



ENGLISH LANGUAGE PROFICIENCY AND ACADEMIC PERFORMANCE IN MATHEMATICS AMONG HIGH SCHOOL STUDENTS OF ST. MARY'S COLLEGE OF BORONGAN, INC.

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ABSTRACT

English has become a universal medium of communication, vital for academic and career success. Mathematics, as a fundamental discipline, is equally significant for preparing individuals for the future. However, in the Philippines, declining educational quality is evident, as reflected in the 2018 PISA results, where Filipino students ranked below average in reading, mathematics, and science. This study aims to investigate the relationship between English language proficiency (ELP) and academic performance in mathematics (AMP) among the 220 students of St. Mary's College of Borongan, Inc. Using a descriptive-correlational research design, data were collected through standardized language proficiency tests and academic records in Mathematics to measure the variables of interest. Results indicated that students generally exhibited an approaching proficient level in English Language and a very satisfactory performance in Mathematics, with a mean ELP score of 9.94 and an APM mean of 86.49. Statistical analysis revealed a significant moderate positive correlation ($r=0.328$, $p<0.001$) between ELP and APM, suggesting that higher English proficiency correlates with better performance in Mathematics. In conclusion, this correlational research provides evidence of the relationship between English language proficiency and academic performance in mathematics. It underscores the significance of language skills in mathematical learning and encourages further exploration of instructional approaches that integrate language development and mathematical instruction.

KEYWORDS: English language proficiency, academic performance, mathematics, english, Philippines

INTRODUCTION

English language is now widely used and can be considered as one of the most effective medium of communication in international business and technology-based industries (Arsad, et al., 2014) notes that. It is widely accepted that learning English as a global and universal language is essential for both academic and career success for millions of people whose first language is not English (Azizi, 2024). According to Varaidzai Makondo and Makondo (2020), Mathematics prepares one for the future world. Consequently, many nations take mathematics as a compulsory subject at O'level since it is a fundamental subject for human life.

Numerous studies show declining quality of education in the Philippines, and they show an alarming picture of the K-12 students' performance (Lopez, 2022). For instance, the Program for International Student Assessment (PISA) report (OECD, 2018) revealed that the Philippines ranked 79th in reading skills with an average of 340 points against Organization for Economic Cooperation and Development (OECD) average of 487 points. Worse, Filipino students obtained low ratings in mathematics and science with 353 points and 357 points against 489 points by OECD (Paris, 2019).

The interaction between English language proficiency and academic performance in mathematics has become a focal point in educational research, acknowledging the pivotal role

language plays in comprehending and communicating mathematical concepts. This background of the study aims to delve into the intricate dynamics between English language proficiency and mathematical academic performance, recognizing the multifaceted ways in which language skills impact students' success in the realm of mathematics.

As a response to this issue, this study aims to determine the English Language Proficiency and academic performance of the students in Mathematics, and investigate the relationship between the English Language Proficiency and academic performance in Mathematics of the students of St. Mary's College of Borongan.

Objectives

1. To describe the profile of the respondents in terms of:
 - 1.1. Age
 - 1.2. Gender
 - 1.3. Language preference (Monolingual, Bilingual, or Multilingual)
2. To determine the level of English Language Proficiency of the students based on their mean score and standard deviation.
3. To determine the level of Academic Performance in Mathematics of the students based on their mean score and standard deviation.



4. To identify the significant relationship between English Language Proficiency and Academic Performance in Mathematics of the students.

5. To examine the influence of confounding variables such as age, gender, and language on both English Language Proficiency and Academic Performance in Mathematics.

METHODOLOGY

In this study, a descriptive-correlational research design is utilized. This design was made use to determine the relationship between English Language Proficiency and Academic Performance in Mathematics of the selected respondents. The descriptive component was used to present the demographic profile of the respondents and determine their levels of English Language Proficiency and Academic Performance in Mathematics through frequency distributions, means, and standard deviations. The correlational component, on the other hand, was utilized to determine the significant relationship between English Language Proficiency and Academic Performance in Mathematics, as well as the confounding variables.

