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# Project MASK (Math Ay Sikaping Kompyutin): A Numeracy Intervention for Grade 7 Students

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**Abstract.** Numeracy is a fundamental competency for academic learning and everyday decision-making, yet difficulties in foundational numeracy remain a concern among learners entering secondary education. This study addressed the need for localized evidence on school-based numeracy interventions for Grade 7 learners identified as non-numerate. It evaluated changes in the numeracy performance of Grade 7 learners following the implementation of Project MASK (Math Ay Sikaping Kompyutin) at Santiago Integrated National High School during School Year 2024–2025. The study employed a pre-experimental action research evaluation using a one-group pretest-posttest design involving 195 Grade 7 learners identified as non-numerate through the Division Numeracy Assessment (DNA). Project MASK was implemented over 12 weeks through 36 sessions organized into four phases: Monitoring and Assessment, Adaptive Instruction, Supportive Learning, and Knowledge Application. Pre-test and post-test scores were analyzed using descriptive statistics and the Wilcoxon signed-rank test because the paired difference scores were not normally distributed. The mean score increased from 1.98 (SD = 0.894) in the pre-test to 7.62 (SD = 1.140) in the post-test, representing an observed mean increase of 5.64 points. The difference between the paired assessments was statistically significant ($W = 0.00$, $p < .001$), with a rank-biserial correlation of –1.00, indicating that all observed paired differences favored the post-test. The findings demonstrate statistically significant improvement in numeracy performance following implementation. However, because the study used a one-group design without a comparison group, the observed improvement cannot be attributed solely to Project MASK. Controlled or quasi-experimental research is therefore needed to determine the intervention's causal contribution.

**Keywords:** Adaptive instruction; Grade 7 learners; numeracy intervention; Project MASK; supportive learning

## Introduction

Numeracy is a fundamental competency that enables learners to understand, interpret, and use numbers and mathematical information in academic and everyday contexts. It extends beyond the mathematics classroom, supporting learning in science and technology, financial literacy, and practical decision-making. Strengthening foundational numeracy is therefore an important educational priority, particularly for learners who enter secondary education without sufficient mastery of prerequisite mathematical skills. This concern is reflected in international and national efforts to address persistent learning gaps and promote foundational competencies.

Despite these efforts, difficulties in mathematics and numeracy remain evident among Filipino learners. International assessments have documented substantial challenges in mathematics achievement. In the 2022 Programme for International Student Assessment (PISA), only 16% of Filipino students reached at least Level 2 proficiency in mathematics, considerably below the OECD average (OECD, 2023). Similarly, the 2019 Southeast Asia Primary Learning Metrics (SEA-PLM) reported that only 17% of Filipino learners at the end of primary education met the minimum mathematical standards under the Sustainable Development Goal definitions (UNICEF & SEAMEO, 2020). These findings highlight the continuing need for interventions that identify foundational learning gaps and provide targeted support before such difficulties become more pronounced in secondary education.

Recent research supports the use of targeted and differentiated mathematics interventions for learners experiencing difficulties. A meta-analysis by Rojo et al. (2023) found positive effects of interventions addressing rational-number knowledge among students with mathematics difficulties, although the

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magnitude of effects varied across instructional approaches and outcome measures. Similarly, research on learning recovery has shown that differentiated remedial instruction based on learners' numeracy levels can improve foundational numeracy outcomes. In a large-scale study involving 1,545 students in 25 Indonesian schools, Susanti et al. (2025) found that group-based and individualized remedial approaches significantly improved foundational numeracy following pandemic-related learning loss. These findings suggest that interventions that begin with assessment of learners' existing skills and subsequently provide instruction matched to identified needs can support the recovery of foundational mathematical competencies.

However, the recent intervention literature also indicates an important gap concerning learners at the transition to secondary education. Nelson et al. (2025), in a scoping review of mathematics intervention studies involving students with or at risk for mathematics difficulties, identified 16 studies meeting their inclusion criteria, but none focused on learners in Grades 7–12. The reviewed interventions were concentrated largely on earlier grade levels and commonly addressed areas such as whole-number concepts and fractions. This finding suggests that evidence regarding structured mathematics interventions for learners entering secondary education with substantial foundational difficulties remains comparatively limited.

