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IMPROVING NUMERACY LEVEL OF GRADE 4 PUPILS OF STO. TOMAS NORTH CENTRAL SCHOOL THROUGH PROJECT MATH-ALINO

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ABSTRACT

The study would like to determine the improvement of numeracy level of Grade 4 pupils in Sto. Tomas North Central School through project Math-ALINO. The researcher used a descriptive method of research. Descriptive statistics will also be used to calculate the percentage that best characterizes the study's variables. The study focuses on the result of the Numeracy Test for Grade Four wherein out of 411 Grade Four learners, 98 or 23.84% of learners fall under Non-numerates. The study recorded the pretest result of the numeracy test and determined the improvement after the intervention was made.

Based on the result, it was found that after using the intervention plan of Project Math-ALINO, the numeracy level of Grade 4 pupils improved. The 98 or 23.84% of learners under the non-numerate level in the pretest reduced to only 15 or 3.65% of learners in the post-test after the intervention had been applied.

All subsequent math lessons are built on the foundation of early arithmetic and numeracy skills. Research indicates that if students arrive at school without these foundational math skills, they will struggle all through their math education. Teachers need to know the best practices for teaching math and numeracy and appropriate strategies, innovations, and interventions that build

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a strong foundation of numeracy skills. Hence, if a learner is readily equipped with a strong foundation in math and numeracy skills, they don't have to struggle for the rest of their math education.

Keywords: *Improvement, Numeracy, Non-numerate*

INTRODUCTION:

Numeracy refers to the everyday uses of mathematics and includes the ability to reason and apply simple numerical concepts, such as addition and subtraction. Just like reading and writing, numeracy is a necessary life skill, and someone who possesses adequate numeracy skills can handle and respond to the everyday mathematical demands of life. According to Pagan (2016), numeracy is the set of mathematical knowledge, problem-solving abilities, and communication skills needed by everyone to get by in today's technologically advanced society.

The occurrence of the COVID-19 pandemic has created a profound impact on basic education. Over 1.6 billion children and youth—nearly 80% of all enrolled students worldwide—were forced to miss school as a result of this pandemic in 161 countries (Saavedra, 2020). In addition to the problem is the reality that the percentage of children who cannot read and comprehend at age 10 stood at 53% whose parents belong to low and middle-income countries even before the outbreak started (World Bank, 2020 cited in DepEd,2020). The status of these children will continue to worsen if teachers do not act realistically on how to help them, especially those who are already identified as non-readers and non-numerates (Saavedra, 2020).

In the opening of the school year 2022-2023, one of the challenges faced by the schools is how to fill the learning gap brought on by the pandemic. It is observed that higher grades in

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elementary found difficulty in mathematics because they have not mastered the four fundamental operations.

As per Section 031 of Division Memorandum, s. 2023 which is the Administration of Division Unified Numeracy Test for Elementary and Secondary Level that aims to determine the status of learners' mastery of the fundamental operations in Mathematics which shall guide all teachers and school heads in developing intervention programs. Results of the Division Unified Numeracy Test show that in Sto. Tomas North Central School 10.45% found to be non-numerates out of their total population. It has been observed that students struggle to understand the subject of mathematics regardless of their level of proficiency. Even though there aren't many experts in the field, learning must be improved and reinforced to advance to the next level of mastery. Conversely, students who are struggling with the material must receive remediation for them to acquire the necessary subject-matter competencies. The students' low level of numeracy proficiency suggested that they had not learned or met the required learning objectives for their grade.

According to the results of the Grade Four Numeracy Test, 98, or 23.84%, of the 411 students in Grade Four are classified as non-numerate. Hence, the researcher who is a Grade Four Mathematics teacher has experienced difficulties in teaching their grade level learning competencies in mathematics because of the low numeracy level of her learners. Having this percentage of non-numerate in her grade level, the researcher is very eager to determine the least mastered learning competencies and find interventions that will improve the numeracy level of non-numerate learners. The researcher also believes that it is the teachers' and school's duty to equip students with a sure foundation of mathematical concepts and symbols so as not to leave them in the dark when they pursue their learning in higher education.

