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Teacher Strategies and Its Influence on Student Mathematic Performance

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ABSTRACT: *This study determined the influence of teacher's classroom strategy on learners' mathematics performance in Zapatera Elementary School in the school year 2024-2025. The descriptive-correlational research methodology was utilized to examine the effectiveness of differentiated instruction, student engagement strategies, contextualized learning materials, and the integration of real-world scenarios, as well as their potential influence on students' academic performance The learners' profile revealed that most were 11 years old, with a nearly equal distribution of males and females. Families generally had moderate incomes, with parents predominantly holding at least a bachelor's degree. Most learners came from small families with one or two siblings, though some were only children. Findings indicated that teachers effectively implemented a variety of strategies to enhance learning. Differentiated instruction and student engagement strategies fostered personalized and active learning experiences, while contextualized learning materials and real-world scenarios helped students connect mathematics to practical applications. Despite the positive perceptions of these strategies, the learners' academic performance, rated as very satisfactory across all assessed topics, showed no statistically significant correlation with the classroom strategies employed. These results suggest that while the strategies create an inclusive and engaging learning environment, their direct impact on specific academic performance may be limited. Other factors, such as student motivation, prior knowledge, and assessment design, may influence academic performance. The study recommends a Teacher Support and Development Program to refine instructional practices and address these gaps.*

Key words*: Contextualized Learning Materials, Learners' Mathematics Performance, Student Engagement Strategies, Teacher's Classroom Strategies.*

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1. Introduction

Mathematics education plays a crucial role in developing critical thinking and problem-solving skills worldwide, equipping learners to tackle modern challenges (Zhu, 2023; Abayeva et al., 2024). In the Philippines, mathematics is a key element of the K-12 curriculum, designed to promote holistic growth and global competitiveness (Barrot, 2023). However, achieving these goals is often impeded by ongoing challenges, particularly in resource-constrained classrooms. Traditional teaching methods, which prioritize rote memorization over deep conceptual understanding, continue to dominate, limiting students' ability to engage meaningfully with mathematical concepts (Binothman et al., 2024; Peconcillo et al., 2020). On a

global scale, successful education systems emphasize the use of innovative strategies, such as integrating technology and fostering critical thinking, to improve learning outcomes (Gonzalez-Perez & Ramirez-Montoya, 2022). Embracing these international practices could help align the Philippine mathematics curriculum with global standards and enhance its effectiveness (Eslit, 2023; Descartin et al., 2023).

However, the Philippines has consistently performed below the global average in the Programme for International Student Assessment (PISA), particularly in mathematics (Garcia et al., 2024**)**. In 2018, Filipino students ranked near the bottom among 79 participating countries, highlighting significant challenges in mathematics education (Melchor et al., 2023). Over 50% of students scored below the minimum proficiency level, indicating severe gaps in foundational. Several factors contribute to this underperformance, including low levels of mathematical literacy, misaligned curricula that fail to meet global standards, and insufficient teacher preparation for delivering complex mathematical competencies (Skipp & Dommett, 2021).

Effective teacher classroom strategies significantly impact student outcomes in mathematics (Anthony & Walshaw, 2023). Differentiated instruction, contextualized learning materials, and the integration of real-world scenarios have proven to improve engagement and performance (Azis et al., 2024). However, implementing such teacher strategies requires readiness, sufficient resources, and professional development programs (Grecu, 2023). Investigating teacher strategies offers insights into addressing the mathematics performance gap among Filipino learners (Luzano, 2024). Studies indicate that enhancing teachers' questioning techniques and fostering higher-order thinking skills can lead to better student outcomes (Dicdiquin et al., 2023; Karuru et al., 2023; Liu & Zhang, 2022).

Efforts to reform mathematics education in the Philippines include the adoption of the K-12 curriculum, which aims to enhance conceptual understanding and critical thinking skills, as well as initiatives like the Teacher Induction Program (TIP) and Learning Action Cells (LACs), designed to provide professional development for educators. Additionally, programs such as the Department of Education's (DepEd) partnership with global organizations for teacher training and the integration of ICT tools in teaching have sought to modernize instructional methods. However, these initiatives have not achieved their desired impact due to systemic issues such as insufficient funding, lack of access to resources, and the uneven implementation of programs across regions. Furthermore, teacher preparedness remains a critical challenge, with many educators struggling to shift from traditional methods to more innovative, student-centered approaches. The lack of consistent monitoring and evaluation mechanisms also hampers the ability to track progress and address gaps effectively. These barriers highlight the need for a more holistic and sustainable approach to improving mathematics education in the Philippines.

