

# Teaching Styles and Motivational Practices of Grade 6 Mathematics Teachers in Tinglayan District, Kalinga

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## Abstract

This study examined the perceptions of Grade 6 Mathematics teachers in Tinglayan District, Kalinga, regarding their motivational practices, teaching styles, and problems encountered in Mathematics instruction. A descriptive-survey design was used, involving twenty Grade 6 Mathematics teachers during School Year 2025-2026. Data were gathered through a structured questionnaire, informal interviews, and documentary analysis, and were treated using frequency count, percentage, and weighted mean. Findings showed that the teachers were mostly female, married, Teacher III, holders of a master's degree in education, and recipients of outstanding performance ratings. The teachers agreed that they used motivational strategies in teaching Grade 6 Mathematics, with presenting a challenge receiving the highest rating, followed by indicating the usefulness of a topic and using recreational Mathematics. In terms of teaching styles, teaching by example received the highest rating, followed by providing feedback and establishing learning goals, expectations, and rules of conduct. Problems encountered in Mathematics teaching were slightly serious, with limited community participation in Mathematics activities rated as the most serious concern. The study concludes that Grade 6 Mathematics teachers in Tinglayan District use varied motivational strategies and teaching styles that support pupils' engagement in Mathematics learning. Stronger community participation, sustained professional development, and adequate instructional resources remain necessary to strengthen Mathematics instruction.

**Keywords:** Grade 6 Mathematics, Mathematics Instruction, Motivational Strategies, Teacher Perception, Teaching Styles

## 1. Introduction

Mathematics learning in the elementary grades is strengthened when pupils see the subject as meaningful, manageable, and connected to their daily lives. In many classrooms, the difficulty is not only the content of Mathematics itself, but also the willingness of learners to participate, persist, and explain their thinking. This makes motivation a central concern for Mathematics teachers. Current motivation theory explains that learners become more engaged when they experience autonomy, competence, and relatedness in learning tasks (Ryan and Deci, 2020; Vansteenkiste et al., 2020). In Mathematics, these needs are addressed when pupils are allowed to solve worthwhile problems, receive supportive feedback, work with others, and recognize the usefulness of mathematical ideas.

International and national assessment discussions continue to point to Mathematics as an area that needs close instructional attention. PISA 2022 placed strong emphasis on mathematical reasoning, problem solving, and the ability to apply Mathematics in unfamiliar situations (OECD, 2023). In the Philippines, the MATATAG Curriculum similarly stresses numeracy, reasoning, problem solving, communication, and the use of Mathematics in practical situations (Department of Education, 2023). These directions call for teachers who can move beyond routine exercises and create lessons that invite pupils to think, ask questions, justify answers, and apply concepts with confidence.

Motivational strategies are therefore not mere opening activities. They are part of the learning design. Presenting a challenge, showing the usefulness of a topic, using recreational Mathematics, and asking pupils to justify mathematical curiosities can help pupils develop interest and persistence. Research on problem posing and problem-based learning indicates that well-designed mathematical challenges can increase students' enthusiasm, collaboration, and self-control in learning (Christidamayani and Kristanto, 2020). Likewise, studies on learning strategies and Mathematics performance show that motivation, attitude, learning styles, and teaching strategies work together in shaping achievement (Pizon and Ytoc, 2021).

Teaching style also matters. Pupils learn from what teachers explain, but they also learn from how teachers model reasoning, respond to errors, give feedback, and structure participation. Teaching by example is especially important in Mathematics because pupils often need to see how a competent thinker approaches a problem before they can try the process independently. Feedback, worked examples, guided questioning, and clear success criteria are strongly linked with deeper understanding when they help learners attend to the process, not only the answer (Fiorella and Mayer, 2022; Hattie,

2023). For this reason, current Mathematics teaching recommendations call for classrooms where learners reason, communicate, represent ideas, and see mistakes as part of learning (Boaler, 2022; National Council of Teachers of Mathematics, 2020).

