were analyzed using Pearson correlation coefficients to determine if a relationship existed between specific school financial categories of the Annual Implementation Plan (AIP) and financial reports and the Mean Percentage Score (MPS) in NAT. Data were also analyzed through coefficients of variance to quantify the percent of the related sample that may be explained by the correlation of the variables. Findings include that training and seminar expenses, general services, repair and maintenance expenses and supplies and materials expenses were found to have a significant relationship with the MPS in NAT. Moreover, the positive relationship between financial expenditures and student performance is strongest in Mathematics, and the manner of spending financial resources only affects student performance in many subject areas but not the overall performance in NAT. These findings suggest policy recommendations that aim to guide school heads in the utilization of school budget which would most likely improve student performance in NAT.*

***Keywords: Achievement Test, School-Based Management, School Budget, Policy Inputs, Student Achievemem***

### **I. INTRODUCTION**

School-Based Management (SBM) in the Philippines was designed to improve the academic performance of the students through strengthening the capacity of school

units in determining significant educational concerns and addressing these through budgetary considerations, along with the observance of transparency and accountability through procedural mechanism (Annual Implementation Plan or

AIP and School Report Card (SRC). SBM proponents believed that by allowing those in school to make decisions, educators are better able to meet the needs of their students, thus improving their schools (Clover et al., 2004). If there is high involvement among the stakeholders, it will most likely yield high student performance.

World Bank (2010) reported that before the implementation of SBM in 2002, SBM and non-SBM schools in the Philippines performed relatively similar in NAT. However, in 2005, SBM schools showed better performance in NAT. For example, Mathematics scores between SBM and non-SBM schools increased to 1.58 percentage points, while Science scores were 2.03 percentage points higher, English scores were 2.20 percentage points higher, and overall scores are 1.98 percentage points higher for SBM schools.

Through the implementation of SBM, school heads were also given the authority to address immediate concerns regarding financial matters through the use of the allotted Maintenance and Other Operating Expenses (MOOE) from the national government. This financial autonomy allowed them to develop distinct cultures to enhance the present status of education through proper allocation and utilization of resources to meet the unique needs of the school which would, later on, solve learning problems.

In fact, when educational planners try to look at the scores of the students in NAT, the 75% Mean Percentage Score set by the Department of Education (DepEd) in NAT, remains to be a vision yet to be realized. In the school year 2010-2011, two-thirds of the secondary schools in the country fared poorly with 67.10% of the schools getting below average test results, a mean score of 26-50% (Quismundo, 2011).

The extent to which an institution can fully realize its vision is dependent on how effectively it allocates scarce resources -

sound management of school finances leads to effective education (Joubert & Bray, 2007). One way of maximizing the effectiveness of using financial resources to student achievement was for schools to make right budgeting decisions concerning non-instructional expenditure that affects student achievement: the school leadership (Pugh et al., 2011). The efficiency of campus leadership team's decisions determines how funds are appropriated toward each category of instruction; hence principals are responsible for student outcome.

Though money is required to support all aspects of the school, the amount of money expended may be less significant than how it is spent to improve academic performance. Studies reported that the higher the percentage of school's resources being allotted and utilized directly to the classroom, the better was the performance of that school in regards to academics than those schools which spent lower on resources. Moreover, it was found that efficient schools spend more in areas that will directly impact the teaching and learning process (North Central Regional Educational Laboratory as cited by Lagrone, 2002; Miller, 2002) and this includes the amount spent on teachers and instructional materials.

Teachers are considered to be the first instructional material inside the classroom. Focusing on their professional growth and development is widely seen as an essential means of improving teaching and learning (Quint, 2011). Vogel, as cited by McCoy (2014), mentioned that investment in professional development has been shown to produce a significant increase in student achievement and that the National Staff Development Council recommends that the school districts invest 10% of their budgets on relevant professional development and that teachers spend a quarter of their workweek on professional development.

Moreover, the learning environment has the potential in improving the academic performance of the students. Schneider

(2002) believed that clean air, good light and a quiet comfortable and safe learning environment positively affect learning. Technology is reported to impact student achievement since 21st-century learners learn best when technology is integrated into the learning process. Grinager (2006) argued that with effective implementation, technology can lead to improved student outcomes. Interactive technological materials would help students increase their motivation and enjoy the entire learning process; it would also provide additional opportunities for participation and collaboration and increase student creativity (Levy, 2002).