The gap is particularly relevant in the Philippine context, where learning recovery efforts have emphasized foundational competencies and responsive instruction (Department of Education, 2022, 2023, 2024). Despite these learning-recovery efforts, there remains a need for school-based evidence evaluating an integrated intervention that combines diagnostic assessment, adaptive instruction, supportive learning, and contextualized application within a single intervention framework. Thus, the research gap addressed by the present study is not simply the general lack of numeracy interventions, but the limited empirical evidence on integrated, assessment-informed numeracy interventions specifically designed for Grade 7 learners who have been identified as non-numerate at entry to secondary education.

This need was evident at Santiago Integrated National High School during School Year 2024–2025. Based on the school's numeracy assessment, 33.64% of incoming Grade 7 learners were identified as non-numerates, representing 19% of the total non-numerate learners in the Junior High School. This local condition indicated a substantial need for targeted support among learners who had not yet developed expected foundational numeracy competencies. In response, the school implemented Project MASK (Math Ay Sikaping Kompyutin), a school-based intervention designed to address identified numeracy difficulties through assessment, focused instruction, learning support, and opportunities to apply numeracy skills between the pre-test and post-test phases of the Division Numeracy Assessment.

Project MASK integrates four interconnected phases: Monitoring and Assessment, Adaptive Instruction, Supportive Learning, and Knowledge Application. The intervention uses assessment information to identify learners' needs, guide instructional decisions, provide differentiated learning opportunities, support learner engagement, and promote the application of numeracy skills in contextualized situations. This integrated structure is consistent with evidence supporting assessment-informed and targeted mathematics interventions, while addressing the need for school-based approaches that respond specifically to learners with substantial foundational numeracy difficulties.

Given the identified numeracy deficiencies among incoming Grade 7 learners and the limited evidence on integrated interventions for learners at this stage of schooling, examining changes associated with Project MASK is warranted. The present study therefore evaluated the numeracy performance of Grade 7 learners before and after the implementation of Project MASK at Santiago Integrated National High School during School Year 2024–2025. Specifically, the study examined learners' performance in the Division Numeracy Assessment before and after the intervention and determined whether a statistically significant improvement in numeracy performance was observed.

**Research Questions**

This study determined the numeracy performance and improvement of students in the Division Numeracy Assessment conducted at Santiago Integrated National High School for School Year 2024-2025. Specifically, it answered the following questions:

1. What is the numeracy performance of students based on the Division Numeracy Assessment pre-test results?
2. What is the numeracy performance of students based on the Division Numeracy Assessment post-test results?
3. Is there a statistically significant difference in learners' DNA scores before and after the implementation of Project MASK?

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**Scope and Delimitation of the Study**

This study focused on changes in the numeracy performance of 195 Grade 7 learners identified as non-numerate at Santiago Integrated National High School during School Year 2024–2025 following the implementation of Project MASK (Math Ay Sikaping Kompyutin). The study examined learners' performance before and after the intervention using the Division Numeracy Assessment. Project MASK was implemented through four phases: Monitoring and Assessment, Adaptive Instruction, Supportive Learning, and Knowledge Application. The study was limited to the identified Grade 7 non-numerate learners who participated in the intervention. It focused specifically on changes in their numeracy assessment performance and did not examine other academic outcomes or learners from other grade levels and schools. The study was limited to the identified Grade 7 non-numerate learners who participated in the intervention. It focused specifically on changes in their numeracy assessment performance and did not examine other academic outcomes or learners from other grade levels and schools.

