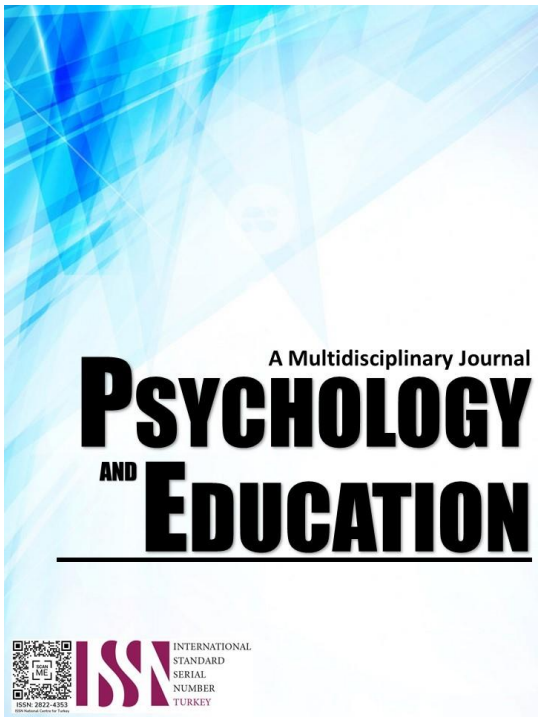
PROJECT PAGBASA KAG PAGSUMA (3PS): BRIDGING THE LEARNING GAPS OF GRADE 7 STUDENTS IN NUMERACY LEVELS



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Research Article

Project Pagbasa Kag Pagsuma (3Ps): Bridging the Learning Gaps of Grade 7 Students in Numeracy Levels

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Abstract

The aim of this action research is to assess the numeracy skills, particularly the effectiveness of Project Pagbasa kag Pagsuma in bridging pandemic-induced learning gaps for 200 Grade 7 students at Florentino Galang Sr. National High School. The researchers used secondary data based on the pre-test results of the Enhanced Regional Numeracy Test (ERUNT) before implementing Project Pagbasa kag Pagsuma to address the learning gaps caused by the pandemic. The results indicate that the study participants obtained an average pretest score of 26.62 with a standard deviation of 4.960, which, according to ERUNT guidelines, is interpreted as non-numerate. Following the intervention, there was a shift in the numeracy level from non- numerate to numerate. The study participants achieved an average posttest score of 34.72 with a standard deviation of 3.663, which, based on ERUNT guidelines, is interpreted as numerate. The significant increase in test scores by 8.10 reflects the impact of the researchers' intervention on the students' numeracy level. Therefore, the researchers conducted successful assessments to identify and address learning gaps, specifically in the students' numeracy level.

Keywords: *action research, project pagbasa kag pagsuma, learning gaps,numeracy skills*

Introduction

Mathematics is a complex subject that encompasses various facets and requires higher- level thinking skills such as critical, logical, analytical, and manipulative abilities. Despite its complexities, excelling in mathematics necessitates students to enhance their skills in fundamental operations.The outbreak of the COVID-19 pandemic has led to temporary school closures in numerous countries worldwide, resulting in a significant transformation of the teaching and learning processes. Traditional face-to-face classroom settings have shifted to distance modular learning modalities. This transition has contributed significantly to the development of learning gaps, particularly in numeracy and literacy skills among students. Recognizing this issue, the Department of Education has made efforts to address and alleviate these challenges in the teaching and learning processes. As a result, interventions and innovations have been developed.

In response to the pandemic-induced learning gaps, the school has localized programs and initiated innovative approaches. The aim is to bridge the educational disparities caused by the pandemic. These initiatives seek to address the specific challenges faced by students, taking into account the unique circumstances of the local community. By implementing targeted interventions and innovative strategies, the school strives to ensure that students receive the necessary support to overcome the learning gaps caused by the pandemic.

Research Questions

This study aims specifically to answer the following questions:

1. What is the pre-test score of FGSNHS Grade 7 Students in Enhanced Regional Numeracy Test before the implementation of Project Pagbasa kag Pagsuma?
2. What is the post-test score of FGSNHS Grade 7 Students in Enhanced Regional Numeracy Test after the implementation of Project Pagbasa kag Pagsuma?
3.Is there significant difference between the pre-test and post-test score of FGSNHS Students in ERUNT before and after the implementation of Project Pagbasa kag Pagsuma?