It is on this premise that the researcher found it relevant to conduct a study in the local context which aimed to find out how secondary schools in a City Schools Division utilized the school budget and which among the expenditures received the highest budget allocation based on the AIP for the last three years. All these were then related to the schools' performance in NAT, wherein obtained results served as a basis of the current standard of education in the country. The conclusions derived from the analysis of data were utilized to create a set of guidelines that may be applied to guide and facilitate school administrators on how to efficiently and effectively use and allocate the school budget that will improve student achievement in NAT.

Budget ensures the achievement of the school's objectives - school plans that required that the spending of money be taken care of by the budget (Blake, 2002). Likewise, Hallak (n.d) as indicated in his report for UNESCO considered budget as the most appropriate tool for controlling the implementation of the plan through the programming of its costs and ensuring of annual appropriations of funds needed.

Considered being significant predictors of student performance as evidenced in improved MPS in the NAT include the manner of how schools allocate their school budget on programs, plans, and projects for

one school year; how much is given to fund such activities; the actual utilization of school fund; and which school expenditures were funded the most. The correlation between these variables served as the basis of the policy formulation for the utilization of school budget.

The allocation of school budget includes the proposed financial plan of the schools for programs and projects under the categories: Student Development, Faculty Development, Curriculum Development, Physical Facilities Development and Management and Administration. Whereas, the utilization of school budget includes actual expenditures paid by the schools under the following (DECS Service Manual, 2000): Travelling Expenses, Training and Scholarship, Supplies and Materials, Utility and Communication Expenses, General Services and Repairs and Maintenance.

**Training and seminars of teachers.** Quint in 2011 stressed that professional and personality development of teachers is an essential means of improving the teaching and learning process. Likewise, Odden and his colleagues (2003) believed that high student achievement has direct links with adequate professional development that creates effective strategies.

**Supplies and materials.** Districts spending 61% or more on instruction perform better academically on assessments than those paying 60% or less on instruction-related expenses (Jones and Slate, 2010). Moreover, students learn best when technology is effectively integrated into the lesson (Grinager, 2006).

In the AIP of the schools, plans and programs on instructional-related expenses such as the purchase of instructional materials to be used in the classrooms or during intervention programs are reflected in the Student and Curriculum Development. Whereas, the actual utilization of the school funds for instructional materials are recorded under Supplies and Materials Expenses.

**Physical facilities.** The learning environment has a direct impact on student achievement (McCombs, 2003). The school environment, including the classrooms, must be in their best state for the maximum learning experience to take place.

**Management and administration.** In providing both learners and school personnel an excellent learning environment, principals must allocate for utility workers to keep the school surroundings clean; the budget must also include school guards to keep the school premises safe, and enough amount to pay for utilities and communication expenses. These are all included in the Management and Administration category in the school's Annual Implementation Plan, and actual expenditures are recorded in the General Services category and Utilities and Communication Expenses.

Meanwhile, traveling expenses are subsumed in all categories, meaning, they are the total expenditures of the school personnel's fare going on official business trips.

Research reports that the management of the school financial resources, headed by the school principal, affects school performance. Expenditures related to instruction, such as training and seminars of teachers, and purchase of instructional materials, will most likely yield to positive student performance.

This study identified the sources of school fund of secondary schools in a City Schools Division and how these funds are being utilized within the school year, along with the relationship of the performance of the secondary schools in the NAT with how they utilize the annual school budget. The research aims to answer the following questions:

The research aims to answer the following questions:

1. How is school budget managed in terms of:

1.1 allocation

1.2 utilization?

2. How may the secondary schools NAT be described for the last three years in terms of:

2.1 MPS by subject area

2.2 MPS in general?

3. How do allocation and utilization of school budget affect the MPS in NAT of the secondary schools in a City Schools Division?

## II. METHODOLOGY

### Research Design

In this study, correlational research was used to determine if there is a relationship between the allocation and utilization of school budget and the MPS in NAT of the five participating schools in a City Schools Division.

This type of research design is beneficial since it provides information on how one variable affects the other. The current study examined whether the six financial categories adapted from the DECS Service Manual of 2000 were individually and/or collectively significant predictors of the MPS in NAT. Quantitative studies determine whether there is or is not a correlation between aspects of focus (Creswell, 2009).

Purposive sampling was used to have the needed documents for the study. In purposive sampling, the schools are chosen based on the schools' status as implementing units – schools with their own bookkeeper who manages and prepares their financial reports. Of seven schools invited to participate in the study, only five implementing units were able to comply with the necessary documents. One failed to submit the requested document on the set deadline while the other implementing unit declined the invitation to participate in the study.

The data mainly came from the NAT results from the school effectiveness report of the Enhanced Basic Education

Information System (EBEIS) Coordinators and the financial reports of the bookkeepers. Permission was requested from the Division Office, most specifically from the Schools Division Superintendent, to conduct the research and to gather needed documents from the participating schools.

