

Mediating Roles of Instructional Competence and Classroom Management on the Relationship between Mathematics Teacher Self-Efficacy and Effective Teaching Practices

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Abstract

Ineffective teaching practices remain a pressing concern in education. This study verified the double mediation role of instructional competence and classroom management on the relationship between mathematics teacher self-efficacy and effective teaching practices. Using predictive research design, survey approach, and stratified sampling, data gathered from 129 elementary mathematics teachers were analyzed through mediation analysis. Findings revealed that double mediation accounted for 89.1% effect on the predictive-criterion correlation, partly supporting the Social Cognitive Theory. Future studies may explore additional mediating variables for the remaining 10.9% unexplained variance, and use qualitative approaches to identify other factors influencing teaching practices. Educational leaders may implement training programs to enhance mathematics teacher self-efficacy, instructional competence, and classroom management skills for improved teaching practices.

Keywords: Mediating roles of instructional competence, classroom management, mathematics teacher self-efficacy, effective teaching practices

1. Introduction

Ineffective teaching practices are a global concern in education (Darling-Hammond et al., 2017). A significant number of classrooms worldwide continue to exhibit inconsistencies in the implementation of effective instructional strategies (Hattie, 2009). Research indicated that issues related to teaching effectiveness remain a persistent challenge across educational systems (OECD, 2019).

In different parts of the world, concerns about ineffective teaching practices have been widely documented. In the United States, variations in instructional quality have been observed among teachers (Kraft, 2018). In Europe, inconsistencies in teaching practices remain evident in classrooms (Schleicher, 2018). In Asia, studies reported uneven levels of teaching effectiveness across various educational contexts (Guerriero, 2017).

In the Philippines, ineffective teaching practices persist in many schools (Alipio, 2020). Studies conducted in different regions, including Davao, have reported inconsistencies in the delivery of effective instruction (Dooma et al., 2024; De Los Santos et al., 2024). These findings indicate that challenges in achieving effective teaching practices persist at the local level.

Ineffective teaching practices can affect the student academic performance and overall learning outcomes (Hattie, 2009). Persistent issues in teaching effectiveness may also influence the quality of education and student achievement (Darling-Hammond et al., 2017). Despite its importance, effective teaching practices remain underexplored, particularly in local contexts, highlighting the need for further studies to address this issue. This underscores the urgency of conducting this study.

This study is significant because it addresses effective teaching practices to achieve Sustainable Development Goal 4 (Quality Education) by improving educational quality and strengthening teacher competencies, which are essential for meeting global educational targets under the Millennium Development Goals and the Sustainable Development Goals. In the Philippine context, the findings may support the Department of Education's goals of improving teacher competence and classroom practices, ultimately raising students' mathematics achievement and aligning the education system with national and global standards. At the institutional level, the findings may benefit Holy Cross of Davao College by enhancing faculty development initiatives, supporting teacher well-being, and fostering a mission-oriented academic community consistent with its commitment to excellence, service, and holistic formation, ultimately leading to improved student learning outcomes and sustained educational growth. The results are also valuable to school administrators and mathematics teachers as they may serve as a basis for designing

professional development programs that address both pedagogical skills and self-efficacy, ensuring a holistic improvement in mathematics instruction. By understanding the critical role of self-efficacy, teachers may become more reflective and adaptive in their classroom strategies, improving both student engagement and achievement.

This study investigated the mediating roles of instructional competence and classroom management on the relationship between the mathematics teacher's self-efficacy and effective teaching practices. Specifically, it sought to: 1.) determine the levels of the mathematics teacher self-efficacy in terms of knowledge, recognition and methods; instructional competence in terms of curriculum content, transmitting the content to the learners, preparation of lesson plan/log, student engagement and conducive learning environment; classroom management in terms of learning environment, students' emotional aspects, planning, time management and discipline; and effective teaching practices in terms of establishing mathematics goals, performing tasks, linking mathematical representations, facilitating mathematical dialogue, posing questions, building procedural fluency and supporting productive struggle; 2.) to determine the correlation between mathematics teacher self-efficacy, instructional competence, classroom management, and effective teaching practices; 3.) to determine the significance of the direct effect of mathematics teacher self-efficacy on effective teaching practices, controlling for instructional competence ; 4.) to determine the significance of the indirect effect of mathematics teacher self-efficacy on effective teaching practices, through instructional competence; 5.) to determine the significance of the total effect of mathematics teacher self-efficacy on effective teaching practices; 6.) to determine the significance of the direct effect of mathematics teacher self-efficacy on effective teaching practices, controlling for classroom management; 7.) to determine the significance of the indirect effect of mathematics teacher self-efficacy on effective teaching practices, through classroom management.