## Literature Review

**Numeracy Intervention and Mathematics Difficulties**

Recent research supports targeted mathematics interventions for learners experiencing difficulties. Rojo et al. (2023), in a meta-analysis of 43 studies, found a substantial overall effect of rational-number interventions for students with mathematics difficulties ($g$ = 1.02), although effects varied across instructional approaches and learner characteristics. Similarly, Muñez et al. (2022) found that classroom-based numeracy training improved numeracy and mathematics achievement among children at risk for mathematical learning difficulties, while noting that variation in intervention exposure affected implementation. These findings suggest that effective intervention requires targeted instruction as well as consistent implementation. However, evidence remains limited for learners transitioning to secondary education. Nelson et al. (2025) reviewed mathematics interventions involving students with or at risk for mathematics difficulties and found that none of the studies meeting their inclusion criteria involved Grades 7–12 learners; most focused on kindergarten through Grade 6 and addressed whole-number and fraction concepts. This indicates a need for further evidence on interventions designed for learners entering secondary education with substantial foundational mathematics difficulties.

**Learning Recovery and Differentiated Numeracy Instruction**

Learning recovery research further emphasizes the importance of matching intervention to learners' demonstrated needs. Susanti et al. (2025), in a large-scale intervention involving 1,545 students across 25 schools, found that grouping learners according to numeracy levels and providing additional individual support improved foundational numeracy outcomes. Their findings demonstrate that learning recovery is strengthened when assessment information is used to determine the level and type of instructional support required. Similarly, Insorio and Librada (2025) found that differentiated instruction improved mathematics performance and helped learners connect prior knowledge with new mathematical concepts and real-life applications. Evidence from Grade 7 learners also demonstrates the importance of responsive instruction. Lenz et al. (2024) found that language-responsive mathematics instruction produced higher learning gains than the control condition, with greater benefits among students who had lower proficiency in the language of instruction. Collectively, these studies indicate that learners with different starting points may require differentiated instructional support rather than uniform remediation.

**Formative Assessment and Assessment-Informed Instruction**

Formative assessment provides a mechanism for connecting learner needs with instructional decisions. Besser et al. (2024), using data from 856 students in 39 middle-school mathematics classes, found that the contribution of formative assessment should be considered alongside overall instructional quality. Töllner et al. (2025), in a systematic review of formative assessment in inclusive secondary mathematics education, likewise emphasized the importance of diagnostic information, teacher guidance in responding to identified difficulties, and accessible feedback. These findings suggest that assessment is most valuable when it informs subsequent instruction rather than simply documenting achievement. For numeracy intervention, diagnostic assessment can therefore serve as the basis for identifying learning gaps, adjusting instruction, monitoring progress, and providing appropriate feedback. This principle is reflected in Project MASK's Monitoring and Assessment phase.

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**Supportive and Contextualized Mathematics Learning**

Evidence also indicates that learners experiencing mathematics difficulties benefit from supportive learning conditions and opportunities to apply mathematical knowledge. Muñez et al. (2022) highlighted the importance of consistent intervention exposure in classroom implementation, while Lenz et al. (2024) demonstrated that additional instructional support can benefit learners with particular learning needs. Insorio and Librada (2025) likewise found that differentiated instruction supported connections between mathematical concepts and real-life applications. Taken together, these findings suggest that numeracy intervention should extend beyond repeated mathematical practice. Learners need structured support, feedback, meaningful participation, and opportunities to use developing mathematical knowledge in relevant situations. These principles correspond to the Supportive Learning and Knowledge Application phases of Project MASK.

**Relevance to Project MASK**

The literature converges on an assessment-to-action pathway in mathematics intervention: identify learners' existing competencies, use assessment evidence to determine instructional needs, provide differentiated and supportive instruction, monitor progress, and create opportunities to apply mathematical knowledge. Evidence from numeracy intervention, learning recovery, formative assessment, and Grade 7 mathematics research supports the individual components of this pathway, although their effectiveness varies according to learner characteristics and implementation conditions. A specific gap remains in the limited evidence on how these components can be integrated into a school-based numeracy intervention for Grade 7 learners identified as non-numerate at entry to secondary education. Nelson et al. (2025) found no Grades 7–12 studies meeting their review criteria concerning the moderating role of initial mathematics skills, while much of the recent learning-recovery evidence has focused on primary learners. Project MASK addresses this gap by integrating Monitoring and Assessment, Adaptive Instruction, Supportive Learning, and Knowledge Application into a single school-based intervention. The present study examines whether changes in numeracy performance are observed following implementation among Grade 7 learners identified as non-numerate.