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RESEARCH METHOD:

To gather data, the respondents will complete the numeracy assessments pretest and posttest before and after the intervention. The 40-item numeracy test will determine the level of numeracy of the learners. The content of the 40-item test basically focuses on competencies in basic addition, subtraction, multiplication, and division. The test result will be computed as a percentage. Those who got a percentage score of 76% - 100% belong to the Above Numerate level, 51% - 75% belong to the Numerate level, 26%-50% belong to the Emergent level, and those who get a percentage score of 0% - 25% will belong to the Non-Numerate Level. The result of the item analysis for the least mastered competencies will be therefore the basis of the intervention plan.

RESULTS AND DISCUSSION

1. Result of the Numeracy Assessment of Grade IV Pupils of Sto. Tomas North Central School During the Pretest

Table 1

Grade Four Enrolment	No. of Pupils who took the test	Above Numerate (76%-100%)	Numerate (51%-75%)	Emergent (26%-50%)	Non-Numerate (0 – 25%)
411	411	49	73	191	98

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Table 1 shows the result of the Pretest Numeracy Assessment that was conducted on 411 Grade 4 pupils of Sto. Tomas North Central School.

It is evident from this that of the 411 students who took the test, 49 students, or 11.92%, were above the numerate level, 73 students, or 17.76%, were Numerate level, 191 pupils or 46.47% were Emergent level, and 98 pupils or 23.84% fell under Non-Numerate level. It implied that those learners did not meet or learn the standard learning competencies in Mathematics like the addition of three or more addends, subtracting numbers with and without regrouping, basic multiplication, and division. In this connection, these pupils hardly understand the lessons in Mathematics at Grade 4.

2. ***Factors/Challenges That Students Are Facing in Having Low Scores in Numeracy Test***

The variables influencing students' low numeracy scores are displayed in Table 2. Lack of foundation in basic numeracy got rank 1 with 35.71%. This inferred that numeracy skills are the building blocks of all future math classes. If students are not able to acquire these skills, they will still struggle to comprehend increasingly difficult math concepts. By teaching students these skills before Kindergarten, students enter school with a foundation of skills to build on to do more advanced math. Students are more likely to succeed in school if they have the opportunity to be exposed to and learn early math skills at a young age. Students who enter Kindergarten with low math skills tend to continue to perform below their peers in later grades (Harris & Petersen, 2019). These students, particularly the ones who are at risk, must have the chance to lay a solid foundation from an early age. The early childhood years are the ideal time to start teaching early math and numeracy skills because young students' brains are naturally receptive to logic and math skills (Chesloff, 2013).

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Table 2

Factors that students face in having low scores	Frequency	Percentage	Rank
Lack of foundation in basic numeracy	35	35.71%	1
Parents' involvement in academic performance	27	27.55%	2
Teacher's factor	15	15.31%	3
Implementation of Modular Distance Learning due to Pandemic	11	11.22%	4
Attitudes of Learners in Mathematics	10	10.20%	5

The parents' involvement in academic performance ranks 2 with 27.55%. Mathipa (2014) stated that the level of commitment to parental support and the level of parental activity and participation are the two key elements that contribute to the concept of parental involvement. n comparison to students with the least supportive parents, those with the most supportive parents not only have higher proficiency levels but also exhibit a more positive attitude toward mathematics. Harris and Petersen (2019) found that children with more parent interactions related to math in early childhood are more likely to succeed in school overall.

With 15.31%, the teachers' factor fell short of rank 3. The biggest impact on students' opinions of mathematics is exerted by teachers. Teachers who engage students in hands-on activities with real-world applications, make them feel supported, demonstrate a passion for the

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subject, and provide one-on-one attention have a positive impact on student's attitudes toward mathematics (Kelly, 2011). Teachers should use a variety of strategies, interventions, and innovations to improve students' attitudes toward mathematics. According to Acharya (2017), a child's academic success is significantly influenced by the way their teachers conduct their lessons and carry them out.

