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Effects of Reading Skills on Students' Performance in Science and Mathematics in Public and Private Secondary Schools

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Abstract

In the Philippine education system, reading, mathematics, and science formed part of the core areas of basic education curriculum. For the last decade, the quality of Philippine education was put into a big question due to poor performance of students in mathematics and science tests both local and abroad. The initial result of current efforts of the government by adopting K-12 curriculum didn't do much to change the status quo. The purpose of this study is to determine the reading predictors of students' performance in Mathematics and Science and identify its effects to such performance. A total of 660 freshmen students from public and private high schools in Cotabato City, Philippines were taken as sample. A validated and reliable 150-item test in reading comprehension skills, mathematics and science was used to get primary data to perform correlation and regression analysis. Findings showed that only making inference and getting main idea were predictors of mathematics performance of students in public school and private schools, respectively. Data analysis also revealed that two reading skills such as noting details and making inference had an influence on science performance of students in public school while skills in getting main idea and drawing conclusion influenced science performance of students in private schools. However, there was only one skill such as vocabulary in context which was predictor of overall science performance of all students. Moreover, separate effects of making inference, identifying main idea explained only 1.8 percent and 1.3 percent of students' math performance while their combined effects provided only .1 percent or nearly zero percent. Furthermore, the study found out that separate effects of noting details contributed 3.3 percent and its combined effects with making inference explained 4.2 percent of science performance of students in public schools. In terms of effects of reading to science performance in private schools, making inference provided 1.2 percent of separate effect; making inference and drawing conclusion influenced 2.8 percent of combined effect; understanding vocabulary in context has overall one percent of separate effect.

Keywords*: Reading Comprehension Skills, Students' Performance in Mathematics, Students' Performance in Science, Philippine education, Reading Skills Predictors, Effects of Reading in Mathematics and Science*

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Introduction

Relevant Concepts on Reading Comprehension

By definition reading comprehension is a holistic process of constructing meaning from written text through the interaction of the knowledge the reader brings to the text, i.e., word recognition ability, world knowledge, and knowledge of linguistic conventions; the reader's interpretation of the language that the writer used in constructing the text, and the situation in which the text is read (Maria, 1990). Similarly, Aquino (2005) views reading as the interaction between the reader and the text. The reader constructs meaning from the text by guessing and predicting the succeeding texts based on the reader's prior knowledge of the text and the world.

On his part, William Gray, the known Father of Reading, defined reading as a four-step process which includes perception of the word, comprehension of its meaning, reaction to the meaning in terms of prior knowledge, and integration of idea into one's background of experience (Villamin, Salazar, Bala & Sunga 1994). For Flick and Lederman (2002), they viewed reading comprehension as the employment of high level thinking to infer the meaning of text, consider its implications, and decide on applications.

Calahan and Clark (1988) put together reading comprehension into three levels: reading the lines, reading between the lines, and reading beyond the lines. These three levels encompass relevant sub-skills such understanding vocabulary in context, getting main idea, noting specific details (first level), making inference (second level), predicting outcome and drawing conclusion (third level).

A Glimpse on the Status of Mathematics and Science Education in the Philippines

Mathematics is one of the major and most important subjects in all educational institutions worldwide. Literature is replete with information on how mathematics has contributed to the success in modern science inventions and development of man's life in general. For instance, mathematics is considered as the most important science, and its development affects the development of science in all of its kind - medical, physics, biology, technology, and more (Lasfar, 2010).

The Department of Education (DepEd) and Commission on Higher Education (CHED) together with some representatives from private sectors made an evaluation study on evaluation of basic education program of the country, and they found out that the country's basic mathematics and science education is at alarming stage (Lumaque, Sarraga & Jumawan, 2004-2005). For the reason that mathematics education showed a low profile in terms of the nationwide achievement results, the government and private educational institutions have launched varied programs in upgrading mathematics education (Pidlaon and De Guzman, 2002-2003).

Besides mathematics, DepEd and educational institutions are closely monitoring developments in science teaching-learning particularly the students' science performance in achievement test. The poor science performance of Filipino students in international test is an indicator of poor Philippine education in general. For instance, the 1990 University of the Philippines Survey showed that Filipino students performed poorly in science including mathematics. This finding is very reflective of the 1998 International Assessment of Educational Achievement conducted in 15 countries wherein Filipino students had poor performance in mathematics and science (Navarra, 1997).