In Tinglayan District, Grade 6 Mathematics teachers work with pupils who differ in readiness, confidence, home support, and access to learning resources. These conditions require teachers to be both academically prepared and emotionally responsive. Since Grade 6 is a transition point before junior high school, the quality of Mathematics motivation and teaching style at this level can influence pupils' confidence in later Mathematics learning. This study was conducted to examine the motivational practices, teaching styles, and problems encountered by Grade 6 Mathematics teachers in Tinglayan District, Kalinga, with the aim of providing evidence that may guide improvement in Mathematics instruction. This study determined the perceptions of Grade 6 Mathematics teachers in Tinglayan District, Kalinga, regarding motivational practices, teaching styles, and problems encountered in Mathematics instruction.

## **2. Material and methods**

### **2.1 Research Design**

The study used the descriptive-survey research design to determine the perceptions of Grade 6 Mathematics teachers in Tinglayan District, Kalinga, for School Year 2025-2026. This design was appropriate because the study described the teachers' profile, motivational strategies, teaching styles, and problems encountered in Mathematics instruction as they existed during the conduct of the study. The design allowed the researcher to gather a clear account of teachers' classroom practices and concerns without manipulating any variable.

### **2.2 Locale of the Study**

The study was conducted in Tinglayan District, Kalinga, specifically among public elementary schools with Grade 6 Mathematics teachers during School Year 2025-2026. The locale was selected because the study focused on teachers who were directly handling Grade 6 Mathematics instruction in the district.

### **2.3 Respondents of the Study**

The respondents were twenty Grade 6 Mathematics teachers from public elementary schools in Tinglayan District, Kalinga.

### **2.4 Sample and Sampling Procedure**

Purposive sampling was used because the study required respondents who were directly involved in Grade 6 Mathematics instruction. The selected teachers had actual experience in using motivational strategies, applying teaching styles, and handling classroom concerns related to Mathematics learning.

### **2.5 Research Instrument**

Data were gathered using a structured questionnaire supported by informal interviews and documentary analysis. The questionnaire had four parts: the profile of the respondents, motivational strategies used in teaching Grade 6 Mathematics, teaching styles employed by the teachers, and problems encountered in Mathematics instruction. The items were developed from related literature on motivation, teaching styles, and Mathematics instruction, then checked through a try-out with teachers who were not part of the actual respondents. Their comments, together with suggestions from the adviser and the Dean of Graduate Studies, were used to improve the final questionnaire.

### **2.6 Data Gathering Procedure**

Permission to conduct the study was secured from the concerned school authorities before data collection. The questionnaires were administered to the respondents, and informal interviews were conducted to clarify selected responses.

### **2.7 Data Analysis Techniques**

Frequency counts and percentages were used to describe the respondents' profile. Weighted mean was used to determine the teachers' perceptions of motivational strategies, teaching styles, and problems encountered. A five-point Likert scale was used for interpretation. For motivational strategies and teaching styles, responses ranged from strongly disagree to strongly agree. For problems encountered, responses ranged from least serious to very serious.

### **2.8 Ethical Considerations**

The researcher observed ethical procedures throughout the conduct of the study. Participation was voluntary, and the respondents were informed about the purpose of the research. Their responses were treated with confidentiality and were

used only for academic purposes. Names of individual teachers and schools were not disclosed in the presentation of findings.

### 3. Results and Discussion

#### 3.1 Profile of the Respondents

This section presents the demographic and professional profile of the Grade 6 Mathematics teachers. The profile is useful in reading the findings because teachers' age, experience, education, and professional exposure may shape how they motivate pupils and choose teaching styles. Professional learning remains important because strong instructional practice is developed through continuous study, reflection, and classroom application (Darling-Hammond et al., 2020).

