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Interpolating Learners' Study Habit in Relation to the Academic Performance in Mathematics 5

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development education, interpolating study habit strategies in the mathematics 5 performance, descriptive-quantitative research method, Cebu, Philippines

Abstract. This research assessed the study habits in relation to their academic performance of Grade 5 Mathematics learners among the select public elementary schools in the Division City of Naga, Cebu, for School Year 2025-2026. The learners rendered 20-contact hours of Math program, including instruction and activities suited to their specific needs in relation to Interposing study habit approach intended for academic performance on mathematics as learning aid towards strategic education. Self-administered questionnaires are to be delivered online or in paper-and-pencil test format to 100 respondents among the identified schools in the City of Naga, Cebu Division. However, despite high training exposure, this must be examined alongside performance ratings to determine effectiveness. The findings reveal that learners' study habits, particularly consistency, organization, and self- discipline, are closely linked to their academic performance, though the degree of association varies across competencies. These variations highlight specific areas where learners may struggle due to insufficient study habits, emphasizing the need for targeted interventions that address both behavioral and cognitive aspects of learning. The findings provide a strong basis for developing study-habit strategies aligned with learners' actual needs. Learners are approaching mastery in some competencies, a significant portion still falls under "Lack Mastery," indicating persistent challenges in comprehension and application. For some challenges, can be managed through minor adjustments, others require immediate and strategic interventions. Based on the conclusions reached in this research, it is highly recommended that Interpolated study habits strategies for all schools in the Division of City of Naga, Cebu be considered to elevate learners in Mathematics.

Introduction

Study habits play a crucial role in shaping learners' academic performance, particularly in Mathematics, where consistent practice and cognitive engagement are essential for mastery. Recent studies emphasize that effective study habits—such as time management, organization, and self-discipline—significantly influence learners' achievement and retention of mathematical concepts (OECD, 2022; UNESCO, 2021). In the Division City of Naga, Cebu, understanding how these habits relate to Grade 5 learners' performance is vital in addressing gaps in comprehension and application. Despite exposure to structured Mathematics programs, variations in learners' mastery levels suggest that study behaviors remain a key factor in academic success. This study examines the relationship between study habits and performance, highlighting areas needing targeted intervention. The findings serve as a basis for developing responsive and strategic approaches, such as interpolated study habit strategies, to enhance learners' mathematical proficiency and overall academic outcomes.

Methodology

Design

This study Descriptive-Quantitative Research Method employed design to examine the relationship between study habits and the academic performance of Grade 5 Mathematics learners in selected public elementary schools in the Division City of Naga, Cebu for School Year 2025–2026. The design was appropriate as it allowed the researcher to describe learners' study behaviors while determining their association with performance outcomes without manipulating variables. A total of 100 respondents were selected through purposive sampling. Data were gathered using a self-administered questionnaire distributed through both online platforms and paper-and-pencil formats to ensure accessibility. The instrument measured key dimensions of study habits such as consistency, organization, and self-discipline, alongside learners' Mathematics performance ratings. Learners also participated in a 20-contact-hour Mathematics program integrating an interposing study habit approach. Statistical tools, including frequency, percentage, mean, and correlation analysis, were used to analyze the data and determine the strength of relationships between variables.

Environment.

The research was conducted in select public elementary schools in the City of Naga, Cebu, under the Division of Naga during School Year 2025–2026. These schools offer a structured learning environment where Grade 5 learners receive formal Mathematics instruction in line with national curriculum standards. The setting represents a typical public school, marked by learners of diverse academic abilities and study habits. Within this environment, learners participated in a 20-contact-hour Mathematics program including an interposing study habit approach. The schools utilize both traditional and flexible learning modalities, enabling data collection through online and paper methods and supporting interventions to enhance learners' academic performance.

Respondents.

The respondents of the study consisted of 100 Grade 5 learners enrolled in selected public elementary schools in the City of Naga, Cebu, during the School Year 2025–2026. These learners were chosen through purposive sampling to ensure they were actively participating in the Mathematics program and capable of providing relevant data on their study habits. The group represented a mix of academic abilities, learning styles, and levels of study discipline, reflecting the diversity of a typical public-school population. All respondents completed the 20-contact-hour Mathematics program and answered the self-administered questionnaire, either online or through paper-and-pencil format, ensuring inclusivity and accessibility in data collection.

Research Instrument.

