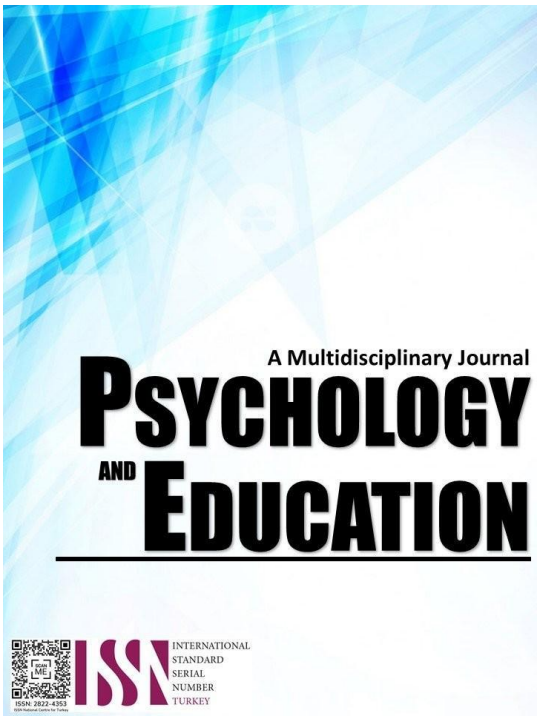
DISCURSIVE STYLE IN TEACHING MATHEMATICS: ITS IMPACT ON GRADE THREE PUPILS' PERFORMANCE



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Research Article

Discursive Style in Teaching Mathematics: Its Impact on Grade Three Pupils' Performance

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Abstract

This study investigates the impact of discursive teaching styles on the mathematical performance of Grade 3 pupils at Balo-i Central Elementary School during the third quarter of the academic year 2024–2025, employing a one-group pretest-posttest design to examine the influence of teacher-student interactions, questioning techniques, feedback, and classroom discussions on students' comprehension of mathematical concepts. By comparing pretest and posttest scores, the research assesses whether discursive teaching strategies significantly enhance mathematical performance. The findings reveal a notable increase in posttest scores, indicating that interactive teaching methods have a positive influence on learning outcomes. Specifically, structured classroom discourse techniques, such as revoicing, negotiating meaning, and guided questioning, were shown to improve students' problem-solving abilities and deepen their understanding of math concepts. These results align with the existing literature, which emphasizes the value of student-centered and communicative approaches in fostering engagement and critical thinking in mathematics. However, the study's scope is limited to a single institution, suggesting that its findings may not be fully generalizable to other contexts due to variations in student demographics, instructional environments, and prior knowledge levels. As such, future studies are recommended to involve broader sample sizes across multiple schools to validate and extend the findings and examine the long-term impacts of discursive teaching. Nonetheless, this research adds to the growing body of knowledge on effective mathematics instruction by demonstrating that incorporating discourse in the classroom enhances both student participation and comprehension. It offers practical implications for educators, encouraging the adoption of interactive strategies that foster dialogue, questioning, and reflective thinking to enhance mathematical learning. In conclusion, discursive teaching presents a promising approach to developing critical thinking and problem-solving skills among young learners, underscoring the importance of dynamic and communicative instructional practices in primary mathematics education.

Keywords: *discursive teaching, mathematical performance, classroom discourse, interactive learning, problem-solving skills, Grade 3 pupils, pretest-posttest design*

Introduction

The teaching of mathematics plays a crucial role in early childhood education worldwide, serving as the bedrock for developing critical thinking, problem-solving abilities, and logical reasoning. Across the globe, educators and researchers have consistently emphasized the importance of foundational math skills in shaping learners' long-term academic success and cognitive growth. As education systems evolve to adopt more effective and inclusive pedagogical strategies, increasing attention has been given to how teaching approaches, particularly the language and communication styles used by teachers, affect learners' learning outcomes in mathematics.