## Methodology

**Research Design**

The study employed a pre-experimental action research evaluation using a one-group pretest-posttest design. The design was used to examine changes in the numeracy performance of Grade 7 learners before and after the implementation of Project MASK (Math Ay Sikaping Kompyutin). The same learners completed the Division Numeracy Assessment (DNA) before and after the 12-week intervention. Because the study did not include a comparison or control group and participants were not randomly assigned, the design does not establish that Project MASK alone caused the observed improvement. Potential threats to internal validity include maturation, regular classroom instruction, testing effects, and other learning experiences occurring during the intervention period. Thus, the findings are interpreted as changes in numeracy performance following the implementation of Project MASK, rather than definitive causal effects of the intervention. The pre-test and post-test scores were analyzed using descriptive statistics and the Wilcoxon signed-rank test. The nonparametric test was selected because the paired difference scores were not normally distributed ($W = 0.737$, $p < .001$). All statistical tests were evaluated at the 0.05 level of significance. A p-value less than .05 was interpreted as statistically significant.

**Sampling Design**

The study used purposive sampling because Project MASK specifically targeted Grade 7 learners identified as non-numerate based on the DNA. Grade 7 learners who met the Division Office's prescribed non-numerate classification were included in the intervention. The final sample consisted of 195 learners. No eligible learners were excluded, and no participant was lost to follow-up

**Research Locale**

The study was conducted at Santiago Integrated National High School, General Trias City, Cavite, Philippines, during School Year 2024–2025. Project MASK was implemented through the school's Mathematics Department as a school-based response to identified numeracy difficulties among incoming Grade 7 learners.

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**Research Participants**

The participants were 195 Grade 7 learners identified as non-numerate through the DNA. The learners participated in the complete Project MASK intervention and underwent both pre-test and post-test assessment. To protect their privacy, participant names were replaced with coded identifiers during data processing and analysis.

**Research Instrument**

The Division Numeracy Assessment (DNA) served as the primary instrument for measuring learners' numeracy performance. It is a Key Stage 3 numeracy assessment developed by the Department of Education–General Trias City to identify learners' numeracy levels prior to the opening of the school year. The assessment was developed based on the Grade 7 Most Essential Learning Competencies (MELCs) and was reviewed by designated reviewers from the Department of Education–General Trias City. For Grade 7, the DNA consisted of 10 multiple-choice items to be answered within 20 minutes. The assessment covered foundational mathematical competencies, including operations with fractions and integers, ratio and proportion, sequences, probability, measurement and volume, and other basic mathematical concepts included in the Grade 7 assessment. Learners answered the items using the prescribed answer sheet and followed the general directions provided in the assessment material. Each correct response was assigned one point, while an incorrect or unanswered item received zero points, resulting in a possible total score ranging from 0 to 10. Scores were classified as follows: 0–3, Non-numerate; 4–5, Emergent; 6–7, Average Numerate; and 8–10, Above Average Numerate. Learners who obtained scores of 0–3 were classified as Non-numerate and were included in the Project MASK intervention. Evidence of content validity was supported by the alignment of the assessment items with the Grade 7 MELCs and their review and validation by designated Department of Education–General Trias City reviewers, including Master Teachers. The assessment material also indicates that the DNA was intended for standardized administration. No reliability coefficient was reported in the supplied DNA documentation; therefore, no additional reliability estimate was claimed in the present study.

