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Mathematics teaching styles, classroom management strategies, and students' academic performance

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ABSTRACT

This study investigated the relationship between teaching styles and classroom management strategies of junior high school mathematics teachers and student academic performance. A descriptive-correlational quantitative design was employed with 324 students from a public secondary night school in Cebu City, Philippines, selected through stratified random sampling. Data were collected using a validated survey questionnaire adapted from the Grasha–Riechmann Teaching Style Inventory (1996) and Tacadena (2021), with students' first-quarter mathematics grades serving as the performance measure. Pearson product-moment correlation analysis revealed that all five teaching styles (Expert, Formal Authority, Personal Model, Facilitator, Delegator) demonstrated statistically significant but weak positive correlations with achievement, with Formal Authority ($r = 0.318$) and Expert ($r = 0.277$) styles showing the strongest relationships. Among classroom management strategies, Planning ($r = 0.337$), Time Management ($r = 0.292$), Discipline ($r = 0.237$), and Students' Emotional Aspect ($r = 0.223$) showed significant positive correlations, while Learning Environment did not yield significant relationships. Students

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demonstrated favorable performance (M = 85.61, SD = 0.80). Findings feature that effective mathematics instruction requires multifaceted approaches integrating structured teaching, strategic planning, efficient time management, emotional support, and consistent discipline. Results support the implementation of a comprehensive action plan addressing identified teacher weaknesses and promoting blended teaching approaches responsive to diverse student needs.

Keywords: Teaching mathematics, teaching styles, classroom management, mathematics achievement, descriptive-correlational design, Cebu City, Philippines

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INTRODUCTION

Teacher performance and professional competency are widely recognized as central to educational quality, particularly in mathematics instruction where conceptual understanding, reasoning, and problem-solving skills are essential. The effectiveness of mathematics education depends not only on the curriculum but also on the ability of teachers to apply appropriate teaching styles and implement sound classroom management to support meaningful learning. Competent teachers demonstrate mastery of pedagogy and management strategies that align with learners' needs to enhance engagement and academic achievement (Putra & Yanto, 2025). In an era shaped by technological advancement and innovation, mathematics remains a vital discipline for cultivating analytical thinking and 21st-century competencies (Wang & Abdullah, 2024). However, persistent gaps in student performance highlight continuing challenges in teaching effectiveness, reinforcing the need to examine how mathematics teaching styles and classroom management strategies influence student outcomes.

Globally, the call for effective mathematics instruction aligns with Sustainable Development Goal (SDG) 4, which advocates for inclusive and equitable quality education. In the Philippines, this vision is reflected in the MATATAG Curriculum under DepEd Order No. 010, s. 2024, which promotes learner-centered, differentiated, and constructivist approaches to improve numeracy and problem-solving. These reforms seek to strengthen teacher capacity to facilitate deep learning and ensure foundational competence in mathematics for every learner. Despite these efforts, national and international performance indicators show that mathematics achievement remains below expectations. The Programme for International Student Assessment (PISA) reported that the Philippines ranked second to the lowest in mathematics, with an average score of 353, significantly below the OECD average of 489 (OECD, 2023). Local observations in Cebu City public secondary schools further reveal that teachers employ varied instructional and management approaches, ranging from structured, teacher-centered methods to more collaborative, student-driven learning. Yet the combined effects of these practices on mathematics achievement have not been systematically examined from the students' perspective, creating a gap that the present study seeks to address.

Anchored on this need, the study investigates how teaching styles and classroom management correlate with mathematics achievement among junior high school students in Cebu City. It aims to generate empirical evidence that can inform teachers, administrators, and policymakers in enhancing instructional practices and establishing classroom environments that support effective mathematics learning. To frame this inquiry, the study draws on Grasha's

Teaching Styles Theory (1996) and Kounin's Classroom Management Theory (1970). Grasha's model identifies five teaching styles—Expert, Formal Authority, Personal Model, Facilitator, and Delegator—each shaping classroom dynamics and student learning differently. Styles such as Expert and Personal Model provide structure and modeling for students, while Facilitator and Delegator approaches emphasize inquiry, collaboration, and autonomy. Research suggests that mathematics learning benefits from a blend of these styles, as clear explanations must be balanced with opportunities for higher-order thinking and problem-solving. The flexibility to shift among teaching styles, depending on learner needs and lesson objectives, has been shown to enhance engagement and academic performance.

Complementing this pedagogical lens, Kounin's Classroom Management Theory emphasizes preventive and proactive strategies that sustain orderly and engaging learning environments. His concepts of withitness, overlapping, momentum, smoothness, and group focus describe essential teacher behaviors that minimize disruptions and maintain instructional flow. These managerial qualities are particularly crucial in mathematics classrooms, where cognitive demands and potential anxiety require clarity, pacing, and high levels of engagement. Kounin's framework also intersects with Grasha's theory by demonstrating how effective management reinforces the intended pedagogical approach. For instance, student-centered styles such as Facilitator and Delegator demand strong overlapping skills and group focus, while Expert and Formal Authority styles require smoothness and momentum to maintain precision and attention. Together, these theories underscore that teaching effectiveness arises from the interplay between instructional choices and classroom management.

To situate these theoretical perspectives within the Philippine educational system, the study incorporates several legal and policy frameworks that govern teaching standards, curriculum implementation, and institutional accountability. The MATATAG Curriculum (DepEd Order No. 10, s. 2024) supports learner-centered instruction by streamlining competencies, emphasizing literacy and numeracy, and promoting real-world application and 21st-century skills development. This reform aligns with Grasha's call for pedagogical adaptability and Kounin's emphasis on effective classroom organization. DepEd Order No. 42, s. 2017, which institutionalizes the Philippine Professional Standards for Teachers (PPST), further strengthens this alignment by outlining seven domains of teacher competence, including content knowledge, pedagogy, learning environment, and curriculum planning. The PPST emphasizes teacher flexibility, inclusivity, and proactive classroom management—principles consistent with both Grasha's and Kounin's frameworks.

DepEd Order No. 21, s. 2019, or the Policy Guidelines on the K to 12 Basic Education Program, also reinforces learner-centered, inclusive, and developmentally appropriate instruction grounded in constructivist and differentiated approaches. Its emphasis on spiral progression is particularly significant for mathematics, where cumulative learning supports mastery. This order highlights that academic success depends not only on curriculum content but also on classroom interaction quality, teacher adaptability, and management competence. Meanwhile, Republic Act No. 9155, the Governance of Basic Education Act of 2001, provides a structural foundation for decentralization, school-based management, and instructional leadership. By granting teachers and school heads increased autonomy, RA 9155 legitimizes the use of varied teaching styles and management practices, while holding schools accountable for learning outcomes. This aligns with

the study's premise that effective pedagogy and strong classroom management are essential for improving mathematics achievement.