Table 1. *Distribution of respondents by age*

| Age          | Frequency | Percentage (%) |
|--------------|-----------|----------------|
| 20-25        | 2         | 10.00          |
| 26-30        | 5         | 25.00          |
| 31-35        | 7         | 35.00          |
| 36-40        | 2         | 10.00          |
| 41-45        | 3         | 15.00          |
| 46 and above | 1         | 5.00           |
| Total        | 20        | 100.00         |

Table 1 shows that the largest group of respondents belonged to the 31-35 age bracket, with 7 teachers or 35.00 percent. This was followed by the 26-30 age bracket with 5 teachers or 25.00 percent, then the 41-45 age bracket with 3 teachers or 15.00 percent. The 20-25 and 36-40 age brackets each had 2 teachers or 10.00 percent, while only 1 teacher or 5.00 percent was 46 years old and above. The age distribution shows a teaching group composed mainly of early- to mid-career educators, which may be favorable for adopting varied motivational strategies and reflective teaching practices.

Table 2. *Distribution of respondents by gender*

| Gender | Frequency | Percentage (%) |
|--------|-----------|----------------|
| Male   | 6         | 30.00          |
| Female | 14        | 70.00          |
| Total  | 20        | 100.00         |

Table 2 reveals that 14 respondents or 70.00 percent were female, while 6 or 30.00 percent were male. This means that female teachers formed the larger group of Grade 6 Mathematics respondents in Tinglayan District. Since the study focused on teaching practices rather than gender-based comparison, the distribution served mainly as descriptive information about the teacher group.

Table 3. *Distribution of respondents by civil status*

| Civil Status | Frequency | Percentage (%) |
|--------------|-----------|----------------|
| Single       | 6         | 30.00          |
| Married      | 13        | 65.00          |
| Widow        | 1         | 5.00           |
| Total        | 20        | 100.00         |

Table 3 indicates that most respondents were married, with 13 teachers or 65.00 percent. Six teachers or 30.00 percent were single, and 1 teacher or 5.00 percent was widowed. The predominance of married teachers points to a respondent group with personal and professional responsibilities that may influence time management, participation in trainings, and engagement in school activities.

Table 4. *Distribution of respondents by position*

| Position         | Frequency | Percentage (%) |
|------------------|-----------|----------------|
| Teacher I        | 6         | 30.00          |
| Teacher II       | 1         | 5.00           |
| Teacher III      | 12        | 60.00          |
| Master Teacher I | 1         | 5.00           |
| Total            | 20        | 100.00         |

Table 4 shows that 12 respondents or 60.00 percent were Teacher III, 6 or 30.00 percent were Teacher I, 1 or 5.00 percent was Teacher II, and 1 or 5.00 percent was Master Teacher I. The high number of Teacher III respondents indicates that many of the Grade 6 Mathematics teachers had already gained professional experience and career advancement. This may help explain their ability to use a range of motivational practices and teaching styles.

Table 5. *Distribution of respondents by highest educational attainment*

| Highest Educational Attainment | Frequency | Percentage (%) |
|--------------------------------|-----------|----------------|
| BEED                           | 3         | 15.00          |
| MAED Units                     | 5         | 25.00          |
| MAED                           | 11        | 55.00          |
| PhD                            | 1         | 5.00           |
| Total                          | 20        | 100.00         |

Table 5 presents that 11 respondents or 55.00 percent had completed a master's degree in education. Five teachers or 25.00 percent had earned MAED units, 3 or 15.00 percent were BEED graduates, and 1 or 5.00 percent had completed a doctoral degree. The data show that most respondents had graduate-level preparation, which is valuable because effective Mathematics teaching requires both content knowledge and knowledge of how pupils learn (National Council of Teachers of Mathematics, 2020).

Table 6. *Distribution of respondents by performance rating*

| Performance Rating | Frequency | Percentage (%) |
|--------------------|-----------|----------------|
| Outstanding        | 13        | 65.00          |
| Very Satisfactory  | 6         | 30.00          |
| Satisfactory       | 1         | 5.00           |
| Total              | 20        | 100.00         |

Table 6 shows that 13 teachers or 65.00 percent obtained an outstanding performance rating, 6 or 30.00 percent obtained a very satisfactory rating, and 1 or 5.00 percent obtained a satisfactory rating. The result indicates that the respondents were generally performing well in their professional duties. High performance ratings may be associated with consistent lesson preparation, classroom management, and willingness to improve teaching practice.

