

Motivation-Driven Instruction: Exploring Teaching Styles in Grade 4 Mathematics in Montalban District, Rizal

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Abstract: Effective mathematics teaching necessitates methods that maintain student motivation, promote active engagement, and tackle classroom issues impacting academic achievement. Analyzing teachers' motivational techniques and teaching methods offers crucial insights for enhancing elementary mathematics education. This study explored the views of Grade 4 Mathematics teachers in the Montalban District, Division of Rizal, on motivational strategies, teaching methods, and challenges faced in math instruction. A descriptive-survey research design was utilized, involving 28 Grade 4 Mathematics teachers chosen through total enumeration sampling. Data collection was conducted using a validated researcher-developed questionnaire, with analysis through frequency, percentage, weighted mean, and standard deviation. The results indicated that most participants were experienced, professionally qualified, and had engaged in various in-service training programs. Teachers concurred those motivational strategies significantly improved students' learning, with challenging mathematical tasks and highlighting the relevance of mathematical concepts receiving top ratings. Respondents also noted that learner-centered teaching methods were widely used, especially teaching by example, offering constructive feedback, and setting clear learning expectations. Among the instructional challenges identified, limited community involvement in math-related activities was the most pressing issue, while shortages in teaching resources and professional development opportunities were seen as moderately serious. Based on these results, an intervention plan focusing on professional development, learner-centred instruction, contextualized teaching materials, collaborative coaching, and ongoing monitoring was suggested to enhance mathematics teaching practices. The findings highlight the necessity of continuous teacher development, motivational teaching approaches, and stakeholder collaboration to create engaging math classrooms and improve students' educational outcomes.

Keywords: *Motivation Strategies; Mathematics Teaching; Teaching Styles; Elementary Mathematics Education; Learner-Centered Instruction.*

INTRODUCTION

Mathematics is a key subject that is crucial for building skills such as critical thinking, problem-solving, and logical reasoning, which are important for doing well in school and life. Globally, there is considerable concern about students not performing well in mathematics and losing interest, which can hinder both education and the economy. Therefore, it is important for teachers to be motivated and use different teaching styles to get students more involved and to improve their grades. Research shows that good teaching methods, especially those that give students some freedom and structure, help them develop a positive attitude and self-confidence in mathematics, which boosts their performance (Awado et al., 2024). Globally, organizations understand that quality education depends on these practices, encouraging teaching that focuses on students and adapts to their needs and abilities.

In the Philippines, doing well in mathematics is still a challenge, as shown by both national and

international tests. To address this, the Department of Education has rolled out curriculum changes and professional development programs to boost the quality of math teaching. It is important to get elementary students excited about math to build strong basic skills. Teachers are encouraged to use teaching methods that fit different learning styles to make the most of their lessons. However, Filipino math teachers face some hurdles, such as not having enough content knowledge, resources, and training, especially those teaching subjects outside their expertise (out-of-field teaching) (Rebato Mercado & Moraleta Morante, 2024). Tackling these issues is key to improving how mathematics is taught and, in the end, how students perform in mathematics across the country (Luzano, 2024).

In the Montalban District, Division of Rizal, Grade 4 students are having a tough time grasping mathematical concepts and solving problems. This situation calls for a closer look at how teaching is done and what motivates students in the classroom. Observations show that teachers are trying different motivation strategies and teaching styles, which definitely impact how engaged and understanding the students are. Grade 4 Mathematics teachers are up against some big challenges, such as not having enough teaching materials, dealing with low student motivation, and managing the classroom effectively. Experiences from other schools suggest that management issues can hinder the creation of a learning environment that is crucial for student success, and it takes teamwork among teachers, parents, and educational authorities to tackle this (Siddique et al., 2024). When teaching styles match students' learning styles, academic performance tends to improve; thus, mismatches might be part of the problem (Clavido & Macalisang, 2024). By assessing motivation strategies and teaching styles, we can pinpoint issues, inform interventions, and guide the development and allocation of resources to boost mathematics instruction and student outcomes in the district (Rebato Mercado & Moraleta Morante, 2024).