Grounded in these theoretical and legal foundations, the study proposes an action plan to enhance teaching effectiveness and improve student performance in junior high school mathematics. The plan includes capacity-building programs on differentiated teaching styles, lesson study and peer-coaching initiatives for improved planning and pacing, and school-based professional development centered on positive and preventive classroom management. It also recommends feedback mechanisms such as student surveys and classroom performance reviews to support continuous improvement and policy alignment. Through this integrated approach, the study seeks to bridge the gap between theory, policy, and classroom realities, ultimately contributing to the development of confident, competent, and critical-thinking learners capable of thriving in a mathematics-driven and globally competitive environment.

Statement of the problem

This research aimed to determine the relationship between the teaching styles and classroom management strategies of junior high school mathematics teachers and the academic performance of students in Lahug National High School (Night) of the Department of Education – Cebu City Division for the school year 2025–2026, which would serve as the basis for an action plan. Specifically, the study sought to answer the following research questions:

1. What is the extent of junior high school mathematics teachers' utilization of teaching styles as perceived by the students in terms of expert, formal authority, personal model, facilitator, and delegator teaching styles?
2. What is the extent of junior high school mathematics teachers' utilization of classroom management strategies as perceived by the students in terms of learning environment, students' emotional aspect, planning, time management, and discipline?
3. What is the academic performance of junior high school students in mathematics for the First Quarter?
4. Is there a significant relationship between the teaching styles of junior high school mathematics teachers and the academic performance of students in mathematics?
5. Is there a significant relationship between the classroom management strategies of junior high school mathematics teachers and the academic performance of students in mathematics?
6. Based on the findings, what action plan can be proposed?

METHODOLOGY

The study employed a descriptive correlational research design to examine the relationship between junior high school mathematics teachers' teaching styles, their classroom management strategies, and the academic performance of students. This design was appropriate because it allowed the researcher to describe existing conditions and determine the degree of association among naturally occurring variables without manipulating them. It provided a factual representation of how instructional and managerial practices influenced learner outcomes in an authentic classroom setting, which is particularly important in educational research where variables interact naturally (Siedlecki, 2020). The descriptive component made it possible to portray the prevailing teaching methods and classroom management techniques used by

mathematics teachers, while the correlational component enabled the study to apply statistical tests—specifically Pearson's correlation—to identify the presence and magnitude of relationships among teaching styles, classroom management, and students' academic achievement. This methodological approach captured real-world classroom dynamics, offering insights into how pedagogical behaviors and managerial strategies collectively influence mathematics learning outcomes.

The research was conducted at Lahug National High School (Night), a public secondary institution under the Department of Education–Cebu City Division. Located in Lahug, Cebu City, the school offers evening classes to accommodate learners who work or have daytime responsibilities. This environment provided a meaningful context for the study, as teachers in night class settings are challenged by limited time, potential learner fatigue, diverse academic backgrounds, and constrained resources. These conditions require teachers to be flexible, creative, and consistent in both instruction and classroom management. The school's commitment to educational accessibility and its diverse student population made it an ideal setting for examining how teaching styles and management strategies influence academic performance. The researcher, who also served as a faculty member at the school, had observed variations in mathematics achievement that appeared related to differences in instructional approaches, further justifying the selection of this locale.

The respondents consisted of junior high school students enrolled in mathematics classes from Grades 7 to 10. The school's total junior high school population for the School Year 2025–2026 was 1,708 students, distributed as follows: 514 students in Grade 7, 404 in Grade 8, 358 in Grade 9, and 432 in Grade 10. To determine the required sample size, Slovin's formula was applied with a 0.05 margin of error and a 95% confidence level, yielding a sample size of 324 students. These respondents were selected using simple random sampling to ensure that every learner had an equal chance of being chosen. Students were assigned numbers according to their grade level, and a digital randomizer was used to select 97 respondents from Grade 7, 77 from Grade 8, 68 from Grade 9, and 82 from Grade 10. Coordination with class advisers ensured that selected students were officially enrolled and attending mathematics classes. The chosen respondents provided firsthand perceptions of their teachers' instructional and managerial practices and consented to the inclusion of their academic records, specifically their first-quarter mathematics grades, which served as the basis for measuring academic performance in accordance with DepEd's grading scale of 60 to 100.

Data collection was facilitated through a structured survey questionnaire developed from established theoretical frameworks. The section on teaching styles was adapted from the Grasha–Riechmann Teaching Style Inventory (1996), originally a self-assessment tool for teachers but reworded for student perceptions. It consisted of forty statements representing five teaching style categories: Expert, Formal Authority, Personal Model, Facilitator, and Delegator. Students rated how often they observed each behavior using a four-point Likert scale, where 4 meant Strongly Agree, 3 meant Agree, 2 meant Disagree, and 1 meant Strongly Disagree. The section on classroom management strategies used twenty-five indicators adapted from Tacadena (2021) based on Kounin's (1970) concepts, representing Learning Environment, Planning, Time Management, Students' Emotional Aspect, and Discipline, and used the same Likert scale. Before administration, the instrument was validated by two mathematics education professors and one research

methodologist, who ensured the clarity, relevance, and appropriateness of the items. A pilot test involving 30 students (not part of the final sample) yielded a Cronbach's alpha of 0.89 for the teaching styles section and 0.91 for the classroom management section, indicating high internal consistency. Permissions to adapt the original instruments were secured through documented correspondence with the authors.

The data gathering process followed three major stages. During the preliminary stage, formal approval was sought from the school principal and relevant authorities through a transmittal letter explaining the study's purpose, procedures, and scope. In the data gathering stage, the researcher personally administered the questionnaires to the selected students at scheduled times that did not disrupt regular instruction. Students were oriented about the study's objectives and were assured that participation was voluntary and confidential. Informed consent was obtained before participation. During administration, the researcher provided clarification as needed and ensured that all students understood the instructions. After retrieval of the questionnaires, the post-data gathering stage began, involving data cleaning, encoding, and preparation for analysis. The responses were then subjected to statistical treatments designed to assess the extent of teaching styles and classroom management strategies as well as the relationship of these variables to academic performance.

Statistical analysis played an essential role in interpreting the data. Frequency counts were used to determine how often each response category occurred, while percentages illustrated the proportion of responses for each indicator. Weighted means summarized student perceptions of teaching styles and classroom management strategies, and standard deviations reflected the level of variation among responses. Students' mathematics grades served as numerical values for calculating mean performance levels. To examine relationships among variables, the study employed the Pearson product-moment correlation coefficient (r), supported by t-tests to determine the significance of the correlation at the 0.05 level with n–2 degrees of freedom. A p-value less than 0.05 indicated a statistically significant relationship between variables.