## Measures

**Independent Variables.** In order to determine how the allocation and utilization of school budget relates to the performance of the schools in NAT, the researcher used the AIP and six financial categories adopted from the DECS Service Manual (2000) as well as that in the Comparative Statement of Financial Performance of the participating schools to find out both the proposed budget and the actual amount spent on each financial category.

For the allocation of the school budget, the total proposed budget in each financial category for the school year was divided by the Beginning of School Year (BoSY) enrolment to get the school's per-student allocation. Likewise, the actual amount spent on each financial category for the year as seen in the Comparative Statement of Financial Performance and financial reports of the schools was divided by the BoSY enrolment to determine per student expenditure.

It is important to note that in the study, the Maintenance and Other Operating Expenses (MOOE) was not the only category that was considered to be funded but also included all other financial categories.

**Dependent Variables.** School performance is measured by the results obtained by the participating schools in the NAT during school years 2012-2013, 2013-2014 and 2014-2015. The results reported by the DepEd Central Office included the MPS of the schools in English, Filipino, Mathematics, Science, Araling Panlipunan and Critical Thinking Skills Test. Likewise, the results also include the overall Mean

Percentage Score of the participating schools for school years 2012-2013, 2013-2014 and 2014-2015.

**Data Analysis.** Descriptive, Pearson correlation coefficient and coefficient of variance ( $r^2$ )- and an  $\alpha=0.05$  were utilized to answer the research questions for all procedures. All results were presented using tables.

Pearson Product Moment Correlation Coefficient was used to determine the relationship between the allocation and utilization of school budget to different expenditures and Mean Percentage Scores in the National Achievement Test. The correlation coefficient which measures the relationship between the variables in the study was computed using Microsoft Excel 2007. In interpreting the strength of the Pearson  $r$ , this study used the rule of thumb as presented by Hinkle et al. (1998): .90 to 1.00 (-.90 to -1.00) is considered a very high positive (negative) correlation. .70 to .90 (-.70 to -.90) is considered a high positive (negative) correlation. .50 to .70 (-.50 to -.70) is considered a moderate positive (negative) correlation. .30 to .50 (-.30 to .50) is considered a low positive (negative) correlation. .00 to .30 (-.00 to -.30) is considered to have little (negligible) if any correlation.

Whereas coefficients of variance allow researchers to quantify the percent of the related sample that may be explained by the correlation of the variables. The variance ranges from 0 and 1.00 with stronger coefficients of variance producing  $r^2$  values closer to 1.00 and weak coefficient of variance closer to 0.

## III. RESULTS

The following topics will be addressed to present the findings of the research: (a) allocation and utilization of school budget based on the AIP and financial reports, (b) classification of the MPS of the sample

implementing units in NAT, (c) correlation for the relationship between allocation and utilization and NAT results, (d) inputs to formulation of policy on utilization of school budget.

### Allocation and Utilization of School Budget Based on Annual Implementation Plan and Financial Reports

Table 1. Descriptive Statistics for Per Student Allocation of Sample Implementing Units in Philippine Peso (Php)

Categories	SY 2012-2013				SY 2013-2014				SY 2014-2015			
	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD
Student Development	63.04	523.71	193.8	189.14	52.78	512.52	183.38	189.86	34.08	493.4	174.5	184.87
Staff Development	33.41	170.78	94.34	60.76	9.93	167.13	72.47	73.89	31.95	160.89	90.93	55.6
Curriculum Development	41.12	1267.68	296.68	542.88	40.24	1247.6	298.54	530.83	38.74	1165.08	300.54	485.73
Physical Facilities Development	0	59.72	24.5	25.58	0	69.64	21.31	28.72	0	134.25	41.82	56.8
Administration and Management	0	537.56	222.25	227.39	0	484.09	218.97	215.4	0	434.7	223.55	208.57

Utilities and Communication Expenses and General Services ranked second and third based on the computation of the average spending for the school years included in the study. Utilities and Communication expenses amounted to an average of Php 156.31 in school year 2012-2013, Php 188.93 in the school year 2013-2014 and Php 205.65 in the school year 2014-2015 while General Expenses had an average of Php 95.95, Php 117.15 and Php 114.06 PPE from school years 2012-2013, 2013-2014 and 2014-2015 respectively.

Expenses under these categories were paid continuously monthly as these included remunerations for janitorial and security services to keep the school clean and conducive to learning, keep the students, school personnel, and school properties safe and pay for monthly dues related to electricity, internet connection, and telephone bills.