Table 7. *Distribution of respondents by number of years teaching*

| Years Teaching | Frequency | Percentage (%) |
|----------------|-----------|----------------|
| 1-5            | 3         | 15.00          |
| 6-10           | 3         | 15.00          |
| 11-15          | 7         | 35.00          |
| 16-20          | 4         | 20.00          |
| 21 and above   | 3         | 15.00          |
| Total          | 20        | 100.00         |

Table 7 reveals that the largest group of respondents had been teaching for 11-15 years, with 7 teachers or 35.00 percent. Four teachers or 20.00 percent had 16-20 years of teaching experience, while the 1-5, 6-10, and 21 years and above groups each had 3 teachers or 15.00 percent. The distribution shows that many respondents had substantial classroom experience, which may support confidence in selecting strategies appropriate for Grade 6 learners.

Table 8. *Distribution of respondents by number of in-service trainings attended*

| Level of In-Service Training | Frequency | Rank |
|------------------------------|-----------|------|
| School/District              | 20        | 1.5  |
| Division                     | 20        | 1.5  |
| Regional                     | 18        | 3    |
| National                     | 16        | 4    |
| International                | 1         | 5    |

Table 8 shows that all 20 respondents attended school/district and division-level in-service trainings, both ranked 1.5. Regional trainings were attended by 18 teachers, national trainings by 16 teachers, and international training by 1 teacher. The data indicate wide exposure to local and division-based professional learning, with fewer opportunities at the

international level. Sustained professional development is essential because teachers refine instructional judgment when they connect training inputs with classroom practice (Darling-Hammond et al., 2020; Hattie, 2023).

### 3.2 Motivational Strategies Used in Teaching Grade 6 Mathematics

Table 9. Respondents' perception of the motivational strategies used in teaching Grade 6 Mathematics

| Motivational Strategies                                               | Weighted Mean | Qualitative Description | Rank |
|-----------------------------------------------------------------------|---------------|-------------------------|------|
| Call the attention of the pupils                                      | 3.99          | Agree                   | 5    |
| Show a sequential achievement                                         | 3.76          | Agree                   | 6    |
| Discovering a pattern                                                 | 4.02          | Agree                   | 4    |
| Present a challenge                                                   | 4.44          | Strongly Agree          | 1    |
| Entice the class with a Gee-Whiz mathematical result                  | 3.70          | Agree                   | 7    |
| Indicate the usefulness of a topic                                    | 4.20          | Strongly Agree          | 2    |
| Use recreational Mathematics                                          | 4.16          | Agree                   | 3    |
| Tell a pertinent story                                                | 3.32          | Agree                   | 9    |
| Let students actively involved in justifying mathematical curiosities | 3.56          | Agree                   | 8    |
| Average Weighted Mean                                                 | 3.95          | Agree                   |      |

The category mean of 3.95 indicates that the respondents agreed that they used the listed motivational strategies in teaching Grade 6 Mathematics. The highest-rated strategy was presenting a challenge, with a weighted mean of 4.44, described as strongly agree. This result is consistent with self-determination theory, which explains that learners are more likely to engage when tasks support competence and present attainable challenge (Ryan and Deci, 2020; Vansteenkiste et al., 2020). The second highest was indicating the usefulness of a topic, with a weighted mean of 4.20, also strongly agree. This shows that teachers try to help pupils see the practical value of Mathematics, an approach aligned with curriculum directions that connect mathematical ideas to real-life situations (Department of Education, 2023). Using recreational Mathematics ranked third with a weighted mean of 4.16, followed by discovering a pattern with 4.02 and calling the attention of pupils with 3.99. These practices can make Mathematics less intimidating and more participatory. Show a sequential achievement obtained 3.76, enticing the class with a Gee-Whiz mathematical result obtained 3.70, and letting students justify mathematical curiosities obtained 3.56. Telling a pertinent story ranked lowest with 3.32, but it was still described as agree. The result means storytelling was used, though less frequently than challenge-based and usefulness-based strategies. Recent work on mathematical creative writing also points to the value of narrative and expression in helping elementary learners communicate mathematical ideas (Song et al., 2024).