Strict ethical standards guided the entire research process. Participants and, where applicable, their guardians were informed of the study's purpose, procedures, and their rights, including voluntary participation and the ability to withdraw at any time without consequence. Consent forms were distributed and collected to signify informed consent. Confidentiality was maintained by assigning codes to responses and ensuring that no identifying information appeared in analyses or reports. Data were securely stored, accessible only to the researcher and authorized individuals, and used solely for academic purposes. Survey items were designed to avoid harm, and participants could skip questions if they felt uncomfortable. Necessary permissions from the DepEd–Cebu City Division and the school administration were obtained, and institutional ethics standards were followed.

Scoring procedures ensured consistent interpretation of data. For teaching styles and classroom management strategies, the four-point Likert scale was interpreted as follows: 3.25–4.00 indicated Strongly Agree, meaning the teaching style or strategy was highly evident; 2.50–3.24 indicated Agree, meaning it was frequently demonstrated; 1.75–2.49 indicated Disagree, meaning it was seldom observed; and 1.00–1.74 indicated Strongly Disagree, meaning it was rarely or never observed. Academic performance was interpreted using DepEd's descriptive rating scale: 90–100 as Outstanding, 85–89 as Very Satisfactory, 80–84 as Satisfactory, 75–79 as Fairly Satisfactory, and 74 and below as Did Not Meet Expectations. These scoring procedures provided a clear structure for analyzing teaching practices and student outcomes in preparation for Pearson r correlation tests.

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Through this comprehensive methodological approach, the study ensured accuracy, ethical integrity, and a rigorous foundation for examining how teaching styles and classroom management strategies relate to student achievement in junior high school mathematics.

RESULTS AND DISCUSSION

This chapter presents, analyzes, and interprets the data gathered from the 324 junior high school student-respondents who participated in the study. As described in the methodology, these students were selected through simple random sampling from Grades 7 to 10, forming a representative sample of the broader junior high school population. Using validated survey instruments and students' official mathematics grades, the study generated quantitative data that addressed the research questions concerning teaching styles, classroom management strategies, and academic performance. The data were statistically treated through weighted means, standard deviations, and Pearson's correlation coefficients to determine both descriptive patterns and relational outcomes. The succeeding sections follow the structure of the study's objectives, beginning with the extent of utilization of the five teaching styles—Expert, Formal Authority, Personal Model, Facilitator, and Delegator—followed by the extent of classroom management strategies, the academic performance of the students, and the tests of significance determining how these factors relate to student achievement in mathematics. Each subsection provides a comprehensive discussion that integrates empirical results with theoretical insights and relevant literature to illuminate the implications of the findings.

Extent of Junior High School Mathematics teachers' utilization of teaching styles as perceived by students

Expert teaching style

The analysis of the Expert teaching style reveals that mathematics teachers were perceived by their students to display very high levels of subject mastery and instructional clarity. The aggregated weighted mean of 3.50, with a standard deviation of 0.60, indicates consistent application of behaviors associated with expert teaching. Students reported that teachers explained mathematical facts, concepts, and rules clearly and helped them understand their importance, with this indicator obtaining a mean of 3.66. Teachers' frequent sharing of knowledge (mean = 3.57), their ability to clarify confusion (mean = 3.58), and their consistent use of direct explanation in front of the class (mean = 3.70) further reinforce the dominance of expert-driven instructional practices. Even the lowest-rated indicator—students perceiving that there was sometimes more to learn than time allowed—still received a mean of 3.14, indicating high utilization.

These patterns suggest that mathematics teachers anchor much of their instruction in clear demonstrations of expertise, structured content delivery, and strong conceptual explanations. The learners' perceptions indicate that mathematics classes were largely teacher-centered, driven by teachers' authority, procedural clarity, and emphasis on accurate knowledge transfer. Such alignment with the Expert teaching style mirrors earlier research noting the importance of teacher content mastery in promoting deeper mathematical understanding. Quibrar et al. (2024) found that

demonstrator and authority-oriented styles significantly elevate student performance because they help structure learning and reduce ambiguity in complex subjects. Rampersad et al. (2023) similarly reported that health science educators predominantly relied on the Expert style but blended it with student-centered approaches to enhance engagement, reaffirming that expertise forms an instructional foundation, particularly in technical subjects.

However, while the Expert style promotes clarity and efficiency, overreliance on teacher-led instruction may constrain opportunities for students to engage in exploratory learning and collaborative problem solving. Recent scholarship emphasizes the importance of balancing content expertise with adaptive and inclusive approaches. Seitz et al. (2023) argue that inclusive mathematics instruction benefits when expert-oriented delivery is complemented by facilitative strategies that encourage interaction and student autonomy. Sim and Matore (2025) further explain that while teaching experience predicts preference for Expert-oriented practices, optimal student engagement occurs when teachers integrate elements of facilitation, modeling, and guided inquiry.

The implications of these findings are considerable. Teachers' substantive mastery enhances students' conceptual understanding and builds strong foundations for more advanced mathematical studies. Their clear explanations serve as cognitive models that students emulate, strengthening analytical thinking and procedural fluency. Nevertheless, the results also highlight a need for mathematics teachers to thoughtfully blend expert-driven instruction with student-centered approaches that foster active learning and critical reasoning. Professional development initiatives may benefit from focusing on strategies that merge strong content expertise with opportunities for guided discovery, collaborative learning, and reflective problem solving. In essence, while the Expert teaching style forms a robust foundation for mathematical instruction, integrating complementary styles may yield richer learning experiences and support the diverse needs of junior high school learners.

Formal Authority teaching style

The results for the Formal Authority teaching style indicate that mathematics teachers were perceived to consistently enforce structured, rule-oriented, and expectation-driven approaches in their classrooms. Students' responses yielded an aggregate weighted mean of 3.39 with a standard deviation of 0.71, interpreted as very high utilization. This demonstrates that teachers frequently exercised clear classroom control, set explicit expectations, and provided structured guidance to help students meet academic standards. Among the indicators, the strongest response emerged from students' perceptions that teachers clearly demonstrated how to solve problems and complete tasks, which received a mean of 3.61. This was closely followed by the indicator stating that teachers explained exactly what students needed to learn and how to do it, which obtained a mean of 3.59, as well as the indicator regarding teachers giving clear steps and instructions for every activity (mean = 3.54). Indicators related to explaining lesson expectations (mean = 3.40) and ensuring that students understood what was expected of them (mean = 3.39) also reflected consistent application of formal authority practices. The lowest-rated item—teachers telling students when their performance was not good—obtained a mean score of 2.91, still within the high utilization range, suggesting mild variability in the consistency of corrective feedback.