While many studies have examined student achievement in mathematics, few have focused on how elementary teachers perceive motivation strategies and teaching styles. Most research is aimed at secondary or higher education, leaving Grade 4 classrooms somewhat overlooked. Moreover, there is little local data on the effectiveness of motivation strategies among Grade 4 Mathematics teachers in the Montalban District. There is also a gap in studies that address motivation strategies, teaching styles, and instructional challenges simultaneously. This study aims to fill these gaps by exploring Grade 4 teachers' perceptions with the goal of improving teaching practices and interventions in mathematics.

RESEARCH QUESTIONS

This study aimed to determine the perceptions of Grade 4 Mathematics teachers regarding motivation strategies and teaching styles in mathematics instruction. Specifically, this study sought to answer the following research questions:

1. What is the demographic profile of Grade 4 Mathematics teachers in terms of age, gender, civil status, highest educational attainment, position, performance rating, years of teaching experience, and number of in-service training sessions attended?
2. To what extent are the motivation strategies used by Grade 4 Mathematics teachers effective in enhancing pupils' learning?
3. What teaching styles do Grade 4 mathematics teachers commonly employ in mathematics instruction?
4. What challenges do Grade 4 Mathematics teachers encounter while teaching Mathematics?
5. Based on the findings of the study, what intervention strategies may be proposed to enhance motivation and teaching practices in Grade 4 mathematics?

METHODS

Research Design

This study employed a **descriptive-survey research design** to determine the perceptions of Grade 4

Mathematics teachers regarding motivation strategies, teaching styles, and challenges encountered in teaching mathematics. The descriptive-survey method was appropriate because it systematically described existing conditions, instructional practices, and respondents' perceptions without manipulating any variables. The design enabled the researcher to gather quantitative data that accurately reflected the current instructional practices of Grade 4 mathematics teachers and served as the basis for proposing an intervention plan to enhance mathematics instruction in the future.

Locale of Study

The study was conducted in selected public elementary schools within the Montalban District, Division of Rizal, during the second semester and summer of the school year 2025–2026. The district was selected because it consists of public elementary schools with Grade 4 mathematics teachers who are actively involved in classroom instruction and the implementation of various teaching strategies. The locale provided an appropriate setting for examining teachers' motivation strategies, teaching styles, and instructional challenges in elementary mathematics education.

Respondents of the Study

The respondents of the study consisted of 28 Grade 4 Mathematics teachers from selected public elementary schools in the Montalban District, Rizal. They were chosen because they are directly responsible for teaching Grade 4 Mathematics and possess relevant knowledge and experience regarding learner motivation, instructional strategies, and classroom challenges. Their responses provided valuable information necessary for achieving the study objectives.

Sampling Technique

This study utilized total enumeration sampling, in which all qualified Grade 4 Mathematics teachers in the selected public elementary schools were included as the respondents. Since the target population was relatively small, total enumeration ensured that every eligible teacher participated in the study, thereby providing a complete representation of the population and minimizing sampling bias. This sampling technique increased the reliability and comprehensiveness of our findings.

Research Instrument

The researcher used a researcher-made structured questionnaire as the primary data collection instrument. The questionnaire was developed through an extensive review of the related literature and previous studies on motivation strategies, teaching styles, and instructional challenges in mathematics education. It consisted of four sections covering the respondents' demographic profiles, motivation strategies, teaching styles, and problems encountered in teaching mathematics. The instrument was subjected to expert validation to ensure content validity before administration. Responses to the perception statements were measured using a five-point Likert scale, with higher ratings indicating greater agreement or higher levels of perceived seriousness.

Data Gathering Procedure

Before conducting the study, the researcher secured approval from the appropriate educational authorities and obtained permission from the heads of participating schools. After receiving approval, the purpose, objectives, and significance of the study were explained to the respondents, and informed consent was obtained prior to the data collection. The questionnaires were personally distributed to the respondents and retrieved after they were completed. All complete questionnaires were checked for completeness, encoded, and organized for statistical analysis while ensuring that the confidentiality and anonymity of the respondents were maintained throughout the research process.

