

Effectiveness of Learning Resource Package in Improving the Numeracy Performance of Grade I Learners in Blended Learning

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Abstract —The study aimed to evaluate the effectiveness of learning resources in improving the numeracy performance of Grade 1 learners in blended learning for School Year 2022-2023 of Tinag-an Elementary School, Albuera South District, Leyte Division. Utilizing the quasi-experimental research design for an in-depth analysis of the study, the researcher used the modified 20-item numeracy test from DepEd Regional Office 8. Simple Percentage, Weighted Mean and t-Test of Mean Difference were the statistical tools used. Results of the study revealed a significant difference in the pre-test and post-test performances of the Grade 1 learners in numeracy. The utilization of learning resource package in teaching and learning numeracy has been effective and recommended to be adapted and used in the lesson. Thus, the learning resource package in numeracy is effective instructional materials to be utilized by learners to improve their numeracy performance.

Keywords — *Effectiveness, Learning Resource Package, Numeracy Performance, Grade 1 Learners, Blended Learning*

I. Introduction

A child's first years are a time of rapid learning and development. Babies and toddlers can recognize number, patterns and shapes. They use math concepts to make sense of their world and connect these concepts with their environment and everyday activities. Their knowledge in math started during this stage.

While much of the teaching of concepts and skills to support numeracy happens in the mathematics learning area, it is strengthened as students take part in activities that connect their learning in the mathematics classroom within the context of other curriculum areas. As they move through their years of schooling, learners are exposed to mathematical understanding, fluency, problem solving and reasoning. These capabilities allow students to respond to familiar and

unfamiliar situations by employing mathematics to make informed decisions and solve problems efficiently (VCAA, 2017).

There is also evidence that other areas of development, such as resilience and perseverance, support achievement in numeracy. Mathematics gives students access to important mathematical ideas, knowledge and skills. Numeracy connects this learning with their personal and work lives. Numeracy has an increasingly important role in enabling and sustaining cultural, social, economic and technological advances.

Being numerate involves more than mastering basic mathematics. Numeracy involves connecting the mathematics that students learn at school with the out-of-school situations that require the skills of problem solving, critical judgement, and sense-making related to applied contexts.

Understanding and using mathematical concepts, and being numerate, helps children know and describe the world around them and make meaning of these encounters. It is, therefore, an essential skill for successful daily life. Research and practice evidence suggest that mathematics and numeracy skills will support children to be confident and capable learners as they navigate the increasingly complex global community of the 21st century.

In mathematics classrooms, it is important to create a rich learning environment that encourages a positive mindset and opens up the potential for growth in mathematics teaching and learning. Using a range of teaching strategies that connect the content, skills and concepts will enhance understanding and engagement and build students' confidence as mathematics learners and thinkers. In the mathematics classroom, students are exposed to opportunities that help them to develop and engage their mathematical thinking, solve problems and demonstrate their understanding, apply strategies and conceptual understanding in familiar and unfamiliar situations, recognize the relevance of their experiences in the environment through a mathematical lens and use and connect what they are learning to contexts outside the mathematics classroom.

Teachers help students to engage with, explore and make connections between their mathematical knowledge, skills and understandings with other learning areas and the world around them. The use of instructional learning resources helps achieve math goals for the grade.

Learning resources basically comprises two components that is the material and physical facilities (DFID, 2007). Learning as Lyons (2012) affirms is a complex activity that involves the interplay of learning resources, students' motivation and skills of teaching in addition to, curriculum demands. Availability of learning materials, therefore, enhances the effectiveness of schools as they are the basic resources that bring about good academic performance in the students.

When educators consider including mathematics and numeracy in early childhood programs, there is often confusion about the relevance of concepts such as algebra or statistics. Children are active learners, exploring the world and beginning to develop explanations for

observed phenomena from a young age. With encouragement, guidance, experience and learning, children further develop their capacity to reflect on their own thinking processes, approaches to learning and using mathematics in their everyday engagement with their world. This resource illustrates the variety of ways that educators, working with children from birth to age five, can support numeracy learning and development.

