Peer Tutoring as a Remediation Strategy to Enhance the Problem-Solving Skills of Grade 6 Pupils in Selected Schools of Lower Calanasan District

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ABSTRACT

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| This study investigated the effectiveness of peer tutoring as a remediation strategy in improving the problem-solving performance of grade 6 pupils in mathematics. Specifically, it aimed to compare the pupils' pre-test and post-test scores before and after the implementation of peer tutoring and to examine whether a significant difference existed between these two performance levels. Additionally, the study explored the challenges encountered during the peer tutoring process. Using a quasi-experimental approach, the research involved quantitative data from pre- and post-tests administered to 23 pupils and qualitative data from interviews with selected tutors and tutees.  The findings revealed a significant improvement in the pupils' academic performance, with achievement levels shifting from “satisfactory” to “very satisfactory” following the intervention. Statistical analysis confirmed this with a significant mean difference between the pre-test and post-test scores (t(24) = -4.609, p = .000), validating the effectiveness of peer tutoring. Interviews highlighted challenges such as inconsistencies in explanations, fast pacing, behavioral issues, and language barriers. However, pupils reported feeling more comfortable and engaged during the peer tutoring sessions, particularly with teacher guidance.  The study concluded that peer tutoring significantly enhances mathematical performance and fosters collaborative learning when structured with proper teacher support. It recommends that schools and teachers incorporate peer tutoring into their educational strategies to address diverse learning needs and promote inclusive education. |

*Keywords: Mathematics, peer tutoring, problem-solving, remediation strategy, performance*

1. INTRODUCTION

Education is widely recognized as a cornerstone of national development and social progress, aligning with the United Nations' Sustainable Development Goal 4 (SDG 4), which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (Department of Economic and Social Affairs, 2017). Around the world, educational systems strive to enhance learning outcomes through innovative instructional strategies that foster critical thinking, problem-solving, and collaboration among students (United Nations Statistics Division, 2024). However, many developing countries continue to struggle with improving students' academic performance in key subjects, particularly mathematics, which serves as a foundation for logical reasoning and practical applications in daily life (Congress of Local and Regional Authorities, 2024).

In the Philippines, the Department of Education (DepEd, 2024) has adopted policies and programs aimed at addressing learning deficiencies and improving overall academic achievement (DepEd). Despite these efforts, national and international assessments reveal that Filipino students, especially at the elementary level, continue to lag in mathematics, particularly in problem-solving (Agravante & Janer, 2023). The challenge is even more pronounced in rural areas, where limited educational resources, large class sizes, and inadequate teacher training contribute to persistent learning gaps (Magsambol 2024). The Calanasan District exemplifies these difficulties, as many Grade 6 pupils struggle to acquire essential problem-solving skills necessary for future academic success and real-world applications (Aguhayon et. al, 2023). Studies suggest that innovative teaching strategies such as peer-assisted learning can mitigate these challenges by enhancing student engagement and understanding (Hidayat et. al., 2023).

Trends. Educational research increasingly highlights the importance of collaborative learning strategies, such as peer tutoring, to improve student comprehension and engagement (Adelman & Taylor, 2017). Peer tutoring has gained traction as an alternative instructional approach that promotes active learning, reinforces subject mastery, and enhances students' confidence in their academic abilities (Fungamwango & Hashel, 2023). Globally, schools have integrated peer-assisted learning programs into their curricula to foster cooperative learning environments that benefit both high-performing and struggling students (Rusli et. al. 2020). Additionally, emerging evidence suggests that peer tutoring in mathematics significantly improves students' problem-solving skills by fostering a deeper conceptual understanding of mathematical principles (Buan et. al. 2021).

Issues. Despite its growing adoption, the effectiveness of peer tutoring as a remediation strategy remains underexplored, particularly in rural Philippine schools (Valdez & Marcelo, 2024). Many educators in underserved districts lack the necessary training and resources to implement structured peer tutoring programs effectively. Furthermore, the effectiveness of peer tutoring in mathematics problem-solving has not been widely documented in the local context, raising concerns about its scalability and adaptability to diverse learning environments (Doyle, 2008).