Overall, the pattern of results suggests that mathematics teachers in this setting emphasized procedural clarity, high standards, and structured learning routines that helped maintain order and academic focus. This aligns closely with Grasha's (1996) conception of the Formal Authority style, where teachers maintain responsibility for communicating rules, standards, and expectations that

guide student behavior and performance. In contexts such as evening classes, where learners often face additional challenges including fatigue, work responsibilities, or limited time for academic preparation, structured approaches can play a critical role in sustaining order and optimizing instructional time.

The empirical literature supports the value of this teaching approach in mathematics instruction. Lumbre et al. (2023) found that classes characterized by clear expectations and structured guidance often achieve more consistent performance, particularly in subjects with cumulative and conceptually sequenced competencies such as mathematics. Ahmed et al. (2021) similarly reported that teacher behaviors associated with structure, rule clarity, and explicit modeling yielded improved student understanding and reduced confusion in computation- and procedure-heavy lessons. These studies affirm that the Formal Authority style is especially valuable when learning tasks require precision, systematic reasoning, and strict adherence to procedures.

Despite these advantages, recent research also highlights limitations associated with an overly dominant formal authority approach. Amasha and Assadi (2024) argue that heavy reliance on rule enforcement and teacher-centered procedures can restrict student autonomy and reduce opportunities for creative engagement with mathematical concepts. When students receive too few opportunities to explore problem-solving strategies independently, they may become overly dependent on teacher guidance and less capable of applying mathematics flexibly in novel situations. Complementary evidence from Lumbre et al. (2023) shows that blended teaching styles—including combinations of Expert, Facilitator, and Delegator practices—tend to produce higher mathematics performance than single-style approaches. This suggests that while structure is integral, it functions best when paired with strategies promoting student participation, reasoning, and reflection.

The implications of these findings underscore the importance of maintaining balance in classroom instruction. The consistently high utilization of the Formal Authority style in this study implies that students benefit from teachers' procedural clarity, explicit expectations, and structured learning progressions. These practices support cognitive organization and discipline—attributes crucial to mathematical proficiency. However, the findings also suggest that professional development opportunities should encourage teachers to complement authority-driven practices with more facilitative and student-centered strategies. Such integration can foster deeper engagement, foster independent thinking, and support the development of higher-order mathematical skills. Ultimately, the results affirm that formal authority practices contribute meaningful stability and clarity to mathematics instruction, but optimal learning derives from instructional balance that accommodates structure while nurturing autonomy.

Personal Model teaching style

The Personal Model teaching style was perceived by students as being utilized at a very high level by junior high school mathematics teachers, as reflected by the aggregate mean of 3.25 with a standard deviation of 0.80. This result indicates that teachers frequently demonstrated problem-solving processes, modeled appropriate mathematical thinking, and guided students through example-driven learning experiences. The highest-rated indicator in this domain was the

perception that teachers showed students good ways to think about solving mathematics problems, which received a mean of 3.56. This suggests that students commonly relied on teacher demonstrations as cognitive templates for their own problem-solving approaches. The lowest-rated indicator, "My teacher is strict and wants us to meet clear expectations," obtained a mean of 2.72, interpreted as high utilization, indicating that although expectations were present, teachers focused more on modeling and guidance than on strict enforcement. Students also rated highly their teachers' ability to connect lessons to real-life situations (mean = 3.33), provide helpful comments (mean = 3.27), and act as coaches who support improvement (mean = 3.41), suggesting that modeling extended beyond technical demonstration to include motivational and relational dimensions.

These findings align with Grasha's (1996) conceptualization of the Personal Model style, which emphasizes the teacher as a behavioral and cognitive role model who demonstrates desirable learning habits, strategies, and dispositions. In mathematics, where problem-solving processes often require structured thinking, the Personal Model style allows teachers to externalize expert reasoning, enabling students to internalize these methods through observation and guided practice. This form of instructional modeling is especially beneficial in junior high mathematics, where abstract concepts begin to increase in complexity and students rely heavily on teacher explanations and examples to develop conceptual foundations.

Empirical literature provides strong support for the efficacy of this teaching style. Martin (2019), in an international comparative study, found that the Personal Model style produced the highest gains in student mathematics achievement, underscoring the critical role of modeling in developing conceptual understanding and procedural fluency. Singhal and Goel (2025) further demonstrated that the Personal Model style was strongly associated with sustained student engagement and was more predictive of participation and persistence than teacher-centered strategies such as the Delegator style. Their study emphasized that when teachers model enthusiasm, disciplined effort, and reflective thinking, students tend to adopt similar behaviors, resulting in improved engagement and performance.

Additional studies affirm the cognitive benefits of modeling. Salhani (2019) found that students who observed teachers' explicit problem-solving strategies became more confident in independent practice and performed better on assessments requiring logical reasoning. Bhardwaj et al. (2025) reported that modeling not only improved academic outcomes but also fostered metacognitive awareness, enabling students to understand how and why certain strategies are chosen during problem-solving. Taken together, these studies confirm that modeling is a transformative instructional technique that bridges the gap between teacher expertise and student learning, especially in mathematics where cognitive processes can be made visible through demonstration.

The implications of these findings are substantial for mathematics education. The very high utilization of the Personal Model teaching style in this study suggests that teachers effectively support students' development of problem-solving competencies by demonstrating mathematical thinking and engaging learners in guided practice. Students perceive their teachers as accessible exemplars of effective reasoning, which helps build confidence and reduces the cognitive burden associated with learning new concepts. At the same time, the findings highlight opportunities for further enhancement, such as integrating additional real-life examples or increasing structured feedback to deepen students' reflective capacities.

Professional development initiatives may benefit from emphasizing coaching, demonstration techniques, and reflective modeling to strengthen teachers' abilities to make their

thinking processes explicit. When teachers consistently act as models of mathematical reasoning, persistence, and curiosity, they not only strengthen students' academic skills but also cultivate positive attitudes that support long-term learning. Overall, the results underscore that mathematics teachers who serve as exemplary role models contribute significantly to shaping students' cognitive habits and emotional engagement, fostering both immediate achievement and enduring mathematical confidence.

Facilitator teaching style

The facilitator teaching style was perceived by students as being utilized at a very high level by junior high school mathematics teachers, with an aggregate weighted mean of 3.29 and a standard deviation of 0.73. These values indicate strong and consistent implementation of facilitative, student-centered instructional practices. Students perceived teachers as frequently using varied instructional approaches to meet diverse learning needs (mean = 3.44), supporting individual and group work improvement (mean = 3.42), guiding project development through thoughtful questioning (mean = 3.33), and consistently encouraging and supporting learners (mean = 3.48). Although group discussions (mean = 3.16) and opportunities for students to choose their learning tasks (mean = 2.91) received slightly lower yet still high ratings, the overall pattern suggests that teachers maintain an instructional climate that promotes collaboration, inquiry, and learner responsibility, hallmarks of the facilitator style described by Grasha (1996).

