
Teachers' Teaching Strategies and Learners' Performance Level

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Abstract — This study examined the relationship between teachers' teaching strategies and the performance level of Grade 3 learners in mathematics at Culong Elementary School for the School Year 2024–2025. The main objective was to determine how different instructional strategies influenced learners' numeracy performance and to identify the challenges teachers faced in implementing these methods. Grounded in Constructivist and Socio-Cultural learning theories, the study aimed to provide insights that could inform more effective and learner-centered mathematics instruction.

The researcher utilized a descriptive-correlational research design. Data were collected from eight Grade 3 teachers and 120 learners through validated survey questionnaires, performance records, and interviews. Statistical tools such as frequency, weighted mean, and Pearson's r were employed to analyze the data.

Findings revealed that lecture and group discussion were the most frequently used strategies, while collaborative learning was perceived as the most effective in enhancing numeracy skills. A significant positive correlation ($r = 0.67$) was found between teaching strategies and learners' performance levels, indicating that instructional methods greatly influenced learning outcomes. However, the study also uncovered key challenges, including large class sizes, diverse learning needs, limited instructional materials, and a lack of training in modern teaching approaches.

These findings suggest that more effective teaching strategies, supported by adequate resources and continuous professional development, can significantly improve learner

performance. The study's implications emphasize the need for school leaders and policymakers to support teachers in implementing differentiated, engaging, and developmentally appropriate instructional practices to address existing gaps in mathematics achievement among primary school learners.

Keywords: teaching strategies; learner performance; mathematics instruction; Grade 3 learners; instructional challenges

I. INTRODUCTION

Mathematics is a core subject in the basic education curriculum and plays a vital role in developing learners' logical reasoning, critical thinking, and problem-solving skills. It serves as a foundation for many real-life applications and future academic pursuits, particularly in STEM-related fields. In the Philippines, the Department of Education continues to emphasize the enhancement of numeracy skills among learners, especially in the early years of schooling, as these foundational skills are essential for success in higher grade levels and in everyday decision-making (National Research Council, 2011; UNESCO, 2017).

Despite the importance placed on numeracy, recent assessments and classroom observations reveal a persistent gap in learners' performance in mathematics, particularly at the primary level. Many Grade 3 learners struggle with basic numeracy skills such as number sense, operations, and problem-solving. These issues may stem from the mismatch between learners' needs and the teaching strategies used in the classroom. Clark et al. (2014) noted that teaching methods significantly influence learners' outcomes, but in many cases, ineffective strategies hinder progress. Furthermore, while studies such as those by Santos and Racelis (2017) have explored instructional practices, most are limited to specific contexts, highlighting the need for further investigation in diverse classroom settings.

This study aims to investigate the relationship between teachers' teaching strategies and the performance level of Grade 3 learners at Culong Elementary School. By identifying which instructional approaches are most effective in improving numeracy skills, this research seeks to bridge the gap in local literature and provide practical recommendations for enhancing mathematics instruction. The results are expected to inform teachers, school leaders, and

policymakers in designing and implementing teaching strategies that foster better learning outcomes in mathematics (Darling-Hammond et al., 2020).

II. METHODOLOGY

This study utilized a descriptive research design to explore the relationship between teachers' teaching strategies and the performance levels of Grade 3 learners in mathematics at Culong Elementary School for School Year 2024–2025. A total of 8 teachers and 50 Grade 3 learners were purposively selected. Teacher-respondents were chosen based on their experience in teaching mathematics, participation in numeracy-related trainings, and current assignment to Grade 3. Learners were selected based on their enrollment and participation in the school's official pre-assessment in mathematics.

Two instruments were used: a validated teacher questionnaire and the learners' pre-assessment test results. The questionnaire gathered data on teaching strategies and teacher profiles, while the assessment scores reflected the learners' performance levels. Data collection was conducted after securing approval from the school head and informed consent from all participants. The instruments were administered in coordination with school officials and conducted in a non-disruptive manner.