Despite efforts to reform mathematics education, gaps persist in implementing effective classroom strategies. Many teachers struggle to integrate innovative methods such as differentiated instruction due to inadequate training and resource limitations. Addressing these gaps requires a systemic approach that combines curriculum improvement, teacher development, and support mechanisms. This research offers numerous benefits, including providing actionable insights for policymakers, educators, and curriculum developers. Focusing on classroom strategies, it promotes evidence-based practices that can enhance teacher effectiveness and student engagement. Furthermore, addressing the gaps identified in previous studies can improve the Philippines' performance in international assessments like PISA, fostering global competitiveness.

2. Challenges and Reforms in Mathematics Education in the Philippines

Mathematics education in the Philippines faces numerous systemic challenges despite the implementation of the K-12 curriculum, which aims to improve conceptual understanding and critical thinking. Several studies have documented barriers to achieving these objectives, including resource constraints, misaligned curricula, and inadequate teacher preparation. Verzosa and Vistro-Yu (2019) highlight the limited effectiveness of reforms, noting that traditional teaching practices and lack of support hinder the realization of intended outcomes. The study emphasizes the need for sustained implementation support and practical guidance for teachers in resource-poor classrooms (Verzosa & Vistro-Yu, 2019). Similarly, Balagtas et al. (2019) argue that gaps between the K-12 curriculum and international assessment frameworks like TIMSS must be addressed to align Filipino students' competencies with global standards (Balagtas et al., 2019). Teacher preparation and professional development remain significant areas of concern. Dicdiquin et al. (2023) report that while professional development programs for mathematics teachers show promise, many teachers lack

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effective questioning techniques and strategies to develop higher-order thinking skills. These shortcomings impede the attainment of the K-12 curriculum's goals (Dicdiquin et al., 2023). Moreover, Schreiter et al. (2024) discuss the challenges in training teachers to teach statistics, emphasizing the importance of in-service training programs tailored to the specific needs of educators (Suson, 2024). Effective professional development initiatives are critical for equipping teachers with the skills needed to implement innovative instructional strategies (Pepito et al., 2024). Additionally, socioeconomic factors and logistical challenges exacerbate the difficulties in mathematics education. Meniano (2022) illustrate the negative impact of modular learning during the COVID-19 pandemic, identifying financial constraints, language barriers, and lack of resources as key issues affecting students' mathematics performance. These studies underscore the need for targeted interventions that address systemic inequities and support both teachers and students in adapting to evolving educational demands. In conclusion, while reforms such as the K-12 curriculum aim to improve mathematics education in the Philippines, persistent challenges related to curriculum alignment, teacher preparation, and resource limitations continue to impede progress. Addressing these issues requires a holistic approach that includes sustained professional development, curriculum adjustments, and systemic support for resource-constrained schools.

3. Methodology

This research utilized the descriptive-correlational research design. It is a method used to examine the relationships between two or more variables without manipulating them (Creswell, 2014). This approach is particularly suited for educational research, where the goal is to understand how different factors, such as teacher classroom strategies, relate to student academic performance. This design allows researchers to explore patterns and associations while providing a detailed description of the variables under study (Fraenkel & Wallen, 2012). This research design is ideal for the study as it enables an in-depth understanding of how teacher classroom strategies correlate with learners' academic performance in mathematics. The research environment for this study is Zapatera Elementary School, a well-established educational institution situated in an urban area. Founded with the mission of providing quality education to learners of diverse socio-economic backgrounds, the school has become a cornerstone in its community. The respondents of this study are learners from Zapatera Elementary School, chosen to reflect the diverse demographic and academic characteristics of the school's population. Simple random sampling was used in this study. Furthermore, their exposure to the teacher's classroom strategies in mathematics makes them well-suited to provide insights into the effectiveness of these teaching methods. The study initially identified 152 potential respondents from the school. However, the sample size was reduced to 110 to ensure manageable data collection and analysis while maintaining statistical reliability. The Slovin's formula was used to determine the appropriate sample size, providing a systematic approach to account for a desired margin of error. Among the 110 respondents, the gender distribution carefully documented as part of the data collection process. Based on the study's objectives, the number of male and female respondents aligned with the overall gender ratio of the school's population, as highlighted in the statement of the problem. This breakdown allows for a comprehensive analysis of whether gender influences perceptions of teaching strategies and academic performance.