The implementation of Modular Distance Learning due to the pandemic was in fourth rank with 11.22%. Anzaldo (2021) stated that the implementation of modular distance learning brought issues when it came to learners' commitment to answering their modules at home. For a variety of reasons, some parents choose to complete the modules in place of their kids. While some people work remotely from home in an online workspace, others are so focused on household chores and other duties that they are the ones answering the modules rather than teaching their kids. Others are lack of gadgets and internet connections when classes are facilitated through online sessions. As a result, it developed a learning gap among students.

The attitudes of learners in Mathematics was the fifth rank with 10.20%. According to Ablian and Paranga's research from 2022, students said they experienced anxiety when learning math. Pupils claimed that mathematics is a hard and complicated subject and that they lack the mathematical skills required to solve complex problems. Tudy (2014) studied Filipino students and discovered that only attitudes toward mathematics had a significant influence on the student's academic performance. Students who have a positive attitude toward the subject perform better.

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3. Proposed Intervention of Project Math-ALINO that will Improve the Numeracy Level of Non-Numerates

a. Self-Learning Materials about Fundamental Operations

The researcher made a self-learning material or activity sheet focusing on the four fundamental operations: Addition, Subtraction, Multiplication, and Division. The material consisted of practice exercises about the competencies in fundamental operations. These were given to non-numerate learners after the teacher explained the lessons.

b. Math Minutes

The researcher scheduled at least five to ten minutes each day for a math drill before the teacher began the lesson to support the intervention.

c. Window cards and Flashcards

The learner's math and numeracy abilities were greatly enhanced by the use of window cards and flashcards. They completed this assignment in their spare time at school.

d. Math Warriors

To mentor and assist their classmates who struggle in math classes, particularly in fundamental operations, the researcher picked a small group of students who excel in math and numeracy. Peer teaching, according to the researcher, is another powerful strategy for enhancing a child's learning.

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e. Parent's involvement

Every day, the students practiced their homework so they could complete it at home. Their parents or guardians were expected to complete these assignments.

4. ***Results of Post-test in Numeracy of Grade IV Pupils of Sto. Tomas North Central School***

Table 3

Grade Four Enrolment	No. of Pupils who took the test	Above Numerate (76%-100%)	Numerate (51%-75%)	Emergent (26%-50%)	Non-Numerate (0 – 25%)
411	411	143	141	111	15

Table 3 shows the result of posttest numeracy assessment of Grade 4 pupils. It can be gleaned that during the posttest, out of 411 pupils, only 15 pupils or 3.65% were left in the non-numerates. The 98 non-numerate pupils in the pretest reduced to 15 non-numerates in the posttest. It shows that the level of numeracy such as Above Numerate, Numerate, and Emergent increased in number while the Non-numerate level decreased. The 98 non-numerate learners in the pretest were reduced to 15 non-numerates in the posttest. This implies that the interventions such as giving learning activity sheets that focus on the four fundamental operations, conducting math minutes (10 minutes of math activities during their free time), selecting math wizard

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learners to tutor non-numerates, and parents' follow-up were a success. This indicates that there was an improvement in numeracy level in grade 4 pupils of Sto. Tomas North Central. The results affirm the findings of Quillao (2014) that there was a significant difference in the pre-test and post-test scores of the learners using the cooperative learning strategies as interventions. It works well to use an intervention to help learners with their basic math operation skills.

CONCLUSION

1. The result of the pretest showed that out of 411 Grade Four learners 98 or 23.84% of the learners are under Non-numerate level. The number of non-numerate learners in Grade 4 during the pretest indicates that learners lack basic fundamental and numeracy skills as they enter a higher grade level or intermediate level which requires the learners to become equipped with the numeracy skills. As a result, this scenario will lead to poor numeracy levels.