2.7 Statistical Treatment of Data

The collected data were analyzed using appropriate descriptive statistics. Frequencies and percentages

were used to describe the respondents' demographic profiles. The weighted mean and standard deviation were computed to determine the respondents' perceptions regarding the motivation strategies, teaching styles, and challenges encountered in teaching Mathematics. The weighted mean was used to determine the average level of agreement for each indicator, whereas the standard deviation measured the consistency or variability of respondents' responses. The findings are presented in tabular form and interpreted using the established verbal interpretation scale.

RESULTS AND DISCUSSION

Table 1. Demographic Profile of the Respondents

Variable	Category	Frequency	Percentage
Age	20–25	2	7.14 %
	26–30	5	17.85%
	31–35	15	53.57 %
	36–40	2	7.14 %
	41–45	3	10.71 %
	46 and above	1	3.57 %
Gender	Male	10	35.71 %
	Female	18	64.28 %
Civil Status	Single	6	21.42 %
	Married	21	75 %
	Widow	1	3.57 %
Position	Teacher I	6	21.42 %
	Teacher II	1	3.57 %
	Teacher III	20	71.42 %
	Master Teacher I	1	3.57 %
Highest Educational Attainment	BEED	3	10.71 %
	MAEd Units	5	17.85 %
	MAEd	19	67.86 %
	PhD	1	3.57 %
Performance Rating	Outstanding	21	75 %
	Very Satisfactory	6	21.42 %
	Satisfactory	1	3.57 %
Years in Teaching	1–5	3	10.71 %
	6–10	3	10.71 %
	11–15	11	39.26 %
	16–20	8	28.57 %
	21 and above	3	10.71 %
In-Service Trainings Attended*	School/District	28	100 %
	Division	28	100 %
	Regional	18	64.29 %
	National	16	57.14 %
	International	1	3.57 %

Table 1 presents the demographic profiles of the 28 Grade 4 mathematics teachers in terms of age, gender, civil status, position, highest educational attainment, performance rating, years of teaching experience, and in-service training attended by them. The findings revealed that most respondents were 31–35 years old (53.57%), female (64.28%), and married (75.00%). Most of the teachers held the position of Teacher III (71.42%), had completed a Master of Arts in Education (MAEd) degree (67.86%), and received outstanding performance ratings (75.00%). In terms of teaching experience, the largest group had 11–15 years of service (39.26%), indicating that most respondents possessed considerable classroom

experience. Regarding professional development, all respondents had attended school/district and division-level in-service training, while fewer had participated in regional, national, and international training programs. These findings suggest that the respondents were experienced and professionally qualified educators who had engaged continuously in capacity-building activities. Their educational qualifications, teaching experience, and professional development may positively influence the implementation of effective motivation strategies and teaching styles in Grade 4 mathematics instruction.

Table 2 Respondent's Perception on the Motivations Used in Teaching Mathematics 4

Particulars	Mean	SD	Verbal Interpretation
Call the attention of the pupils	3.99	0.35	Agree
Showing a Sequential Achievement	3.76	0.35	Agree
Discovering a Pattern	4.02	0.35	Agree
Present a Challenge	4.44	0.35	Strongly Agree
Entice the Class with a "Gee-Whiz" Mathematical Result	3.70	0.35	Agree
Indicating the Usefulness of a Topic	4.20	0.35	Strongly Agree
Use Recreational Mathematics	4.16	0.35	Agree
Tell a Pertinent Story	3.32	0.35	Agree
Get Students Actively Involved in Justifying Mathematical Curiosities	3.56	0.35	Agree
Overall	3.91	0.35	Agree