Keeping the school buildings in its best state as well as maintaining the good condition of the school equipment and other properties ranked fourth in the priorities of the implementing units for schools years

2012-2013 to 2014-2015. The implementing units spent an average amount of Php 41.91 per pupil in the school year 2012-2013, Php 63.02 per pupil in the school year 2013-2014 and Php 71.63 per pupil in the school year 2014-2015 for repair and maintenance of school building, and other properties.

School 3, in 2014 alone, spent a total of Php 70,417 of their school budget on repair of the property custodian room, school clinic and other furniture and fixtures as reflected on the monthly report of disbursement.

On the other hand, implementing units spent an average of Php 681,805.67 from the school year 2012-2013 to 2014-2015 or per-pupil expenditure of Php 39.50 for training and seminars of school personnel.

Traveling expenditures received the lowest spending as implementing units spent an average amount of Php 323,457.33 over the course of three school years. Expenses related to the travel of the school personnel, may it be for a seminar or training or reimbursement of public vehicle fare of the

disbursing officers, bookkeepers and liaison officers when they submit forms and reports to the Division Office or a government agency fall under this financial category.

### Mean Percentage Score in the National Achievement Test

Performance of the sample in terms of their Mean Percentage Score in each component of the National Achievement Test as well as the overall Mean Percentage Score was classified under DepEd Order No. 72, s. 2011.

Table 3. *Descriptive Interpretation of Mean Percentage Score of the Implementing Units in the National Achievement Test for School Year 2012-2013*

Implementing Unit	Filipino	English	Math	Science	AP	CTST	Overall
School 1	Upper Average	Lower Average	Lower Average	Lower Average	Upper Average	Lower Average	Lower Average
School 2	Upper Average	Lower Average	Lower Average	Lower Average	Upper Average	Lower Average	Lower Average
School 3	Upper Average	Lower Average	Upper Average	Lower Average	Upper Average	Lower Average	Upper Average
School 4	Upper Average	Lower Average	Lower Average	Lower Average	Upper Average	Lower Average	Lower Average
School 5	Upper Average	Lower Average	Lower Average	Lower Average	Upper Average	Lower Average	Upper Average

Table 3 above shows that in the school year 2012-2013, the Mean Percentage Scores of the sample in English, Science, and CTST were classified as Lower Average since they fall within the range of 26-50%. On the other hand, Filipino and AP were classified as Upper Average.

In Mathematics, only School 3 was classified as Upper Average while the rest of the sample had been classified as Lower Average. For the overall mean percentage score, 3 out of the 5 were classified as Lower Average while School 3 and School 5 achieved a total MPS described as Upper Average.

The Mean Percentage Scores of the sample in English and AP were classified as Upper Average during the National Achievement Test in the school year 2013-2014 while Science and CTST remained classified as Lower Average.

Among the sample, School 1 was the only implementing unit that achieved a Mean Percentage Score described as Lower Average in Filipino while the Mean Percentage Scores of the remaining implementing units were classified as Upper Average. Whereas, in Mathematics, only School 3 and School 5 attained an Upper Average Mean Percentage Score while the rest got Lower Average.

In terms of the overall performance during the school year 2013-2014, School 2, School 3 and School 5 achieved Upper Average Mean Percentage Score whereas School 1 and School 4 got Lower Average Mean Percentage Score.

In the school year 2013-2014, only Filipino achieved a Mean Percentage Score that can be classified as Upper Average, while the remaining components and the overall performance were classified as

Lower Average, with a mean percentage score ranging from 26%-50%.

**Correlation for the Relationship between Allocation and Utilization and National Achievement Test Results**

Table 4 below reveals that during the school year 2012-2013, Curriculum

Development was found to have a significant relationship with Critical Thinking Skills Test. The rest of the components though were found to have a high correlation with the categories in the AIP; thus, the relationship was found to be not significant

Table 4. Correlation Matrix for the Relationship between Per Student Allocation and NAT Results for School Year 2012-2013

Categories	FILIPINO		ENGLISH		MATH		SCIENCE		AP		CTST		OVERALL	
	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value
Student Development	-0.060	0.920	-0.291	0.630	-0.491	0.400	-0.059	0.930	0.264	0.670	-0.117	0.850	-0.414	0.490
Faculty Development	-0.310	0.610	-0.171	0.780	-0.533	0.350	-0.231	0.710	-0.092	0.880	0.394	0.510	-0.360	0.550
Curriculum Development	0.341	0.570	0.632	0.250	0.170	0.780	0.432	0.470	0.257	0.680	0.990	0.001	0.546	0.340
Physical Facilities Development	-0.519	0.370	-0.378	0.530	0.084	0.890	-0.552	0.340	-0.715	0.170	-0.526	0.360	-0.270	0.660
Administration and Management	-0.042	0.950	-0.250	0.680	0.607	0.280	-0.156	0.800	-0.167	0.790	-0.487	0.410	0.235	0.700

The following year, it was the MPS of Filipino that was found to have a significant relationship with Student Development as displayed in Table 5. The correlation was found to be very high but negative. This

implies that as the proposed amount for programs and projects for Student Development increased, lower performance in Filipino among the sample can be observed.