One such approach gaining recognition is the discursive style of teaching, which encompasses how educators communicate mathematical concepts, structure classroom dialogue, and engage learners in verbal interactions. This includes techniques such as questioning, clarifying, giving feedback, and prompting learners' responses. Research from various countries has demonstrated that teacher discourse has a significant influence on learners' conceptual understanding and engagement in mathematics. Effective discursive strategies foster a participatory learning environment, enhance comprehension, and build learners' confidence in problem-solving tasks.

In the Philippine context, the Department of Education (DepEd) has been advocating for learner-centered instructional methods that promote active participation and critical thinking. This is reflected in policies such as DepEd Order No. 8, s. 2015, which highlights the need for responsive and inclusive teaching strategies tailored to learners' learning needs. Furthermore, the K to 12 Curriculum Guide for Mathematics emphasizes inquiry-based and collaborative learning approaches that rely heavily on meaningful classroom interactions. Legal frameworks, such as Republic Act No. 10533, also known as the Enhanced Basic Education Act of 2013, support the need to tailor teaching methods to diverse learner profiles, including those with varied mathematical abilities.

Despite these national efforts to improve instructional quality, a noticeable research gap remains concerning the impact of discursive styles on mathematics performance among elementary learners in the Philippines. While international studies have explored the role of teacher discourse in developing mathematical thinking, local literature is limited, particularly studies that focus on how discursive styles influence learner outcomes in the early grades. One of them is Grade three, an essential developmental stage where learners begin transitioning from concrete to abstract mathematical reasoning.

It is within this context that the present study was conceptualized. This research aims to examine how the discursive styles of mathematics teachers affect the academic performance of Grade Three learners, with a specific focus on a selected school in Balo-I, Lanao del norte. By addressing this gap, the study aims to provide insights that can inform teaching practices and policy decisions

aimed at enhancing mathematics instruction in Philippine elementary education.

Research Objectives

The primary aimed of this study is to investigate the impact of teachers' discursive styles on the mathematical performance of Grade Three learners. As education systems continuously strive to improve teaching methods, understanding how different teaching approaches, particularly in terms of teacher-learner interactions and communication, can influence learner outcomes is crucial. Discursive style refers to the various ways in which teachers engage with learners, including the use of questioning, explanation, feedback, and classroom dialogue. This study aimed to investigate the relationship between these discursive styles and the academic performance of Grade Three learners in mathematics, with the intention of identifying the most effective strategies for enhancing learner understanding and achievement. To achieve this, the study was guided by the following objectives:

1. To describe the pretest scores in Rapid Mathematics Assessment of the Grade Three learners before using the Discursive style.
2. To describe the posttest scores in Rapid Mathematics Assessment of the Grade Three learners after using the Discursive style.
3. To describe the gain score of Grade Three learners before and after the using Discursive Style.
4. To determine the significant difference between the pretest and posttest scores in Rapid Mathematics Assessment.
5. To craft a Learning Development Plan for mathematics based on the findings of the study.

Methodology

Research Design

This study utilized a one-group pretest-posttest design, which proved effective in assessing the influence of discursive teaching styles on the mathematical performance of Grade Three learners at Balo-I Central Elementary School. This design enabled a direct comparison of student performance before and after the intervention, offering valuable insights into its impact. The approach was particularly suitable for this context, as it eliminated the need for cluster assignments, which were impractical given the school's setting.

Respondents

The respondents in this study were all Grade Three learners from Section Avocado at Balo-I Central Elementary School, comprising 20 girls and 20 boys, totaling 40 learners. As the school has four Grade Three sections, a cluster sampling technique was applied, wherein the entire section served as the representative sample for the study. This method was chosen for its practicality and suitability, ensuring that all participants came from a naturally occurring group while maintaining consistency in instructional and classroom conditions. Using the entire section as a sample helped reduce selection bias and provided a reliable basis for assessing the intervention's impact.