Student engagement is essential for effective learning in subjects such as mathematics, writing, and physical education. Research indicates that using motivational teaching methods greatly boosts engagement and learning outcomes. In math education, students' perceptions of motivation significantly affect their views on instruction and engagement. Teaching strategies that support autonomy by focusing on relevance, success expectations, and instructor care create a positive motivational environment, leading to better student engagement and positive course evaluations (Wilkins et al. 2021). Instructional methods that address non-academic issues, such as emotional stress, enhance focus and participation. Creating a supportive environment through open communication and interactive learning, such as real-world applications, boosts motivation and self-confidence in mathematics students (Verdeflor et al., 2024). Similarly, in writing instruction, using motivational strategies within process-genre approaches improves students' argumentative writing skills and engagement. Key factors, such as collaborative learning, competence-building experiences, and active participation, motivate students to put effort into writing tasks (Rahimi, 2024). In online learning, intrinsic motivation supported by autonomy-focused teaching greatly increases student engagement, whereas controlling teaching methods has limited positive effects. Supporting students' autonomy, competence, and relatedness is crucial for engagement in both physical and virtual classrooms (Li et al., 2022). Additionally, motivational strategies such as differentiated instruction and task modifications effectively boost student engagement in physical education and design studios. Interventions such as flexible formats, individualized grouping, and motivational events significantly increase participation, intrinsic motivation, and satisfaction (Baigi et al., 2024; Temirbay et al., 2025). Similarly, perceived teacher support that meets students' psychological needs is linked to higher behavioral and emotional engagement in PE settings (Guo et al., 2023).

Table 3 Respondent's Perception on Teaching Styles Used in Teaching Grade 4 Mathematics

Particulars	Mean	SD	Verbal Interpretation
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Possesses knowledge and expertise that students need	3.60	0.47	Agree
Strives to maintain status as an expert by displaying detailed knowledge and challenging students to enhance their competence	2.81	0.47	Slightly Agree
Concerned with transmitting information and ensuring students are well-prepared	2.96	0.47	Slightly Agree
My standards and expectations help students develop the discipline they need to learn	3.53	0.47	Agree
Concerned with providing positive/negative feedback, establishing learning goals, expectations, and rules of conduct	4.24	0.47	Strongly Agree
Concerned with correct, acceptable, and standard ways to do things	3.34	0.47	Agree
Believes in "teaching by example," establishes a prototype for how to think and behave	4.38	0.47	Strongly Agree
Oversees and directs by showing how to do things and encouraging students to observe and emulate the instructor's approach	3.89	0.47	Agree
Shows students how they can use various principles and concepts	3.75	0.47	Agree
Guides students by asking questions, exploring options, suggesting alternatives, and encouraging informed decisions	3.31	0.47	Agree
Develop student capacity for independent responsibility	3.78	0.47	Agree
Employs small group discussions to help students develop their ability to think critically	3.87	0.47	Agree
Overall	3.62	0.47	Agree

Table 3 shows respondents' views of teaching styles in Grade 4 Mathematics. The overall mean score of 3.62 (SD = 0.47), interpreted as "Agree," suggests that teachers generally use effective methods that support meaningful classroom learning. The highest-rated indicator was "Believes in teaching by example, establishes a prototype for how to think and behave" with a mean of 4.38 (SD = 0.47), followed by "Concerned with providing positive/negative feedback, establishing learning goals, expectations, and rules of conduct" with a mean of 4.24 (SD = 0.47), both interpreted as Strongly Agree. These results indicate that Grade 4 mathematics teachers prioritize modeling behavior, constructive feedback, and clear expectations to improve students' understanding and performance. In contrast, the indicators "Strives to maintain status as an expert by displaying detailed knowledge and challenging students to enhance their competence" (M = 2.81, SD = 0.47) and "Concerned with transmitting information and ensuring students are well-prepared" (M = 2.96, SD = 0.47) received the lowest ratings, both interpreted as Slightly Agree. This suggests a stronger focus on learner-centered than teacher-centered instruction. Overall, respondents prefer practices that encourage active participation, guidance, collaboration, and independent learning. These findings align with previous studies on learner-centered teaching in mathematics. Awado et al. (2024) linked supportive interactions, feedback, and participation to improved achievement, attitudes, and self-concepts. Clavido and Macalisang (2024) found that matching teaching styles to learning needs improve performance and engagement. Verdeflor et al. (2024) emphasized interactive learning, guidance, and positive relationships. These support meaningful, learner-centered learning outcomes.

