Republic of the Philippines
Department of Education
REGION IV-A CALABARZON
CITY SCHOOLS DIVISION OF BIÑAN CITY

"ENHANCING FUNDAMENTAL CALCULATION SKILLS IN GRADE FIVE NON-NUMERATES USING VARIOUS COUNTING STRATEGIES"

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ABSTRACT

This action research aimed to improve the numeracy skills of Grade Five non-numerate learners at Biñan Elementary School during the School Year 2022-2023. The study initiated the implementation of remediation and intervention activities for learners struggling with fundamental math facts involving whole numbers.

This study specifically piloted the use of modified worksheets to enhance calculation skills. This initiative was in response to one of the region's priorities: innovating and mobilizing support for additional supplementary learning resources. In addition, finger counting and counting-on learning strategies were introduced as part of the instructional interventions.

The findings of pre- and post-assessments, utilizing the Early Grade Math Assessment (EGMA), served as the primary source of information to evaluate the learners' progress. These findings revealed a significant progress in the numeracy skill levels of the participants. Out of 28 Grade Five non-numerate learners, 26 (or 93%) demonstrated improvement. Ten students achieved numerate status, while 16 advanced to an instructional numeracy skill level. Furthermore, the study revealed that the participants had positive perceptions of the intervention activities.

These results have implications for enhancing the delivery of quality education and providing equal learning opportunities for all learners. This is especially significant in light of the MATATAG curriculum, which emphasizes the development of foundational numeracy skills as one of its salient points.

Keywords: *Grade Five Non-numerates, Remedial and Intervention Activities, Calculation Skills, Numeracy Level Improvement*

INTRODUCTION

In the ever-evolving landscape of education, ensuring that all learners have an equal opportunity to learn essential skills is of utmost importance. Mathematics, as one of the core subjects in the curriculum, plays a vital role in honing critical thinking and decision-making abilities, transcending its relevance beyond classrooms into various aspects of life and other subject areas. However, during the COVID-19 pandemic, the abrupt shift to remote learning had a noticeable impact on learners not only in the Philippines but worldwide. The context for our study unfolds within this situation, and how interventions can help bridge the learning loss and assist learners at Biñan Elementary School to cope up and become interested again in learning Mathematics.

A pre-assessment conducted in person revealed a significant number of Grade Five learners who struggled with fundamental math facts involving whole numbers. Out of 428 Grade Five learners, 14%, or 61 learners, were identified as non-numerate, scoring less than 50% on the Early Grade Math Assessment (EGMA) test. This data prompted a critical need for tailored activities to bridge this learning gap.

Our study sought to address this challenge by implementing remediation and intervention activities specifically designed to cater to the needs of non-numerate learners. These activities were in line with the Department of Education's intention of remedial instructional interventions as outlined in DepEd Order 13, s. 2018, aiming to remediate learning gaps and numeracy deficiencies. Our interventions incorporated various counting strategies, including the use of worksheets, finger counting, and counting on involving basic addition and subtraction of whole numbers.

The chosen interventions were grounded in the idea that a one-size-fits-all approach does not effectively address the unique and diverse learning needs of learners. DepEd Order No. 025 s. 2022 encouraged educational activities within self-learning modules to align with the learners' cognitive development and learning assessments, thus optimizing the learning experience.

This study aimed to not only improve the numeracy skills of non-numerate Grade Five learners but also to provide equal learning opportunities. As the Department of Education mandates equal access to education, we were committed to the goal that, by the end of this study, all learners would improve in their calculation skills and eventually achieve numerate level of their numeracy skill. The findings of this research bear implications for inclusion in regular classes and the aspiration to offer quality education that leaves no learner behind.

METHODOLOGY

This study employed a mixed-methods embedded design, a research approach built on the idea that combining qualitative and quantitative methods offers a deeper understanding of a research problem compared to using either method alone (Creswell, 2014).

The quantitative component of the study adopted a pre-test-post-test design, utilizing the Early Grade Math Assessment (EGMA) tool to evaluate the numeracy skills of Grade Five learners. It employed descriptive statistics, including measures such as frequency, mean, and percent, for data analysis. This approach enabled the measurement of participants' numeracy skills before and after the intervention, facilitating the assessment of progress.