Procedure

The data-gathering method for this study employed multiple approaches to assess the impact of discursive teaching styles on the performance of Grade Three learners in mathematics. The primary instrument for data collection was the Rapid Mathematics Assessment, a structured test specifically designed to evaluate learners' competencies in problem-solving, conceptual understanding, and computational skills appropriate for their grade level. This assessment was administered twice: initially as a pretest before any intervention to establish a baseline of learners' mathematical performance, and again as a posttest after the implementation of discursive teaching strategies. In addition to the assessments, classroom observations were conducted from December 10, 2024, to January 30, 2025, to gather both quantitative and qualitative data on the discursive practices employed by the teacher. These included specific strategies such as revoicing, orienting, negotiating, and concretizing, all of which are known to enhance learner engagement and deepen conceptual understanding in mathematics. The goal of the observation was to determine how frequently and effectively these discursive strategies were integrated into the lessons and how learners responded during instruction.

To guide these observations, a detailed observation checklist was used to systematically record both the presence and frequency of the targeted discursive strategies. The checklist contained indicators for various teacher talk moves such as rephrasing learner responses, guiding attention to key mathematical concepts, and making abstract ideas more concrete through Vygotsky's manipulatives. Each observation session enabled the researcher to document the real-time interactions between the teacher and learners, ensuring consistency and accuracy in capturing instructional practices.

The process began with the selection of 40 Grade Three learners from Section Avocado at Balo-I Central Elementary School, using a cluster sampling method. These learners took the pretest to assess their initial performance. Throughout the intervention period, the teacher conducted math lessons infused with discursive teaching strategies designed to engage learners actively in the learning process. After the intervention, the same learners took the posttest to measure any improvements in mathematical achievement.

To determine learners' performance, the scores from the pretest and posttest were quantitatively analyzed and compared. Each learner's raw score was recorded and categorized into performance levels (e.g., Poor, Fair, Good, Very Good, Exceptional) based on a predetermined scoring rubric. Gain scores were then computed by subtracting the pretest score from the posttest score, allowing the researcher to evaluate the extent of learning progress attributable to the discursive intervention. The collected data from the assessments

and observations were used collectively to assess the effectiveness of discursive teaching styles in improving the mathematical performance of Grade Three learners.

Data Analysis

The data analysis for this study was focused exclusively on quantitative methods to assess the effectiveness of differentiated instruction on reading comprehension among fifth-grade students. The quantitative data, specifically the pre- and post-assessment scores, were analyzed using Frequency and Percentage. This provided a summary of the participants' scores in the Rapid Mathematics Assessment before and after the intervention. The Wilcoxon Signed-Rank Test was used to compare the pre- and post-assessment scores to determine whether there were statistically significant changes in reading comprehension attributable to the discursive style implemented during the study.

Ethical Considerations

The research adhered to strict ethical guidelines to ensure the protection and welfare of all participants, particularly the Grade Three learners at Balo-I Central Elementary School. Informed consent was obtained from the parents or guardians of the learners before participation, ensuring they were fully aware of the study's purpose, procedures, and any potential risks involved. Participants were assured that their involvement was voluntary and that they could withdraw from the study at any time without consequence. The learners' identities and personal information were kept confidential, with all data anonymized to protect their privacy.

The research did not cause any harm or discomfort to the learners, as all activities and interventions were carefully designed to enhance their learning experience, particularly in mathematics. The researcher ensured that all data collected was used solely for academic purposes and securely stored to prevent any unauthorized access or misuse. The ethical integrity of the study was upheld by respecting the rights, privacy, and dignity of all participants and by promoting transparency and accountability throughout the research process.