Table 5. Correlation Matrix for the Relationship between Per Student Allocation and NAT Results for School Year 2013-2014

3ggered c mam

Categories	FILIPINO		ENGLISH		MATH		SCIENCE		AP		CTST		OVERALL	
	r	p-value	r	p-value	r	p-value	R	p-value	r	p-value	r	p-value	r	p-value
Student Development	-0.936	0.020	-0.065	0.920	-0.245	0.690	0.305	0.620	0.226	0.710	-0.343	0.570	-0.575	0.310
Faculty Development	-0.650	0.230	-0.030	0.960	-0.128	0.840	-0.100	0.870	0.235	0.700	0.150	0.810	-0.358	0.550
Curriculum Development	0.328	0.590	0.063	0.920	0.100	0.870	-0.710	0.180	0.027	0.970	0.771	0.130	0.231	0.710
Physical Facilities Development	0.242	0.690	0.648	0.240	-0.550	0.340	-0.264	0.670	-0.828	0.080	-0.442	0.460	-0.332	0.580
Administration and Management	0.538	0.350	-0.034	0.960	0.348	0.570	0.372	0.540	-0.089	0.890	-0.066	0.920	0.470	0.420



During the school year 2014-2015, the components in the National Achievement Test showed no significant relationship with any of the categories in the AIP of the sample as shown in Table

Table 6. *Correlation Matrix for the Relationship between Per Student Allocation and NAT Results for School Year 2014-2015*

Categories	FILIPINO		ENGLISH		MATH		SCIENCE		AP		CTST		OVERALL	
	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value
Student Development	-0.308	0.610	-0.316	0.600	-0.594	0.290	0.390	0.520	-0.210	0.740	-0.344	0.570	-0.086	0.890
Faculty Development	-0.275	0.650	0.394	0.510	-0.317	0.600	0.837	0.080	-0.155	0.800	-0.123	0.840	0.192	0.760
Curriculum Development	0.460	0.440	0.755	0.140	0.619	0.270	0.130	0.830	0.467	0.430	0.425	0.480	0.644	0.240
Physical Facilities Development	-0.314	0.610	0.239	0.700	-0.050	0.940	0.265	0.670	-0.335	0.580	-0.026	0.970	-0.288	0.640
Administration and Management	-0.127	0.840	-0.192	0.760	0.037	0.950	-0.320	0.600	-0.209	0.740	-0.037	0.950	-0.397	0.510

Table 6 displays no significant relationship between the utilization of school budget and the performance of the sample in the National Achievement Test during school years 2012-2013 to 2014-2015.

Table 7. *Correlation Matrix for the Relationship between Per Pupil Expenditure and NAT Results for School Year 2012-2013*

Categories	FILIPINO		ENGLISH		MATH		SCIENCE		AP		CTST		OVERALL	
	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value
Travelling Expenses	-0.039	0.950	-0.372	0.540	0.655	0.230	-0.177	0.780	-0.075	0.900	-0.519	0.370	0.243	0.690
Training And Seminar	-0.554	0.330	0.018	0.980	-0.351	0.560	-0.434	0.460	-0.719	0.170	0.406	0.500	-0.275	0.460
Supplies and Materials	0.147	0.810	0.089	0.890	0.804	0.100	0.106	0.870	0.152	0.810	0.690	0.200	0.766	0.860
Utilities and Communication	-0.277	0.650	-0.593	0.290	0.718	0.170	-0.402	0.500	-0.145	0.820	-0.052	0.930	0.312	0.740
General Services	-0.424	0.480	-0.683	0.200	0.626	0.230	-0.542	0.340	-0.315	0.610	-0.155	0.800	0.172	0.870
Repair and Maintenance	-0.633	0.250	-0.743	0.150	0.396	0.510	-0.706	0.180	-0.490	0.400	0.025	0.970	0.001	0.760

Table 7 shows that in the school year 2013-2014, three implementing units were classified as Upper Average; the Critical Thinking Skills Test was also found to have high correlation and significant relationship with both training and seminar expenses, and supplies and materials.