### 3.3 Teaching Styles Used in Teaching Grade 6 Mathematics

Table 10. Respondents' perception of the teaching styles used in teaching Grade 6 Mathematics

| Teaching Styles                                                                                                            | Weighted Mean | Qualitative Description | Rank |
|----------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------|------|
| Possesses knowledge and expertise that students need                                                                       | 3.50          | Agree                   | 7    |
| Maintains status as expert by displaying detailed knowledge and challenging students to enhance competence                 | 2.81          | Somewhat Agree          | 12   |
| Concerned with transmitting information and ensuring students are well-prepared                                            | 2.99          | Somewhat Agree          | 11   |
| My standards and expectations help students develop the discipline they need to learn                                      | 3.53          | Agree                   | 8    |
| Concerned with providing positive/negative feedback, establishing learning goals, expectations, and rules of conduct       | 4.24          | Strongly Agree          | 2    |
| Concerned with correct and acceptable ways to do things                                                                    | 3.36          | Agree                   | 9    |
| Believes in teaching by example; establishes a prototype for how to think and behave                                       | 4.38          | Strongly Agree          | 1    |
| Oversees and directs by showing how to do things and encouraging students to observe and emulate the instructor's approach | 3.89          | Agree                   | 3    |
| Shows students how they can use various principles and concepts                                                            | 3.79          | Agree                   | 6    |
| Guides students by asking questions, exploring options, suggesting alternatives, and encouraging informed decisions        | 3.31          | Agree                   | 10   |

| Teaching Styles                                                                           | Weighted Mean | Qualitative Description | Rank |
|-------------------------------------------------------------------------------------------|---------------|-------------------------|------|
| Develops student capacity for independent responsibility                                  | 3.78          | Agree                   | 5    |
| Emphasizes student aspirations to help students develop their ability to think critically | 3.87          | Agree                   | 4    |
| Average Weighted Mean                                                                     | 3.62          | Agree                   |      |

The category mean of 3.62 shows that the respondents agreed that they used the identified teaching styles in teaching Grade 6 Mathematics. Teaching by example received the highest weighted mean of 4.38, described as strongly agree. This means that the teachers placed importance on modeling how to think and behave when solving Mathematics tasks. Worked examples and teacher modeling are useful when pupils are still building fluency and confidence because they make expert thinking visible (Fiorella and Mayer, 2022). Providing positive and negative feedback, establishing learning goals, expectations, and rules of conduct ranked second with a weighted mean of 4.24, also strongly agree. This finding agrees with evidence that feedback becomes powerful when it tells learners where they are, where they need to go, and how to improve (Hattie, 2023). The third highest item was overseeing and directing by showing how to do things and encouraging students to observe and emulate the teacher's approach, with a weighted mean of 3.89. This was followed by emphasizing student aspirations for critical thinking with 3.87, developing independent responsibility with 3.78, and showing how principles and concepts can be used with 3.79. Possessing needed knowledge and expertise obtained 3.50, and standards and expectations obtained 3.53. Items with lower means were concern for correct and acceptable ways of doing things with 3.36, guided questioning with 3.31, transmitting information with 2.99, and maintaining expert status with 2.81. These lower ratings may indicate that teachers leaned more toward modeling, feedback, and participation than purely authority-centered delivery. This direction matches recent recommendations for Mathematics classrooms that value reasoning, communication, and active sense-making (Boaler, 2022; National Council of Teachers of Mathematics, 2020).