Literature Review

Deficiencies in Evidence

Currently, there are significant learning gaps, particularly in numeracy skills, as evidenced by the results of the E-RUNT assessment. In order to tackle these learning gaps, the researchers developed and implemented a School-Based Innovation called "Project Pagbasa kag Pagsuma". Recognizing the importance of monitoring the progress and

effectiveness of this innovation, this research was conducted. Through careful analysis and assessment, this research aimed to provide valuable insights into the effectiveness of "Project Pagbasa kag Pagsuma" and its ability to bridge the identified learning gaps. The findings of this study would contribute to the ongoing efforts in improving the students' numeracy skills, ultimately leading to enhanced academic performance and closing the learning gaps brought about by the pandemic.

Relating the Study to the Audience

The result of the study would serve as the monitoring tool and bases whether the implemented School-Based innovation would be continued or not.

Addressing Learning Gaps

Conduct of 10-Minute Literacy and Literacy Activities before and after the start of the classes.Literacy and numeracy are foundational to engagement in education and lifelong achievement. Thus, strong literacy and numeracy help students to learn, experiment, reason and create, to be active and informed citizens, and to contribute meaningfully to building the nation.

Adherent to MATATAG Agenda of the Department of Education, Literacy and Numeracy Excellence (LiNE) Program of DEPED Region VI, the Division Literacy and numeracy road map, particularly to the Division - initiated Reading Engagement for Academic Development Plus Numeracy (READ Plus), this Office through the curriculum implementation division announces the conduct of the 10-minute literacy and numeracy activities before the start of classes in all public elementary and secondary schools. This project focuses more on result outcome of the numeracy skill of the learners.

This activity generally aims to increase learners' foundational skills in numeracy. Specifically, this activity aims to:

1. Develop the learner's skills in learning basic numeracy skills of K to 12 learners;
2. Master the four fundamental operations in Mathematics and understand word problems
3. Recognize the impact efforts of the numeracy implementer, and
4. Strengthen the implementation of READ Plus, LINE and DepEd MATATAG Agenda.

Intervention Program to address Learning gaps

The need to find solutions for children with low response to high-quality interventions is a topic of considerable urgency and interest to the special education research and practice community. Hypotheses about the sources of low responsiveness and solutions to increase learning in these children include: significantly intensifying interventions; increasing the comprehensiveness of taught skills and strategies; explicitly teaching for transfer; and addressing the cognitive and linguistic limitations of students with learning disabilities (e.g., Fuchs & Fuchs, 2014; Fuchs, Fuchs, & Vaughn, 2014). In keeping with these ideas, the current study attempted to: (a) significantly increase the intensity of a mathematics intervention for preschool children at high risk for math difficulties and (b) address cognitive weaknesses by combining an intensive math intervention with an attention intervention. The rationale for these approaches to address the needs of pre-kindergarten children at high risk for math difficulties is reviewed below. Systematic reviews of the literature on math interventions for students with math learning difficulties highlight the importance of providing instruction that incorporates particular design features: increases the intensity of instruction in mathematics in addition to Tier 1 instruction; provides explicit, systematic instruction that integrates developmental research in mathematics with principles of direct instruction; provides opportunities for cumulative review; teaches mathematical concepts to mastery ensuring that foundational skills needed to understand higher level concepts are mastered before moving on to the next level; uses concrete and visual representations including manipulatives; provides tutor scaffolding for learning as well as emotional support; and tracks children's understanding of each mathematical concept, adjusting the difficulty of concepts in relation to child knowledge (Fletcher, Lyon, Fuchs, & Barnes, 2007; Gersten et al., 2009). Barnes, M.A. (2016)

Barnes, M.A. (2016) had found out that there was a significant effect of the (Pre- Kindergarten Mathematics Tutorial) PKMT intervention on a broad measure of informal mathematical knowledge and a small but significant effect on a measure of numerical knowledge. Attention training was associated with small effects on attention, but did not provide additional benefit for mathematics. A main effect of state on math outcomes was associated with a stronger, numeracy-focused mathematics curriculum in one state.

Findings are discussed with respect to increasing intensity of math-specific and domain- general interventions for young children at risk for

mathematical learning difficulties. Moreover, understanding the predictors of low response in this group of children will be important for finding ways to further intensify and tailor early math interventions.In the study conducted by Welcome, (2023), he noted that in the time of COVID-19 pandemic, students adapted to new ways of learning-including switching between virtual and hybrid learning models on the fly. During this time, many your learners experienced significant disruptions in their curriculum-such as schedule changers, glitchy technology, midyear teacher replacements, and at-home distractions. Unfortunately, these disruptions have led to many students experiencing learning loss and learning gaps in their education.