This low performance is also evident on the account that in 1984 2nd International Science Study (SISS), the Philippines and Singapore were neighbors in terms of low performance in science but in 1994 international test, the Philippines maintained its poor status while Singapore made it to the top (Carido, et al, 1999-2000). Similarly, Agham noted that in the 1996 Third International Mathematics and Science Survey (TIMSS), the 13-year old Filipino students ranked 40th in science out of 42 countries (Tenizo, 2002).

Reading Skills in Mathematics and Science

Since reading was established as a tool in learning other fields including mathematics, various researches have been undertaken to examine the relationship of the two especially on the aspect of comprehension which is a critical skill to perform understanding of mathematical process. Particularly, researchers have found out skills commonly attributed and utilized when one is engaged in reading comprehension and doing mathematics, thus establishing significant correlation between reading and mathematics.

As argued by Crandall, Dale, Rhodes, and Spanos, language skills-particularly the reading skills needed to comprehend mathematics texts and word problems and the listening skills required to understand and follow an instructor's presentation of a problem's solution-are the vehicles through which students learn and apply math concepts and skills (Roberson & Summerlin, 2005).

Based on studies presented by Zepp (1981) reading skills such as significance of paragraph, predicting the outcome of events, understanding directions, noting details, and vocabulary knowledge were found to have significant correlations with algebra scores and various problem solving abilities in Mathematics. For Barnes (2005), he observed that finding main idea, using information in details, and making inference are needed skills to solve math problems. For instance, math problems often need more than what is explicitly written which calls for making inference or drawing conclusion. In addition, Monroe and Orme as cited Miller and many educators claimed that a key component in understanding Mathematics is learning the vocabulary and that without an understanding of the vocabulary that is used routinely in mathematics instruction, textbooks, and word problems, students are handicapped in their efforts to learn mathematics.

Factors predicting science performance of students have become a major subject of many global science researches in the past. For instance, positive attitude toward science study and class environment were influential factors to science achievement in Japan while effect of positive attitude toward science teaching is the only influential factor to science achievement in China (Linghong, 2001). Florentino's study found out that academic performance, communications skills, and father's income are best predictors of fifth graders' performance in Science (De Asis, 2004).

The need to integrate reading in content areas like science was clearly described by expert such as Bowers (2000) who claimed that reading complements each other well because of the similarities between reading skills and science process skills. She argued that the meshing of the skills in both subject areas make them natural partners for integration.

For Armbruster (1993), he noted that the same skills that make good scientists also make good readers: engaging prior knowledge, forming hypotheses, establishing plans, evaluating, understanding, determining the relative importance of information, describing patterns, comparing and contrasting, making inferences, drawing conclusions, generalizing, evaluating sources, and so on.

Educators also realized that students cannot learn secondary science content unless they read science text with comprehension (Cooper, 2004). In fact, Carnine and Carnine (2004) found out that science content area texts are difficult for most middle school students, particularly those whose reading skills are below grade level (www.glencoe.com). Research in the fields of reading and science education suggests a number of principles that support reading and language arts particularly vocabulary development and science goals (Spencer & Guillaume, 2006).

According to Ediger (2009), the difficulties in reading to understand Science subject matter may be minimized with foresight and skilful methods used in teaching. Vocabulary development is an inherent part of becoming a good reader in Science. The reading activities need to center around the heart of Science which is quality experimentation.

Dismal Performance of Students in Reading, Mathematics and Science

Based on the United Nations Development Report 2009, Philippines is among the countries in the world with higher literacy rate at 93.4 percent in 2008 but the performance of Filipino students in international Mathematics and Science tests stuck at the bottom while struggling at a passing level locally.

Students' performance in the National Achievement Test (NAT) was even more discouraging. Some one million fourth year students' NAT in 2003-2005 had only less than two percent mastery in science, while only 10 percent mastery in mathematics (Manila Bulletin, August 24, 2006). Students' NAT for four succeeding years (2006-2009) in both elementary and secondary levels registered below mastery level of 75 percent. Education officials attributed this on poor reading competence as a principal factor in the miserable performance of students in NAT.