Sampling Design

This study has the total population of 487 students of the High School level of St. Mary's college of Borongan, Inc. Furthermore, this study utilized the Slovin's Formula to determine the sample size which has a total of 220 students. In addition, this study used the stratified sampling technique to determine the respondents of the study. Having the 14 sections as strata, this study has 16 students as respondents per section.

Statistical Design

The data gathered were analyzed and interpreted using appropriate statistical tools. Frequency distribution and percentages were used to describe the demographic profile of the respondents in terms of age, gender, and language preference. Mean and standard deviation were utilized to determine the level of English Language Proficiency and Academic Performance in Mathematics of the respondents. Lastly, Pearson r correlation was employed to determine the significant relationship between English Language Proficiency and Academic Performance in Mathematics, as well as the confounding variables, at a 0.05 level of significance.

Geographical Area

This study was conducted at St. Mary's College of Borongan, Inc., a private Catholic educational institution located at E. Cinco St., Brgy. A, Borongan City, Eastern Samar. The school offers both Junior and Senior High School programs, making it an appropriate setting for this study. The data gathering was carried out during the first semester of the school year 2025–2026.

RESULTS

I. Profile of the Respondents

The demographic profile of the 220 student-respondents of St. Mary's College of Borongan, Inc. was analyzed in terms of age, gender, and language preference. In terms of age, majority of the respondents belong to the 17-19 years old age bracket comprising 93 students or 42.3%, followed by 14-16 years old

with 75 students or 34.1%, and 11-13 years old with 49 students or 22.3%. The remaining minority belongs to the 20-22 years old and 23-25 years old age brackets with 2 or 0.9% and 1 or 0.5% respectively. As to gender, 104 or 47.3% are male and 116 or 52.7% are female. In terms of language preference, majority of the respondents are multilingual comprising 206 students or 93.6%, followed by bilingual with 10 students or 4.5%, and only 4 or 1.8% are monolingual.

II. Level of English Language Proficiency of the Students

The English Language Proficiency level of the 220 respondents was determined through a standardized language proficiency test. Results revealed that 19 or 8.6% of the students are at the Beginning Proficient level, 65 or 29.5% are at the Developing Proficient level, 79 or 35.9% are at the Approaching Proficient level, 45 or 20.5% are at the Proficient level, and only 12 or 5.5% reached the Advanced Proficient level. The overall mean score of 9.94 with a standard deviation of 3.96 indicates that the students are generally at the Approaching Proficient level in English Language Proficiency.

III. Academic Performance in Mathematics of the Students

The Academic Performance in Mathematics of the respondents was determined based on their grades in General Mathematics subject. Results showed that none of the students fell under the Did Not Meet Expectation category, while only 6 or 2.7% were under the Fairly Satisfactory category. Furthermore, 77 or 35.0% had a Satisfactory performance, 76 or 34.5% had a Very Satisfactory performance, and 61 or 27.7% had an Outstanding performance. The overall mean grade of 86.49 with a standard deviation of 4.87 indicates that the students generally have a Very Satisfactory performance in Mathematics.

IV. Relationship between English Language Proficiency and Academic Performance in Mathematics

The Pearson r correlation was used to determine the significant relationship between English Language Proficiency and Academic Performance in Mathematics of the respondents. Results revealed a significant moderate positive correlation ($r = 0.328$, $p < 0.001$) between the two variables. Since the p -value is less than the 0.05 level of significance, the null hypothesis is rejected, indicating that there is a significant relationship between English Language Proficiency and Academic Performance in Mathematics. This means that as the English Language Proficiency level of the students increases, their Academic Performance in Mathematics also increases.

V. Relationship between the Confounding Variables and English Language Proficiency and Academic Performance in Mathematics

The results further revealed the relationships of the confounding variables with the two main variables of the study. Age showed a significant moderate positive correlation with English Language Proficiency ($r = 0.622$, $p < 0.001$), indicating that older students tend to have higher English Language Proficiency levels. Gender, on the other hand, showed no significant relationship with both English Language Proficiency ($r = 0.035$, $p = 0.605$) and Academic Performance in Mathematics ($r = 0.008$, $p = 0.904$). Lastly, language preference showed a significant but weak positive correlation



with English Language Proficiency ($r = 0.144$, $p = 0.033$), Academic Performance in Mathematics ($r = 0.149$, $p = 0.027$), and age ($r = 0.186$, $p = 0.006$).