Welcome (2023) defined a learning gap as a discrepancy between what a student has learned and what a student was expected to learn by a specific point in their education. While some learning gaps can be minor and relatively easy to remedy (such as a student missing a single lesson due to illness), other can be significant and cause major learning loss or academic setbacks. How to address learning gaps? According to Heather (2020), the first step in addressing learning gaps is to identify exactly where and what those gaps are, and which learners struggle with them. The author noted that quizzes are a quick and easy way to formatively assess learners on what they have learned. She added that these can be mini end-of-topic quizzes, or even one covering a few units of a subject. Teachers must ensure a good spread and mix of questions to uncover learning gaps. After knowing the gaps, teachers must apply the necessary actions and test again the mastery level acquired by the learners through quizzes. Through these steps, learning gaps can be addressed and bridged.

Psychology.iresearchnet.com gives a powerful statement on the use of the Input- Process-Output (IPO) model in every systematic inquiry. According to it, "the IPO model has historically been the dominant approach to understanding and explaining team performance and continues to exert a strong influence on group research today. The framework is based on classic systems theory, which states that the general structure of a system is as important in determining how effective it will function as its components. Similarly, the IPO model has a causal structure, in that outputs are a function of various group processes, which are in turn influenced by numerous input variables." Using this premise of the IPO model, addressing and bridging learning gaps will always be feasible and possible. What we need is a support system to initiate and sustain our initiatives of helping our learners master what they ought to master as they progress to the education ladder. Cabigao (2014) stressed out that teachers should be at the forefront in addressing the learning gaps of learners. Present and previous teachers should work collaboratively to offer developmentally appropriate learning tasks, thus ensuring effective implementation of the intervention program. The words developmentally appropriate mean an approach to teaching that respects both the age and the individual needs of each child. This pedagogical concept reiterates that the program should fit the learner, not the other way around. Aside from the support system within the school, parents' support at home is indeed essential in addressing (bridging and closing) the learning gap. A study conducted in an elementary school proved that strengthened school-home relationships have positive effects on the performance of learners.

Methodology

This study employed an action research design to evaluate the effectiveness of Project Pagbasa kag Pagsuma in addressing the learning gaps of non-numerate Grade 7 students at Florentino Galang Sr. National High School in District V, Schools Division Office of Kabankalan City. McNiff (2013) described action research as a systematic inquiry method undertaken by teachers to study their own practice.

The study was conducted at Florentino Galang Sr. National High School-Main Campus, located in Purok Pinetree, Barangay Oringao, Kabankalan City, Negros Occidental. The school is recognized as one of the prominent schools in the Division of Kabankalan City, Negros Occidental. A total of 200 out of 221 Grade 7 students from Florentino Galang Sr. National High School participated in the study. The researchers conducted a preliminary activity using the ERUNT tool, provided by the Department of Education Region VI, to assess the students' numeracy skills. Secondary data obtained from the pre-test results of the Enhanced Regional Numeracy Test (ERUNT) conducted prior to the implementation of Project Pagbasa kag Pagsuma were used to address the learning gaps resulting from the pandemic. The ERUNT tool used in this study is a standardized tool provided by the Department of Education Region VI-Western Visayas. Furthermore, primary data based on the post-test results of the Enhanced Regional Numeracy Test (ERUNT) following the implementation of Project Pagbasa kag Pagsuma will be used as the posttest data.

The research instrument underwent validation by three

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(3) expert jurors who possess knowledge and expertise relevant to the study. The validation criteria were based on the guidelines set by Good and Scates. These jurors, particularly skilled in mathematics and research instrument construction, utilized face and content validity to refine the test questionnaire. The research instrument was revised accordingly to enhance its quality. To ensure the reliability of the test instrument, guidelines provided by the Department of Education (DEPED) were followed.

Data Gathering Procedure

The researcher obtained the necessary permits and approvals to conduct the study by submitting a letter request to the School Principal and other relevant authorities' offices. Once approval was granted, the researchers sought the assistance of the School Principal at Florentino Galang Sr. National High School. The research section of the school then forwarded the letter request to the Grade 7 Advisers and Mathematics Teachers, who were responsible for granting data access. After acquiring a valid and reliable test instrument, the researcher collected the ERUNT results from the Mathematics teacher who administered both the pre-test and post-test. Only students who were classified as non-numerate were included in the study. Prior to commencing the study, the researcher conducted a pre-test to assess the subjects' numeracy status. Following the pre-test, the researcher implemented an intervention. Subsequently, a post-test was once conducted. Once secondary data was gathered, it was tabulated and summarized for statistical analysis.