### 3.4 Problems Encountered in Teaching Grade 6 Mathematics

Table 11. *Respondents' perception of the problems encountered in teaching Grade 6 Mathematics*

| Problems Encountered                                             | Mean | Qualitative Description | Rank |
|------------------------------------------------------------------|------|-------------------------|------|
| There is inadequate supply of textbooks for Mathematics          | 1.53 | Not Serious             | 5    |
| There is inadequate materials for use for Mathematics activities | 1.91 | Slightly Serious        | 3    |
| The school fairly supports Mathematics program activities        | 2.41 | Slightly Serious        | 2    |
| The community discreetly participates in Mathematics activities  | 3.34 | Serious                 | 1    |
| The school occasionally facilitates trainings for Mathematics    | 1.89 | Slightly Serious        | 4    |
| Average Weighted Mean                                            | 2.22 | Slightly Serious        |      |

The category mean of 2.22 indicates that the problems encountered in teaching Grade 6 Mathematics were slightly serious. The highest-rated problem was limited community participation in Mathematics activities, with a mean of 3.34, described as serious. This result points to the need for stronger parent and community engagement in Mathematics-related activities. International learning reports emphasize that learner achievement is shaped not only by classroom instruction but also by the support systems surrounding the learner (OECD, 2023; UNESCO, 2021). The second highest concern was school support for Mathematics program activities, with a mean of 2.41, described as slightly serious. Inadequate materials for Mathematics activities followed with 1.91, while occasional facilitation of Mathematics trainings obtained 1.89. These concerns show that although the problems were not severe as a group, teachers still experienced resource and support gaps. Inadequate supply of textbooks received the lowest mean of 1.53, described as not serious, which means textbooks were less problematic than participation, program support, materials, and trainings. The finding agrees with Mathematics education literature stating that materials, teacher learning, and community support contribute to pupils' confidence and performance in Mathematics (Department of Education, 2023; Wijaya et al., 2019).

## 4. Conclusion & Recommendations

The Grade 6 Mathematics teachers in Tinglayan District, Kalinga were composed mainly of female, married, mid-career teachers, many of whom held Teacher III positions and had graduate-level education. Their performance ratings and training participation show a teacher group with professional preparation and continuing exposure to development activities. The teachers agreed that they used different motivational strategies in teaching Grade 6 Mathematics. Presenting a challenge, indicating the usefulness of a topic, and using recreational Mathematics were the most evident strategies. These practices show that teachers were not only introducing lessons but also trying to make pupils think, participate, and see Mathematics as useful. Storytelling and guided justification of mathematical curiosities were used less often, giving room for further improvement in communication-rich and inquiry-oriented Mathematics activities. The teachers also agreed that

they used varied teaching styles. Teaching by example and giving feedback with clear expectations were the strongest practices. These results show that teachers valued modeling, guidance, and classroom structure. However, lower ratings in guided questioning and student decision-making point to a need for more inquiry-based and dialogic Mathematics teaching, where pupils are encouraged to explain strategies, compare solutions, and make reasoned choices.

Based on the findings, Mathematics instruction in Tinglayan District may be strengthened by increasing community participation in Mathematics activities, providing adequate instructional materials, sustaining teacher training, and encouraging more communication-rich and inquiry-oriented practices. Teachers may be supported in using storytelling, guided questioning, mathematical explanation, and pupil decision-making so that learners can explain strategies, compare solutions, and build confidence in Mathematics.

The study was limited to twenty Grade 6 Mathematics teachers in Tinglayan District, Kalinga, during School Year 2025-2026. Since the data were based mainly on teacher perceptions gathered through questionnaire responses, informal interviews, and documentary analysis, the findings may not fully represent other grade levels, other districts, or the direct perceptions of pupils, parents, and community members.

### **Compliance with ethical standards**

The study adhered to institutional ethical standards in the conduct of educational research. Participation was voluntary, the purpose of the study was explained to the respondents, and informed consent was observed before data collection. Responses were treated with confidentiality and reported only in summarized form; names of individual teachers and schools were not disclosed. The authors take responsibility for the accuracy of the manuscript, acknowledge all scholarly sources used, retain copyright responsibility for the work, and declare that no conflict of interest was involved in the preparation of the study.

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