Table 8. *Correlation Matrix for the Relationship between Per Pupil Expenditure and NAT Results for School Year 2013-2014*

Categories	FILIPINO		ENGLISH		MATH		SCIENCE		AP		CTST		OVERALL	
	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	R	p-value	r	p-value
Travelling Expenses	0.371	0.540	-0.170	0.780	0.745	0.140	0.621	0.260	0.228	0.710	0.315	0.610	0.698	0.190
Training And Seminar	0.729	0.160	0.008	0.990	0.509	0.380	-0.429	0.470	0.058	0.930	0.940	0.020	0.696	0.190
Supplies and Materials	0.508	0.380	-0.025	0.970	0.763	0.130	0.062	0.900	0.186	0.760	0.890	0.040	0.781	0.120
Utilities and Communication	-0.294	0.630	0.166	0.790	0.487	0.400	0.695	0.190	0.074	0.910	0.229	0.710	0.216	0.730
General Services	-0.415	0.490	0.128	0.840	0.487	0.460	0.392	0.510	0.193	0.760	0.497	0.390	0.143	0.820
Repair and Maintenance	0.586	0.300	-0.374	0.540	0.439	0.030	0.164	0.790	0.490	0.400	0.878	0.050	0.937	0.020

Table 8 shows the value of r between Critical Thinking Skills Test and training and seminar of teachers which is 0.940. Hinkle (1998) interprets this value as very high positive correlation. This means that the higher budget is utilized in training and seminars of teachers, the higher is the MPS of the students in the Critical Thinking Skills Test component in NAT.

participating implementing units plummeted from 51.48 to 44.24; thus, financial categories such as supplies and materials expenses and general services expenses were found to have a significant relationship with Filipino and Mathematics. Similarly, repair and maintenance expenses category was found to have a significant relationship with Critical Thinking Skills Test scores.

Table 9 also indicates that on the school year 2014-2015, the average MPS of the

Table 9. *Correlation Matrix for the Relationship Between Per Pupil Expenditure and NAT Results for School Year 2014-2015*

Categories	FILIPINO		ENGLISH		MATH		SCIENCE		AP		CTST		OVERALL	
	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value
Travelling Expenses	-0.125	0.840	-0.377	0.530	-0.217	0.730	-0.069	0.910	-0.122	0.850	0.037	0.950	-0.273	0.660
Training And Seminar	0.839	0.080	0.259	0.670	0.832	0.080	-0.472	0.420	0.804	0.100	0.859	0.060	0.621	0.260
Supplies and Materials	0.902	0.040	0.273	0.660	0.930	0.020	-0.663	0.220	0.833	0.080	0.738	0.150	0.648	0.240
Utilities and Communication	0.194	0.750	0.264	0.670	0.199	0.750	0.259	0.670	0.240	0.700	0.505	0.390	0.257	0.680
General Services	0.835	0.080	0.425	0.480	0.934	0.020	-0.468	0.420	0.780	0.120	0.834	0.080	0.636	0.250
Repair and Maintenance	0.713	0.180	0.754	0.140	0.870	0.060	0.001	1.000	0.712	0.180	0.885	0.050	0.746	0.150

The *r-value* of 0.902 between supplies and materials expenses and MPS in Filipino can be interpreted as having a high positive correlation. The interpretation gives an idea that during this school year, high MPS in Filipino can be observed in schools that spent more on supplies and materials. Moreover, a *p-value* less than 0.05 denotes that the relationship between the MPS in Filipino and supplies and materials expenses category is significant. The same relationship was observed between Mathematics and Supplies and Materials expenses, Mathematics and General Services, CTST and Repair and Maintenance Expenses.

#### IV. DISCUSSION

Research in the field of education has reported that schools have to become efficient and effective in handling the available financial resources and make the necessary shift in the school budget allocation and utilization to bring out positive student achievement. However, reports focusing on how schools manage their financial resources and how these affect the student performance in standardized examinations are still limited in number and need further investigation. The researcher therefore found it relevant to conduct a study in the local context aiming at finding out how the secondary schools in a City Schools Division in the Philippines utilized its school budget and which among the expenditures received the highest budget allocation based on the Annual Implementation Plan for the last three years.