The study utilized a structured questionnaire to evaluate the effectiveness of teaching strategies across four domains: Differentiated Instruction, Student Engagement Strategies, Contextualized Learning Materials, and Integration of Real-World Scenarios. The questionnaire employed a 5-point Likert scale with the following response options: Strongly Disagree (1), Disagree (2), moderately agree (3), Agree (4), and Strongly Agree (5). Each domain included specific indicators adapted from established studies. Differentiated Instruction included six indicators focusing on content adaptation, flexible grouping, and instructional scaffolding, drawn from the works of Faber et al. (2018), Smit & Humpert (2012), and Suprayogi et al. (2017). Student Engagement Strategies was assessed using five indicators on interactive participation and feedback opportunities, based on Carrillo et al. (2016) and Handa (2020). Contextualized Learning Materials featured four indicators evaluating material relevance and situational applicability, adapted from Santamaría (2009) and Seddon et al. (2012). Integration of Real-World Scenarios included five indicators assessing the practical application of teaching, drawn from Almazova et al. (2021) and Maulana et al. (2023). Meanwhile, for the learners' academic performance was determined using the average of their 2nd grading period results, providing a comprehensive view of their achievements. Moreover, to test if there any significant relationship between level of teacher's classroom strategy and learners' performance.

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Table 1. Differentiated Instruction.

Indicators	Mean	VD
Use of tiered tasks tailored to student readiness and ability levels	4.07	A
Grouping strategies based on student needs, such as ability or interest-based groups.	4.20	A
Flexible pacing to allow students to work at their own speed on specific tasks.	4.15	A
Providing multiple formats for content delivery, such as visual, auditory, and kinesthetic materials.	4.35	SA
Adjustments to product assignments, allowing students to demonstrate understanding in diverse ways.	4.12	A
Grand Mean	4.18	A

4. Results and Discussion

The data in Table 1 shows how learners perceive their teachers' use of differentiated instruction. Overall, the responses suggest that learners generally agree their teachers effectively use various strategies to address diverse learning needs, as indicated by the grand mean of 4.18, which falls under the "Agree" category. Among the indicators, the highest-rated strategy is the use of multiple formats for content delivery, such as visual, auditory, and kinesthetic materials, with a mean of 4.35, classified as "Strongly Agree." Other strategies, including tiered tasks, grouping based on needs, flexible pacing, and adjustments to assignments, all received ratings in the "Agree" range, with means between 4.07 and 4.20. This highlights that while students appreciate these practices, they find the variety in content delivery particularly impactful. The findings in align with existing research on students' perceptions of differentiated instruction (DI). For instance, Saif et al. (2024) indicate that students generally view DI strategies positively, recognizing their role in addressing diverse learning needs. Moreover, research has shown that students perceive DI as an effective approach that enhances their learning experiences by catering to individual needs and preferences. For instance, a study found that students viewed DI positively, noting that it made learning more engaging and tailored to their abilities (Asyidiqi et al., 2023). The data reflecting learners' agreement on the effectiveness of various DI strategies, is supported by scholarly research. Learners appreciate when teachers implement DI practices, particularly those involving multiple content delivery as these methods cater to individual learning preferences and promote a more inclusive educational environment.

Table 2. Student engagement strategies.

Indicators	Mean	VD
Interactive activities that promote participation, such as group discussions and peer learning.	4.35	SA
Use of gamification or competitive elements to maintain interest.	4.02	A
Provision of regular, immediate feedback to keep students engaged with learning goals.	3.88	A
Opportunities for student voice and choice in classroom activities.	4.06	A
Integration of collaborative digital tools to enhance engagement.	4.12	A
Grand Mean	4.09	A

The data in Table 2 showed students' perceptions of engagement strategies used in their classrooms. Overall, the strategies are viewed positively, with a grand mean of 4.09, categorized as "Agree." Among the indicators, interactive activities like group discussions and peer learning are rated the highest, with a mean of 4.35, falling under "Strongly Agree." Other strategies, such as gamification, student voice and choice, collaborative digital tools, and immediate feedback, also received high ratings, ranging from 3.88 to 4.12, which are categorized as "Agree." These results suggest that students find interactive and participatory approaches, as well as the use of technology and feedback, effective in keeping them engaged in learning activities. These findings align with existing research highlighting the effectiveness of these methods in enhancing student engagement and learning outcomes. For instance, engaging students through group discussions and peer learning fosters active participation and deeper understanding. Studies have shown that