The alarming performance of our Filipino students locally, nationally and internationally necessitates drastic actions from all education sectors. The present study will shed light on some gray areas from previous researches which generally pointed reading as a culprit without dissecting different skills in reading. The result may help education authorities, teachers and other stakeholders to initiate appropriate curriculum revision to integrate reading skills in teaching mathematics and science. In this way, DepEd may achieve its long-term education national goal of registering an overall MPS of 75 percent. Thus, this study is a supportive effort to find ways of improving students' performance in reading, mathematics and science.

Method

The study used prediction research design to identify which of the six reading comprehension skills predict students' performance in both subjects using their scores in the 50-item multiple choice

test for each subject. Moreover, it identified the separate and combined effects of reading skills to students' performance in mathematics and science.

The study was conducted in 18 public and private high schools in Cotabato City, Philippines; the selection of schools was done through equal proportion. It employed a total of 666 sampled student-respondents from both public and private high schools.

Three stages of sampling procedure was undertaken such as selection of schools, selection of first year classes, and selection of student samples. On selection of public schools, the study used complete enumeration. For private schools, the study employed purposive sampling to get nine (9) schools out of eighteen (18) to match similar number of public schools. Then, simple random sampling was utilized to select the private participating schools.

Considering that only first year classes were target respondents, the study randomly selected one section among first year classes in all participating schools using lottery technique. Then, all students in the selected sections were taken as respondents using complete enumeration.

The questionnaires used in the study were adopted from the study of Imam (2009). It is composed of 150-item multiple choice test in Reading Comprehension, Mathematics and Science. The reading comprehension test covered the following areas: understanding vocabulary in context, identifying main ideas, noting details, making inferences, predicting outcomes, and drawing conclusion while mathematics and science tests were based on DepEd curriculum for first year.

The instrument was subjected to validity and reliability tests by experts in English, mathematics and science using four validation criteria such as (a) conformity with the objectives, (b) clarity and construction, (c) level of difficulty, and (d) suitability. Items which failed to meet the above criteria were rejected or modified to satisfy the validation criteria.

The instrument was administered to 30 students who were then excluded in the student sample-15 for public school and another 15 to private school-for pilot testing. The test was given twice to same students, with one month interval, using test-retest method. Scores of students in the first and second test were correlated using Pearson r correlation coefficient to test the consistency of scores. The result showed that the scores are significantly correlated with the following correlation coefficient values: Reading Comprehension .670**, Mathematics' .596**, and Science's .682**. The test was set at 0.01 level of significant which yielded the instrument 99 percent reliable.

For data analysis, Pearson r correlation coefficient was used to establish the correlation of variables, then the linear regression analysis using stepwise regression was applied to find out the predictor and effects of students' performance in mathematics and science. All tests were set at 0.05 level of significance.

Results and Discussion

Reading Predictors of Students' Mathematics Performance in Public Schools

Table 1 contains regression analysis showing the predictor variable significantly affecting the scores of public school students in mathematics. As presented in the Table, Model 1 included only the reading skill which is making inference ($F=7.227$ $p<.05$) as the only single variable which had a contributory power on math performance; the other five variables were excluded in the Model for insignificant contribution. This implies that when math test requires students to use inference, those students in public school who have poor inference skill would definitely be frustrated to arrive at correct solution.

Table 1. Stepwise Regression Result of Analysis of Reading Skill Predictors of Students' Performance in Mathematics in Public Schools

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	300.762	1	300.762	7.227	.008(a)
	Residual	13940.739	335	41.614		
	Total	14241.501	336			

a Predictors: (Constant), Making Inference

b Dependent Variable: Math

Reading Predictors of Students' Mathematics Performance in Private Schools

On the part of private schools, data in Table 2 show that Model 1 indicated getting main idea ($F=5.341$, $p<.05$) as the reading skill that had significant predictive value on students' mathematics performance. Essentially, this finding connotes that a valid predictor variable cannot be overpowered by insignificant correlation generated by overall variables. This also implies that when the math test requires finding what is asked in the problem, students who can identify or get main idea would have better performance.