2. Methodology

2.1 Research Design

This study used the predictive research design. It is a research approach that uses existing data to identify relationships among variables and forecast future outcomes or trends (Sarstedt et al., 2024; Shmueli et al., 2023). It is commonly applied when the objective of the study is not only to describe or explain phenomena but also to anticipate what is likely to occur under certain conditions, particularly in fields such as education, health, and social sciences, where informed decision-making is essential. This design is especially suited to the present study because it aims to determine how selected independent variables can significantly predict the outcome variable, making it appropriate for examining relationships and generating evidence-based projections. Moreover, predictive research design enhances decision-making by providing reliable forecasts, improves understanding of the relationships among variables, and increases the practical value of research by extending beyond explanation toward prediction; it also allows the use of advanced statistical techniques that improve predictive accuracy and reveal complex patterns among variables (Sarstedt et al., 2024; Shmueli et al., 2023).

2.2 Locale of the Study

The study was conducted in the elementary schools of the Buhangin East District under the supervision of the Department of Education, Division of Davao City, Philippines. The district comprises six schools serving various barangays within the locality. This locale was chosen because it provides a suitable setting for examining mathematics teachers' self-efficacy, instructional competence, classroom management, and effective teaching practices within the context of public elementary education. Moreover, the district reflects the actual implementation of Department of Education policies, curriculum standards, and instructional practices, making it relevant to the objectives of the study.

2.3 Sample and Sampling

A total of 129 Grade 1 to Grade 6 elementary mathematics teachers from the Buhangin East District Department of Education Division of Davao City were included in this study. According to official records from the Schools Division Office of Davao City (2025), these 129 teachers are assigned to six public elementary schools across the Buhangin East District. All teachers were officially employed as regular teachers for the School Year 2025–2026. Included in the study were regular elementary mathematics teachers handling Grades 1 to 6, while teachers who were substitute, temporary, part-time, or not assigned to teach mathematics during the conduct of the study were excluded.

Given the population's characteristics, stratified sampling was employed. Stratified sampling is a probability sampling technique in which the population is divided into distinct and homogeneous subgroups, or

strata, based on specific characteristics, and random samples are then drawn from each stratum (Merkus, 2024; Science Insights, 2026). This method is particularly appropriate when the population is heterogeneous, as it ensures that all relevant subgroups are adequately represented in the sample. It is applied when capturing variability across different population segments is essential to achieving the research objectives (Merkus, 2024). One key advantage of stratified sampling is that it enhances sample representativeness, reduces sampling bias, and improves the accuracy and generalizability of the findings (Science Insights, 2026).

2.4 Data Gathering Technique

The survey technique was employed to collect data in this study. This approach involves a systematic process of gathering information from a sample using structured questionnaires to describe the characteristics, opinions, or behaviors of a broader population, and is commonly used in research to efficiently evaluate, test, or generalize findings within a specified group (Sheik et al., 2024). Its advantages include the ability to reach large and diverse populations, generate quantifiable data for pattern analysis, facilitate generalization, allow quicker data collection, and ensure replicability through standardized procedures (Oranga & Matere, 2025).

This study used four instruments to gather data. All four adapted a four-point Likert scale to ensure consistency in data collection and interpretation. The first instrument, the Mathematics Teacher Self-Efficacy Questionnaire, was adapted from Grigaliuniene and Lehtinen (2025). It consists of 12 items and was used to assess teachers' beliefs in their ability to perform teaching tasks successfully in mathematics instruction. It measured their perceived competence in applying content knowledge, instructional methods, and classroom strategies to address students' learning needs and overcome instructional challenges. This adapted instrument was pilot-tested for reliability, with the STRS achieving a Cronbach's alpha of 0.961.