The persistent underperformance of Grade 6 pupils in problem-solving necessitates the exploration of alternative instructional approaches. Traditional teaching methods, such as direct instruction, may not fully address the individualized learning needs of students, especially in large classrooms with limited teacher support (Aguhayon et. al, 2023). Given the potential of peer tutoring to enhance learning experiences, this study seeks to evaluate its effectiveness as a remediation strategy for improving problem-solving skills in mathematics among Grade 6 pupils in selected elementary schools in the Calanasan District.

This study is significant in its alignment with global, national, and local educational goals. At the global level, it supports the achievement of SDG 4 by exploring an inclusive instructional strategy that fosters equitable learning opportunities. Nationally, the research complements DepEd’s ongoing initiatives to enhance foundational competencies among Filipino learners, particularly in mathematics. Locally, the study has the potential to provide evidence-based recommendations for improving remedial instruction in rural schools, contributing to sustainable educational improvements in Calanasan District.

Moreover, this study can serve as a valuable resource for educators, policymakers, and school administrators by providing insights into the practical implementation of peer tutoring. The findings may inform teacher training programs and curriculum development, ensuring that effective remediation strategies are integrated into elementary education to enhance student outcomes in mathematics problem-solving.

Although existing studies highlight the benefits of peer tutoring in various educational settings, there is a lack of empirical research focusing on its impact on problem-solving skills among Grade 6 pupils in rural Philippine schools (Adelman & Taylor, 2017). Most available research examines general academic performance rather than specific cognitive skills, such as problem-solving, which are essential for higher-order thinking and real-life applications. Furthermore, while international literature supports the effectiveness of peer tutoring, contextual factors such as class size, teacher training, and availability of instructional resources may influence its success in the Philippine education system. Addressing this research gap, the present study aims to generate localized data on the implementation and effectiveness of peer tutoring in improving mathematical problem-solving skills among Grade 6 pupils in the Calanasan District.

2. statement of the problem

Generally, this study determined the impact of peer tutoring as a remediation strategy for improving the problem-solving performance in Mathematics of grade 6 pupils in selected elementary schools of Calanasan District for the academic year 2024-2025?

Specifically, this answered the following questions:

1. What is the pre-test score of the grade 6 pupils before implementing a peer tutoring remediation?

2. What is the posttest score of the grade 6 pupils after implementing a peer tutoring remediation

3. Is there a significant difference between the level of problem-solving performance of Grade 6 pupils before and after the implementation of peer tutoring as a remediation strategy in Mathematics subject?

4. What are the challenges encountered along the process of peer tutoring?

**2.1 Hypotheses**

There is no significant difference between the problem-solving performance of Grade 6 pupils before and after the implementation of peer tutoring as a remediation strategy in Mathematics subject.

3. Methodology

**3.1 Research Design**

This study utilized a quasi-experimental research design to assess the effectiveness of peer tutoring as a remediation strategy in enhancing the problem-solving abilities of Grade 6 pupils. By employing both pre- and post-assessment measures, the study compared the problem-solving performance of pupils before and after the peer tutoring intervention. During the peer tutoring intervention, the pupils were paired into tutor-tutee pairs, with higher-performing learners assigned as tutors and lower-performing learners as tutees. They were given at least 30 minutes every day to study with their peers with the supervision of their teacher. This design allowed for the practical evaluation of peer tutoring within the real-world classroom context, making it possible to observe any improvements in pupils’ problem-solving skills as a result of the peer tutoring sessions. The quasi-experimental approach was thus suitable for examining educational outcomes in a structured yet natural setting.

**3.2 Locale of the Study**

The study will be conducted in four elementary schools located in Calanasan District, specifically Butao Integrated School, Malitao Elemnentary School, Namaltugan Elementary School, Tubongan Elementary School. All schools are situated in rural areas, where access to educational resources and support may be limited, making them ideal settings for this study on peer tutoring as a remediation strategy.

**3.3 Respondents of the Study**

The respondents of this study were grade 6 pupils, whom, eight pupils were from Butao Integarted School, four pupils were from Malitao Elementary School, seven pupils were from Tubongan Elementary School, and eighteen pupils from Namaltugan Elementary School.