As part of the intervention, discursive teaching strategies were employed during the delivery of specific mathematics lessons, particularly on the topics of multiplication and division. During the sessions, the teacher implemented discursive steps such as orienting, by directing learners' attention to key vocabulary (e.g., "times," "groups of") and visual models representing multiplication; concretizing, through the use of real-life objects like counters, bundles of sticks, and pictorial representations to demonstrate how multiplication works as repeated addition; negotiating, by encouraging open dialogue and peer discussion where learners shared their understanding of solving problems and justified their answers; revoicing, by restating or paraphrasing learners' responses to clarify their thinking and promote deeper class discussion; and questioning, to provoke critical thinking, probe learner reasoning, and guide them toward correct procedures and mathematical insights.

Results and Discussion

This section presents the data collected to address the study's research questions. It also analyzes and interprets the data collected by the researcher to solve the issues in the study.

Pretest Scores in Rapid Mathematics Assessment of the Grade Three Learners before using the Discursive Style.

Table 1. *Pretest Scores*

Score Range	*Frequency Count*	*Percentage (%)*	*Description*
1 – 3	18	45.0	Poor
4 – 6	20	50.0	Fair
7 – 9	2	5.0	Good
10 – 12	0	0	Very Good
13 – 15	0	0	Exceptional
Total	40	100.0	

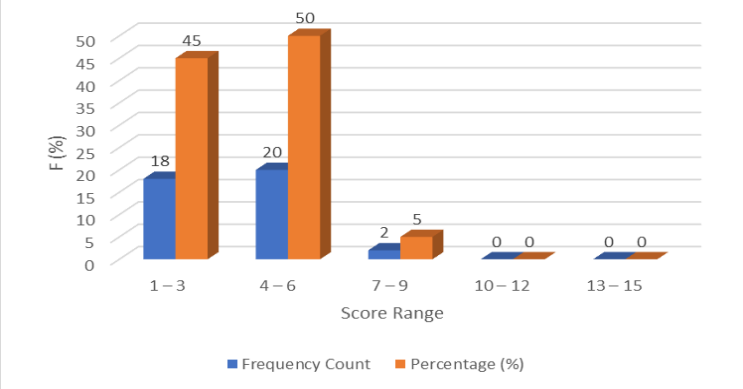

Figure 1. *Pretest Score*

Table 1 (Figure 1) presents the pretest scores of 40 Grade Three learners before the implementation of discursive teaching strategies in mathematics. A significant portion of the learners demonstrated low levels of proficiency, with 45.0% (18 learners) falling within the "Poor" category (scores ranging from 1 to 3) and 50.0% (20 learners) classified under the "Fair" category (scores from 4 to 6). Only 5.0% (2 learners) achieved a "Good" rating, with scores ranging from 7 to 9. Notably, no learners scored within the "Very Good" (10–12) or "Exceptional" (13–15) ranges. These results indicate that the majority of learners struggled with mathematical concepts prior to the intervention, highlighting the need for improved instructional strategies. The findings establish a baseline for evaluating the effectiveness of the discursive teaching methods introduced during the study.

This pattern suggests a general lack of mastery in key mathematical concepts, which may be attributed to several factors, such as ineffective instructional methods, limited student engagement, or challenges in comprehension due to the abstract nature of the content. The absence of high scores further underscores the urgent need for targeted instructional strategies, such as the implementation of discursive teaching styles, which aim to enhance understanding through dialogue, questioning, and collaborative exploration. Additionally, the results may reflect disparities in learners' prior knowledge, exposure to mathematical language, or confidence in solving problems. Overall, the pretest outcomes serve as a critical baseline for measuring the effectiveness of the intervention and emphasize the necessity of pedagogical approaches that actively involve students in the learning process.

This aligns with the findings of the latest Gallup youth survey (cited by Saad, 2021), which indicates that mathematics is the most challenging subject for teenagers, resulting in lower performance rates. Saad (2021) also pointed out that poor performance in mathematics often leads to blame on educators, suggesting the need for instructional improvements. This supports the idea that the participants' low pretest scores could be addressed through improved instructional strategies.

