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Reading comprehension and students' academic performance in English

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Abstract

Aims: The main goal is to identify, examine, and recommend techniques for enhancing academic performance and reading comprehension abilities. The ultimate goal is to significantly aid students' overall achievement in their academic endeavors.

Study design: The design used in this study is descriptive research.

Place and duration of study: Nicolas L. Galvez memorial national high school

Methodology: Grade 7 students of Nicolas L. Galvez memorial national high school consisting two hundred eighty nine (289) students were the chosen respondents of the researchers.

Results: There is a significant difference between the students' reading comprehension proficiency and academic performance, as the results showed that most of the respondents' struggled comprehending the text affected the academic performance. In addition to that, reading comprehension is essential as it helps them to understand any instruction resulting in independent readers.

Conclusion: There is a significant difference between the students' reading comprehension and academic performance.

Keywords: Reading Comprehension; Academic Performance; Literal; Inferential; Evaluative; Relationship

1. Introduction

The ability to read is essential for everyday life and academic success. One of the most crucial abilities that every learner must master is reading, as it serves as the gateway to knowledge and information. All study areas require reading as a prerequisite, making it an indispensable skill for any student.

A strong foundation in reading can lead to better understanding of academic materials, improved critical thinking skills, and higher academic performance. However, many students struggle with reading comprehension, which significantly impacts their academic progress negatively. Overcoming this

Challenge is vital to unlocking the full potential of every learner.

This thesis aims to explore the relationship between reading comprehension and students' academic performance as well as the level of students reading comprehension. The goal is to identify and recommend strategies that can help

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improve both reading comprehension and academic outcomes, contributing to the overall success of students in their educational journey

2. Materials and methods

The researchers used a descriptive method of research. In this research design, the primary objective was to gather comprehensive and factual data to provide a clear and detailed understanding of the subject under investigation. By focusing on the what, when, where, and how aspects, descriptive research design avoids delving into causal relationships or making predictions about the future. Instead, it emphasizes the collection of data through methods such as surveys, observations, or secondary data analysis, enabling researchers to present an accurate and objective portrayal of the phenomenon, situation, or population of interest. Through this approach, descriptive research design contributes valuable insights that can inform decision-making processes, policy development, or further exploratory studies. research

Locale the study was conducted at Nicolas L Galvez memorial national high school. The researchers selected 289 respondents out of 537 grade 7 students as of January 2023. The school is located in barangay san Antonio, bay, Laguna.



Figure 1 Location of the study

The researchers used the slovin's formula to determine the number of respondents of the study. Slovin's formula is employed to determine the smallest sample size required to estimate a statistic with a reasonable margin of error. The researchers used .04/4% as the margin of error to gain the sample from the absolute center of population. The respondents were grade 7 students of Nicolas I. Galvez memorial national high school located at barangay san Antonio, bay, Laguna. The researchers selected 289 respondents out of 537 students which were ideal to support the study.

The researchers used survey questionnaires as an instrument for collecting data from the respondents. Reading selection to read and guide questions with multiple choices was used.

A letter of request was given to the principal of Nicolas I. Galvez memorial national high school. The researchers also prepared a letter for the selected respondents of the study. After the letter was signed by the principal and approved by the head teacher of the English department, the study was then conducted. The data gathering procedure for the study involved a pre-test, intervention, and post-test conducted over a three-day period. The pre-test assessed the students' initial level of reading comprehension, followed by an intervention session aimed at enhancing their skills. Finally, the post-test evaluated the effectiveness of the intervention on the students' academic performance. By analyzing the data collected from these stages, the researchers aimed to gain insights into the relationship between reading comprehension and students' academic achievement in English. The results of the study will contribute to the understanding of effective strategies for improving reading comprehension skills and may provide recommendations for educational interventions in the future. The data collected were assessed and enough to come up with the needed data for the study.

After collecting the data needed, the researchers analyzed the data with the help of statistical tools. The following are the statistical tools that were used in the study together with their corresponding formulas. Mean was used to determine the average of student’s reading comprehension before and after the 3-day reading program intervention.