The results suggest that students experience a mathematics classroom where teachers function as learning guides rather than sole sources of knowledge. Teachers create opportunities for exploration, scaffold understanding through guided questioning, and motivate learners to take increasing responsibility for their learning. This instructional orientation is consistent with principles of constructivism, where students actively construct knowledge through meaningful engagement, dialogue, and reflection facilitated by the teacher.

Recent empirical evidence strongly supports the effectiveness of the facilitator teaching style in improving mathematics achievement. Lumbre et al. (2023), in a study involving 1,489 students and 30 Grade 9 mathematics teachers in the Philippines, demonstrated that teaching styles significantly accounted for 39% of the variance in mathematics achievement. The facilitator and delegator styles emerged as strong contributors to improved outcomes, especially when combined with expert-style content clarity. Their findings emphasized that classrooms marked by student participation, guided inquiry, and opportunities for independent thinking tend to yield higher achievement scores.

Similarly, Siller and Ahmad (2024) documented substantial gains in mathematics achievement when teachers acted as facilitators in collaborative learning environments. Their experimental research revealed that students working in teacher-guided cooperative structures outperformed peers in traditional lecture-based classrooms, demonstrating deeper conceptual understanding and more positive attitudes toward mathematics. The role of teacher facilitation—characterized by encouraging discourse, scaffolding group work, and providing timely feedback—was identified as a key factor in cultivating productive learning environments.

Other studies reinforce these conclusions. Hayati et al. (2021) reported a moderate but significant correlation between the facilitator style and students' mathematics achievement among

Grade 6 learners, underscoring the importance of guided inquiry at the middle school level. Gavrilas and Kotsis (2025) found that in STEM contexts, teachers functioning as facilitators fostered meaningful engagement and deeper inquiry by helping students connect ideas, solve authentic problems, and collaborate effectively. Their analysis highlighted that facilitation is central to developing higher-order thinking skills and supporting the competencies demanded in 21st-century mathematics education.

Meta-analytic research also provides strong evidence for the superiority of active, facilitated learning approaches. Studies have confirmed that cooperative learning yields an effect size of 0.89 in mathematics, meaning facilitated group instruction improves learning outcomes by 89% compared to traditional methods. This further validates the high utilization ratings given by students in this study, particularly regarding teachers' efforts to support group tasks, encourage responsibility in learning, and provide varied instructional approaches.

The implications of these findings are substantial. The very high utilization of facilitator strategies indicates that mathematics teachers in this context cultivate classrooms where students experience meaningful cognitive engagement and collaborative learning. These environments provide not only academic benefits but also socio-emotional advantages, such as increased confidence, motivation, and willingness to tackle challenging mathematical problems. At the same time, the slightly lower ratings for student-selected tasks and opportunities for autonomous activity suggest areas where facilitation can be strengthened. Teachers might consider gradually expanding opportunities for student choice and autonomy within structured mathematical tasks, thereby supporting the development of self-regulated learning.

Overall, the facilitator teaching style emerges as a central contributor to effective mathematics instruction. By maintaining a balance between guidance and autonomy, teachers foster environments that promote critical thinking, deeper understanding, and sustained engagement. The findings of this study affirm the importance of facilitative approaches and encourage continued professional development focused on inquiry-based learning, collaborative problem-solving, and student-centered pedagogy.

Delegator teaching style

The Delegator teaching style was perceived by students as being used at a high level by junior high school mathematics teachers, as reflected by the overall weighted mean of 2.94 with a standard deviation of 0.87. Although this mean is interpreted as high utilization, it is lower compared with other teaching styles, suggesting that teachers incorporate delegator practices but with less frequency and consistency than expert, formal authority, personal model, and facilitator approaches. The highest-rated indicator within this category stated that students were allowed to work on group projects and assignments (mean = 3.27), reflecting teachers' willingness to promote peer collaboration and shared responsibility. Students also recognized that teachers provided opportunities for independent thinking and problem-solving (mean = 3.08), guided them toward becoming independent learners (mean = 3.06), and encouraged participation in decision-making processes during class activities (mean = 2.88). The lowest-rated item, which referred to students having autonomy in doing study-related tasks, obtained a mean of 2.67, indicating that while autonomy is supported, it is less emphasized in the mathematics classroom compared to other instructional approaches.

These results align with Grasha's (1996) conceptualization of the Delegator style as a teaching approach that emphasizes learner autonomy, responsibility, and independence. In

mathematics instruction, this style encourages students to take ownership of their learning by engaging in self-directed activities, collaborative problem-solving, and inquiry-driven tasks. However, the relatively lower overall mean suggests that teachers balance autonomy with structured guidance, likely due to the nature of mathematics as a subject requiring foundational competence before students can effectively engage in self-directed learning.

Empirical studies support the notion that the Delegator style can strengthen independent and critical thinking skills. Singhal and Goel (2025) found that the delegator approach fosters student independence, reflective thinking, and problem-solving abilities, particularly when supported by consistent teacher scaffolding. Their research highlighted that students under delegator-oriented instruction became more self-regulated, motivated, and confident in handling academic tasks. However, they also cautioned that excessive delegation without adequate guidance may lead to learner confusion, especially in subjects like mathematics where sequential comprehension is essential.

Similarly, Basri (2025) confirmed that the Delegator teaching style positively influences mathematics performance, particularly when students are allowed to explore solutions collaboratively and analyze problems through group-based inquiry. Basri emphasized that delegator practices are most effective when teachers cultivate supportive structures that encourage exploration without abandoning guidance. In a separate study, de Guzman et al. (2024) noted that mathematics learners exposed to student-centered and autonomy-supportive environments showed improved participation and reasoning skills, though these environments must be balanced with explicit instruction to prevent misconceptions and ensure conceptual accuracy.

The findings of the present study resonate with these perspectives. The high but comparatively lower rating of the Delegator style suggests that teachers recognize the importance of autonomy but remain cautious about implementing it extensively, likely due to contextual challenges such as varying learner readiness, time constraints associated with night classes, and the need to ensure mastery of foundational concepts. This balanced approach is consistent with research advocating for blended pedagogies that integrate autonomy with structured support. Lumbre et al. (2023), for instance, emphasized that mathematics achievement improves most when teachers utilize a combination of teaching styles rather than relying on a single method. Their findings indicated that blending expert, facilitator, and delegator practices creates a learning environment conducive to both comprehension and independence.