This present study found that the following proposed proportion for each financial category was observed to give an overall Mean Percentage Score classified as “Upper Average” for three consecutive school years:

Traveling Expenses – 6.00% of the total per-pupil expenditure

Training and Seminar Expenses – 6.00% of the total per-pupil expenditure

Supplies and Materials Expenses – 41.00% of the total per-pupil expenditure

Utilities and Communication Expenses – 24.00% of the total per-pupil expenditure

General Services Expenses – 12.00% of the total per-pupil expenditure

Repair and Maintenance Expenses – 11.00% of the total per-pupil expenditure

The proposed policy above suggests that 47% of the per-pupil expenditure shall go to instructional expenses such as training and seminars of teachers and supplies and materials as existing research reports, together with this present study, found that instructional expenditures have a significant relationship with student performance. Meanwhile, 36% of per pupil expenditure is proposed to be utilized in utilities, communication, and general services expenditures while the 11% shall be used in improvement and repair of school facilities. The remaining 6% for traveling expenses is subsumed in all categories as this is the total of the amount spent on school personnel’s public utility vehicles fare whenever they go out of the school on an official business status.

This proposed policy in utilizing the per-pupil budget expenditure is in line with research in the field which posited that school fund must be invested in wisely in classroom instruction, quality teaching, good facilities, strong curriculum, programs for struggling students and effective supervision (Baker, Sciarra & Farrie, 2010; Brinson & Mellor, 2005). Rothstein (2011) found out that investing on teacher quality has more of an influence on test scores than class sizes or average district-wide per-pupil spending and schools are better off having a good teacher in a larger class size than a mediocre teacher in smaller class size; therefore, investing in professional and personal development of

teachers is widely seen as an essential means of improving teaching and learning (McCoy, 2015; Quint, 2011). Likewise, instructional materials also affect the academic performance of students, most especially when technology is being integrated into the lessons. Grinager (2006) said that with effective implementation, technology could lead to improved student outcomes. Interactive technological materials would help students increase their motivation and enjoy the entire learning process. It would also provide additional opportunities for participation and collaboration and increase student creativity (Levy, 2002).

This study was conducted to raise awareness of school heads and the school leadership team about managing and spending school resources on targeted expenditures that will help improve student performance. This also contributes to the debate of whether utilization of school expenditures affects student performance. This research also took the initial step of formulating policy recommendation on how to utilize school budget based on the data gathered throughout the process of writing this study.

In light of the findings of this study, the following recommendations for future research are made to narrow down conclusions in finding the most advantageous approach in utilizing the school budget to advance student performance. First, replicate this study with the specific expenditures under the supplies and material expenses category and training and seminar expenses categories; professional development, technology, instructional materials like reference textbooks and laboratory equipment, performance-based incentives would be beneficial areas to investigate to further understand and assist school administrators in allocating funding. Second, for the study, align the financial categories for utilization of school budget and its specific expenditures with the categories indicated in the AIP of the schools. This approach would

show whether schools stick to the budget plan created at the beginning of the school year as shown in the AIP when utilizing the school budget throughout the school year.

It is important to note that this study was designed to determine the relationship between the financial categories of the school budget and the MPS in NAT. However, this investigation did not include other factors such as parent involvement, class size, and teacher qualifications that may have an impact on student achievement. The school budget for the school year was computed based on the submitted financial reports of the participating schools for the study. It is also presumed that the schools had submitted all the necessary documents needed to complete this study as these were requested from and approved by the Schools Division Superintendent and School Heads.

Generalizations from this study may be limited to the City Schools Division itself and the schools involved in the research. Moreover, this study did not address the disparities that existed in private schools; there is a possibility that discrepancies existed in the documents submitted since the data provided was made at the school level. This study is also quantitative in nature. Hence, it does not explore qualitative methods in finding information to support the findings; thus, it is suggested that this study is replicated using the overall top and low performing schools in NAT in the country. This would shed light on the trend in allocation and utilization of school budget per student to solidify the findings of this study.

## V. CONCLUSIONS

The study shows that (1) schools follow an identical strategic plan in allocating financial resources yearly (2) as supplies and materials, training and seminars, general services and repair and maintenance expenses rise, student performance also rises (3) the positive relationship of financial expenditures and

student performance is strongest in Mathematics (4) the manner of spending financial resources only affects student performance in a number of subject areas but not the overall performance in NAT as found with General Services and Repair and Maintenance expenditures and Mathematics and Critical Thinking Skills Test Mean Percentage Scores. Likewise, instructional expenditures have a significant relationship with student performance in NAT. In fact, two of the six financial expenditures are known to directly affect instruction: Training and Seminar Expenses and Supplies and Materials Expenses. Increase in funding in these two categories shows an improvement in student performance in Filipino, Mathematics and Critical Thinking Skills Test. Moreover, though the relationship may not be found as significant, these instruction-related expenditures are found to have a high positive correlation with the overall performance of the implementing units in NAT. With the available data, it is found that implementing units spending 45% and above on instructional expenditures perform better than those spending less on this category. This supports the claim that the manner of spending, and not the amount spent affects student performance.