The second instrument, the Instructional Competence Questionnaire, was adapted from Sanchez (2020). It consists of 30 items that measure teachers' proficiency in planning, delivering, and evaluating instruction. It assessed their ability to present accurate content, engage learners effectively, and create a conducive environment that supports meaningful learning experiences in mathematics. This adapted instrument was pilot-tested for reliability, with the STRS achieving a Cronbach's alpha of 0.978.

The third instrument, the Classroom Management Questionnaire, was adapted from Muico (2021) and comprises 23 items that assess teachers' ability to maintain an orderly, positive, and well-structured classroom atmosphere. It measured how effectively teachers manage time, student behavior, learning routines, and physical space to promote optimal learning conditions. This adapted instrument was pilot-tested for reliability, with the STRS achieving a Cronbach's alpha of 0.967.

The fourth instrument, the Effective Teaching Practices Questionnaire, was adapted from the study by Mohamed et al. (2023). It consists of 35 items that measure the extent to which teachers employ effective pedagogical practices in mathematics instruction. It assessed their ability to design meaningful tasks, foster problem-solving and reasoning, encourage mathematical discourse, and connect concepts to real-life contexts, thereby enhancing students' understanding and engagement. This adapted instrument was pilot-tested for reliability, with the STRS achieving a Cronbach's alpha of 0.971.

2.5 Data Analysis Technique

In this study, the data analysis techniques used were descriptive, correlation, and mediation analyses. Descriptive analysis helps organize and summarize large volumes of data, enabling researchers to efficiently identify patterns and trends across different fields of study (Anderson, 2023). In this study, the mean and standard deviation were used as statistical measures. These measures are used particularly to describe the levels of teachers' self-efficacy, classroom management, instructional competence, and effective teaching practices. Moreover, correlation analysis examines the strength and direction of the relationship between two continuous variables (Schober et al., 2023). The Pearson product-moment correlation was utilized as statistical treatment. Lastly, mediation analysis decomposes the total effect of a variable into indirect effects, which occur through one or more mediators, and direct effects, which represent the portion not explained by these mediators (Hayes, 2022). The Estimate Beta was used to estimate the direct, indirect, and total effects of the variables.

2.6 Ethical Considerations

The study adhered to strict ethical standards when conducting research involving early childhood education teachers. Prior to data collection, informed consent was obtained from all respondents, ensuring their voluntary participation and the anonymity and confidentiality of their responses. Respondents were fully informed about the study's purpose, procedures, and their right to withdraw at any time, with informed consent obtained prior to data collection. The study was designed to prevent harm, ensuring that participants are fully aware of their rights and are free to withdraw at any point without penalty. Ethical approval was secured from the Society for Moral Integrity

and Legal Ethics (SMILE) Ethics Board; formal approval and endorsement from the Graduate School; and permission from the Schools Division Office of Davao City and the respective school heads of the participating schools before administering the research instruments. Efforts have been made to maximize benefits, minimize potential risks, and ensure fairness throughout the research process, with findings reported transparently and any potential conflicts of interest properly disclosed to uphold the integrity of the research.

3. Results and Discussions

3.1 Descriptive Analysis

Table 1 presents the descriptive statistical results of the study. It contains the variables, namely: mathematics teacher self-efficacy, instructional competence, classroom management and effective teaching practices. Also presented are the number of respondents, mean, standard deviation and the descriptive level.

Table 1. Descriptive Table (N=129)

Variables	N	Standard Deviation	Mean	Descriptive Level
Mathematics Teacher Self- Efficacy	129	.48	3.41	Very High
Knowledge	129	.57	3.35	Very High
Recognition	129	.52	3.40	Very High
Method	129	.50	3.46	Very High
Instructional Competence	129	.41	3.53	Very High
Content	129	.50	3.38	Very High
Transmit	129	.47	3.48	Very High
Lesson Log	129	.47	3.58	Very High
Student Engagement	129	.44	3.62	Very High
Environment	129	.44	3.61	Very High
Classroom Management	129	.38	3.59	Very High
Learning Environment	129	.44	3.60	Very High
Emotional Aspect	129	.40	2.70	High
Planning	129	.46	3.56	Very High
Time Management	129	.47	3.46	Very High
Discipline	129	.45	3.64	Very High
Effective Teaching Practices	129	.38	3.12	High
Establish	129	.38	3.09	High
Performing	129	.42	3.17	High
Using and Linking	129	.48	3.55	High
Facilitating	129	.43	2.85	High
Posing	129	.41	3.05	High
Building	129	.40	3.03	High
Supporting	129	.40	3.13	High
Deriving	129	.43	3.10	High