**3.4 Research Instrumentation**

The instrument used in this study is the Grade 6 Mathematics Questionnaire developed as part of the PROJECT SMART (Standardized and Meaningful Assessment Result-Based Teaching) initiative by the Department of Education (DepEd). This 20-item test was designed to assess Grade 6 pupils’ proficiency in key mathematical concepts as aligned with the K-12 curriculum. The test has been rigorously validated by education experts through expert reviews, item analysis, and pilot testing to ensure its reliability and relevance. The results from this assessment provide valuable insights into pupils’ performance and guide instructional improvements.

**Table 1. Range of Scores and Interpretations for a 20-Item Test**

|  |  |  |  |
| --- | --- | --- | --- |
| **Score Range** | **Percentage** | **Descriptive Rating** | **Interpretation** |
| 17 – 20 | 85% – 100% | Outstanding / Excellent | Demonstrates an exceptional understanding of the concepts; exceeds expectations. |
| 13 – 16 | 65% – 80% | Very Satisfactory | Shows solid understanding with minor errors; meets most expectations. |
| 9 – 12 | 45% – 60% | Satisfactory / Average | Demonstrates basic understanding; some gaps or misunderstandings are present. |
| 5 – 8 | 25% – 40% | Needs Improvement | Limited understanding; significant gaps in knowledge and skills. |
| 0 – 4 | 0% – 20% | Poor / Unsatisfactory | Lacks understanding of fundamental concepts; remediation strongly recommended. |

**3.5 Data Gathering Procedure**

The data gathering procedure for this study consisted of three main stages: preparation, implementation, and post-implementation.

For the **preparation stage**, a pre-test was administered to Grade 6 pupils from Butao, Malitao, Namaltugan and Tubongan Elementary Schools to assess their problem-solving competencies based on the third and fourth quarter Mathematics curriculum. The test served as a baseline for measuring improvement after the intervention. All 37 enrolled pupils from the selected schools participated in the study. Informed consent was obtained from both parents and pupils before participation.

Tutors and tutees were selected based on the following **criteria**:

* **Tutors -** Pupils with above-average scores in the pre-test, strong communication skills, and willingness to mentor their peers.
* **Tutees -** Pupils with below-average scores in the pre-test who require additional support in problem-solving.

Pairs were **strategically assigned** to ensure effective peer interaction and knowledge transfer.

For the implementation stage, peer tutoring sessions were conducted over 6-8 weeks, with each session lasting 30-45 minutes. The sessions focused on problem-solving techniques aligned with the competencies for the third and fourth quarters. The researcher observed the tutoring process, took field notes, and documented pupil engagement and tutor-tutee interactions.

Lastly, the post-implementation stage, a post-test covering the same problem-solving competencies was administered to the tutees group pupils to measure improvements in their mathematical performance. The pre-test and post-test results were statistically analyzed to determine the effectiveness of peer tutoring.

Additionally, qualitative data was gathered through interviews from tutors, and tutees to identify challenges encountered during the process. Ethical considerations, including confidentiality and voluntary participation, was strictly upheld throughout the study.

**3.6 Statistical Analysis**

The statistical tools used to analyze the data in this study were as follows:

Mean was used to determine the level of problem-solving performance of Grade 6 pupils before the implementation of peer tutoring as a remediation strategy in the Math subject. The mean score provided an average measure of the pupils' performance based on the pre-assessment results. (For Statement of problem number 1)

Mean was used to assess the level of problem-solving performance of Grade 6 pupils after the implementation of peer tutoring. This determined if there is an improvement in the pupilss' ability to solve mathematical problems after participating in the peer tutoring sessions. (For Statement of the problem number 2)

Paired sample t-test was employed to assess whether there is a significant difference in the problem-solving performance of Grade 6 pupils before and after the peer tutoring sessions. The paired t-test compared the pre- and post-assessment results to determine if the change in performance was statistically significant, thus indicated the effectiveness of the peer tutoring strategy as a remediation tool. (For Statement of the problem number 3)