**Data Gathering Procedure**

Prior to data collection, the researchers secured permission from the school administration and coordinated with the Mathematics Department regarding the implementation of Project MASK and the administration of the DNA. The required informed consent from parents or guardians and assent from the participating learners were obtained. The DNA pre-test was administered to Grade 7 learners following the prescribed assessment conditions. Grade 7 learners answered Items 1–10 within the specified 20-minute period. Learners who obtained scores of 0–3 were identified as non-numerate and participated in Project MASK. The intervention was implemented for 12 weeks, with three sessions per week or 36 sessions in total, covering the four phases of Monitoring and Assessment, Adaptive Instruction, Supportive Learning, and Knowledge Application. After the intervention, the DNA post-test was administered using the same scoring and assessment procedures. Pre-test and post-test results were matched using coded participant identifiers rather than learners' names. The collected data were encoded, analyzed, and reported in aggregate form to maintain participant confidentiality.

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## Results and Discussions

Project MASK comprised four phases: Monitoring and Assessment, Adaptive Instruction, Supportive Learning, and Knowledge Application, as illustrated in Figure 1.

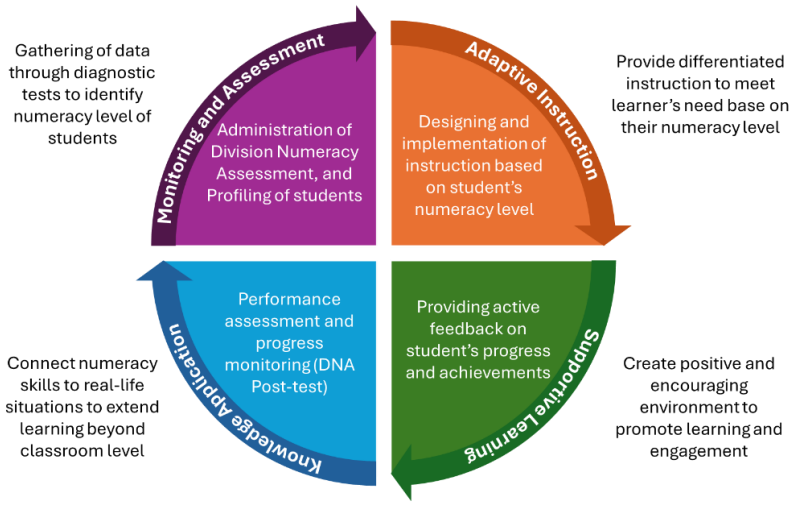


***Figure 1.*** *Project MASK Intervention Framework*

**Research Question 1: What is the numeracy performance of students based on the Division Numeracy Assessment pre-test results?**

**Table 1**. Division Numeracy Assessment Pre-test Performance of Grade 7 Learners

| DNA | n | Minimum | Maximum | Mean | SD |
|---|---|---|---|---|---|
| Pre-test | 195 | 0 | 3 | 1.98 | 0.894 |

The pre-test results showed that the 195 Grade 7 learners obtained scores ranging from 0 to 3, with a mean of 1.98 (SD = 0.894). Since the Division Numeracy Assessment (DNA) consists of 10 items for Grade 7, the mean score corresponds to approximately 19.8%. Based on the DNA classification, scores from 0–3 are categorized as Non-numerate. Thus, the participants' average performance at baseline was within the non-numerate level.

The frequency distribution further showed that 16 learners (8.21%) obtained a score of 0, 31 (15.90%) obtained 1, 88 (45.13%) obtained 2, and 60 (30.77%) obtained 3. Hence, all 195 participants (100%) were within the non-numerate classification before the intervention. This distribution confirms that the participants entered the study with substantial foundational numeracy difficulties rather than merely having a low average score.

The finding supports the need for targeted mathematics intervention for learners experiencing foundational difficulties. Rojo et al. (2023), in a meta-analysis of 43 studies, found substantial positive effects for mathematics interventions among students with mathematics difficulties, although the magnitude of effects varied across interventions and learners. The baseline condition observed in the present study therefore provided a clear basis for implementing an assessment-informed and targeted intervention.