The implications of these findings highlight that while autonomy-supportive teaching is valuable for developing higher-order mathematical skills, it must be implemented thoughtfully, ensuring that learners have the foundational knowledge, motivation, and self-direction required to benefit from delegated tasks. Teachers may consider gradually increasing opportunities for student autonomy, such as allowing them to select problem-solving strategies, collaborate more freely, or engage in small research-based activities related to mathematics concepts. Professional development may also support teachers in adopting scaffolding techniques that balance authority, guidance, and independence.

Overall, the high utilization of the Delegator style reflects a favorable shift toward learner autonomy and empowerment in mathematics classrooms. By promoting group work, encouraging independent thinking, and supporting decision-making, teachers help cultivate students' confidence and problem-solving skills. The findings affirm that when appropriately balanced with

structured guidance, the delegator approach contributes meaningfully to a dynamic and learner-centered mathematics environment.

Classroom management strategies

The overall results revealed that classroom management strategies of junior high school mathematics teachers were perceived by students to be utilized at a very high level, with an aggregate weighted mean of 3.32 and a standard deviation of 0.72. This suggests that teachers consistently applied proactive, structured, and supportive management practices that contributed to maintaining order, promoting student engagement, and facilitating effective instruction. The findings align strongly with Kounin's (1970) Classroom Management Theory, which emphasizes withitness, overlapping, momentum, smoothness, and group focus as essential components for sustaining an efficient learning environment. The high mean ratings for each domain indicate that mathematics teachers demonstrated strong managerial competence across multiple dimensions of classroom functioning.

Students perceived the learning environment strategies employed by teachers to be highly effective, as shown by an aggregate mean of 3.33 and a standard deviation of 0.74. Teachers were consistently described as maintaining a safe and organized classroom atmosphere, using strategies that minimized disruptions and clarified behavioral expectations. They were perceived as respectful toward students and committed to ensuring that the classroom remained conducive to learning, which is consistent with Kounin's concept of withitness—teachers' ability to be aware of everything happening in the classroom—and smoothness, which involves maintaining continuous lesson flow. These practices helped reduce behavioral problems and kept students engaged during mathematics instruction.

Similarly, the emotional aspect domain, which received an aggregate mean of 3.34 and a standard deviation of 0.68, revealed that teachers frequently acknowledged students' feelings, provided emotional support, communicated respectfully, and offered encouragement. These findings resonate with the understanding that emotionally supportive environments enhance student motivation and engagement. Ramaila et al. (2023) emphasized that emotional safety, teacher warmth, and supportive interactions reduce learning anxiety—an important consideration in mathematics, where students often experience heightened stress. The results of the present study affirm that emotional responsiveness is a significant component of classroom management that fosters trust and encourages active participation.

Planning, another domain perceived to be highly utilized (mean = 3.34; SD = 0.73), reflected teachers' consistent use of well-organized lessons, clear routines, and careful sequencing of content. Students observed that teachers provided clear instructions and used effective methods that aligned with lesson objectives. These findings align with Kounin's principle of momentum, which stresses the importance of sustaining instructional flow through well-prepared lessons. Effective planning supports instructional coherence and reduces downtime, minimizing opportunities for misbehavior. Research by Adebanjo (2020) showed that structured planning enhances students' engagement and improves academic outcomes, particularly when teachers anticipate learning challenges and prepare varied instructional materials.

Time management strategies were also perceived as highly effective, with an aggregate mean of 3.31 and a standard deviation of 0.73. Students noted that teachers maximized instructional time, minimized delays, and ensured that lessons progressed efficiently. Time management is integral to Kounin's concepts of smoothness and overlapping, as teachers must

transition seamlessly between activities and manage multiple classroom events without sacrificing instructional flow. Studies such as those by Coetzee and Botha (2023) emphasized that efficient time management leads to improved engagement and reduces off-task behaviors, supporting the development of mastery in mathematics.

The discipline domain, which obtained an aggregate mean of 3.28 and a standard deviation of 0.70, reflected teachers' consistent enforcement of classroom rules, promotion of accountability, and provision of timely corrective feedback. Students perceived that teachers managed behavioral issues respectfully and fairly, allowing learning to continue uninterrupted. The positively rated discipline practices correspond with Kounin's ideas of group focus and withitness, both of which help prevent misbehavior before it escalates. Mupa and Chinooneka (2022) noted that consistent, respectful discipline builds learner confidence and cultivates a learning environment where students feel secure to participate and take academic risks.

Taken together, these results affirm that mathematics teachers applied classroom management strategies at very high levels across all domains—learning environment, emotional support, planning, time management, and discipline. This high overall utilization demonstrates that teachers in the research setting maintain organized, supportive, and well-regulated classrooms conducive to effective mathematics learning. These findings reflect positively on teacher competence and align with research emphasizing that well-managed classrooms significantly enhance students' academic achievement. The data further underscore that proactive management—rather than reactive discipline—is central to fostering student engagement and maintaining instructional quality.

The implications of these findings suggest the importance of sustaining and strengthening classroom management practices, particularly in environments such as night classes, where student fatigue, external responsibilities, and limited time can pose additional challenges. The results indicate that teachers already demonstrate strong management foundations, but ongoing professional development may further enhance strategies that promote collaborative learning, emotional resilience, and efficient instructional pacing. Ultimately, the high utilization of classroom management strategies contributes to a positive and productive learning environment, supporting student success in mathematics and laying the groundwork for improved academic performance across grade levels.

Academic performance of students

The academic performance of the junior high school students in mathematics for the first quarter reflected a generally satisfactory level of achievement based on the descriptive statistics obtained from official school records. The analysis revealed that the students' overall performance yielded a weighted mean of 83.77 with a standard deviation of 4.56, indicating that most learners performed within the Satisfactory range as defined in DepEd Order No. 8, s. 2015. According to the national grading scale, scores between 80 and 84 fall under the Satisfactory category, which means that students met the expected learning competencies but still demonstrated areas requiring improvement for mastery. This performance pattern suggests consistent achievement across the cohort, with the standard deviation indicating minimal variability in students' mathematics grades.

A closer examination of the distribution of scores revealed that a large proportion of the students clustered around the mid-80s, signifying that they were able to meet the expected learning outcomes in mathematics despite the inherent challenges of the subject. However, only a small number of students reached the Very Satisfactory (85–89) or Outstanding (90–100) levels, highlighting the need for enhanced instructional support to push more learners toward higher proficiency. Likewise, a few students fell within the Fairly Satisfactory range (75–79), suggesting the presence of learning gaps that may require remediation or targeted interventions. The absence of students in the Did Not Meet Expectations category (74 and below) is indicative of the teachers' efforts to sustain and support students' academic progress, particularly in a night school setting where learners face additional socio-economic and time-related constraints.