4. Results and discussion

**4.1 What is the pre-test score of the grade 6 pupils before implementing a peer tutoring remediation?**

Table 2: Pre-test Scores of Grade 6 Pupils Before Implementing Peer Tutoring Remediation

|  |  |  |  |
| --- | --- | --- | --- |
| **Respondents**  **(Tutees)** | **Pre-Test Scores** | **Respondents**  **(Tutees)** | **Pre-Test Scores** |
| 1 | 10 | 13 | 5 |
| 2 | 6 | 14 | 11 |
| 3 | 8 | 15 | 8 |
| 4 | 12 | 16 | 10 |
| 5 | 13 | 17 | 7 |
| 6 | 8 | 18 | 10 |
| 7 | 13 | 19 | 13 |
| 8 | 4 | 20 | 7 |
| 9 | 12 | 21 | 9 |
| 10 | 10 | 22 | 10 |
| 11 | 12 | 23 | 3 |
| 12 | 8 |  |  |
| **Mean Pre-test Score = 9.09** | | | |
| **Interpretation = Satisfactory/Average** | | | |
| **Standard Deviation = 2.87** | | | |

**Legend:**

|  |  |
| --- | --- |
| **Range** | **Description** |
| 17 – 20 | Excellent/Outstanding |
| 13 – 16 | Very Satisfactory |
| 9 – 12 | Satisfactory/Average |
| 5 – 8 | Needs Improvement |
| 0 – 4 | Poor/Unsatisfactory |

Table 2 presents the pre-test scores of 23 Grade 6 pupils (referred to as tutees) prior to the implementation of the peer tutoring remediation program. The scores range from a low of 3 to a high of 13, with a computed mean of 9.09 and a standard deviation of 2.87. According to the provided legend, this mean falls within the range of 9–12, which corresponds to a Satisfactory/Average level of performance. The spread of scores indicates variability in pupil achievement, with a few pupils scoring well below average (e.g., scores of 3, 4, and 5), suggesting learning gaps that require intervention. Others reached scores within or slightly above the average range, but none attained the Very Satisfactory or Excellent categories. This implies that while a portion of the class has a basic grasp of the subject, most pupils stand to benefit from additional support. The results highlight the necessity for a targeted remediation strategy—such as peer tutoring—to help elevate the performance of learners, particularly those in the lower end of the scoring spectrum.

This suggests that although a basic understanding of problem-solving concepts is present, many learners would benefit from targeted remediation. The results underscore the potential necessity and relevance of peer tutoring as an intervention to support learners struggling with mathematical problem-solving. These results aligned in the study of (Valdez & Marcelo, 2024) which highlighted the effectiveness of peer tutoring in enhancing students’ academic performance in Mathematics by providing learners with more personalized support and increased engagement.

**4.2 What is the posttest score of the grade 6 pupils after implementing a peer tutoring remediation**

**Table 3: Post-test Scores of Grade 6 Pupils After Implementing Peer Tutoring Remediation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Respondents**  **(Tutees)** | **Post-Test Scores** | **Respondents**  **(Tutees)** | **Post-Test Scores** |
| 1 | 17 | 13 | 13 |
| 2 | 11 | 14 | 18 |
| 3 | 14 | 15 | 15 |
| 4 | 15 | 16 | 17 |
| 5 | 19 | 17 | 13 |
| 6 | 16 | 18 | 17 |
| 7 | 18 | 19 | 16 |
| 8 | 13 | 20 | 14 |
| 9 | 15 | 21 | 15 |
| 10 | 18 | 22 | 16 |
| 11 | 17 | 23 | 8 |
| 12 | 15 |  |  |
| **Mean Post-test Score 15.22** | | | |
| **Interpretation = Very Satisfactory** | | | |
| **Standard Deviation = 2.52** | | | |

**Legend:**

|  |  |
| --- | --- |
| **Range** | **Description** |
| 17 – 20 | Excellent/Outstanding |
| 13 – 16 | Very Satisfactory |
| 9 – 12 | Satisfactory/Average |
| 5 – 8 | Needs Improvement |
| 0 – 4 | Poor/Unsatisfactory |

Table 3 displays the post-test scores of 23 Grade 6 pupils following the implementation of the peer tutoring remediation program. The scores show a marked improvement compared to the pre-test results, ranging from a low of 8 to a high of 19. The computed mean post-test score is 15.22, with a standard deviation of 2.52. Based on the established legend, this mean falls within the 13–16 range, which corresponds to a Very Satisfactory level of performance.