Children who are confident and involved learners have positive dispositions toward learning, experience challenge and success in their learning and are able to contribute positively and effectively to others children's learning. They develop and use their imagination and curiosity as they build a 'toolkit' of skills and processes to support problem solving, hypothesizing, experimenting researching and investigating (VEYLDF, 2016).

Building children's confidence in understanding and using mathematics to explore and know the world will benefit everyone. Children benefit from many opportunities to generate and discuss ideas, make plans, exercise skills, engage in sustained shared thinking, generate solutions to problems, reflect and give reasons for their choices. Children who are confident and involved learners have positive dispositions toward learning, and experience challenge and success in their learning.

Educators can encourage families to recognize their role in supporting children's mathematics and numeracy learning in many ways; from formal communication with families (in a family handbook for example or newsletters) about how they can support children at home to informal conversations that promote positive attitudes and reinforce responses to children that help build their confidence. When educators maintain a commitment to sharing ideas with families about children's mathematics and numeracy, learning outcomes are more likely to progress.

Families and educators play a critical role in introducing children to mathematics and encouraging them to be curious and enthusiastic about mathematics. From a very young age, adults invite children to use mathematics to understand and participate in their world. Parents displays charts with numbers, colors and shapes in the bedroom and they expose the child to real objects. So, at home, numeracy skills are already taught. If this is so, how come that as the learners already in school, many of them find difficulty in passing the numeracy test conducted to them? Most of them failed in the pre-test. By examining the result, the researcher had been searching for reasons and factors which affects to low numeracy achievement. And one of the reasons is lack of learning resources at home.

The researcher, being a grade 1 teacher did experimental activities through the utilization of differentiated and varied learning resource package. She applied these learning materials in her lessons in math during the last quarter of school year 2021-2022 and it was found out that most of the grade 1 pupils were able to achieve the mastery level in numeracy. And it is in this premise that this research is crafted to evaluate the effectiveness of learning resource package in improving the numeracy performance of the grade 1 learners in Tinag-an Elementary School of Albuera South

District, Leyte Division. A proposed improvement plan was formulated based on the findings of the study.

It is in the rationale that the researcher who is currently a Grade I teacher in the above mentioned local, would like to delve worthy research undertaking that will benefit the school she is currently teaching and that of her Graduate Program she is enrolled at.

This study evaluates the effectiveness of learning resources in improving the numeracy performance of Grade 1 learners in blended learning in Tinag-an Elementary School of Albuera South District, Leyte Division for School Year 2022-2023. The findings of the study were bases for the proposed improvement plan.

Specifically, this study sought to answer the following questions:

1. What is the pre-test performance of the Grade 1 learners in numeracy before the utilization of learning resource package?
2. What is the post-test performance of Grade 1 learners in numeracy after the utilization of learning resource package?
3. Is there a significant difference in the pre-test and post-test performances of the Grade I learners in numeracy before and after the utilization of learning resource package?
4. What improvement plan can be proposed based on the findings of this study?

II. Methodology

Design. This study employed the quasi-experimental research design utilizing the pre-test and post-test to evaluate the effectiveness of learning resources in improving the numeracy performance of Grade 1 learners in blended learning for School Year 2022-2023. Tinag-an Elementary School, Albuera South District, Leyte Division is the main locale of the study. The 22 Grade 1 pupils enrolled in the said locale for School Year 2022-2023 are the main respondents of the study and a modified 20-item numeracy test from DepEd Regional Office 8 was used. This research is focused in evaluating the effectiveness of learning resources in improving the numeracy performance of Grade 1 learners in blended learning through the pre-test and post-test and its significant difference. A Proposed Improvement Plan based on the findings of the study is the output.