Table 2. Stepwise Regression Result of Analysis of Reading Skill Predictors of Students' Performance in Mathematics in Private Schools

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	322.787	1	322.787	5.341	.021(a)
	Residual	19763.766	327	60.440		
	Total	20086.553	328			

a Predictors: (Constant), Getting Main Idea
b Dependent Variable: Math

Reading Predictors of Students' Mathematics Performance in Both Public and Private Schools

The overall reading variables in both public and private schools indicated no valid predictor that influenced the overall performance of students in mathematics test. As presented in Table 3 in which Model 1 reveals that when overall reading skill scores are entered to regress with combined math scores, the Model shows none of the six reading variables such as understanding vocabulary in context, getting main idea, noting details, making inference, predicting outcome, and drawing conclusion predicted mathematics performance of students ($F=1.113$, $p<.05$). Generally, this result implies that our students were more exposed on doing algorithm or mathematical computation-the traditional thinking about mathematics. This approach was anchored on math educator's perspective that to improve comprehension of math, instructors must concentrate on teaching mathematics concepts, procedures, generalizations, logical exchange and number facts (Cloer, Jr., www.americanreadingforum.org).

Table 3. Stepwise Regression Result of Analysis of Reading Skill Predictors of Students' Performance in Mathematics in Both Public and Private Schools

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	351.249	6	58.541	1.113	.353(a)
	Residual	34666.547	659	52.605		
	Total	35017.796	665			

a Predictors: (Constant), UVC, GMI, ND, MI, PO, DC
b Dependent Variable: Math

Legend:
UVC – Understanding Vocabulary in Context
GMI – Getting Main Idea
MI – Making Inference
PO – Predicting Outcome

Reading Predictors of Students' Science Performance in Public Schools

As presented in Table 4, Model 1 shows that noting details ($F=12.568$, $p<.05$) is a valid predictor of students' Science performance in public school. In addition, Model 2 shows that noting details and making inference were two predictive variables of students' performance in science. This finding was observed by Bowers (2001) that identifying details is among other reading skills that are complementary to science because of the similarity of reading skills and science process skills. For Kumar and Bristor (1999), inferencing is among other language skills that share similar cognitive process with science. In addition, Armbruster (1993) observed that making inferences is one of the skills that make good scientists and good readers. This implies only that those students in the public schools who possess these skills in noting details and making inference may have an advantage in taking science achievement test.

Table 4. Stepwise Regression Result of Analysis of Reading Skill Predictors of Students' Performance in Science in Public Schools

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	456.978	1	552.783	12.568	.000(a)
	Residual	14734.659	335	43.984		
	Total	15287.442	336			
2	Regression	727.642	2	363.821	8.346	.000(a)
	Residual	14559.800	334	43.592		
	Total	15287.442	336			

a Predictors: (Constant), Noting Details
b Predictors: (Constant), Noting Details, Making Inference
c Dependent Variable: Science

Reading Predictors of Students' Science Performance in Private Schools

Table 5, on the other hand, shows different predictor variables of science performance of students in private schools. In Table 5, Model 1 showed getting main idea ($F=5.005$, $p<.05$) as valid predictor of students' score in science test.

As given in Table 5, Model 2 indicated identifying main idea and drawing conclusion as the two valid predictors of private school students' performance in science. These findings are comparable to Bowers' (2001) additional observation that reading skill such as identifying main idea is complementary to science due to the similarity of reading skills to science process. Moreover, Armbruster (1993) stressed drawing conclusions tends to be a similar skill that makes good scientists and good readers.

Table 5. Stepwise Regression Result of Analysis of Reading Skill Predictors of Students' Performance in Science in Private Schools

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	358.223	1	385.223	5.005	.026(a)
	Residual	25167.093	327	76.964		
	Total	25552.316	328			
2	Regression	864.421	2	432.211	5.707	.004a)
	Residual	24687.897	326	75.730		
	Total	25552.316	328			

a Predictors: (Constant), Getting Main Idea
b Predictors: (Constant), Identifying Main Idea, Drawing Conclusion
c Dependent Variable: Science

Reading Predictors of Students' Science Performance in both Public and Private Schools

Overall, Model 1 identified only understanding vocabulary in context ($F=7.457$) as the reading skill which predicted combined science performance of students as shown in Table 6. This implies that since NAT is given to both public and privates schools, those who have good vocabulary may have a greater chance of performing better in science test, but those with poor vocabulary would have a greater possibility to perform poorly.