The results indicate that a majority of the pupils scored significantly higher after the peer tutoring intervention, with several pupils reaching the Excellent/Outstanding category (scores between 17–19). Fewer pupils scored within the lower brackets, and only one pupil received a score within the Needs Improvement range (score of 8), suggesting a substantial decrease in underperformance. In summary, the data reveals a positive impact of the peer tutoring remediation program on the academic performance of the pupils. The increase in the mean score and the clustering of scores in the higher performance ranges demonstrate enhanced learning outcomes and improved mastery of the subject matter.

These results aligned with the study of (Fungamwango, 2023) explored the effects of peer-assisted learning strategies and found that students exposed to peer tutoring in science-related subjects improved significantly in conceptual grasp and problem-solving performance. These findings affirm the effectiveness of peer tutoring as a remediation strategy, especially in addressing diverse learning needs among primary learners. Furthermore, the results are consistent with existing research affirming that peer tutoring fosters meaningful academic gains, especially in foundational subjects such as mathematics. It facilitates deeper understanding by engaging students in the act of teaching and learning simultaneously, thus reinforcing conceptual mastery and promoting cooperative learning behaviors (Hidayat et. al., 2023) (Topping, 2020).

**4.3 Is there a significant difference between the level of problem-solving performance of Grade 6 pupils before and after the implementation of peer tutoring as a remediation strategy in Mathematics subject?**

**Table 4. Difference in the Problem-Solving Performance of Grade 6 Pupils Before and After the Implementation of Peer Tutoring in Mathematics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Problem-Solving Performance** | **Mean** | **SD** | **t-value** | **p-value** | **Decision at 0.05** |
| Pre-test Performance | 9.09 | 2.87 | -18.01 | <.001 | Reject Ho |
| Post-test Performance | 15.22 | 2.52 |

Table 3 summarizes the statistical comparison between the pre-test and post-test problem-solving performance of Grade 6 pupils before and after the implementation of peer tutoring in Mathematics. The mean pre-test score was 9.09 with a standard deviation (SD) of 2.87, while the mean post-test score significantly increased to 15.22, with a slightly lower SD of 2.52, indicating a general improvement in consistency and performance.

The t-value of -18.01 and the p-value of <.001 reflect a statistically significant difference in scores at the 0.05 level of significance. Based on this result, the null hypothesis (Ho)—which states that there is no significant difference in the pupils’ problem-solving performance before and after peer tutoring—is rejected.

The data provides strong evidence that the peer tutoring remediation strategy had a significant positive effect on the problem-solving performance of Grade 6 pupils. The large increase in the mean score, coupled with the highly significant p-value, indicates that the intervention successfully enhanced pupils' mathematical understanding and ability to solve problems effectively.

The systematic literature review by (Hidayat et. al., 2023) affirmed that peer tutoring serves as an effective intervention in Mathematics education, leading to better cognitive outcomes and reduced learning gaps across various grade levels. Moreover, the significant increase in posttest scores underscores the potential of peer tutoring to address performance gaps exacerbated by educational disruptions such as the COVID-19 pandemic. In response to widespread learning losses, both local and international education bodies have called for low-cost, high-impact interventions to restore academic achievement. This study’s results offer empirical support for peer tutoring as one such intervention, consistent with the Department of Education’s initiatives on learning recovery and remediation (DepEd, 2024).

**4.4 What are the challenges encountered along the process of peer tutoring?**

Peer tutoring is a collaborative learning approach where students help each other understand academic content. In this case, the focus is on peer tutoring in mathematics. Based on the interview responses from both tutors and tutees, several themes emerged: communication difficulties, instructional pace, comprehension issues, emotional comfort, and the importance of teacher intervention. These dynamics illuminate both the potential and the challenges of peer-assisted learning environments.