Sampling. There are 22 Grade 1 pupils involved in this study. The research instruments were conducted on a face-to-face during classes with consent from the Local IATF and strictly following the prescribed Health Protocol.

Research Procedure. The researcher prepared the research design and tools to be utilized in the study. Approval and recommendation from the Panel of Examiner of the Graduate Studies was sought. A letter request to conduct this study was forwarded to the Office of the Schools Division Superintendent. Upon approval, permission from the District Supervisor and School Head was secured before the actual gathering of data. Orientation of the participants and

administration of the pre-test was done through face-to-face after the approval of the permit from the parents of the respondents. After accomplishing the pre-test, intervention was given within four weeks. The utilization of learning resource package in Math was emphasized in the lessons. After the four-week of intervention, post-test was administered. Results of the tests were collected. Data were tallied and submitted for statistical treatment. Analysis and Interpretation of Data. Making of Proposed Improvement Plan followed.

Ethical Issues. The right to conduct the study was strictly adhered through the approval of the Schools Division Superintendent of the Division, District Supervisor, and School Head. Orientation of the respondents was done using face to face modality. In the orientation, issues and concerns were addressed and consent to be included in the study were signed.

Treatment of Data. The Simple Percentage and Weighted Mean were employed to evaluate the pre-test and post-test numeracy performance of the Grade 1 learners. **t-Test of Mean Difference** was used to determine the significant difference in the pre-test and post-test performances of the Grade 1 learners in numeracy.

III. Results and Discussion

Table 1
Pre-Test Performance of Grade 1 Learners in Numeracy

Score Range	Description	PRETEST	
		Frequency	%
17-20	Excellent	0	0
13-16	Very Good	4	18
9-12	Good	4	18
5-8	Fair	6	28
0-4	Poor	8	36
Total		22	100
Weighted Mean		7.09	Good

Table 1 presents the pre-test performance of Grade 1 learners in numeracy. It was revealed on the table that among the 22 grade 1 learners, 4 or 18% got a score between 13-16 which is very good, 4 or 18% got 9-12 which is good while 6 or 28% got the score of 5-8 which is fair and 8 or 36% which is poor. Moreover, the pre-test performance has an average mean of 7.09 which is interpreted as good. This means that the level of numeracy of the Grade 1 pupils before the intervention is good. This implies that the grade 1 learners had background knowledge on numeracy despite that during their kindergarten face-to-face classes they only attended the last

quarter for the school year. On the other hand, there are some pupils who were not able to get the passing score which shows that they need intervention to achieve positive learning outcomes. They need additional learning resource package which will be used by the learners while learning Math.

Table 2
Post-Test Performance of Grade 1 Learners in Numeracy

Score Range	Description	POST-TEST	
		Frequency	%
17-20	Excellent	17	77
13-16	Very Good	4	18
9-12	Good	1	5
5-8	Fair	0	0
1-4	Poor	0	0
Total		22	100
Weighted Mean		18.22	Excellent

Table 2 presents the post-test performance of Grade 1 learners in numeracy. It was revealed on the table that among the 22 grade 1 learners, 17 or 77% got a score of 17-20 which is interpreted as excellent while 4 or 18% got the score of 13-16 which is interpreted as very good and 1 or 5% got the score of 9-12 which is interpreted as good. Moreover, the table also revealed a weighted mean of 18.22 which is excellent. This means the grade 1 learner's performance has improved after the utilization of learning resource package in all Math lessons. This implies that the learning resource package is effective as instructional materials in teaching numeracy. The excellent performance attained by the Grade 1 learners after the utilization of learning resource package shows that the learners enjoy and understand the lessons in numeracy using such manipulative instructional materials.