Descriptive statistics such as mean, frequency, and percentage were used to summarize the teaching strategies and performance levels. A Chi-square test for independence determined the relationship between teaching strategies and learners' performance. The Average Weighted Mean was used to assess challenges encountered by teachers. Ethical considerations such as confidentiality, voluntary participation, and data protection were strictly observed throughout the research process.

III. RESULTS

This section presents the key findings of the study on the relationship between teaching strategies and the performance levels of Grade 3 learners in mathematics at Culong Elementary School for the School Year 2024–2025. Data were gathered through surveys, performance records,

and interviews, focusing on the instructional strategies commonly used by teachers, their perceived effectiveness, and the challenges faced in implementation. The results highlight the extent to which these strategies influenced learners' numeracy performance and provide insights into the factors that either supported or hindered effective mathematics instruction in the classroom setting.

TABLE 1
PERFORMANCE LEVEL OF GRADE 3 LEARNERS
(PRE-ASSESSMENT)
N = 50 (STUDENTS)

Performance Level	Frequency	Percentage (%)
Below Average	12	24
Average	25	50
Above Average	13	26

The pre-assessment results showed that 12 out of 50 Grade 3 learners performed below average, indicating a need for targeted intervention. While most learners were at or above average, the low-performing group raised concerns about instructional effectiveness. Teacher feedback supported these findings, citing challenges such as varied learning needs, lack of resources, and limited training in innovative strategies. These issues hindered effective instruction and learner progress.

The results imply a need for professional development and enhanced teaching support. Theories like Vygotsky's Socio-Cultural Theory and Constructivist Learning Theory highlight the importance of adaptive strategies suited to learners' needs and contexts.

TABLE 2.1
TEACHING STRATEGIES USED BY TEACHERS
N = 8 (TEACHERS)

Teaching Strategy	Frequency	Percentage (%)
Lecture Method	5	62.50%
Group Discussion	4	50%
Hands-on Activities	3	37.50%
Multimedia/ICT Use	2	25%
Collaborative Learning	4	50%

Table 2.1 revealed that while lecture and group discussions were commonly used, they often failed to meet the diverse learning needs of students, especially in enhancing numeracy skills. Interactive strategies like hands-on learning and ICT use were limited.

This suggested a need for more engaging, student-centered approaches. The performance gaps, particularly among below-average learners, highlighted the impact of relying heavily on teacher-centered methods.

These findings were supported by teacher feedback, which cited constraints in training, resources, and classroom management. Theories by Vygotsky and Constructivist thinkers emphasized the value of active, collaborative learning—approaches that had yet to be fully implemented.

TABLE 2.2
LEVEL OF EFFECTIVENESS OF TEACHERS' STRATEGIES (SELF-ASSESSMENT)
N = 8 (TEACHERS)

Teaching Strategy	Weighted Mean	Interpretation
Collaborative Learning	3.59	Very Effective
Use of Visual Aids	3.27	Very Effective
Group Discussion	3.41	Very Effective
Hands-on Activities	2.94	Effective
ICT Integration	2.64	Effective
Lecture Method	2.36	Less Effective
Total	18.21	
Average Weighted Mean	3.04	Effective

The study found that Grade 3 teachers at Culong Elementary School viewed collaborative learning (weighted mean = 3.59), group discussion (3.41), and visual aids (3.27) as the most effective strategies for improving numeracy. In contrast, the lecture method received the lowest rating (2.36), suggesting it was less effective. The overall average weighted mean was 3.04, indicating that the strategies used were generally effective.

These findings imply that learner-centered approaches are more beneficial in developing numeracy skills. Schools should support teachers with training and resources to implement interactive strategies. The results align with studies by Johnson & Miller (2019) and Chen et al. (2018), who emphasized collaborative and visual learning as key to improving student performance.

The results in Table 3 showed a strong positive correlation ($r = 0.67$) between teaching strategies and student performance in numeracy. This suggested that how teachers taught significantly influenced learners' outcomes, validating the study's core assumption.

The finding emphasized the need for intentional, learner-centered instruction. Strategies such as collaborative learning and group discussions—aligned with constructivist and socio-cultural theories—proved more effective in promoting understanding and engagement.