Additionally, Nguyen (2022) highlighted that discursive teaching approaches, when facilitated by teachers, enhance mathematical problem-solving abilities, which is crucial for learners struggling with foundational concepts. Thomas (2023) further demonstrated that dialogic teaching helps address learning gaps and improve performance by engaging learners in meaningful mathematical discussions.

The findings of Torres and Ramos (2023) also supported the effectiveness of discursive teaching in mixed-ability classrooms, which could be particularly useful in addressing the diverse learning needs evident from the pretest results.

Posttest Scores in Rapid Mathematics Assessment of the Grade Three Learners after using the Discursive Style.

Table 2. *Posttest Scores*

Score Range	*Frequency Count*	*Percentage (%)*	*Description*
1 – 3	0	0	Poor
4 – 6	2	5.0	Fair
7 – 9	21	52.5	Good
10 – 12	16	40.0	Very Good
13 – 15	1	2.5	Exceptional
Total	40	100.0	

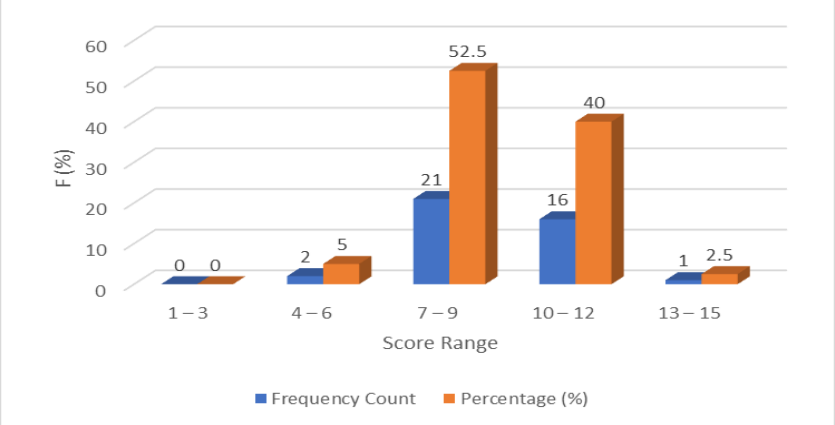

Figure 2. *Posttest Scores*

Table 2 (Figure 2) displays the posttest scores of the 40 Grade Three learners following the implementation of discursive teaching strategies in mathematics. A noticeable performance improvement is evident compared to the pretest results. More than half of the learners, or 52.5% (21 learners), scored within the "Good" range (7–9), while 40.0% (16 learners) reached the "Very Good" category (10–12). Additionally, one learner (2.5%) attained an "Exceptional" score (13–15). Only a small portion, 5.0% (2 learners), remained in the "Fair" category (4–6), and none fell within the "Poor" range (1–3). These results suggest that the discursive teaching methods had a positive impact on learners' mathematical performance, significantly reducing the number of low-performing learners and increasing those in the higher achievement brackets. The data reflect a shift toward improved understanding and application of mathematical concepts among the learners.

This upward shift in performance demonstrates the positive impact of the intervention, specifically, the application of discursive teaching styles, which emphasize active engagement, student dialogue, and concept clarification. The reduction in low scores and the emergence of higher performance levels reflect an improvement in learners' comprehension, problem-solving skills, and confidence in tackling mathematical tasks. Furthermore, the increase in scores within the Average and Above Average ranges suggests that the instructional approach effectively addressed earlier learning gaps and promoted a deeper understanding of place value concepts.

While the number of learners reaching the Excellent category remains low, this result still marks progress, indicating potential for continued growth with sustained instructional support. These findings validate the effectiveness of learner-centered strategies in enhancing academic outcomes and underscore the importance of fostering interactive learning environments that encourage students to articulate their thinking and learn collaboratively.