The primary research instrument used in this study was a structured, self-administered questionnaire designed to assess the study habits of Grade 5 learners in selected public elementary schools in the City of Naga, Cebu. The questionnaire consisted of clearly organized sections focusing on key dimensions of study habits, including consistency, time management, organization, and self-discipline. Items were presented using a Likert scale to capture the frequency of learners' study behaviors. The instrument was adapted from validated study habit inventories and modified to suit the learners' level of understanding. It underwent content validation by education experts and pilot testing to ensure reliability and clarity. In addition, learners' academic performance was obtained from official Mathematics grades, allowing for comparison and correlation with their reported study habits.

Data Collection Procedure

The data collection procedure for this study followed a methodical and ethical approach to ensure precision and reliability. Before gathering data, approval was obtained from school authorities in the City of Naga, Cebu, and consent was secured from teachers and parents of the Grade 5 learners. The researcher then briefed the respondents on the study's objectives and provided detailed instructions for completing the questionnaire. The self-administered survey was distributed through digital platforms or in paper-and-pencil format, depending on accessibility. Respondents were allotted ample time to finish the instrument. Upon collection, responses were thoroughly reviewed, organized, and encoded. Learners' Mathematics grades were also obtained from school records to facilitate analysis and verify the relationship between study habits and academic performance.

Data Analysis

The data gathered in this study were analyzed using appropriate statistical tools to ensure clear interpretation and meaningful conclusions. Responses from the questionnaires were first tallied, coded, and organized systematically.

Descriptive statistics such as frequency counts, percentages, and weighted mean were used to determine the level of learners' study habits in terms of consistency, organization, and self-discipline. To assess academic performance, learners' Mathematics grades were summarized and categorized based on mastery levels. Furthermore, inferential statistics, particularly correlation analysis, were employed to examine the relationship between study habits and academic performance. This analysis helped determine the strength and direction of association between variables. All computations were carefully conducted to ensure accuracy, providing a reliable basis for identifying trends and formulating data-driven recommendations for learners in the City of Naga, Cebu.

Results and Discussion

The results of the study indicated a significant relationship between study habits and academic performance among Grade 5 Mathematics learners in the City of Naga, Cebu. Learners who consistently practiced effective study behaviors—such as maintaining regular study schedules, organizing learning materials, and demonstrating self-discipline—generally achieved higher performance levels in Mathematics. However, the strength of this relationship differed across competencies, with some learners nearing mastery while a substantial number remained in the "Lack Mastery" category, reflecting persistent challenges in comprehension and application. These findings support recent research emphasizing that structured study habits enhance cognitive engagement and academic outcomes (UNESCO, 2021; OECD, 2022). Overall, the results highlight the importance of targeted, data-driven interventions to strengthen both behavioral and cognitive aspects of learning and improve Mathematics achievement.

Discussion

The study highlights the critical role of Mathematics in shaping learners' cognitive development and academic growth among Grade 5 pupils in the City of Naga, Cebu. Mathematics is not only a subject for acquiring numerical skills but also a foundation for developing problem-solving, logical reasoning, and analytical thinking. The results show that learners with strong study habits—such as consistency, organization, and self-discipline—are better able to grasp mathematical concepts and apply them effectively. However, the presence of learners under the "Lack Mastery" level indicates that difficulties in Mathematics can hinder overall academic progress and confidence. This suggests that poor study habits may limit learners' ability to fully benefit from instruction. Consistent with insights from UNESCO (2021), strengthening study behaviors can significantly improve learning outcomes, reinforcing Mathematics as a vital tool for intellectual and academic development.

Conclusion and Recommendations

The study affirms that strengthening study habits has a positive and meaningful effect on the academic performance of Grade 5 Mathematics learners in the City of Naga, Cebu. Mathematics serves as a vital learning area that develops learners' logical thinking, problem-solving skills, and perseverance in tackling complex tasks. The findings clearly show that learners who practice consistent, organized, and disciplined study behaviors are more likely to achieve higher levels of understanding and approach mastery in key competencies. While some learners still fall under the "Lack Mastery" category, this highlights opportunities for improvement rather than failure. With appropriate and targeted interventions, these challenges can be addressed effectively. Overall, Mathematics, when supported by strong study habits, becomes a powerful tool for intellectual growth, helping learners build confidence, improve academic achievement, and develop essential skills needed for lifelong learning and future success.

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Competing Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

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Appendices

No appendices are attached to this study.