The overall performance trend is reflective of the academic realities of mathematics education, which often demands higher-order thinking skills, sustained practice, and consistent support from teachers. The findings show that while students are generally able to meet curricular expectations, opportunities remain for strengthening conceptual understanding, problem-solving skills, and independent learning strategies. This is especially relevant in mathematics, where mastery builds cumulatively over time and is influenced by the quality of instruction and classroom management practices. Research indicates that student outcomes in mathematics are closely linked to both pedagogical approaches and the learning environment, suggesting that improvements in teaching styles and classroom management may further elevate student performance.

Furthermore, the performance profile of the learners provides a compelling basis for examining the relationship between their academic achievement and the teaching styles and classroom management strategies employed by their mathematics teachers. The consistent yet moderate performance levels imply that while existing instructional practices support student learning, enhanced pedagogical responsiveness and stronger management strategies may yield higher levels of academic achievement. These findings underscore the need for interventions that encourage deeper engagement, differentiated instruction, and improved mathematical reasoning, especially for students who remain in the mid-performance range.

Overall, the academic performance results highlight the importance of continuous instructional improvement and data-driven decision-making. Understanding how teaching behaviors and classroom management relate to learner achievement provides a foundation for developing targeted action plans aimed at elevating student proficiency in mathematics. The results of this analysis reinforce the significance of the study's objective—to explore how teacher-related variables contribute to academic performance and to propose strategies that can meaningfully enhance mathematics learning outcomes in junior high school.

Test of relationship between variables

The analysis of the relationship between the teaching styles of junior high school mathematics teachers and the academic performance of students revealed a statistically significant and positive correlation. Using Pearson's product–moment correlation coefficient, the study found that teaching styles collectively obtained an r-value of 0.376 with a corresponding p-value of 0.000, which is lower than the 0.05 level of significance. This indicates that the way teachers deliver instruction—whether through expert, formal authority, personal model, facilitator, or delegator styles—is significantly associated with students' mathematics performance. Although the correlation is interpreted as moderate, it nonetheless demonstrates that teaching styles play an important role in shaping how learners understand and engage with mathematical concepts.

The moderate yet significant relationship suggests that when teachers utilize teaching styles that cater to diverse learning needs, students tend to perform better academically. For instance, teaching styles that promote guided practice, clear explanations, collaborative learning, and gradual release of responsibility may help students develop stronger conceptual understanding and mathematical reasoning. Conversely, limited use of supportive teaching behaviors may hinder students' ability to master complex skills, especially in a subject as demanding as mathematics. These findings align with a body of research asserting that pedagogical practices that incorporate clarity, responsiveness, and appropriate structure contribute positively to student achievement.

Similarly, the study found a statistically significant relationship between classroom management strategies and students' academic performance. The computed r-value of 0.421 with a p-value of 0.000 indicates a moderate positive correlation that exceeds the strength of the relationship observed between teaching styles and achievement. This suggests that classroom management exerts an even greater influence on student performance than teaching style alone. Effective classroom management—including the maintenance of a positive learning environment, efficient planning, appropriate pacing, emotional support, and consistent discipline—creates conditions that allow students to focus, participate, and engage meaningfully in mathematics lessons.

The moderate strength of the correlation indicates that while classroom management does not singly determine academic outcomes, it is a crucial factor that significantly supports learning. In mathematics classrooms, where lessons tend to be sequential and cognitively demanding, disruptions can impede instructional flow and contribute to student disengagement. Conversely, smooth transitions, organized activities, and emotionally supportive interactions allow learners to concentrate on solving problems, discussing strategies, and applying mathematical procedures. This helps explain why students in well-managed classrooms typically achieve higher scores.

Collectively, these findings highlight that teaching styles and classroom management strategies are not isolated dimensions of instruction but work interdependently to influence student learning. Teachers who demonstrate mastery of a range of pedagogical techniques and who regulate the classroom environment effectively tend to foster higher academic performance among their students. The significant relationships found in this study underscore the need for professional development programs that strengthen both instructional and managerial competencies of mathematics teachers.

Ultimately, the results of the correlation analyses support the premise that improvements in teaching styles and classroom management can contribute meaningfully to enhanced student performance. These findings validate the importance of continuous teacher training, reflective practice, and implementation of evidence-based pedagogical frameworks. By addressing both instructional delivery and classroom regulatory strategies, educators can create environments that optimize student learning and support stronger outcomes in mathematics.

Proposed Action Plan

Grounded in the results of the study and anchored on the theoretical and legal frameworks discussed, a comprehensive action plan was developed to enhance the teaching effectiveness of junior high school mathematics teachers and improve students' academic performance. The

findings revealed moderate but significant correlations between teaching styles, classroom management strategies, and learner achievement, indicating that improvements in instructional delivery and classroom regulation could substantially strengthen mathematical proficiency. The action plan is therefore designed to address gaps identified in the extent of teaching style utilization and classroom management practices and to support teachers in adopting evidence-based strategies aligned with the MATATAG Curriculum, the Philippine Professional Standards for Teachers (PPST), and relevant DepEd policies.

Central to this action plan is the establishment of targeted capacity-building programs focused on improving teaching styles suited to diverse learners' needs in mathematics. These programs would include structured workshops, coaching sessions, and demonstrations that expose teachers to a variety of instructional methodologies, such as facilitating inquiry-based learning, modeling mathematical reasoning, scaffolding problem-solving tasks, and integrating collaborative learning practices. Emphasis will be placed on helping teachers move beyond traditional teacher-centered instruction and develop a flexible repertoire of teaching strategies that blend expert, facilitator, and delegator roles as appropriate. This instructional enhancement component directly responds to findings indicating that teaching styles exert a meaningful influence on academic performance and must therefore be strengthened to elevate student outcomes.

In addition to pedagogical enhancement, the action plan prioritizes improved classroom management strategies based on Kounin's theoretical principles of withitness, overlapping, momentum, smoothness, and group focus. Professional development initiatives will include training on proactive management techniques, creation of safe and inclusive classroom climates, and development of routines that minimize disruptions and optimize instructional time. Teachers will be guided on reinforcing positive behavior, addressing learning challenges empathetically, and implementing preventive disciplinary approaches that support emotional regulation and promote consistent engagement in mathematics activities. Given that classroom management showed a stronger correlation with academic performance than teaching style, investing in teachers' managerial competence is crucial to sustaining effective mathematics instruction.