## References

- Baker, B., Sciarra, D. & Farrie, D. (2010). Is school funding fair? A national report card. Retrieved from <http://www.schoolfundingfairness.org/>
- Blake, J.G. (2002). *How principals develop and administer a school budget*. Retrieved from <http://paws.wcu.edu/churley/budgets.html>.
- Brinson, V., & Mellor, L. (2005). How are high performing schools spending their money? A case study. Louisville, KY: American Education Finance Association.
- Clover, M. W., Jones, E. B., Bailey, W., & Griffin, B. (2004). Budget priorities of selected principals: Reallocation of state funds (Dissertation). *National Association of Secondary School Principals. NASSP Bulletin*, 88(640), 69-82. Retrieved from <http://search.proquest.com/docview/216034160?>
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Los Angeles: Sage.
- DECS Service Manual. (2000). Retrieved from [http://www.deped.gov.ph/sites/default/files/page/2016/DECS%20SERVICE%20MANUAL\\_11%20IX%20%20Budgeting,%20Accounting%20and%20and%20Auditing%20Rules%20and%20Regulations.PDF](http://www.deped.gov.ph/sites/default/files/page/2016/DECS%20SERVICE%20MANUAL_11%20IX%20%20Budgeting,%20Accounting%20and%20and%20Auditing%20Rules%20and%20Regulations.PDF)
- DepEd Order No. 72, s. 2011. "Intensive Supervisory Support to Elementary and Secondary Schools to Raise Their Achievement Rate in the National Achievement test (NAT)".
- Grinager, H. (2006). *How education technology leads to improved student achievement. National Conference of State Legislatures*. Retrieved from <https://www.ncsl.org/portals/1/documents/educ/item013161.pdf>
- Hallak, J.(n.d.).The role of budgets in educational planning. *Unesco : International Institute for Educational Planning*.Retrieved from <http://unesdoc.unesco.org/images/0006/000692/069261eo.pdf>
- Hinkle, D. E., Wiersma, W., & Jurs, S. G. (1998). *Applied Statistics for the Behavioral Sciences* (3rd, ed.). Houghton Mifflin Company.
- Jones, T. B., & Slate, J. R. (2010). *The 65% instructional expenditure ratio and*

- student achievement: Does money matter?* Unpublished manuscript. Sam Houston State University, Huntsville, TX.
- Joubert R. & Bray E. (2007). Public school governance in South Africa. Pretoria, South Africa: Interuniversity Centre for Education Law and Education Policy.
- Lagrone, C.M. (2002). A study of the factors affecting high performing and low performing high schools in Texas (Dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3074262).
- Levy, P. (2002). Interactive Whiteboards in learning and teaching in two Sheffield schools: a developmental study (Masters dissertation, University of Sheffield, U.K.). Retrieved from: <http://dis.shef.ac.uk/eirg/projects/wboards.htm>
- McCombs, B. L. (2003). A framework for the redesign of K-12 education in the context of current educational reform. *Theory into Practice*, 42(2), 93-101.
- McCoy, M.S. (2014). Influences of selected budgetary and school factors on the academic achievement of third grade students (Dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3662722).
- Miller, K. (2002). *Resource allocation: targeting funding for maximum impact*. Office of Educational Research and Improvement. Washington D.C. pp. 2-8
- Odden, A., & Picus, L. (2003). *School finance: A policy perspective*. New York: McGraw-Hill.
- Pugh, G., Mangan, J., & Gray, J. (2011). Do increased resources increase educational attainment during a period of rising expenditure? Evidence from English secondary schools using a dynamic panel analysis. *British Educational Journal*, 37(1), 163-189. Retrieved from <http://dx.doi.org/10.1080/01411920903452563>.
- Quint (2011). *Professional development for teachers*. MDRC, P-12.
- Quismundo, T. (2011, September 22). 2/3 of Philippine high schools obtain low NAT scores. Philippine Daily Inquirer. Retrieved from <http://newsinfo.inquirer.net/63039/23-of-philippine-high-schools-obtain-low-nat-scores>
- Rothstein, R. (2011). How to fix our schools. *Education Digest*, 76(6), 32-37.
- Schneider, M. (2002). Do school facilities affect academic outcomes? *National Clearinghouse for Educational Facilities*. Retrieved September 1, 2007 from [www.edfacilities.org](http://www.edfacilities.org).
- World Bank. (2010). *Inclusive education: An EFA strategy for all children*. Retrieved on December 12, 2016, from <http://www.worldbank.org/education>