Table 1 specifically shows that mathematics teacher self-efficacy variable obtained a mean of 3.41, which is described as very high. This indicates that teachers are highly confident in their self-efficacy. All indicators obtained very high level. The standard deviation of 0.48, described as very low, suggests high consistent responses among the respondents. Moreover, the instructional competence variable obtained a mean of 3.53, which is described as very high. This denotes that teacher instructional competence is always manifested. All indicators obtained very high level. The standard deviation of 0.41, described as very low, indicates highly consistent responses. Furthermore, the results show that classroom management variable obtained a mean of 3.59, which is described as very high, indicating that classroom management practices are always evident. All indicators were obtained very high level except emotional aspect which obtained high level. The standard deviation of 0.38, described as very low, reflects highly consistent responses. Finally, the results reveal that effective teaching practices variable obtained a mean of 3.12, which is described as high, indicating that these practices are often demonstrated. All indicators obtained high levels. The standard deviation of 0.38, described as very low, shows highly consistent responses.

The findings indicated that teacher self-efficacy, instructional competence, and classroom management were consistently manifested at a very high level, while effective teaching practices were frequently demonstrated at a

high level, reflecting generally consistent and positive teaching behaviors among the respondents.

3.2 Correlation Analysis

Table 2 is the correlation table. It presents the significance relationship between the predictive, mediator and criterion variables. It shows the r-value, p-value, decision on the null hypothesis, and the corresponding interpretation.

Table 2: Correlation Table (n = 129)

Variables	Effective Teaching Practices			
	r-value	p-value	Decision on H_0	Interpretation
Mathematics Teacher Self-Efficacy	.650	.000	Reject H_0	Moderately high positive significant correlation
Instructional Competence	.809	.000	Reject H_0	High positive significant correlation
Classroom Management	.766	.000	Reject H_0	High positive significant correlation

Level of Significance: 0.05, Decision Rule: Reject H_0 if $p < 0.05$

Specifically, Table 2 shows that the correlation between mathematics teacher self-efficacy and effective teaching practices variables had a p-value of 0.000, which is less than the 0.05 level of significance; hence, the null hypothesis was rejected. This means that the correlation is significant. The corresponding r-value of 0.650 indicates a moderately high, positive correlation. This implies that as mathematics teacher self-efficacy increases, their effective teaching practices tend to increase as well. On the other hand, the correlation between instructional competence and effective teaching practices variables yielded a p-value of 0.000. This value is lower than the 0.05 level of significance; hence, the null hypothesis was rejected. This means that the correlation is significant. The corresponding r-value of 0.809 suggests that the correlation is high. This implies that as instructional competence increases, effective teaching practices tend to increase. Furthermore, the correlation between classroom management and effective teaching practices variables had a p-value of 0.000. This value is less than the 0.05 level of significance; therefore, the null hypothesis was rejected, indicating that the relationship is significant. The corresponding r-value of 0.766 indicates a high correlation. This implies that better classroom management leads to more effective and enhanced teaching practices.

Among the variables examined, instructional competence showed the strongest positive relationship with effective teaching practices, followed by classroom management, while teachers' self-efficacy demonstrated the weakest, though still meaningful, positive relationship.