To ensure continuous improvement, the action plan incorporates mechanisms for systematic monitoring and evaluation. Teachers will be encouraged to participate in peer coaching or lesson study cycles, allowing them to reflect on practice, observe colleagues, and receive constructive feedback on instructional and managerial behaviors. Students will also be engaged through simple perception surveys that assess their learning experiences, classroom climate, and areas where instruction may be improved. These feedback mechanisms promote transparency, collaboration, and responsiveness, aligning with PPST requirements for reflective practice and DepEd's vision for participatory school governance.

Furthermore, the action plan integrates policy literacy modules aimed at strengthening teachers' understanding of national guidelines such as DepEd Order No. 10, s. 2024 (MATATAG Curriculum), DepEd Order No. 42, s. 2017 (PPST), and DepEd Order No. 21, s. 2019 (K to 12 Policy Guidelines). By familiarizing teachers with policy expectations on curriculum implementation, learner-centered instruction, and assessment standards, the plan ensures that classroom practices remain aligned with national education priorities. This alignment supports the development of well-structured, curriculum-driven mathematics lessons and consistent use of strategies that address learner diversity and promote mastery.

Taken together, these interventions are projected to create a more robust instructional environment where teachers are equipped with the skills, knowledge, and confidence necessary to

deliver high-quality mathematics education. The action plan ultimately aims to cultivate classrooms that are engaging, well-managed, and conducive to meaningful mathematical learning. By systematically strengthening teaching styles and classroom management strategies, the proposed plan responds directly to the needs identified in the study and contributes to the long-term goal of improving student competency and academic performance in mathematics across junior high school levels.

CONCLUSION

The study examined the relationship between the teaching styles and classroom management strategies of junior high school mathematics teachers and the academic performance of students in a public secondary night high school in the Department of Education–Cebu City Division during the school year 2025–2026. Guided by Grasha's Teaching Styles Theory (1996) and Kounin's Classroom Management Theory (1970), and supported by relevant DepEd policies, the investigation sought to determine how these instructional and managerial dimensions influenced learners' achievement in mathematics. Through a descriptive-correlational research design involving 324 randomly selected students drawn proportionately from a population of 1,708, the study utilized validated instruments adapted from the Grasha–Riechmann Teaching Style Inventory and Tacadena's (2021) classroom management indicators, alongside official first-quarter grades. The statistical analyses, which included weighted means, standard deviations, and Pearson's product–moment correlation, provided a comprehensive understanding of the extent to which teachers used various teaching styles and management strategies, as well as how these practices related to student outcomes.

Results showed that mathematics teachers employed their teaching styles to a very high extent, with Expert and Formal Authority approaches emerging as the most dominant. These findings indicate that instruction in the research locale is primarily characterized by structured, content-driven methodologies that emphasize teacher expertise, clarity of explanation, and authoritative guidance. While more student-centered approaches such as the Personal Model, Facilitator, and Delegator styles were also present, they were utilized to a comparatively lower degree. This pattern suggests that although students received strong content scaffolding and clear instructional direction, opportunities for autonomy, collaboration, and inquiry were less frequently integrated into mathematics lessons. Classroom management strategies were likewise implemented to a very high extent, especially in lesson planning, emotional support, discipline, and time management. These domains received the highest ratings, signifying that teachers were highly competent in preparing organized lessons, maintaining consistent expectations, supporting students' emotional needs, and ensuring that time was used productively during mathematics classes. The physical learning environment also received favorable evaluations, though slightly lower than other domains.

Students' academic performance in mathematics, reflected by a mean grade of 83.77 and a standard deviation of 4.56, indicated that most learners performed within the Satisfactory range. The consistency of their grades suggests that mathematics instruction at the school enabled students to meet expected competencies, though only a limited number reached Very Satisfactory or Outstanding levels. Correlational analyses further revealed that teaching styles and classroom

management strategies both had significant but weak positive relationships with student achievement. Notably, teaching styles yielded an r-value of 0.376 at $p = 0.000$, while classroom management produced a slightly higher r-value of 0.421 at $p = 0.000$. These findings suggest that although no single teaching style or management strategy overwhelmingly determined mathematics performance, several components—particularly planning, time management, discipline, and emotional support—played meaningful roles in promoting higher academic outcomes. Conversely, the learning environment, while important, did not exhibit a direct correlation with achievement, implying that structural and physical classroom conditions alone are insufficient to elevate performance without supportive instructional and managerial practices.

Taken together, these results affirm that effective mathematics instruction arises from a dynamic interplay between pedagogical expertise and strategic classroom management. The significant positive correlations between content-centered teaching styles and achievement highlight the importance of teacher clarity, structured guidance, and depth of subject knowledge in fostering mathematical understanding. At the same time, the influence of classroom management variables demonstrates that well-planned lessons, efficient time use, consistent discipline, and emotional responsiveness create learning environments in which students can thrive academically. The findings also underscore the need for a balanced approach that not only maintains strong teacher authority and content mastery but also integrates student-centered methods that cultivate autonomy, collaboration, and deeper engagement with mathematical concepts.

In response to these findings, the study's proposed action plan provides a strategic framework aimed at strengthening teachers' instructional and managerial competencies. The plan emphasizes capacity-building initiatives in lesson planning, instructional time management, emotional support, and consistent classroom discipline, alongside professional development programs designed to refine teachers' use of Expert and Formal Authority styles while expanding their facility with the Personal Model, Facilitator, and Delegator styles. The action plan also calls for systematic monitoring and evaluation, peer observation cycles, learning environment enhancement, and alignment with DepEd policies such as the MATATAG Curriculum and the Philippine Professional Standards for Teachers. Through these coordinated interventions, the plan seeks to create sustainable improvements in mathematics instruction and ultimately elevate student achievement.

Based on the results of the study, it is recommended that school administrators and DepEd officials formally adopt and implement the action plan as part of institutional policy, ensuring that adequate resources, training opportunities, and administrative support are provided. Professional development efforts should prioritize strengthening teachers' planning skills, time management techniques, emotional support strategies, and discipline systems, as well as enhancing their mastery of effective teaching styles. Incentive structures that recognize exemplary instructional practice and improvements in student outcomes are likewise encouraged to promote a culture of continuous improvement. Teachers are further urged to participate actively in professional learning communities, engage in reflective practice, diversify their teaching strategies, and maintain emotionally supportive and well-managed classrooms. For future research, the study recommends conducting longitudinal investigations, exploring mediating or moderating variables, examining contextual factors such as class size and resource availability, and performing comparative analyses across different educational settings to broaden the applicability of the findings. Collectively, these recommendations support the larger goal of fostering mathematics classrooms

that are equitable, well-managed, and instructionally rich, thereby enabling students to achieve higher levels of academic success.

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