According to Spencer and Guillaume (2006), this present finding supports a number of studies pointing out the great role of vocabulary in science learning and performance. They observed that research in the fields of reading and science education suggest a number of principles that support reading and language arts-particularly vocabulary development-and science goals. In addition, Kinniburgh and Shaw Jr. (2008) claimed that because of difficult academic vocabulary and ambiguous explanations of many concepts, science texts are hard for students to read and understand. To become skilled readers of content material, students need to learn the meanings of the academic science vocabulary. For Ediger (2009), he concluded in his study that vocabulary development is an inherent part of becoming a good reader in science.

Moreover, another study found out that vocabulary is greatly needed in comprehending science concepts. Thus, she recommended that teachers continue to use science vocabulary in their conversational speaking during science class. This allows students to hear difficult words being used in context, which attached meaning to words. Another way for vocabulary acquisition is for teacher to make connection with the students' lives and vocabulary (Copper, 2009).

Table 6. Stepwise Regression Result of Analysis of Reading Skill Predictors of Students' Performance in Science in Both Public and Private Schools

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	456.978	1	456.978	7.457	.006(a)
	Residual	40690.926	664	61.282		
	Total	41147.904	665			

a Predictors: (Constant), Understanding Vocabulary in Context
b Dependent Variable: Science

Separate and Combined Effects of Reading Skills to Students' Mathematics

Performance in Public Schools

Earlier regression analysis showed three major findings as follows: (a) making inference is the valid predictor of math performance in public schools, (b) getting main idea is the valid predictor of math performance in private schools, and (c) no valid predictor of math performance with combined reading skills in public and private school was found. These findings show that only valid predictors are entered in the following Model Summary Tables and have single or combined effects which explained the variance.

Table 7 shows that Model Summary contained only valid predictor such as making inference as having an Adjusted R^2 of .018 which means that 1.8 percent of mathematics scores made by students in public schools were explained by their skill in making inference. It is noted that since there was only one valid predictor, the Model Summary provided no combined effect. This means that 98.2 percent of scores can be explained by other factors not subject to the present investigation.

Table 7. Stepwise Regression Result of Separate and Combined Effects of Reading Comprehension Skills to Students' Performance in Math in Public Schools

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.145(a)	.021	.018	6.451

a Predictors: (Constant), Making Inference

Performance in Private Schools

Table 8 shows that Model Summary registered reading skill such as identifying main idea (Adjusted R^2 of .013) to have a separate effect on math scores generated by students in private schools. The result means that 1.3 percent of the math scores was influenced by students' skill in identifying main idea. This means further that 98.7 percent of the variance (math score) can be explained by other factors.

Table 8. Stepwise Regression Result of Separate and Combined Effects of Reading Comprehension Skills to Students' Performance in Private Mathematics Schools

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.127(a)	.016	.013	7.774

a Predictors: (Constant), Getting Main Idea

Performance in Both Public and Private Schools

As presented in Table 9, Model Summary entered the six variables (as constant) since earlier regression results identified no valid predictor of math performance for combined scores of students in reading comprehension. The Model Summary reveals that the constant had nearly zero percent effect (Adjusted R^2=.001). This finding only shows that the overall low mastery level performance of students in mathematics was not influenced or caused by their similar performance in reading comprehension skills. This implies that those valid reading skill predictors of mathematics performance held true only to respective group of students and didn't affect the overall mathematics scores of students. Along this specific research and in the absence of study showing result to the contrary, the present finding refutes

claims by the DepEd that reading comprehension caused students' poor performance in mathematics achievement test (Rimando, 2006).