**Research Question 2: What is the numeracy performance of students based on the Division Numeracy Assessment post-test results?**

**Table 2.** Division Numeracy Assessment Post-test Performance of Grade 7 Learners

| DNA | n | Minimum | Maximum | Mean | SD |
|---|---|---|---|---|---|
| Post-test | 195 | 6 | 10 | 7.62 | 1.140 |

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Following the implementation of Project MASK, the learners obtained post-test scores ranging from 6 to 10, with a mean of 7.62 (SD = 1.140). With 10 items in the DNA, the mean corresponds to approximately 76.2%. Under the DNA classification, scores of 6–7 are Average Numerate, while scores of 8–10 are Above Average Numerate. Thus, the mean post-test performance fell within the Average Numerate classification.

More importantly, the frequency distribution demonstrated a substantial shift in learner performance. Ten learners (5.13%) obtained a score of 6, 120 (61.54%) obtained 7, 28 (14.36%) obtained 8, 9 (4.62%) obtained 9, and 28 (14.36%) obtained 10. Therefore, 130 learners (66.67%) were classified as Average Numerate, while 65 (33.33%) were classified as Above Average Numerate. No learner remained in the Non-numerate or Emergent categories.

This shift indicates that the improvement was not limited to an increase in the overall mean. The distribution of scores moved entirely out of the non-numerate range, with two-thirds of the learners reaching the Average Numerate level and one-third reaching the Above Average Numerate level. The result is consistent with findings from learning-recovery research showing that differentiated remedial instruction based on learners' numeracy levels can improve foundational numeracy outcomes. Susanti et al. (2025), for example, reported significant improvements in foundational numeracy following differentiated group-based and individualized remedial instruction.

**Table 3.** Frequency Distribution of Learners According to DNA Percentage Score Classification

| Percentage Score | DNA Classification | Pre-test n (%) | Post-test n (%) |
|---|---|---|---|
| 0–30% | Non-numerate | 195 (100.00%) | 0 (0.00%) |
| 40–50% | Emergent | 0 (0.00%) | 0 (0.00%) |
| 60–70% | Average Numerate | 0 (0.00%) | 130 (66.67%) |
| 80–100% | Above Average Numerate | 0 (0.00%) | 65 (33.33%) |
| **Total** | | **195 (100.00%)** | **195 (100.00%)** |

Table 3 provides a clearer picture of the change in learner performance than the mean scores alone. Before the intervention, all 195 learners (100%) were classified as Non-numerate. After the intervention, none remained in either the Non-numerate or Emergent categories. Instead, 130 learners (66.67%) reached the Average Numerate level and 65 (33.33%) reached the Above Average Numerate level.

The movement of all learners into the Average Numerate or Above Average Numerate categories is consistent with the assessment-informed approach of Project MASK. Recent mathematics intervention research indicates that targeted interventions can improve outcomes among learners with mathematics difficulties, while also emphasizing the importance of matching instructional support to learners' initial levels of performance (Rojo et al., 2023). Similarly, Susanti et al. (2025) found that grouping learners according to foundational numeracy levels and providing differentiated remedial support significantly improved numeracy outcomes.

**Research Question 3: Is there a statistically significant difference in learners' DNA scores before and after the implementation of Project MASK?**

**Table 4.** Wilcoxon Signed-Rank Test of Pre-test and Post-test Numeracy Scores

| Comparison | Wilcoxon W | p - value | Effect Size |
|---|---|---|---|
| Pre-test vs. Post-test | 0.00 | <0.001 | Rank-biserial correlation = −1.00 |

The Shapiro–Wilk test indicated that the paired difference scores were not normally distributed; therefore, the Wilcoxon signed-rank test was used to compare the pre-test and post-test scores. The analysis yielded $W = 0.00$, $p < .001$, indicating a statistically significant difference between the two assessments.

The result is reinforced by the magnitude and direction of the observed change. The mean score increased from 1.98 (19.8%) in the pre-test to 7.62 (76.2%) in the post-test. Furthermore, examination of the individual scores showed that all 195 learners obtained a higher post-test score than their pre-test score. The rank-biserial correlation had an absolute magnitude of 1.00, indicating that all paired differences favored the post-test. This describes the observed within-participant change and should not be interpreted as a causal effect size for Project MASK because the study had no comparison group.

