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Enhancing Constructive Classroom Instruction Strategies in Numeracy Skills: Its Effect on Academic Achievement

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master of education, constructive classroom instruction in numeracy skills, its strategies and effect on academic achievement, quantitative research method, CTU main campus, Cebu City, Philippines

Abstract. This research assessed the adoption of constructive classroom instruction in relation to the academic achievement in Grade 6 Numeracy among the select Public Elementary Schools of Cebu Province Division, Region VII during the School Year 2025-2026. A total of 120 respondents composing of 12 teachers and 108 Grade 6 learners from among the select Elementary Schools of Cebu Province Division. For the teachers' profile strengthens the credibility of the findings and supports the development of contextualized learning tasks grounded in actual classroom conditions. For the learners also provide a basis for designing learning tasks that are responsive to the learners' needs, capabilities, and home support systems. The findings provide a basis for identifying strengths and areas for improvement in instructional practices, guiding the development of contextualized learning tasks and enhancing overall academic achievement in numeracy. Academic achievements in numeracy 6 learners provide valuable insights for designing targeted interventions and contextualized learning tasks that address identified learning gaps and enhance overall student performance. The significant association between the learning strategies used to implement constructive classroom instruction and the academic achievements of Grade 6 learners in numeracy identifies which strategies are more strongly associated with specific numeracy competencies, thereby guiding educators in selecting and improving teaching approaches. Addressing these concerns is vital in enhancing the quality of numeracy instruction and improving learners' academic achievement. There were issues and concerns identified in relation to this research. Accordingly, it is therefore recommended that appropriate Contextualized Learning Activities for all schools in the Division of Cebu Province be considered to elevate learners academic.

Introduction

In 2025, international issues regarding competency-based numeracy skills are characterized by a growing crisis in foundational learning, a shift towards application-based assessments, and significant challenges in implementing new, flexible curricula. Reports indicate a widening gap between required workforce skills and student proficiency, heavily impacted by the lingering effects of pandemic-related school closures. The World Bank estimates that 70% of 10-year-olds in low- and middle-income countries are unable to understand age-appropriate text or perform basic numeracy, a figure that has increased since 2019. Recent assessments in OECD countries (e.g., UK, Australia, France) show that a significant portion of adults possess only primary-level numeracy skills, posing risks for employment and social inclusion. Recent data suggests that foundational numeracy skills continue to decline, with roughly one in three 15-year-olds in some regions struggling to apply mathematics in real-life situations.

Numeracy, the ability to understand and work with numbers effectively, is a foundational skill essential for success in various aspects of life, including education, employment, and daily decision-making. In the realm of education, numeracy forms the bedrock upon which mathematical competency and skills development are built. However, despite its

significance, there remains a considerable gap in understanding the key determinants that contribute to the acquisition and enhancement of numeracy skills among learners. Across the globe, mathematics competency and skill development are essential parts of curriculum that lay the groundwork for future career prospects and academic achievement. The foundation of mathematical proficiency is numeracy, or the capacity to comprehend and manipulate numbers. Numeracy affects daily decision-making and problem-solving skills in addition to academic achievement. The factors that determine numeracy and how it affects general mathematical proficiency are still intricate and multidimensional, despite their significance, and they demand further research.

Methodology

Design

This study employed a quantitative research design, specifically a descriptive-correlational approach, to examine the relationship between the adoption of constructive classroom instruction and the academic achievement of Grade 6 learners in numeracy. The respondents consisted of 120 participants, including 12 teachers and 108 learners from selected public elementary schools in the Cebu Province Division during the School Year 2025–2026. Data were gathered using structured survey questionnaires for teachers to assess instructional strategies and standardized assessment records to measure learners' numeracy performance. The instruments were validated and pilot-tested to ensure reliability. Statistical tools such as frequency, percentage, mean, and correlation analysis were used to interpret the data and determine the significant association between variables. Ethical considerations, including informed consent and confidentiality, were strictly observed. This method allowed the researcher to generate reliable insights for developing contextualized learning activities and improving instructional practices in numeracy.

Environment

The research was conducted in selected public elementary schools within the Cebu Province Division, Region VII, during the School Year 2025–2026. These schools provide a typical learning environment where diverse groups of Grade 6 learners engage in numeracy instruction under the guidance of experienced teachers. The classrooms reflect real educational settings, characterized by varying levels of resources, learner abilities, and support systems at home. Teachers employ different instructional strategies, including constructive classroom practices, to enhance learners' understanding of numeracy concepts. The environment also highlights the challenges commonly faced in public schools, such as large class sizes and limited instructional materials, alongside the dedication of teachers to deliver quality education. This setting allowed the researcher to observe authentic teaching-learning interactions and gather meaningful data. Overall, the research environment supports the development of contextualized learning activities that are practical, responsive, and aligned with the actual needs of both teachers and learners.

Respondents

The respondents of the study consisted of 120 participants drawn from selected public elementary schools in the Cebu Province Division, Region VII, during the School Year 2025–2026. This included 12 Grade 6 teachers and 108 learners, providing a balanced perspective on both instructional practices and learning outcomes in numeracy. The teachers were chosen based on their direct involvement in teaching Grade 6 Mathematics, allowing them to provide relevant insights into the use of constructive classroom instruction. Meanwhile, the learners represented diverse academic abilities, backgrounds, and levels of home support, reflecting the actual classroom situation. Their inclusion made it possible to examine how teaching strategies influence real student performance. The combination of teacher and learner respondents strengthened the study by linking instructional approaches with measurable academic achievement. Overall, the selected respondents ensured that the findings were grounded in authentic experiences, making the results more reliable and useful for improving classroom practices and learner outcomes.