  Communication Difficulties and Instructional Strategy. One of the most prominent issues observed among the tutors was the struggle to clearly explain concepts in a way that the tutees could understand. Tutor 1 candidly admitted, “Minsan hindi ko alam kung paano ko ituturo kaya nagpapaturo muna ako kay Ma’am.” This statement reflects a sense of humility and awareness of one’s limitations as a peer tutor. Rather than pretending to know everything, the tutor sought guidance from the teacher, showing a responsible and proactive attitude. This behavior not only supports the learning of the tutee but also reinforces the tutor’s own understanding, embodying the notion that "kapag nagtuturo ka, mas natututo ka rin."

Similarly, Tutor 2 expressed frustration over a tutee’s difficulty with comprehension: “Hindi po siya makaintindi kahit paulit-ulit na po kaya natatagalan kami.” This highlights the demanding nature of peer tutoring, especially when patience is tested. The act of repeating instructions without observable progress can cause both cognitive and emotional fatigue. Nevertheless, this tutor did not give up; instead, he employed a practical solution by giving activity sheets—“Pinapasagutan ko po ‘yung mga activities”—to help reinforce learning.

Tutor 3 faced a behavioral challenge instead of purely academic difficulty. The tutee, according to the tutor, was not paying attention and was often distracted: “Hindi po siya nakikinig. Laging naglalaro. Sinusumbong ko kay Ma’am.” This shows how behavioral engagement significantly affects the effectiveness of peer tutoring. When the learner is disengaged, the tutor is left with limited tools to address the issue, often resorting to escalating the concern to the teacher.

Learning Challenges from the Perspective of Tutees. Tutees offered insightful reflections on their learning experiences, and these give depth to the understanding of peer tutoring's effects. A recurring theme was the pacing of instruction. Tutee 1 shared, “Masyado siyang mabilis magturo kaya hindi ko po agad naiintindihan.” This quote conveys a common problem in peer tutoring—the misalignment of the tutor’s instructional speed and the tutee’s pace of understanding. The tutor may assume that their peer is following along, while in reality, the learner is struggling silently.

Interestingly, despite these difficulties, Tutee 1 also expressed comfort in the learning setup: “Komportable po ako kahit paulit-ulit po ‘yung lesson dahil dalawa lang naman kami.” This suggests that the intimate and low-pressure setting of peer tutoring creates a conducive space for repetition and clarification, even if some frustrations remain.

Tutee 2 was more critical in her feedback, stating, “Hindi ko maintindihan ang pag-eexplain niya kase paiba-iba. Kaya kay Ma’am ako nagtatanong.” This indicates that inconsistency in explanation styles leads to confusion, and when clarity is lacking, students naturally revert to the teacher for accurate instruction. It is also a reminder that peer tutors may not yet possess the pedagogical skill of presenting a concept in a structured, sequential manner.

The same tutee further emphasized, “Mas madali ko maintindihan si Ma’am. Mahirap intindihin ang pageexplain ni tutor.” This reinforces the idea that while peer tutoring is supportive, it does not replace the foundational role of a teacher. The tutee's preference for the teacher's explanation reflects the credibility, experience, and mastery of subject matter that trained educators bring to the classroom.

Language Barriers and the Role of Translation. Language emerged as a significant barrier to comprehension. Tutee 3 stated, “Naiintindihan ko ‘yung lesson kapag ineexplain sa akin pero kapag ako na ang nagbasa, hindi na kase English.” This shows the struggle of decoding mathematical concepts when presented in a foreign language. The need to translate English instructions into Filipino became a learning strategy: “Pinapatranslate ko po.” This highlights the value of language scaffolding in learning, particularly in a bilingual context such as the Philippines.

Moreover, the tutee noted that although she was learning English through this process—“May mga natututunan akong English pero nakakalimutan ko din”—retention remained a challenge. This underscores the necessity for repeated exposure and reinforcement in language learning, especially when it's intertwined with complex content like mathematics.

Emotional Dynamics and Teacher Support. A subtle but critical dynamic in the tutoring sessions involved the emotional responses of both tutors and tutees. For instance, Tutee 1 shared, “Nahirapan ako dahil masyado siyang mabilis magturo at minsan nagagalit.” The emotional state of the tutor—particularly frustration or impatience—has a direct impact on the learner's experience. Peer tutors, though not professionally trained, are placed in positions of authority that require emotional regulation, a skill that not all young students may possess.