A paired t-test is a statistical test used in this research to compare the means of two related groups or conditions. It is applied when the same subjects are measured or observed under two different conditions, or when a single group is measured twice (before and after the intervention or treatment). The paired t-test evaluates whether there is a significant difference between the means of the paired measurements, taking into account the within-subject variability and reducing the influence of individual differences.

Table 1 Treatment of data

Mean	$\frac{\text{Sum of the terms}}{\text{Number of terms}}$
Paired t-test	$t = \frac{\sum d}{\sqrt{n} \sqrt{\frac{\sum d^2}{n} - \frac{(\sum d)^2}{n^2}}}$ <p>Where:</p> <ul style="list-style-type: none"> ● \bar{d} is the mean of difference in the change variable, ● s_d is standard deviation of difference in change variable ● n is the size of the sample.

3. Results and discussion

The presentation of the major findings followed the order of the statement of the problem, namely: what is the reading comprehension level of grade 7 students at nicolas galvez memorial integrated national high school before the 3-day reading program intervention? What is the grade 7 students’ academic performance after the 3-day reading program intervention? Is there a significant difference between the level of students’ reading comprehension before and after the intervention?

Table 2 Pre-test result

Levels of comprehension	Scores	Mean (average)
Literal	682	2.47
Inferential	282	0.93
Evaluative	191	0.65
Overall score/mean	1,149	3.98

During pre-test, the scores obtained in different comprehension categories were as follows: literal comprehension with a score of 682, inferential comprehension resulted in a score of 282, and evaluative comprehension yielded a score of 191. The cumulative score across all categories amounted to 1,149. The mean scores for the respective categories were observed to be as follows: literal comprehension had a mean score of 2.47, inferential comprehension had a mean score of 0.93, and evaluative comprehension had a mean score of 0.65. The overall mean score, encompassing all comprehension categories, was calculated to be 3.98. These findings suggested that the participants exhibited a stronger grasp of literal comprehension in comparison to inferential and evaluative comprehension. Furthermore, the overall mean score indicates a moderate level of comprehension proficiency.

To add support on that, a foreign study stated that “literal items being significantly easier compared to inferential and evaluative items, and when measuring comprehension” this suggests that participants had a higher level of proficiency in understanding literal information, which involves directly retrieving explicit details from the text.

Additionally, the results of the most recent pisa (program for international student assessment) study indicated that 19% of 15-year-old students which were mostly at grade 7 globally scored below a level 2, which indicates that they have difficulty with tasks such as recognizing main ideas, locating explicitly stated information, and making low-level inferences in a familiar topic.

Table 3 Post test result

Levels of comprehension	Scores	Mean (average)
Literal	744	2.58
Inferential	339	1.17
Evaluative	213	0.74
Overall score/mean	1,297	4.49

Following the intervention, the assessment results revealed a significant change in the participants' performance. Specifically, in the post-test, the scores for literal comprehension were 744, inferential comprehension were 339, evaluative comprehension were 213, and the overall score was 1297. The mean scores for each category were as follows: literal comprehension had a mean score of 2.58, inferential comprehension had a mean score of 1.17, evaluative comprehension had a mean score of 0.74, and the overall mean score was 4.49. These findings indicate a statistically significant improvement in the participants' performance, particularly in the category of literal comprehension, where the mean score exhibited a substantial increase from the pre-test score. The participants also demonstrated progress in the categories of inferential and evaluative comprehension, with mean scores of 1.17 and 0.74, respectively. Collectively, the post-test scores and means provide compelling evidence of the intervention's effectiveness in enhancing the participants' comprehension abilities.