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such collaborative learning approaches enhance student engagement and improve academic performance (Sartania et al., 2022). Moreover, integrating digital tools that facilitate collaboration can enhance student engagement, especially in online or blended learning environments. The use of such tools has been linked to improved student interaction and learning experiences (Fazza & Mahgoub, 2021). Thus, implementing interactive activities, gamification, and collaborative digital tools can create a more engaging and effective learning environment.

The data in Table 3 showed students' perceptions of contextualized learning materials used in their mathematics classes. Overall, students generally agree that these materials are effective, with a grand mean of 4.19, categorized as "Agree." Among the indicators, the highest-rated strategy is the use of manipulatives and tangible tools to represent abstract ideas, with a mean of 4.39, categorized as "Strongly Agree."

Table 3. Contextualized learning materials.

Indicators	Mean	VD
Use of locally relevant examples to connect mathematical concepts to students' experiences.	4.12	A
Inclusion of case studies or real-life problems to foster application skills.	4.05	A
Development of culturally responsive instructional materials.	4.17	A
Creation of interdisciplinary projects combining mathematics with other subjects.	4.21	A
Use of manipulatives and tangible tools to represent abstract ide.	4.39	SA
Grand Mean	4.19	A

Other strategies, including the use of locally relevant examples, case studies, culturally responsive materials, and interdisciplinary projects, are also rated positively, with means ranging from 4.05 to 4.21, all falling under "Agree." These results suggest that students appreciate teaching methods that make learning more relatable, practical, and engaging by connecting mathematical concepts to real-life contexts and incorporating hands-on tools. Research indicates that using examples from students' immediate environments helps them connect abstract mathematical concepts to their lived experiences, improving comprehension and retention (Klein, 2024). Moreover, Dare et al. (2021) emphasize that incorporating real-world scenarios into math problems fosters critical thinking and application skills, making learning more meaningful. Thus, integrating mathematics with other subjects enhances problem-solving and creativity, providing students with a broader perspective on how math applies across disciplines.

Table 4. Integration of real-world scenarios.

Indicators	Mean	VD
Teachers use real-life examples in teaching mathematics.	4.47	SA
Teachers develop tasks that mirror real-world situations.	4.35	SA
Teachers connect mathematics to other fields like science, economics, or technology, showcasing its relevance across disciplines.	4.28	SA
Teachers guide students in collaborative and real-world projects.	4.21	A
Teachers evaluate students' ability to apply mathematical concepts in real-world scenarios as part of classroom assessments.	4.24	SA
Grand Mean	4.31	SA

The data in Table 4 highlights students' perceptions of the integration of real-world scenarios in mathematics teaching. The overall grand mean of 4.31, categorized as "Strongly Agree," reflects students' strong approval of these practices. Among the indicators, the highest-rated is the use of real-life examples in teaching mathematics, with a mean of 4.47. This is closely followed by developing tasks that mirror real-world situations (4.35) and connecting mathematics to other disciplines like science, economics, or technology (4.28). Collaborative real-world projects and the evaluation of students' ability to apply mathematical concepts in real-world contexts also received high ratings, with means of 4.21 and 4.24, respectively. These findings suggest that students value teaching methods that demonstrate the practicality and interdisciplinary nature of mathematics, making learning more engaging and relevant to their daily lives. The findings in align with existing research showed that incorporating real-life examples into mathematics

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teaching enhances student engagement and helps them see the relevance of math in everyday life. It supports better understanding and application of abstract concepts (Serin, 2023). Moreover, linking mathematics to fields like science, economics, and technology demonstrates its relevance across disciplines and fosters a deeper appreciation for its utility. This approach is shown to boost student motivation and interest (Belbase et al., 2022). Thus, integration of real-world scenarios in mathematics teaching enhances learners' motivation and understanding.

Table 5. Level of mathematic achievement of the respondents (Ratio and proportion).