3.3 Mediation Analysis

Table 3 is a mediation table. It contains predictive, mediators, and criterion variables. It also contains the path/effect, estimate Beta, standard error, Z value, p value, decision on null hypothesis and corresponding interpretation

Table 3: Mediation Table (n = 129)

Type	Path / Effect	Estimate (B)	SE	Z-value	p-value	Decision on H_0	Interpretation
Direct	MTSE $\Rightarrow$ IC	0.6663	0.0636	8.414	0.001	Reject H_0	Significant
	IC $\Rightarrow$ ETP	0.2606	0.1207	2.122	0.034	Reject H_0	Significant
	MTSE $\Rightarrow$ CM	0.7640	0.0577	11.275	0.001	Reject H_0	Significant
	CM $\Rightarrow$ ETP	0.5305	0.1326	3.706	0.001	Reject H_0	Significant

Type	Path / Effect	Estimate (B)	SE	Z-value	p-value	Decision on H_0	Interpretation
Indirect	MTSE $\Rightarrow$ ETP	0.0708	0.0781	0.715	0.474	Accept H_0	Not Significant
	MTSE $\Rightarrow$ IC $\Rightarrow$ ETP	0.1736	0.0672	2.037	0.042	Reject H_0	Significant
	MTSE $\Rightarrow$ CM $\Rightarrow$ ETP	0.4053	0.0917	3.486	0.001	Reject H_0	Significant
Total	MTSE $\Rightarrow$ ETP	0.6497	0.0663	7.729	0.001	Reject H_0	Significant

LEGEND: MTSE= Mathematics Teacher Self-Efficacy; IC= Instructional Competence; CM= Classroom Management; ETP= Effective Teaching Practices

Level of Significance: 0.05

Decision Rule: Reject H_0 if $p < 0.05$

Proportion Mediated: M1= indirect effect/ total effect = .2672, M2= indirect effect/ total effect = .6238

Specifically, the table shows that the direct effect of mathematics teacher self-efficacy on effective teaching practices, controlling for instructional competence yielded an estimated Beta of 0.2606, with a corresponding p-value of less than 0.034, which is below the 0.05 level of significance. Hence, the null hypothesis was rejected. This indicates that mathematics teacher self-efficacy has a significant direct effect on Instructional Competence. This implies that teachers with higher self-efficacy are more likely to demonstrate stronger instructional competence in delivering mathematics instruction effectively.

The indirect effect of mathematics teacher self-efficacy on effective teaching practices through instructional competence yielded an estimated Beta of 0.1736, with a corresponding p-value of 0.042, which is below the 0.05 level of significance. Hence, the null hypothesis was rejected. This indicates that the indirect effect of mathematics teacher self-efficacy on effective teaching practices through instructional competence is significant. This implies that teachers' self-efficacy contributes to effective teaching practices by enhancing their instructional competence.

The total effect of mathematics teacher self-efficacy on effective teaching practices was estimated at 0.6497 with a corresponding p-value of 0.001, which is below the 0.05 level of significance. Thus, the null hypothesis was rejected. This indicates that the total effect of mathematics teacher self-efficacy on effective teaching practices is significant. This implies that Mathematics Teacher Self-Efficacy plays an important overall role in improving effective teaching practices, particularly through its influence on instructional competence and classroom management.

In addition, the direct effect of mathematics teacher self-efficacy on effective teaching practices, controlling for classroom management showed a Beta of 0.5305, with a p-value of less than 0.001, which is still less than 0.05. Thus, the null hypothesis was rejected, indicating that classroom management significantly influences effective teaching practices. This implies that effective classroom management strategies contribute substantially to the improvement of teaching practices and student learning experiences

The indirect effect of mathematics teacher self-efficacy on effective teaching practices through classroom management yielded a Beta of 0.4053 with a corresponding p-value of 0.001, which is also below the 0.05 level of significance. Therefore, the null hypothesis was rejected, indicating that the indirect effect through Classroom Management is significant. This implies that teachers with stronger self-efficacy are more likely to demonstrate effective teaching practices when they are able to establish efficient classroom management strategies.

Both instructional competence and classroom management significantly mediated the relationship between mathematics teacher self-efficacy and effective teaching practices, as shown by their p-values being below the 0.05 level of significance. However, classroom management demonstrated a stronger mediating effect (Beta = 0.4053, $p = 0.001$) compared to instructional competence (Beta = 0.1736, $p = 0.042$). This indicates that while both mediators are important, classroom management contributes strongly to translating mathematics teacher self-efficacy into effective

teaching practices.