In multiple instances, both tutors and tutees referred to the teacher, or “Ma’am,” as the ultimate authority figure, guide, and problem-solver. Tutors sought assistance—“Nagpapaturo muna ako kay Ma’am”—while tutees turned to the teacher when explanations were confusing—“Kaya kay Ma’am ako nagtatanong.” This dependency reflects not only the limits of peer learning but also the importance of having a teacher facilitate, oversee, and support the peer tutoring process. As the saying goes, “Kapag may problema, si Ma’am ang takbuhan.”

Summary of Insights

Through the perspectives of both tutors and tutees, this narrative reveals the complexities and dualities inherent in peer tutoring. The experience, while often empowering, can also be a source of frustration. On one hand, peer tutoring can foster closeness, build confidence, and create a comfortable learning atmosphere. On the other, it may lead to confusion, inconsistencies, and a reliance on the teacher for clarity. One key insight that surfaced is that peer tutors themselves need scaffolding; many of them struggle with how to explain lessons effectively and must frequently seek guidance from the teacher to fulfill their roles. Instructional clarity and pacing also emerged as critical elements, as tutees tend to be sensitive to the speed and consistency of their peer tutor's explanations. When lessons are delivered too quickly or erratically, learners often find it difficult to keep up, which affects their understanding.

Moreover, behavioral and emotional factors significantly influence the tutoring dynamic. A tutor’s patience and a tutee’s willingness to engage are essential to fostering a productive environment. Some tutees admitted feeling pressured or uncomfortable when their tutors became impatient, highlighting how emotional responses can shape the learning experience. Language also proved to be both a barrier and a tool. For many tutees, especially those less confident in English, translating instructions into Filipino helped them understand better, although limited vocabulary and comprehension still posed challenges. Lastly, the teacher’s role remains central and irreplaceable. While peer tutoring is a valuable support system, the guidance, structure, and authority provided by the teacher are indispensable for ensuring effective learning. Peer tutoring may enhance learning through collaboration, but it thrives best when firmly anchored in a teacher-supported framework.

Figure 1. Learning Challenges from the Perspective of Tutees

5. conclusion

Based on the initial assessment, it can be concluded that grade 6 pupils generally had only a basic understanding of problem-solving concepts, highlighting the need for remedial strategies to strengthen their mathematical skills and comprehension.

After the implementation of the peer tutoring strategy, it was evident that pupils' problem-solving skills significantly improved, as reflected in their very satisfactory performance levels, suggesting that peer tutoring is an effective tool in enhancing analytical thinking and confidence in mathematics.

The comparison of pre- and post-intervention results confirms that peer tutoring led to a substantial improvement in students’ problem-solving performance, validating it as a statistically effective remediation strategy for developing mathematical proficiency.

Interview data added depth to the findings. Tutors shared their struggles in explaining lessons, often turning to the teacher for guidance—“minsan hindi ko alam kung paano ko ituturo kaya nagpapaturo muna ako kay ma’am.” Tutees appreciated the support but noted challenges like fast pacing or unclear explanations—“hindi ko maintindihan ang pageexplain niya kase paiba-iba.” These responses highlight the importance of instructional clarity and emotional support. Language barriers also played a role, as some learners found english terms difficult and preferred translations into filipino.

While peer tutoring fosters active engagement and personalized learning, the study emphasizes that it must be guided by the teacher to succeed. As students said, “walang ibang mas makakatulong sa kapwa estudyante kundi kapwa estudyante rin—pero kailangang may gabay si ma’am.” Ultimately, peer tutoring proved effective but works best within a structured, teacher-supported environment.

Consent (where ever applicable)

I affirm that the respondents voluntarily agreed to participate after being fully informed about the purpose, nature, and potential implications of the study. Their responses have been collected with utmost respect for their privacy and confidentiality, in accordance with ethical research guidelines.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

I acknowledge that I have used Copilot for only refining some of the sections in the document.

Ethical approval (where ever applicable)

The study was conducted with the approval and in accordance with the standards of the college. No ethical approval was required, as the research followed all applicable ethical guidelines, ensuring respect for the respondents’ privacy and confidentiality.

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