Level	Numerical range	f	%
Outstanding	90-100	12	10.91
Very satisfactory	85-89	56	50.91
Satisfactory	80-84	33	30.00
Fairly satisfactory	75-59	9	8.18
Did no meet expectations	Below 75	4	6.36
	Total	110	100
	Mean	85.63	
	St. Dev.	2.74	

The data in Table 5 presents the mathematics achievement levels of respondents in the topic of Ratio and Proportion. The majority of respondents, 50.91% (56 out of 110), achieved a Very Satisfactory level, scoring between 85 and 89. Following this, 30.00% (33 respondents) attained a Satisfactory level with scores ranging from 80 to 84, while 10.91% (12 respondents) reached the Outstanding level with scores of 90 to 100. A smaller portion of the respondents, 8.18% (9 individuals), fell into the Fairly Satisfactory category, scoring between 75 and 79, and 6.36% (4 individuals) Did Not Meet Expectations, with scores below 75. The overall mean score was 85.63, indicating a Very Satisfactory performance on average, with a standard deviation of 2.74, suggesting moderate variation in the respondents' scores. This reflects a generally strong understanding of ratio and proportion among the participants.

Table 6. Level of mathematic achievement of the respondents (Integers).

Level	Numerical range	f	%
Outstanding	90-100	11	10.00
Very satisfactory	85-89	38	34.55
Satisfactory	80-84	42	38.18
Fairly satisfactory	75-59	13	11.82
Did no meet expectations	Below 75	6	5.45
	Total	110	100
	Mean	85.57	
	St. Dev.	2.77	

The data in Table 6 summarizes the mathematics achievement levels of the respondents in the topic of Integers. The largest group, 38.18% (42 respondents), achieved a Satisfactory level with scores ranging from 80 to 84. This is followed by 34.55% (38 respondents) who attained a Very Satisfactory level, scoring between 85 and 89. A smaller proportion, 10.00% (11 respondents), performed at an Outstanding level with scores of 90 to 100. Meanwhile, 11.82% (13 respondents) fell into the Fairly Satisfactory category, scoring between 75 and 79, and 5.45% (6 respondents) Did Not Meet Expectations, scoring below 75. The overall mean score was 85.57, indicating a Very Satisfactory performance on average, with a standard deviation of 2.77, showing a moderate spread in the scores. This indicates that while most respondents demonstrated good understanding of integers, there is some variation in their performance levels.

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Table 7. Level of mathematic achievement of the respondents (Ratio and proportion).

Level	Numerical Range	f	%

Outstanding	90-100	21	10.00
Very satisfactory	85-89	42	34.55
Satisfactory	80-84	36	38.18
Fairly satisfactory	75-59	8	11.82
Did no meet expectations	Below 75	3	5.45
	Total	110	100
	Mean	86.23	
	St. dev.	3.06	

The data in Table 7 illustrates the mathematics achievement levels of respondents in the topic of Ratio and Proportion. The highest percentage of respondents, 38.18% (36 individuals), achieved a Satisfactory level with scores between 80 and 84. This is closely followed by 34.55% (42 respondents) who attained a Very Satisfactory level, scoring between 85 and 89. Additionally, 10.00% (21 respondents) reached the Outstanding category with scores of 90 to 100. Meanwhile, 11.82% (8 respondents) fell into the Fairly Satisfactory range, scoring between 75 and 79, and 5.45% (3 respondents) Did Not Meet Expectations with scores below 75. The overall mean score was 86.23, indicating a Very Satisfactory performance on average, with a standard deviation of 3.06, reflecting moderate variability in the respondents' scores. This shows a generally strong understanding of ratio and proportion, with the majority of respondents achieving satisfactory or higher levels.

Table 8. Significant relationship between the teacher classroom strategy and learners academic performance in ratio and proportion

Constructs	r-value	t-value	P value	Remarks	Decision
Differentiated instruction	0.078	0.81	0.421+	Not Significant	Do not reject
Student engagement strategies	0.109	1.14	0.257	Not Significant	Do not reject
Contextualized learning materials	0.135	1.42	0.159	Not Significant	Do not reject
Integration of real-world scenarios	-0.035	-0.36	0.721	Not Significant	Do not reject

Note: *significant at p<0.05.