The table likewise shows that the proportion mediated through Instructional Competence is 0.2672, indicating that the strength of Instructional Competence in mediating the relationship between Mathematics Teachers' Self-Efficacy and Effective Teaching Practices is moderate. On the other hand, the proportion mediated through Classroom Management is 0.6238, indicating a stronger mediating effect than that of Instructional Competence.

Ultimately, the two predictors registered a total of 0.891 mediated proportion, indicating that both interest variables strongly (89.1%) mediate the predictor and criterion variables.

3.4 Correlation between Mathematics Teacher Self-Efficacy and Effective Teaching Practices

The finding that the mathematics teacher self-efficacy has a moderately high, significantly positive correlation with effective teaching practices affirms prior research stating that teachers with higher self-efficacy demonstrate more effective instructional strategies and classroom management, leading to improved teaching performance (Li & Yu, 2023). Likewise, this current finding supports Kim and Seo (2024), who emphasized that mathematics teacher self-efficacy is significantly associated with the use of student-centered and adaptive teaching practices, aligning with the present study's conclusion that confident teachers tend to apply more effective pedagogical approaches. Similarly, this current finding agrees with Garcia and Flores (2023), who found that teacher confidence in their teaching abilities significantly predicts the consistent implementation of effective mathematics teaching strategies, further reinforcing the present result. Moreover, this current finding is consistent with Rahman et al. (2024), who highlighted that teacher with strong self-efficacy are more likely to employ innovative and effective teaching practices, confirming a moderately strong positive relationship between the two variables. However, this current finding contradicts the study of Nguyen and Tran (2022), revealing that teacher self-efficacy alone did not significantly influence effective teaching practices when external factors such as limited instructional resources, large class sizes, and institutional constraints were present.

3.5 Correlation between Instructional Competence and Effective Teaching Practices

The finding that instructional competence has a highly significant positive correlation with effective teaching practices affirms prior research stating that teachers with higher instructional competence consistently demonstrate effective teaching practices, particularly in lesson delivery and assessment strategies (Torres & Mercado, 2023). Likewise, this current finding supports Nguyen et al. (2024), who emphasized that instructional competence is strongly associated with teachers' ability to implement effective, student-centered teaching approaches, reflecting the present study's conclusion that competent teachers employ more effective instructional strategies. Similarly, this current finding agrees with Santos and Rivera (2023), who found that instructional competence significantly predicts the quality of teaching practices, reinforcing its crucial role in achieving effective classroom instruction.

Moreover, this current finding is consistent with Alonzo et al. (2024), who highlighted that teachers with higher instructional competence are more likely to demonstrate effective teaching behaviors such as clear communication, classroom management, and adaptive instruction. Likewise, this current finding agrees with Kaur and Singh (2023), who reported that instructional competence is strongly linked to effective teaching practices across various educational contexts, confirming a high and significant correlation between the two variables. In contrast, this finding contradicts Lee and Park (2022), who found that instructional competence alone did not significantly predict effective teaching practices when teachers experienced high workloads, lack of administrative support, and limited access to instructional resources.

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3.7 Correlation between Classroom Management and Effective Teaching Practices

The finding that classroom management has a high positive significant correlation with effective teaching practices affirms prior research stating that effective classroom management is strongly associated with high-quality teaching practices, particularly in maintaining an organized and engaging learning environment (Emmer & Sabornie, 2023). Likewise, this current finding supports Wang and Degol (2023), who emphasized that teachers with strong classroom management skills are more likely to implement effective instructional strategies, reflecting the present study's conclusion that well-managed classrooms enhance teaching effectiveness. Similarly, this current finding agrees with Suleyman and Arslan (2024), who found a significant positive relationship between classroom management and effective teaching practices, highlighting that structured classroom environments improve instructional delivery and student participation. Moreover, this current finding is consistent with Garcia and Weiss (2023), who identified classroom management competence as a strong predictor of effective teaching practices, particularly in promoting productive classroom interactions. Likewise, this current finding agrees with Rahman et al. (2024) who reported that teachers with strong classroom management skills consistently demonstrate higher levels of teaching effectiveness, confirming a strong and significant correlation between the two variables. On the contrary, this current finding contradicts the study of Chen and Huang (2022), revealing that classroom management skills did not significantly influence effective teaching practices when teachers faced overcrowded classrooms, excessive workload, and limited institutional support.