Table 9. Stepwise Regression Result of Separate and Combined Effects of Reading Comprehension Skills to Students' Performance in Mathematics in Both Public and Private Schools

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.100(a)	.010	.001	7.253

a Predictors: (Constant), UVC, GMI, ND, MI, PO, DC

Legend:
UVC – Understanding Vocabulary in Context
GMI – Getting Main Idea
MI – Making Inference
PO – Predicting Outcome

Separate and Combined Effects of Reading Skills to Students' Science

Performance in Public Schools

It can be glimpsed from earlier regression analysis that there were four valid reading skill predictors of students' performance in science: noting details and making inference in public schools, making inference and drawing conclusion in private schools, as well as understanding vocabulary in context for combined reading scores of students in public and private schools.

Based on these results, the following Summary Tables were drawn. Table 10 presents Summary Model 1 showing that separate effect of noting details on science performance of students in public schools accounted for only 3.3 percent (Adjusted R^2=.033). Subtracting the Adjusted R^2 in Model Summary, it can be derived that the separate effect of making inference was almost one percent (.009). Moreover, Model Summary 2 shows that the combined contributory effect of noting details plus making inference was 4.2 percent (Adjusted R^2=.042). This means the 4.2 percent of the overall science performance in public school as reported by Imam and Abas-Mastura, et al. (2014) was attributed to these two reading skills. The other 95.8 percent of the variance cannot be explained by reading comprehension skills related variables.

Table 10. Stepwise Regression Result of Separate and Combined Effects of Reading Comprehension Skills to Students' Performance in Science in Public Schools

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.190(a)	.036	.033	6.632
2	.218(b)	.048	.042	6.602

a Predictors: (Constant), Noting Details
b Predictors: (Constant), Noting Details, Making Inference

Performance in Private Schools

As contained in Table 11, Model Summary 1 presents that the separate effect of making inference explained 1.2 percent of student's science performance in private schools (Adjusted R^2=.012). In addition, the difference in subtraction equation between Adjusted R^2 value in Model 2 and Adjusted R^2 value in Model 1 gives the separate effect of drawing conclusion on science performance which explained 1.6 percent (Adjusted R^2 .016) of the variance. Moreover, Model Summary 2 shows that the combined contributory effect of these two predictors was only 2.8 percent. This means that greater percentage of students' science performance in private schools is not influenced by reading comprehension skills.

Table 11. Stepwise Regression Result of Separate and Combined Effects of Reading Comprehension Skills to Students' Performance in Science in Private Schools

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.123(a)	.015	.012	7.828
2	.184(b)	.034	.028	7.828

a Predictors: (Constant), Making Inference
b Predictors: (Constant), Making Inference, Drawing Conclusion

Performance in Both Public and Private Schools

Since the only valid predictor in combined reading performance of students was understanding vocabulary in context, Table 12 provides only one Model Summary showing the single effect of predictor variable. Model Summary 1 reveals that only one percent of students' low mastery level in science as reported by Imam and Abas-Mastura, et al. (2014) was influenced by reading comprehension skills particularly understanding vocabulary in context. Looking at this finding seriously, one can rightly reject claims by DepEd and other government officials that students' miserable fate in science achievement test particularly NAT is exclusively attributed to poor reading comprehension.

In summary, all valid predictors whether individual group or combined groups accounted to have less than five percent effect on students' performance in mathematics and science (Imam, Abas-Mastura, et al., 2012; Imam, et al., 2014;). This supports previous literatures showing unique and separate characteristics of these two disciplines: focus on "doing" science instead of reading; comprehending math through concepts, procedures, generalizations, logical exchange and number facts. Nevertheless, the present findings identified reading-related skills that had valid contribution and effect to students' performance in mathematics and science.

Table 12. Stepwise Regression Result of Separate and Combined Effects of Reading Comprehension Skills to Students' Performance in Science in Both Public and Private Schools

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.105(a)	.011	.010	7.828

a Predictors: (Constant), Understanding Vocabulary in Context

Conclusion

Based on the findings, reading predictors of Mathematics and Science performance of students in public schools were different from those in the private schools. Although previous studies have established significant relationship between reading and Mathematics and reading and Science, not all reading skills which were correlated to Mathematics and Science performance could predict performance in the same way that not all uncorrelated reading skills were invalid predictors. Although reading comprehension skills had some degree of influence on students' mathematics and Science, but such influence may not suffice to improve their performance in both subjects. Generally, the poor performance of students in Mathematics and Science can hardly be attributed to reading comprehension skills variable.

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