A qualitative aspect was included, focusing on exploring learners' perceptions of the intervention strategies. This exploration was carried out through a six-point Likert Scale in surveys, with qualitative data analysis conducted using both descriptive statistics (mean) and thematic analysis. This qualitative component offered valuable insights into how learners perceived and experienced the implemented learning strategies.

Purposive sampling was employed to select participants based on their numeracy skill levels. The study's participants consisted of 28 Grade Five learners at Biñan Elementary School who remained non-numerate following the Phase 1 assessment, requiring additional support to meet their numeracy requirements.

To ensure the ethical conduct of the research, the researchers obtained an approval letter from the school principal and secured consent/assent from both the parents/guardians and the participants themselves.

Confidentiality of participants' performance and responses was diligently maintained, with the assurance that the results would solely be used for analysis in this study.

RESULTS

The study aimed to examine the effect of the instructional intervention activities on non-numerate Grade Five learners at Biñan Elementary School, addressing specific research questions:

Question 1. What is the pre-assessment numeracy skill level of the non-numerate learners in terms of basic calculation ability in addition and subtraction?

- Basic Calculation Skill: All participating learners exhibited non-numerate status in basic addition and subtraction, with less than five correct answers out of 10 questions involving whole numbers.

Question 2. What is the post-assessment numeracy skill level of the non-numerate learners in terms of basic calculation ability in addition and subtraction?

- Basic Calculation Skill: Twenty-five or 89% improved to instructional or numerate level.

Question 3. Is there a significant improvement in the numeracy skill level of learners?

- Significantly, 26 out of the 28 non-numerate learners or 93% of the participants made substantial progress, reaching instructional and numerate levels in the post-assessment.

Question 4. How do learners perceive learning to count using the following learning strategies:

a) worksheets?
b) counting-on?
c) finger counting?

- The narrative of the participants revealed positive perceptions regarding the effectiveness of using worksheets to enhance their counting skills. Although "Learning to Count through Finger Counting" received slightly lower mean scores, participants still viewed it favorably.

DISCUSSION

The study conducted at Biñan Elementary School addressed the pressing challenge of enhancing numeracy skills among Grade Five learners. Focusing on 28 non-numerate learners, the research aimed to improve their foundational skills in addition and subtraction involving whole numbers. Employing different instructional interventions, including worksheets, counting on, and finger counting strategies, this study delved into their effectiveness in improving the numeracy skills of these learners as perceived by the participants.

The research showed highly positive results, demonstrating a significant improvement in the participants' abilities, particularly in the domains of basic mathematical operations. This improvement was not only substantial but also transformative, with learners progressing from a non-numerate status in the pre-test to becoming instructional and numerate learners in the post-test. This showed the positive effect of the intervention activities. It highlighted the pivotal role of targeted interventions in equipping learners with basic

numeracy skills, forming a solid foundation for their calculation skills.

What added depth to these findings were the learners' own perspectives. The participants expressed a strong preference for specific intervention methods, notably favoring the use of worksheets. This positive reception not only reinforced the success of the program but also emphasized the potential for learners to excel in mathematics when provided with this supportive learning interventions.

In light of these outcomes, several recommendations emerged. Firstly, it was advised to not only continue the existing program but also to expand its reach, ensuring that more non-numerate learners in Grade Five, and potentially for other grade levels, could benefit from these interventions. Secondly, recognizing the pivotal role of teachers, the study emphasized the necessity of providing comprehensive training and ongoing support. Teachers, as facilitators, could significantly enhance the effectiveness of these interventions. Furthermore, the importance of regular assessments was highlighted. By implementing regular pre- and post-assessments, the progress of learners could be continually tracked, ensuring the sustainability of the program's impact.

The study also advocated for further research to explore the long-term effects of these intervention programs on learners' academic performance and overall mathematical abilities. Understanding the enduring impact of such interventions could provide valuable insights for future educational strategies. Lastly, the need for tailored interventions was emphasized. Recognizing the diverse and unique needs of individual learners, the study recommended the development of personalized strategies, aligning with the guidelines provided by DepEd Order No. 025 s. 2022. This tailored approach could further optimize the effectiveness of interventions, ensuring that each learner receives the specific support they require to succeed in learning mathematics.

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