This improvement suggests that the instructional interventions applied between the pretest and posttest were effective in enhancing learners' understanding and performance. According to Ahmed and Khan (2020), structured teacher-led discourse improves learners' problem-solving skills, comprehension, and retention, which could explain the observed positive shift in scores. Similarly, Diaz (2021) emphasized that revoicing techniques in classroom discussions help clarify misconceptions and reinforce learning, leading to better academic outcomes. The findings of Wu and Zhang (2022) also supported the effectiveness of dialogic teaching methods, such as orienting and negotiating, in fostering deeper mathematical understanding.

Furthermore, Thomas (2023) demonstrated that discursive teaching addresses learning gaps and improves learners' performance by encouraging active engagement with mathematical concepts. The results align with Nguyen's (2022) research, which found that guided teacher facilitation enhances problem-solving abilities, particularly in mathematics. Additionally, Evans (2023) showed that implementing discursive teaching practices significantly improves learners' academic achievement by making abstract concepts more concrete and accessible.

The posttest results, therefore, reinforce the effectiveness of interactive and structured teaching strategies in improving learners' mathematical competencies. The significant decrease in learners' scoring in the Poor and Below Average categories, along with the increase in those achieving Average and Above Average scores, suggests that targeted instructional approaches, such as scaffolding, revoicing, and dialogic teaching, play a crucial role in enhancing learning outcomes.

Gain Score of Grade Three Learners before and after the using Discursive Style.

Table 3. *Gain Scores*

Score	*Frequency*	*Percentage (%)*
4	3	7.0
5	13	33.0
6	20	50.0
7	4	10.0
Total	40	100.0

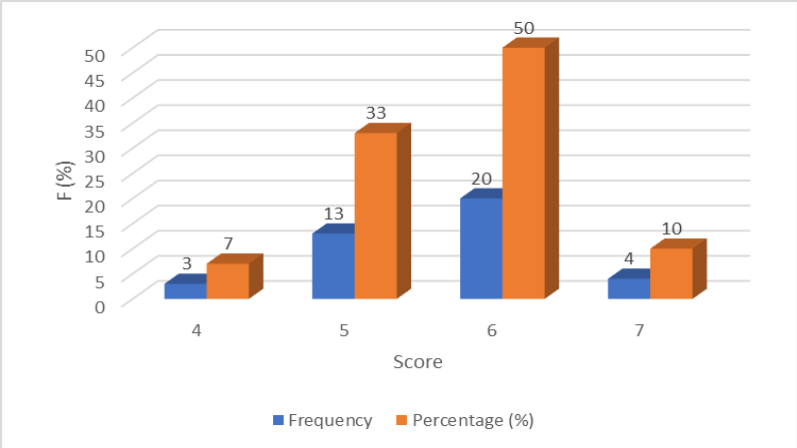

Figure 3. *Gain Scores*

Table 3 (Figure 3) presents the gain scores of the 40 Grade Three learners, reflecting the improvement in their mathematics performance from pretest to posttest after the implementation of discursive teaching strategies. The data shows that the majority of learners experienced substantial academic growth, with 50.0% (20 learners) achieving a gain score of 6, indicating a significant improvement in their understanding of mathematical concepts. Additionally, 33.0% (13 learners) recorded a gain score of 5, while 10.0% (4 learners) improved by 7 points. Only 7.0% (3 learners) had a gain score of 4, which, although lower than the rest, still indicates positive progress. Overall, the results demonstrate that all learners made measurable academic gains, reinforcing the effectiveness of discursive teaching methods in enhancing learners' mathematical learning and performance.

These findings suggest that the majority of students benefited meaningfully from the intervention, with gains clustered around the middle to upper range, indicating that the discursive teaching approach was broadly effective in enhancing learners' mathematical performance. The predominance of gain scores in the 5–6 range indicates a consistent, measurable impact, suggesting improved conceptual understanding, increased engagement, and better retention of place value concepts. The presence of a few students with a gain score of 7 implies that some learners responded exceptionally well to the teaching method, possibly due to higher receptiveness to interactive strategies or prior knowledge that was activated through discussion.