The data in Table 8 examines the relationship between teachers' classroom strategies and learners' academic performance in Ratio and Proportion. Findings showed that none of the strategies differentiated instruction, student engagement strategies, contextualized learning materials, or integration of real-world scenarios showed a statistically significant relationship with academic performance, as all p-values were greater than 0.05. The r-values for the strategies indicate weak correlations, with some positive and one slightly negative correlation (-0.03448 for integration of real-world scenarios). These findings suggest that while these strategies are appreciated by students, they may not have a direct measurable impact on performance in this specific topic. According to Yoon & Kim (2022) the effectiveness of strategies may vary depending on the complexity of the subject matter and the contextual factors like teacher expertise, classroom environment, and student demographics. Moreover, Teng and Yue (2023) suggested that teaching strategies influence broader skills such as critical thinking, engagement, and motivation, which may not immediately reflect in academic performance metrics for specific topics. These findings suggest that while classroom strategies are essential for fostering an inclusive and engaging learning environment, their impact on specific academic outcomes may be indirect or context-dependent.

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Table 9. Significant Relationship Between the teacher Classroom Strategy and Learners Academic Performance in Integers.

Constructs	r-value	t-value	P value	Remarks	Decision

Differentiated instruction	-0.080	-0.839	0.404	Not Significant	Do not reject
Student engagement strategies	-0.079	-0.828	0.409	Not Significant	Do not reject
Contextualized learning materials	-0.054	-0.559	0.578	Not Significant	Do not reject
Integration of real-world scenarios	0.1087	1.137	0.258	Not Significant	Do not reject

Note: *Significant at p<0.05.

The data in Table 9 presents the relationship between teachers' classroom strategies and learners' academic performance in Integers. Data showed that none of the teacher classroom strategies showed a statistically significant relationship with academic performance, as all p-values exceeded the 0.05 significance threshold. The r-values indicate weak correlations, with most being slightly negative, except for integration of real-world scenarios, which showed a weak positive correlation (r = 0.108738). These findings suggest that while these strategies are valuable for overall teaching and engagement, they do not have a measurable direct impact on academic performance in the specific area of Integers. This finding was supported by Wang et al. (2024) highlighted that teaching strategies may have a stronger influence on students' overall engagement, critical thinking, and conceptual understanding rather than on short-term performance outcomes in specific mathematical areas. Moreover, research shows that classroom strategies, while enhancing engagement and motivation, do not always have a strong, direct correlation with academic performance in specific topics like integers and performance is influenced by multiple factors, including prior knowledge, cognitive abilities, and assessment design (Durksen et al., 2017). While classroom strategies play a crucial role in enhancing student engagement and motivation, their direct impact on academic performance in specific topics like integers appears to be limited.

Table 10. Significant relationship between the teacher classroom strategy and learners academic performance in rate, base and percentage.

Constructs	**r-value**	**t-value**	**P value**	**Remarks**	**Decision**
Differentiated instruction	-0.045	-0.469	0.640	Not Significant	Do not reject
student engagement strategies	-0.002	-0.022	0.983	Not Significant	Do not reject
contextualized learning materials	-0.044	-0.462	0.645	Not Significant	Do not reject
integration of real-world scenarios	-0.137	-1.437	0.155	Not Significant	Do not reject

Note: *significant at p<0.05.

Table 10 presents data on the relationship between teachers' classroom strategies and learners' academic. Based on the data, none of the strategies showed a statistically significant relationship with academic performance, as all p-values exceeded the 0.05 threshold. The r-values indicate very weak or negligible correlations, with all values close to zero and slightly negative. These findings suggest that while these classroom strategies may enhance the learning environment and student engagement, they do not have a direct measurable impact on academic performance in this specific topic. Rallos et al. (2024) suggested that while classroom strategies are often more effective for fostering critical thinking and problem-solving skills, which may not immediately translate into performance improvements in isolated mathematical topics. Moreover, findings also showed that while classroom strategies improve engagement and understanding, their direct correlation with academic performance, due to performance outcomes depend on multiple factors, including individual learning styles, prior knowledge, and the nature of assessments (Cali, 2024). These findings highlight the multifaceted nature of academic performance, where engagement, prior knowledge, and instructional strategies collectively influence student success.

5. Conclusion

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Based on the results, it shows that teachers are effectively using a variety of classroom strategies, such as differentiated instruction, engaging activities, contextualized materials, and real-world scenarios, to enhance mathematics teaching. Learners are performing well, demonstrating a strong understanding of mathematical concepts across different topics. However, the results indicate no significant direct relationship between these teaching strategies and learners' academic performance in the evaluated topics. This suggests that while these strategies are important for creating a positive and inclusive learning environment, other factors may have a stronger impact on students' academic success in mathematics.

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