To add support on that, according to auld (2019), "students who engage in independent reading exhibit enhanced reading comprehension, verbal fluency, and general knowledge compared to their non-reading counterparts. They experience improvements in their reading abilities and achieve higher scores on academic assessments across various subjects" this suggests that engaging in reading activities promotes critical thinking skills and enhances reading comprehension abilities among students, which in turn proves advantageous across all academic subjects

Additionally, according to compe (2018), "the majority of pupils struggled with reading comprehension and had to work on improving their academic English ability. This suggests that kids' reading comprehension affects their academic success in English. When a student's reading comprehension declines, their academic performance in English also decreases; similarly, when a student's reading comprehension improves, their English academic performance also increases." This suggests that when a student's 33 reading comprehension improves, it means they are becoming more proficient in understanding and extracting meaning from texts. With enhanced comprehension skills, they are better equipped to grasp the nuances of English language usage, vocabulary, grammar, and writing conventions. Their academic performance in English tends to increase because they can engage more deeply with the subject matter, demonstrate a stronger command of language, and produce higher-quality written work

Table 4 Paired t-test result

	Variable 1 (x)	Variable 2 (y)
Mean	3.96	4.49
Variance	1.57	1.43
Observations	289	289
Pearson correlation	0.68	
Hypothesized mean difference	0	
Df	288	
T stat	-8.86	
P (t<=t) one-tail	4.30	
T critical one-tail	1.65	
P (t<=t) two-tail	8.59	
T critical two-tail	1.97	

Based on the analyzed results, the mean of variable 1 (x) was found to be 3.98, whereas the mean of variable 2 (y) was determined to be 4.49. The variances for variable 1 and variable 2 were estimated to be 1.57 and 1.43, respectively. The sample size for both variables is made up of 289 observations.

The Pearson correlation coefficient between variable 1 and variable 2 yielded a value of 0.68, indicating a moderately positive correlation between the two variables. The null hypothesis assumed no difference in means between the paired samples, and the hypothesized mean difference was set at -0. With 288 degrees of freedom, the calculated t-statistic was found to be -8.86. This t-statistic quantifies the extent of the mean difference relative to the within-sample variability.

For the one-tailed test, the resulting p-value was 4.29, indicating extremely strong evidence against the null hypothesis. Therefore, the null hypothesis can be rejected. Considering a chosen significance level of 0.05, the critical t-value for the one-tailed test was 1.65. Since the absolute value of the calculated t-statistic exceeded the critical t value, the null hypothesis was rejected. Similarly, the two-tailed test yielded a p-value of 8.59, providing compelling evidence against the null hypothesis. The critical t-value for the two-tailed test, at a significance level of 0.05, was 1.97. Once again, the absolute value of the calculated t-statistic greatly surpassed the critical t-value, leading to the rejection of the null hypothesis.

In conclusion, based on the aforementioned results, there exists strong evidence to support the presence of a significant difference between the means of the paired samples (variable 1 and variable 2).

To add support on that, according to a study conducted by Dima Hijazi (2018), "it identifies a statistically significant difference in students' achievement that can be attributed to variances in their reading comprehension abilities." This study concluded that there was also a statistically significant difference between students' reading comprehension and in their achievement. Also, "the study reveals a strong correlation between reading comprehension and English achievement, emphasizing the need for students to employ various reading comprehension techniques to comprehend texts effectively" indicating that there is a significant relationship between students' reading comprehension and their academic performance.

Additionally, Bayazit and Ozdemir' (2019) study suggests that "reading comprehension is a significant factor in achieving success in English, and it is essential to improve this skill to enhance one's English proficiency. The study provides valuable insights into the importance of reading comprehension in achieving academic success in English." The mentioned study offers valuable insights by highlighting the significance of reading comprehension in achieving academic excellence specifically in the subject of English. By recognizing the importance of reading comprehension in English, students can prioritize the development of this skill to enhance their language proficiency and excel in their academic pursuits in the subject.

4. Conclusion

Based on the findings of the study, the researchers concluded that:

- The preliminary assessment results indicate that the participants had a stronger understanding of literal comprehension compared to inferential and evaluative comprehension. The overall mean score suggests a moderate level of comprehension proficiency.
- The intervention resulted in improvements in the participants' performance. There was a statistically significant increase in scores, particularly in literal comprehension. The mean scores also showed progress in inferential and evaluative comprehension. These findings provide compelling evidence of the intervention's effectiveness in enhancing comprehension abilities.
- The analysis of variable 1 and variable 2 revealed a significant difference between their means. The calculated t-statistic was considerably larger than the critical t value for both one-tailed and two-tailed tests.
- This leads to the rejection of the null hypothesis, indicating a significant difference between the means of the paired samples.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare no conflicts of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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