On the other hand, the small proportion of students with a gain score of 4 suggests that while improvement was evident, these learners may have required additional support or differentiated instruction to grasp the concepts fully. This highlights the importance of ongoing formative assessment and instructional flexibility to address varying levels of learner readiness. Overall, the gain score distribution supports the effectiveness of discursive teaching styles in promoting academic progress and illustrates the potential for further enhancement through targeted interventions.

The highest gain scores indicate that learners who actively participated in discursive learning activities demonstrated a substantial improvement in their mathematical performance. This aligns with the findings of Mercer and Sams (2023), who highlighted the role of classroom discourse in fostering critical thinking and deep understanding of mathematical concepts. Furthermore, Vygotsky's (1978) sociocultural theory supported this notion by emphasizing the importance of social interaction in cognitive development. When learners engage in verbal reasoning, they construct knowledge collaboratively, leading to improved problem-solving skills.

Conversely, the lowest gain scores suggest that some learners may not have benefited as significantly from discursive methods. This could be due to several factors, including limited prior knowledge, lower confidence in verbal expression, or difficulty in adapting to interactive learning environments. Similar findings were reported by Sfard (2020), who noted that while discourse is a powerful learning tool, it requires structured scaffolding to be effective for all learners. Without proper guidance and support, some learners may struggle to translate discussions into concrete mathematical understanding.

The implications of these findings are critical for educators aiming to implement discursive teaching strategies effectively. Teachers must ensure that all learners are actively engaged and supported in mathematical discussions, possibly through differentiated instruction and targeted interventions. Additionally, integrating visual aids, manipulatives, and real-life applications alongside discourse-based learning could further enhance comprehension and retention of mathematical concepts.

Significant Difference Between the Pretest and Posttest Scores in Rapid Mathematics Assessment

Table 4 presents the difference between the posttest and pretest scores of the participants. The data revealed a highly significant difference between the posttest and pretest scores of the participants. Thus, the null hypothesis, which states that there is no significant difference between the posttest and pretest scores of the participants, was rejected.

Table 4. *Difference[1] Posttest and Pretest Scores*

		Static	*Mean Difference*	*SE Difference*	*p-value*
Posttest	Pretest	820	5.50	0.122	<0.001

*Note: 2 – Wilcoxon Signed-Rank Test; ns – p > 0.05; * – p < 0.05; ** – p < 0.01; *** – p < 0.001.*

The findings reveal that the discursive style in teaching mathematics has a significant impact on learner engagement, comprehension, and overall academic performance. The data indicate that learners who experience mathematics instruction through interactive discussions, collaborative learning, and problem-solving activities exhibit higher levels of understanding and retention compared to those taught through traditional, lecture-based methods.

This supports the statement of Cobb, Yackel, and McClain (2020) that teacher facilitation plays a crucial role in the effectiveness of discursive teaching. Furthermore, the results highlight that the integration of discourse-based strategies, such as revoicing and negotiating mathematical ideas, leads to improved conceptual understanding, as emphasized by Nathan and Knuth (2023). The findings also align with the work of Ball and Bass (2021), who argued that practical examples and mathematical discussions enable learners to grasp abstract concepts more effectively. Additionally, the results demonstrate that learners who develop a solid understanding of definitions, principles, and theorems perform better in problem-solving tasks, supporting the observations of Fujita and Jones (2019) regarding the challenges learners faced in hierarchical classification and deductive reasoning. The study further emphasized the significance of language and communication in mathematical learning, reinforcing Vygotsky's (1994) theory that internalized language skills contribute to cognitive development. These findings collectively suggest that a discursive approach to teaching mathematics enhances learners' critical thinking skills, promotes active participation, and ultimately leads to higher academic achievement.