Statistical Treatment of Data

To answer the following objectives with their corresponding statistical treatment:

Problem no. 1. What is the pre-test score of FGSNHS Grade 7 Students in the Enhanced Regional Numeracy Test before the implementation of Project Pagbasa kag Pagsuma?Statistical treatment: mean and standard deviation will be used.Problem no. 2. What is the post-test score of FGSNHS Grade 7 Students in the Enhanced Regional Numeracy Test after the implementation of Project Pagbasa kag Pagsuma? Statistical treatment: mean and standard deviation will be used. Problem no. 3. Is there a significant difference between the pre-test and post-test scores of FGSNHS Students in ERUNT before and after the implementation of Project Pagbasa kag Pagsuma. The intervention implemented during the study resulted in a significant improvement in the participants' numeracy level. Prior to the intervention, the participants were classified as non-numerate. However, after the intervention, their numeracy level increased to the numerate category.

Results and Discussion

Table 1. A Pretest score of Enhanced Regional Numeracy Test Result (ERUNT) result.

	Mean	*Std. Deviation*	*Interpretation*
Pretest Score	26.62	4.960	Non-Numerate

Legend:Numerate (32-40), non-numerate (1-31)

The result shows that the participants of the study got a pretest score with an average of 26.62 with a standard deviation of 4.960, which is interpreted as non-numerate based on the ERUNT guidelines.

Table 2. A posttest score of Enhanced Regional Numeracy Test Result (ERUNT) result.

	Mean	*SD*	*Interpretation*
Posttest Score	34.72	3.663	Numerate

The result shows that the participants of the study got a posttest score with an verage of 34.72 with a standard deviation of 3.663, which is interpreted as numerated based on the ERUNT guidelines.

The intervention implemented during the study resulted in a significant improvement in the participants' numeracy level. Prior to the intervention, the participants were classified as non-numerate. However, after the intervention, their numeracy level increased to the numerate category.

Table 3. The significant difference on the Pre-test and Post Test of Enhanced Regional Numeracy Test Result (ERUNT)

	Mean	*Std. Deviation*	*T-test Computed Value*	*Significance Value*	*Interpretation*
Pre-test	26	4.960	-		Highly Significant
Post-test	23	3.66	11.883	0.000	

Result shows that the participants obtained a pretest

score with a mean of 26.62 with a standard deviation of 4.960, and a posttest score with a mean of 34.72 with a standard deviation of 3.663. There was a mean difference of -19.1 with a standard deviation difference of 4.879, it also obtained a T-test computed value of -11.883 with a significance value of 0.000, which is interpreted as highly significant.

The study's results indicate a significant increase in students' numeracy levels, despite the small magnitude of the 8.10 increase in test scores. This highlights the effectiveness of the intervention conducted by the researchers.

The findings of the study align with Heather's (2020) research, which emphasizes the importance of identifying learning gaps and understanding which learners struggle with them as the initial step in addressing these gaps. Heather suggests using quizzes as a formative assessment tool to evaluate student learning. These quizzes can cover specific topics or units within a subject, and should include a diverse range of questions to identify learning gaps. Teachers can then take appropriate actions to bridge these gaps and reassess student mastery through quizzes. Additionally, Cabigao (2014) emphasizes the role of teachers in addressing learning gaps and highlights the importance of collaboration between present and previous teachers to provide developmentally appropriate learning tasks and ensure effective implementation of intervention programs.

Therefore, the researchers conducted assessments to identify and address learning gaps, specifically in the area of numeracy, and successfully bridged these gaps. The intervention program "Pagbasa kag Pagsuma" focused on developing students' reading skills and fundamental numeracy competencies, including solving basic mathematical operations.

Conclusion

There was a significant difference between the pretest and posttest score of the participants, a significant increase of test scores of 8.10 with a students' numeracy level which highlighted to the effect of the intervention conducted by the researchers from a non-numerate to a numerate level.

Hence, the researchers indeed did their assessments to address to know the learning gaps and had successfully addressed these learning gaps, specifically, in the numeracy level of the students.

The following were recommended by the researchers: (1)To give importance on the impact of monitoring and evaluation of the students' numeracy skills as it will be basis of possible interventions. (2)To continue and sustained the program "Pagbasa kg Pagsuma" for it had successfully increase the students' numeracy level.

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