Table 4 Respondent's Perception on the Problems Encountered in Teaching Grade 4 Mathematics

Particulars	Mean	SD	Verbal Interpretation
There is inadequate supply of textbooks for Mathematics	1.53	0.70	Not Serious
There are inadequate materials for Mathematics activities	1.91	0.70	Slightly Serious
The school fairly supports Mathematics program activities	2.41	0.70	Slightly Serious

The community discreetly participates in Mathematics activities	3.34	0.70	Serious
The school occasionally facilitates Mathematics trainings	1.89	0.70	Slightly Serious
Overall	2.22	0.70	Slightly Serious

The insights from this table indicate that the most significant issue faced in teaching Grade 4 mathematics is the minimal community involvement in mathematics activities, which received an average score of 3.34 and was rated as “Serious.” This implies that although there are challenges related to schools and materials, the participation and engagement of the community—a crucial stakeholder in education—are notably lacking, which could impact the success and support of mathematics teaching. Other concerns, such as insufficient materials for mathematics activities (mean=1.91), infrequent facilitation of mathematics training by the school (mean=1.89), and a shortage of textbooks (mean=1.53), were viewed as “Not Serious” to “Slightly Serious.” These findings suggest moderate concerns about resource availability and institutional support, possibly indicating the use of compensatory strategies or adaptive teaching methods to address resource limitations. These observations are consistent with broader educational research, which shows that resource constraints and a lack of community involvement often hinder effective mathematics instruction in primary grades(Hwang et al., 2025; Mpilwenhle Zondi et al., 2025). For instance, studies have pointed out that a lack of textbooks and teaching materials obstructs active problem-posing and student-centred teaching methods, necessitating creative adaptation by teachers despite these limitations. Furthermore, irregular professional development opportunities for mathematics educators restrict the ongoing enhancement of teaching skills and strategies(Zhuang & Zhang, 2025). Research also underscores the significance of community involvement and school support in creating a more comprehensive and motivating learning environment that boosts student engagement and learning outcomes(Abu Talib et al., 2025). The readiness and effectiveness of teachers, influenced by suitable institutional and community settings, are crucial in their ability to address these challenges in primary mathematics education(Yoong & Hoe, 2022).

Table 5. Proposed Intervention Plan to Enhance Motivation and Teaching Practices in Grade 4 Mathematics

Identified Area	Objective	Proposed Intervention	Persons Involved	Timeline	Success Indicator
Motivation Strategies	Strengthening teachers' ability to motivate learners	Conduct a seminar-workshop on learner motivation and engagement strategies	School Head, Master Teachers, Grade 4 Teachers	First Quarter	Improved learner engagement during Mathematics classes
Teaching Styles	Enhance the use of learner-centered and differentiated teaching strategies	Organize demonstration teaching and peer coaching sessions	School Head, Master Teachers	Quarterly	Increased use of varied teaching strategies
Instructional Resources	Improve the availability and utilization of instructional materials	Develop and share contextualized Mathematics learning	Teachers, Learning Resource Coordinator	Throughout the School Year	Availability of localized instructional materials

Classroom Management	Improve classroom discipline and participation	materials Conduct Learning Action Cell (LAC) sessions on classroom management practices	School Head, Teachers	Every Quarter	Reduced classroom management issues
Professional Development	Strengthening teachers' instructional competence	Encourage participation in division, regional, and national Mathematics training programs	Division Office, School Head	Annual	Increased teacher participation in professional development activities
Monitoring and Evaluation	Assess the effectiveness of the interventions	Conduct regular classroom observations and monitoring of intervention implementation	School Head, Master Teachers	Every Quarter	Improved classroom observation ratings and teaching performance

Table 5 presents the intervention plan developed from the study findings to enhance motivation strategies, teaching practices, instructional resources, classroom management, professional development, and monitoring among Grade 4 mathematics teachers. The intervention emphasized seminar-workshops on learner motivation, demonstration teaching, peer coaching, development of contextualized instructional materials, Learning Action Cell (LAC) sessions, continuous professional development, and regular classroom monitoring. These interventions are expected to improve learner engagement, diversify instructional strategies, strengthen teachers' instructional competence, and enhance teaching performance. The proposed interventions are supported by studies emphasizing that continuous professional development and collaborative learning opportunities contribute significantly to improved instructional quality and student achievement. Demonstration teaching, peer coaching, and sustained professional learning communities enable teachers to refine effective instructional practices and increase learner engagement (Awado et al., 2024; Abu Talib et al., 2025). Likewise, differentiated instruction, contextualized learning materials, and motivational teaching strategies promote active participation, improve students' motivation, and foster mathematics learning experiences (Verdeflor et al., 2024; Temirbay et al., 2025). Furthermore, regular monitoring, classroom observations, and feedback mechanisms support continuous instructional improvement and help ensure effective implementation of intervention programmes in the Montalban District.