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The finding is consistent with recent evidence supporting targeted and differentiated mathematics intervention. Rojo et al. (2023) reported a substantial overall effect for mathematics interventions among students with mathematics difficulties, while Susanti et al. (2025) found significant improvements in foundational numeracy following differentiated remedial instruction. These findings provide empirical support for the use of assessment-informed and targeted approaches when addressing substantial numeracy difficulties.

The result also contributes to the identified gap in the intervention literature. Nelson et al. (2025) reported that among the studies meeting their review criteria, none examined Grades 7–12 learners in relation to the moderating role of initial mathematics skills. The present findings therefore provide school-based evidence concerning changes in numeracy performance among Grade 7 learners who were specifically identified as non-numerate before intervention.

However, the statistically significant difference should not be interpreted as proof that Project MASK alone caused the improvement. The study employed a one-group pretest-posttest design without a comparison group. Consequently, maturation, regular classroom instruction, repeated exposure to assessment, and other learning experiences during the 12-week period may have contributed to the observed improvement. The results therefore provide evidence of substantial improvement following the implementation of Project MASK, while controlled or quasi-experimental research is needed to establish its specific causal contribution.

## Ethical Considerations

The study was conducted with the approval of the School Head of Santiago Integrated National High School prior to the implementation of the research activities. As the participants were Grade 7 learners and therefore minors, informed consent was obtained from their parents or legal guardians, and learner assent was likewise secured before participation. Participation was voluntary, and the learners were informed of the purpose and procedures of the study and their right to participate without undue pressure. The confidentiality and anonymity of the participants were maintained throughout the study. Real names were not recorded in the research dataset; instead, numerical identifiers were assigned to the participants for data organization and analysis. The collected information was used solely for research purposes and was handled in accordance with the principles of privacy and confidentiality under the Data Privacy Act of 2012 (Republic Act No. 10173). No personally identifiable information was included in the presentation or publication of the findings. Although the study did not undergo review by a separate institutional research ethics committee and therefore has no ethics approval or certificate reference number, the conduct of the study was formally authorized by the School Head and appropriate safeguards for research involving minor participants were observed.

## Conclusion

The findings demonstrated a statistically significant improvement in the numeracy performance of the Grade 7 learners following the implementation of Project MASK. The learners' performance increased from a pre-test mean of 1.98 to a post-test mean of 7.62, with the Wilcoxon signed-rank test indicating a statistically significant difference between the paired scores ($p < .001$). The results further showed that all learners moved out of the Non-numerate classification at pre-test, with 66.67% classified as Average Numerate and 33.33% as Above Average Numerate at post-test. These findings provide evidence of substantial improvement in learner numeracy performance following the implementation of Project MASK and suggest that Project MASK warrants further investigation as a school-based numeracy intervention.However, the findings should not be interpreted as definitive evidence that Project MASK alone caused the observed improvement. The study employed a one-group pretest-posttest design without a control or comparison group and without random assignment. Consequently, alternative explanations, including maturation, regular classroom instruction, exposure to other learning experiences, and testing or practice effects, cannot be ruled out. Thus, the results establish a statistically significant improvement following implementation, but causal effectiveness cannot be conclusively determined from the present design. Future studies using a quasi-experimental or controlled design with an appropriate comparison group are recommended to provide stronger evidence of the intervention's causal effectiveness.

## Recommendations

Based on the statistically significant improvement observed following the implementation of Project MASK, future research should first validate the intervention effect using a quasi-experimental or controlled design involving an appropriate comparison group. Such a design would help determine whether the observed gains are attributable to Project MASK rather than to maturation, regular classroom instruction,

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testing effects, or other learning experiences. Future studies should also use larger and, where feasible, more diverse samples and include follow-up assessments to determine whether improvements in numeracy are maintained over time. Researchers may further examine which components of the intervention and which learner characteristics are associated with greater improvement. Until the intervention effect is more securely established through stronger research designs, decisions to institutionalize, scale up, or substantially modify Project MASK should be guided by additional empirical evidence.

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