SUGGESTIONS

Teachers should integrate English language development strategies into Mathematics instruction, such as simplifying mathematical terminologies and using visual aids to help students better comprehend mathematical concepts. Schools should also provide enrichment and remedial programs to improve the English Language Proficiency of students, as this may consequently improve their performance in Mathematics. Since language preference showed a significant relationship with both variables, teachers are encouraged to adopt multilingual instructional approaches that acknowledge the linguistic backgrounds of the students. Lastly, future researchers are encouraged to explore other variables that may influence the relationship between English Language Proficiency and Academic Performance in Mathematics, such as socioeconomic status, study habits, and teaching strategies,

and to conduct similar studies in other schools or regions for broader and more generalizable findings.

CONCLUSION

The findings of the study show that there was a significant relationship between language proficiency in English and mathematical performance among the students at St. Mary's College of Borongan. Moreover, it has been learned that students who are fluent in the English language perform more effectively in mathematics. Hence, language skills are very necessary for the comprehension and resolution of mathematical problems. The study further shows that age has a positive relationship with language proficiency, meaning the more mature the students are, the better they are in understanding the concepts of English. The study also shows a moderate relationship between students' language backgrounds and their performance, which calls for intervention in linguistic diversity in the classroom. These results suggest that language proficiency in English is critical to academic performance, especially in Mathematics.