CONCLUSION

The research indicates that Grade 4 mathematics teachers in the Montalban District are typically seasoned and professionally credentialed, utilizing effective motivational techniques and suitable teaching methods in their lessons. Teachers expressed strong agreement that engaging students with challenging tasks and highlighting the practical applications of mathematical ideas are among the most successful methods for inspiring students. They also showed a preference for student-centered teaching methods, such as teaching through examples and offering constructive feedback, which positively enhanced classroom interactions. While the challenges faced in teaching mathematics were generally seen as minor, the lack of community involvement was identified as the most pressing issue, followed

by challenges related to teaching resources and opportunities for professional development. Considering these insights, the suggested intervention plan provides practical approaches to further bolster teachers' instructional skills, boost student motivation, refine classroom practices, and encourage ongoing professional development, ultimately leading to better mathematics teaching and learning outcomes.

RECOMMENDATIONS

According to the study's conclusions, school leaders should consistently assist Grade 4 Mathematics teachers by offering ongoing professional development sessions, demonstration teaching, peer coaching, and Learning Action Cell (LAC) meetings that emphasize motivational techniques and student-focused teaching. Teachers should persist in employing engaging and meaningful teaching methods while creating contextualized learning materials tailored to students' varied needs. Additionally, schools should enhance collaboration with parents and the community to boost involvement in math-related activities and provide extra support for educational programs. Moreover, education authorities should ensure that sufficient instructional resources are available and broaden opportunities for math-specific training to improve teachers' skills. Future researchers might explore similar studies with larger samples and varied educational contexts or assess the effectiveness of the suggested intervention plan post-implementation to confirm its influence on teaching methods and student learning outcomes.

LIMITATIONS OF THE STUDY

This study has several limitations that should be considered when interpreting its findings. First, the research was conducted among selected Grade 4 Mathematics teachers and learners in public elementary schools in the Montalban District, Rizal. Consequently, the findings may not be generalizable to private schools, other grade levels, or schools in different districts or regions with varying educational contexts. It focused on motivation-driven instruction and the teaching styles employed by Grade 4 Mathematics teachers. Other factors that may influence instructional effectiveness and students' motivation—such as class size, learners' prior mathematical knowledge, parental involvement, socioeconomic background, school resources, and teacher experience—were not comprehensively examined.

FUTURE RESEARCH DIRECTIONS

Future studies are encouraged to broaden the scope of the research by including additional grade levels, private schools, and schools from other districts or regions to improve the generalizability of the findings and facilitate comparative analyses. Researchers may employ longitudinal research designs to examine how motivation-driven teaching styles influence students' mathematical achievement, engagement, confidence, and attitudes toward mathematics over time. Experimental or quasi-experimental studies may also be conducted to evaluate the effectiveness of specific motivational strategies, learner-centered instructional approaches, differentiated instruction, and technology-enhanced mathematics teaching.

ETHICS STATEMENT

This study was conducted in accordance with the accepted ethical standards for educational research. Prior approval to conduct the study was obtained from the appropriate educational authorities and school administrators before data collection commenced. Participation was voluntary, and informed consent was obtained from all teacher participants after they were informed of the study's objectives, procedures, expected benefits, and minimal risks. Where students participated directly in surveys, interviews, classroom observations, or other research activities, informed consent was obtained from their parents or legal guardians in accordance with institutional and applicable legal requirements, and assent was obtained from the students where appropriate. Participants were informed that they could

decline participation or withdraw from the study at any time without penalty.

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AI DISCLOSURE STATEMENT

ChatGPT (AI)-assisted writing tools were used solely for grammar checking, language refinement, sentence organization, and formatting during the preparation of this manuscript. AI tools were not used to formulate research questions, design the study, collect or analyze the data, interpret the findings, or generate conclusions and recommendations.

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