Table 3
Test of Difference Between the Scores in the Pre-Test and Post-Test of Grade 1 Learners in Numeracy

Aspects	Test Scores		Computed T	Critical T	Decision	Interpretation
	Pre	Post				
Grade 1 in Numeracy	7.09	18.22	4.021	0.662	Reject H_0	Significant

Table 3 presents the test of difference between the scores in the pre-test and post-test of Grade 1 learners in numeracy. It was revealed on the table that the computed t of 4.021 is greater than the critical value or t of 0.662, so null hypothesis is rejected. This means that there is a

significant difference in the pre-test and post-test performances of the Grade 1 learners before and after the utilization of learning resource package in learning numeracy. The mean of the post-test performance of 18.22 shows great increase from the pre-test of 7.09. This implies that the intervention given after knowing the result of the pre-test has been effective. The utilization of learning resource package has affected the teaching and learning of counting, measurement and classification of numbers which leads to the attainment of numeracy goals to make all learners numerate. The learning resource package which composed of manipulative materials like counters, toys, puzzles, audio-video lessons and activity sheets assist the learners in learning the lessons in numeracy which is visible in the result of the post-test.

Learning resources are basic requirements that can bring about good academic performance in students. Therefore, the availability of such resources enhances the effectiveness of the schools in boosting the academic performance of their students in the long run. Maicibi (2003) asserts that any learning institution is composed of two kinds of resources, the first one is human beings who form the most important part of the organization and the second is non-human, which includes such things as books, library, classrooms and other relevant times like desks in addition to chalkboards and computers. He further affirms that applying the right quality and quantity of human (workers) is vital in manipulation and shaping the non-human resources in order to bring out the required or desired output in the long run.

IV. Conclusion

The study revealed a significant difference in the pre-test and post-test performances of the Grade 1 learners in numeracy. The utilization of learning resource package in teaching and learning numeracy has been effective and recommended to be adapted and used in the lesson. Thus, the learning resource package in numeracy is an effective instructional material to be utilized by learners to improve their numeracy performance.

V. Recommendations

1. The proposed improvement plan formulated should be utilized;
2. Teachers should prepare learning resource package for the learners to be used in their lessons in numeracy;
3. Teachers should attend training on the crafting and utilization of learning resource package in numeracy;
4. Teachers should encourage the parents to assist their children in doing their activities at home using the learning resource package;
5. Teachers should conduct capability building activities to parents in the proper handling and utilization of the learning resource package;
6. School heads should provide additional materials for the construction of learning resource package for the learners to use;

7. School heads should provide appropriate technical assistance to the teachers in teaching numeracy;
8. School heads should conduct monitoring on the progress of the learners in numeracy;
9. School heads should see to it that learners have enough learning resource package to be used in learning numeracy; and
10. Future researchers should replicate this study to include different locale and include different variables aside from the mentioned in this study.

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AUTHOR'S PROFILE



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The author is Mrs. Janice L. Bote . She was born on July 29, 1996 at Sitio Magbangon Brgy. Tinag-an, Albueria, Leyte. She was married for 4 years with Mr. Ian Christopher D. Bote. She has a 3-year-old son and is now pregnant of her second baby. She's presently residing at Sitio Magbangon, Brgy. Tinag-an, Albueria, Leyte. She finished her elementary education at Albueria South Central School, Brgy. Damulaan, Albueria, Leyte in the year 2008 and continue her quest for education and able to finish her secondary education at Damulaan National High School, Damulaan, Albueria, Leyte in the year 2012. She enrolled and finished her bachelor's degree with a course of Bachelor of Elementary Education major in General Education at Visayas State University-Main Campus in the year 2016 and graduated Cum Laude. She took up Master of Arts in Education major in Supervision and Administration with complete academic requirements at Western Leyte College of Ormoc City, Inc.

She was teaching for one academic year in private school at Saint Peter's College of Ormoc handling Grade VI class. She is now five years in DepEd and a Teacher III at Tinag-an Elementary School, Tinag-an, Albueria, Leyte. Her first station was in Salvacion Elementary School for 4 years and a half handling Grade V class. She recently transferred in Tinag-an Elementary School and is currently handling Grade I class. She also attended series of seminars and trainings to increase her professional growth as a teacher.