FIGURES AND TABLES

Figure 1: Age Distribution of the Students

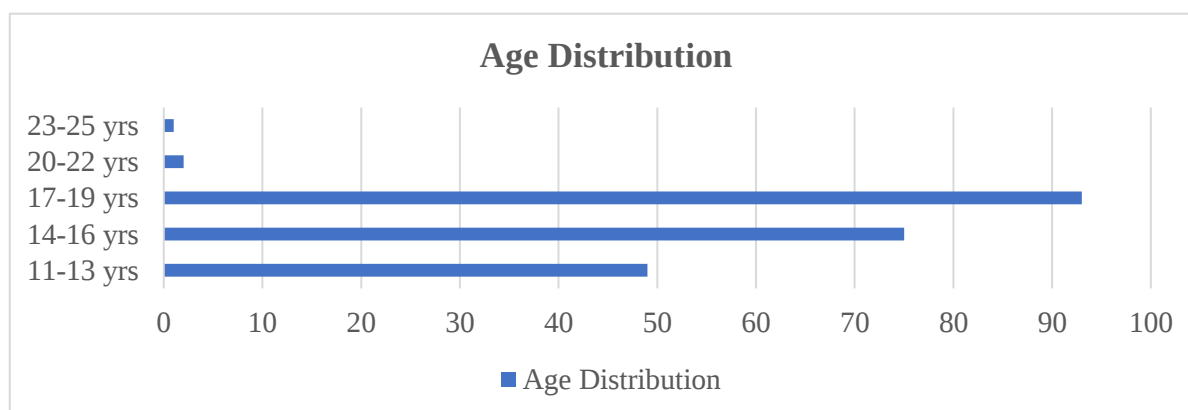


Figure 2: Gender Distribution of the Students

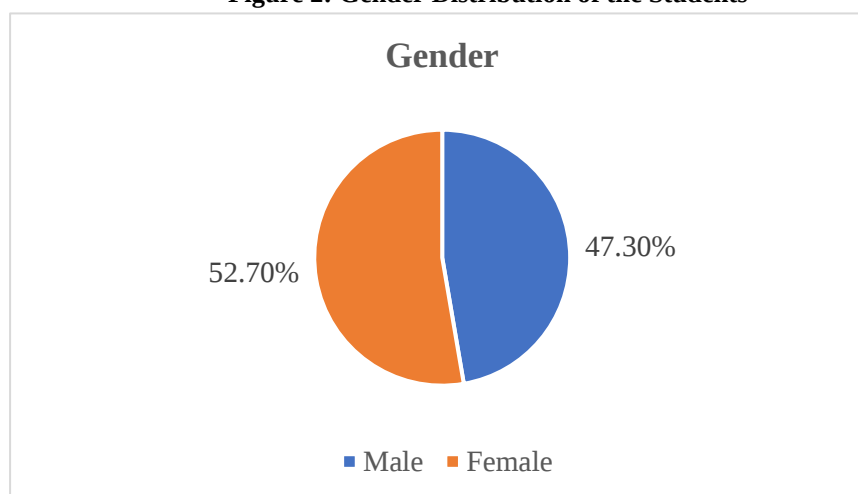


Figure 3: Language Preference of the Students

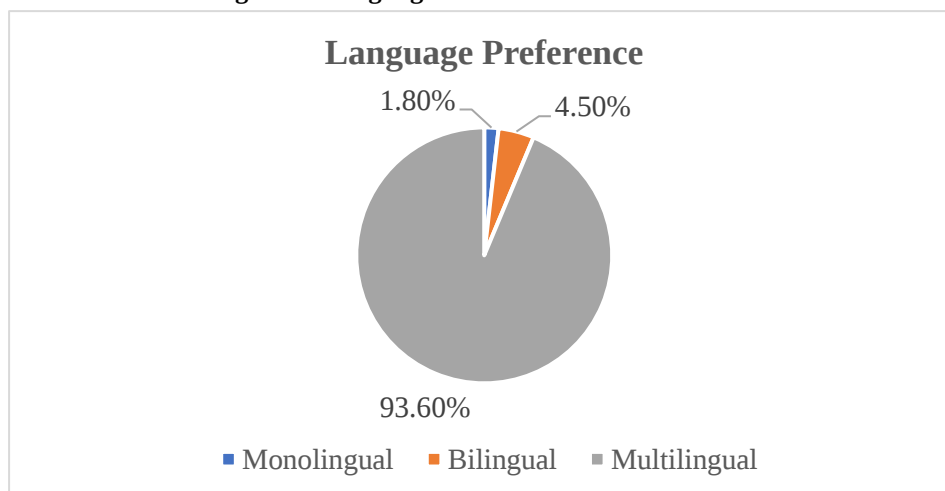


Table 1: Mean and Standard Deviation of the students in SMCB

	Mean	Standard Deviation	Interpretation
English Language Proficiency	9.94	3.96	Approaching Proficient
Academic Performance in Mathematics	86.49	4.87	Very Satisfactory

Table 2: Frequency Distribution on English Language Proficiency of the students in SMCB

English Language Proficiency	Frequency	Valid Percent
Beginning Proficient	19	8.6%
Developing Proficient	65	29.5%
Approaching Proficient	79	35.9%
Proficient	45	20.5%
Advanced Proficient	12	5.5%
Total	220	100%

Table 3: Frequency Distribution on Academic Performance in Mathematics of the students in SMCB

Academic Performance	Frequency	Valid Percent
Did not meet expectation	0	0%
Fairly Satisfactory	6	2.7%
Satisfactory	77	35.0%
Very Satisfactory	76	34.5%
Outstanding	61	27.7%
Total	220	100%

Table 4: Correlation Coefficient (p) test of relationship between English Language Proficiency (ELP), Academic Performance in Mathematics (APM), and Cofounding Variables

		ELP	APM	Age	Gender	Language
ELP	Correlation Coefficient	1	0.328**	0.622**	0.035	0.144*
	Sig. (2-tailed)		<0.001	<0.001	0.605	0.033
	N	220	220	220	220	220
APM	Correlation Coefficient	0.328**	1	-0.121	0.008	0.149*
	Sig. (2-tailed)	<0.001		0.073	0.904	0.027
	N	220	220	220	220	220
Age	Correlation Coefficient	0.622**	-0.121	1	0.001	0.186**
	Sig. (2-tailed)	<0.001	0.073		0.986	0.006
	N	220	220	220	220	220
Gender	Correlation Coefficient	0.035	0.008	0.001	1	-0.014
	Sig. (2-tailed)	0.605	0.904	0.986		0.838
	N	220	220	220	220	220
Language	Correlation Coefficient	0.144*	0.149*	0.186**	-0.014	1
	Sig. (2-tailed)	0.033	0.027	0.006	0.838	
	N	220	220	220	220	220

** Correlation is significant at 0.01 level. * Correlation is significant at 0.05 level.



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