Conclusions

The following presentation summarizes the conclusions based on the findings of the data:

The pretest results indicate a significant gap in learners' foundational mathematical knowledge. The majority of participants scored within the Below Average category, highlighting difficulties in understanding key concepts and problem-solving. This suggests that conventional teaching methods may not have been sufficient in addressing learners' learning needs, reinforcing the necessity for

instructional improvements that emphasize active engagement and deeper comprehension.

The posttest results demonstrated a notable increase in learners' mathematical performance, with more participants attaining scores in the Average and Above Average categories. The significant reduction in the number of learners scoring in the Poor and Below Average ranges indicates that the intervention was effective in enhancing their understanding. These results support the idea that interactive teaching strategies, particularly those incorporating discussion-based and collaborative learning approaches, contribute to improved learner outcomes.

Additionally, the gain scores reflect the extent of learners' improvement, with a majority achieving moderate to high levels of progress. The findings suggest that structured teacher-led discourse, problem-solving activities, and learner participation in mathematical discussions played a crucial role in fostering better comprehension and retention of concepts. However, the minimal improvement observed in a few learners implies that differentiated instruction and additional support strategies may be needed to cater to diverse learning styles and abilities.

The statistical analysis of the difference between pretest and posttest scores confirmed a highly significant improvement in learner performance, leading to the rejection of the null hypothesis. This validates the effectiveness of discursive teaching methods in mathematics instruction, as the findings align with previous research emphasizing the role of interactive discussions, revoicing techniques, and teacher facilitation in promoting conceptual understanding and critical thinking.

Furthermore, the study underscores the importance of language and communication in mathematical learning, as supported by sociocultural learning theories. Engaging learners in meaningful discussions enables them to articulate their thought processes, clarify misconceptions, and construct knowledge collaboratively. The integration of discourse-based teaching strategies can, therefore, serve as a vital tool in improving mathematics education by making abstract concepts more accessible and fostering learner confidence in problem-solving.

Overall, the study concludes that discursive teaching strategies significantly enhance learners' mathematical performance. By incorporating interactive learning approaches, educators can create more effective and engaging classroom environments that promote deeper understanding, critical thinking, and long-term retention of mathematical concepts. Future studies may explore additional factors influencing the success of discursive teaching and investigate its applicability across different grade levels and subject areas.

In light of the study's findings, conclusions, and implications, several recommendations are presented. For school heads, it is essential to support and promote the implementation of discursive teaching strategies in mathematics classrooms. This can be achieved by providing technical assistance through professional development opportunities for teachers, equipping classrooms with necessary resources, and fostering a culture of collaborative learning. Additionally, encouraging innovative instructional approaches that emphasize learner engagement and active participation is crucial. For mathematics teachers, it is recommended to incorporate discourse-based strategies, such as structured discussions, problem-solving activities, and collaborative learning, into their instructional practices, utilizing techniques like revoicing, scaffolding, and guided questioning to help learners articulate their reasoning, enhance conceptual understanding, and employ differentiated instruction to address diverse learning needs. Learners are encouraged to take an active role in their learning by participating in classroom discussions, engaging in group activities, seeking clarification when needed, embracing interactive learning experiences, and developing self-directed learning habits, such as reviewing lessons, practicing problem-solving techniques, and collaborating with peers.

For parents, their role in supporting their children's mathematical development is crucial, fostering a positive attitude towards mathematics by providing encouragement, creating a conducive home learning environment, assisting with schoolwork when needed, and strengthening collaboration with teachers through regular communication, participation in school activities, and engagement in programs that enhance learners' academic growth. For future researchers, further studies should explore additional variables that influence the effectiveness of discursive teaching strategies, such as learner motivation, teacher expertise, and classroom environment. Additionally, comparative studies should be conducted across different grade levels, subjects, and educational settings. Moreover, researchers may investigate the long-term effects of interactive teaching approaches on learners' mathematical performance and cognitive development, contributing to the continuous improvement of mathematics education.

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