2. To be able to expand on those skills later on, students must lay a foundation early on. Factors such as parents' involvement in academic performance, teachers' factors, students' attitudes towards mathematics, modular distance learning during the pandemic, and lack of foundation of numeracy skills are said to be the factors that affect students' low grades in mathematics. Without the basic early math and numeracy skills such as counting, comparing and classifying, geometry, and thinking skills. According to research, students who lack these fundamental math abilities when they first enroll in school will find it difficult to learn math.

3. The effectiveness of the intervention plan was determined by its ability to lower the proportion of non-numerates. Parent involvement, math warriors, window cards and flashcards, self-learning resources, and math minutes were among the interventions that were used.

4. Only 15 or 3.65% of the 411 Grade Four students who took the posttest fell into the Non-numerate level. The findings show that appropriate intervention is needed for students who

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struggle with numeracy. Instructors need to come up with innovative ideas, tactics, and interventions that will help students advance.

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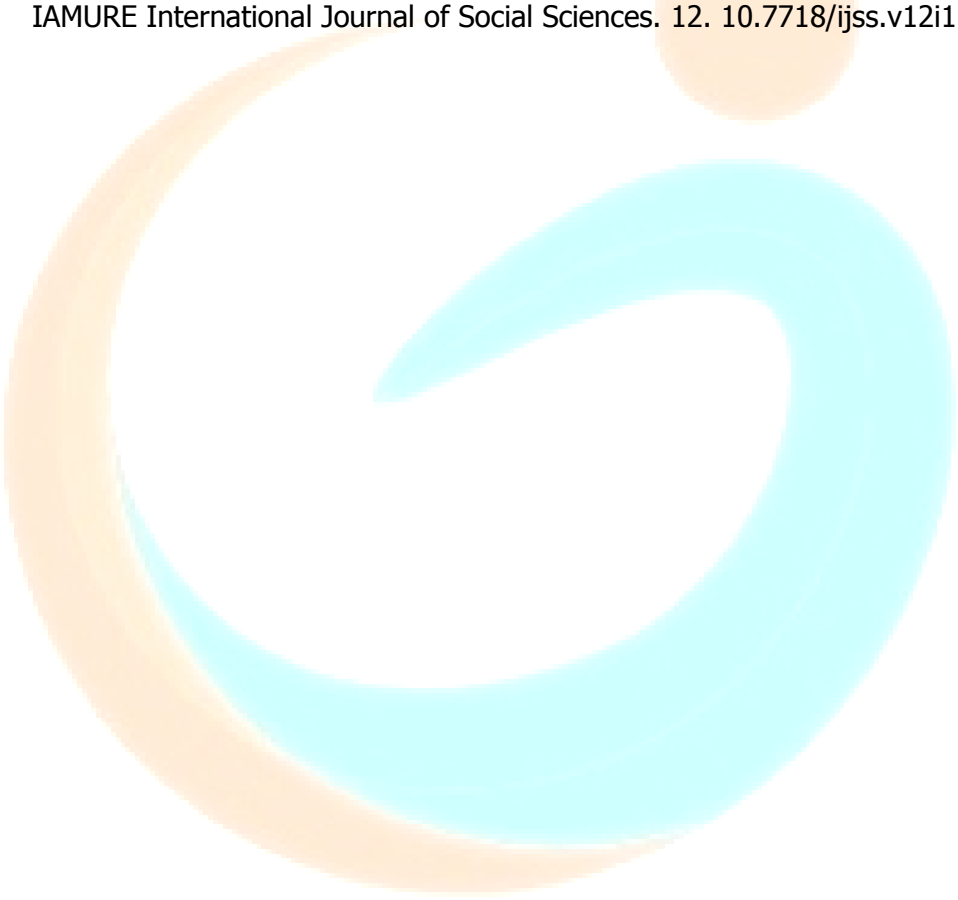

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