Research Instrument

The study utilized a structured research instrument designed to gather relevant data from both teachers and learners. For teachers, a survey questionnaire was used to assess the extent of adoption of constructive classroom instruction, focusing on strategies such as learner engagement, collaborative activities, and problem-solving approaches in teaching numeracy. The instrument included Likert-scale items to measure the frequency and effectiveness of these practices. For learners, academic achievement in numeracy was determined using their recorded grades and performance results, providing an objective measure of learning outcomes. The questionnaire was carefully developed based on related literature and aligned with the study's objectives. It underwent validation by experts to ensure content accuracy and clarity, and pilot testing was conducted to establish reliability. Necessary revisions were made before full implementation. Overall, the research

instrument enabled the collection of reliable and meaningful data to support the analysis of instructional practices and learners' academic performance.

Data Collection Procedure

The data collection procedure began with securing formal approval from the Schools Division Office of Cebu Province and the respective school heads of the selected public elementary schools. After obtaining permission, the researcher coordinated with Grade 6 teachers to schedule the distribution of the research instruments. The purpose of the study was clearly explained to all participants, and informed consent was obtained to ensure voluntary participation and ethical compliance. The survey questionnaires were administered to teachers to gather information on their use of constructive classroom instruction strategies. At the same time, learners' academic achievement in numeracy was collected from official school records, ensuring accuracy and reliability of data. The researcher closely monitored the retrieval of questionnaires to ensure completeness and immediate clarification of responses when necessary. All collected data were treated with strict confidentiality and organized systematically for analysis. This careful and respectful process helped ensure the credibility and integrity of the research findings.

Data Analysis

The data analysis for this study was carried out using appropriate statistical tools to ensure accurate interpretation of the results. Descriptive statistics such as frequency counts, percentages, and mean were used to summarize the profile of the respondents and determine the level of adoption of constructive classroom instruction among teachers. These measures provided a clear picture of existing teaching practices and learner performance in numeracy. To examine the relationship between instructional strategies and academic achievement, inferential statistics, particularly correlation analysis, were applied to identify any significant association between the variables. The learners' numeracy performance, based on their academic records, was analyzed alongside the teachers' reported strategies to determine patterns and connections. All data were carefully organized, coded, and processed to maintain accuracy and consistency. The results of the analysis served as a basis for identifying strengths, gaps, and areas for improvement, guiding the development of contextualized learning activities and interventions.

Results and Discussion

This research assessed the adoption of constructive classroom instruction

in relation to the academic achievement in Grade 6 Numeracy among the select Public Elementary Schools of Cebu Province Division, Region VII during the School Year 2025-2026. A total of 120 respondents composing of 12 teachers and 108 Grade 6 learners from among the select Elementary Schools of Cebu Province Division.

Teachers' Profile. This section presents the demographic and professional profiles of the teacher-respondents that provide a comprehensive picture of the respondents and help establish whether the teachers possess the necessary qualifications, experience, and exposure to effectively implement constructive classroom instruction in numeracy. This strengthens the credibility of the findings and supports the development of contextualized learning tasks grounded in actual classroom conditions.

Learning strategies used in the implementation of constructive classroom instruction in numeracy .The focus is on identifying how teachers employ learner-centered approaches, particularly inquiry-based and cooperative learning strategies, to enhance students' understanding of mathematical concepts. The findings provide a basis for identifying strengths and areas for improvement in instructional practices, guiding the development of contextualized learning tasks and enhancing overall academic achievement in numeracy.

Academic achievements in numeracy 6 learners using the most essential learning competencies. The study highlights the extent to which teaching approaches support or hinder the development of numeracy skills. The findings also provide valuable insights for designing targeted interventions and contextualized learning tasks that address identified learning gaps and enhance overall student performance.

The significant association between the learning strategies used to implement constructive classroom instruction and the academic achievements of Grade 6 learners in numeracy, as measured by the Most Essential Learning Competencies (MELCs). Provides deeper insights into the effectiveness of instructional practices. It also identifies which strategies are more strongly associated with specific numeracy competencies, thereby guiding educators in selecting and improving teaching approaches.

The study highlights the areas that need intervention and improvement to ensure that constructive classroom instruction is effectively implemented. Furthermore, addressing these concerns is vital in enhancing the quality of numeracy instruction and improving learners' academic achievement.

Discussion

Study highlight the important role of constructive classroom instruction in improving the numeracy performance of Grade 6 learners. Teachers who actively use learner-centered strategies, such as collaborative activities and problem-solving tasks, tend to support better academic outcomes among their students. The results also show that understanding both teacher practices and learner characteristics helps in designing more responsive and effective learning tasks. However, some gaps and challenges in instructional approaches were identified, indicating the need for continuous improvement. The significant relationship between teaching strategies and academic achievement suggests that selecting appropriate methods can greatly influence learners' success in numeracy. Overall, the study emphasizes the value of contextualized learning activities as a practical way to address learning needs and enhance student performance.

Conclusion and Recommendations

Findings imply that integrating both strategies is essential for achieving balanced and effective instruction. However, there is a need to enhance the application of cooperative learning strategies, particularly in tasks that require deeper analysis and critical thinking. Teachers may need to implement clearer group structures, assign specific roles, and incorporate reflective activities to ensure that all learners actively participate and benefit from collaborative work. Continuous professional development, focused on effective strategy implementation, can further improve the alignment between teaching approaches and learners' academic achievement.

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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.