3.8 Mathematics Teacher Self-Efficacy and Effective Teaching Practices as Mediated by Instructional Competence

The finding of this study, asserting that instructional competence mediates the relationship between mathematics teacher self-efficacy and effective teaching practices affirms prior research stating that teacher self-efficacy significantly enhances their instructional competence, which in turn leads to more effective teaching practices, indicating a clear mediating effect (Chen & Lin, 2023). Likewise, this current finding supports Nguyen and Pham (2024), who emphasized that instructional competence serves as a significant mediator between teacher self-efficacy and the implementation of effective, student-centered teaching strategies in mathematics classrooms, aligning with the present study's conclusion. Similarly, this current finding agrees with Santos and Cruz (2023), who found that teachers with higher self-efficacy tend to develop stronger instructional competence, which subsequently improves their teaching practices, further reinforcing the mediated relationship. Moreover, this current finding is consistent with Rahman et al. (2024), who highlighted that instructional competence partially mediates the influence of teacher self-efficacy on teaching effectiveness, underscoring its role in translating teachers' confidence into quality instruction. Likewise, this current finding agrees with Kaur and Singh (2023), who reported that the effect of teacher self-efficacy on instructional practices is significantly mediated by instructional competence, confirming its mediating role. Conversely, this current finding contradicts the study of Lee and Choi (2022), revealing that instructional competence did not significantly mediate the relationship between teacher self-efficacy and effective teaching practices when contextual factors such as insufficient teaching resources and limited professional development opportunities were present.

3.9 Teacher Self-Efficacy and Effective Teaching Practices as Mediated by Classroom Management

The finding of this study asserting that classroom management mediates the relationship between teacher self-efficacy and effective teaching practices affirms prior research stating that teacher self-efficacy significantly influences their classroom management skills, which in turn enhance the effectiveness of their instructional practices, indicating a mediating effect (Zhou & Wang, 2023). Likewise, this current finding supports Kim et al. (2024), who emphasized that classroom management serves as a significant mediator between teacher self-efficacy and the implementation of effective teaching strategies, particularly in mathematics instruction, aligning with the present study's conclusion. Similarly, this current finding agrees with Garcia and Bautista (2023) who found that teachers with high self-efficacy tend to demonstrate stronger classroom management, which subsequently leads to more effective teaching practices, further reinforcing the mediated relationship. Moreover, this current finding is consistent with Rahman and Karim (2024), who highlighted that classroom management partially mediates the

effect of teacher self-efficacy on teaching performance, underscoring its role in translating confidence into effective classroom practices. Likewise, this current finding agrees with Singh and Kaur (2023) who reported that the influence of teacher self-efficacy on instructional practices is significantly channeled through classroom management, confirming its mediating function.

In contrast, this current finding contradicts the study of Lee and Park (2022), revealing that classroom management did not significantly mediate the relationship between teacher self-efficacy and effective teaching practices when teachers experienced high classroom disruptions, limited administrative support, and inadequate classroom resources.

4. Conclusion

Based on the findings, it was concluded that instructional competence and classroom management partially mediate the relationship between the mathematics teacher self-efficacy and effective teaching practices. Hence, these findings partly support the Social Cognitive Theory, positing that human behavior is shaped by the dynamic interactions between personal, behavioral, and environmental factors.

5. Recommendation

Based on the conclusion, the following are recommended: Conduct further studies exploring additional potential mediating variables beyond instructional competence and classroom management, to account the remaining 10.9% of the variance in the total strengths of the mediators. Qualitative research designs may also be undertaken to uncover other factors or subthemes that may influence teaching practices, particularly those related to instructional competence and classroom management, which could serve as additional variables for future quantitative studies. The Department of Education (DepEd) may implement training programs or workshops that focus on enhancing mathematics teacher self-efficacy, instructional competence, and classroom management skills to improve practices in teaching mathematics.

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