These results were supported by teacher feedback and strategy usage patterns, reinforcing the call for more training, resources, and support in implementing varied, research-based approaches. The outcome also aligned with DepEd's MATATAG reforms, highlighting the crucial role of pedagogy in improving foundational learning.

TABLE 3
SIGNIFICANT RELATIONSHIP BETWEEN PERFORMANCE LEVEL AND
TEACHING STRATEGIES USED
N = 58 (50 STUDENTS AND 8 TEACHERS)

Variables Compared	Computed r -value	Interpretation
Performance Level and Teaching Strategies	0.67	Significant Relationship

The results in Table 3 showed a strong positive correlation ($r = 0.67$) between teachers' teaching strategies and learners' performance in numeracy. This indicated that effective instructional methods significantly influenced student achievement, confirming that how teachers teach directly affects learning outcomes.

The findings implied the importance of using learner-centered strategies like group discussions and collaborative learning, which were also rated as effective by teachers. These were supported by past studies (Chen et al., 2018; Johnson & Miller, 2019) and aligned with education reforms like the MATATAG Curriculum (DepEd Orders No. 17, s. 2022; No. 10, s. 2024).

Overall, the study highlighted the need for continuous teacher development and strategic instructional planning to improve student performance, especially in foundational skills like numeracy.

Challenges Encountered by Teachers in Teaching Strategies and Their Seriousness Level

Challenge	Average Weighted Mean (AWM)	Seriousness Level (Based on Likert Scale)
Diverse Learning Needs	4.60	Very Much Serious (VMS)
Large Class Sizes	4.30	Much Serious (MS)
Lack of Instructional Resources	3.90	Much Serious (MS)
Limited Time for Lesson Prep	4.00	Much Serious (MS)
Inadequate Training	3.70	Serious (S)
Learner Motivation Issues	3.20	Serious (S)
Challenges in Assessing Progress	2.80	Fairly Serious (FS)

The study revealed that teachers at Culong Elementary School faced major challenges in implementing effective strategies, particularly due to diverse learning needs, large class sizes, and limited resources. These issues were rated as “Much Serious,” with managing student diversity (4.43), class size (4.25), and lack of materials (4.12) as top concerns. Other issues, such as time constraints and insufficient training, were also notable but less severe.

These findings aligned with prior research emphasizing the importance of smaller classes, differentiated instruction, and access to resources in improving learner outcomes (Pawan & Sato, 2019; Alim, 2018). The lack of professional development limited teachers' ability to apply modern strategies, confirming the need for ongoing training (Darling-Hammond et al., 2020). The study implied that addressing these barriers through resource provision, class size reduction, and teacher support could significantly improve numeracy outcomes. These results were further supported by global findings that emphasized equipping teachers as a key factor in improving student achievement (Hattie, 2009; Tharp, 2019).

IV. DISCUSSION

The study found a strong positive correlation ($r = 0.67$) between teaching strategies and learners' performance in mathematics, confirming that how teachers deliver instruction significantly affects student outcomes. Collaborative learning and group discussions were rated most effective by teachers, supporting constructivist and socio-cultural theories that emphasize interaction and engagement in building numeracy skills.

In contrast, traditional lectures and ICT-based strategies were seen as less effective, suggesting a need for improved teacher training and access to resources. The performance data also showed that a notable number of students were below average in math, reinforcing the importance of using varied and effective teaching methods.

Teachers reported challenges such as large class sizes, diverse learning needs, and limited materials, all of which hinder their ability to implement effective strategies. These findings highlight the need for professional development, more teaching resources, and better classroom conditions to support student learning and improve numeracy outcomes.

V. CONCLUSION

The study concluded that teaching strategies significantly influenced the performance levels of Grade 3 learners in mathematics. A strong positive correlation ($r = 0.67$) between teaching strategies and learner outcomes confirmed that instructional approaches played a vital role in

shaping academic performance. Learner-centered strategies, such as collaborative learning and group discussion, were found to be more effective than traditional lecture-based methods. These approaches, grounded in Constructivist and Socio-Cultural theories, encouraged active participation, critical thinking, and peer interaction, all of which contributed to improved numeracy skills.

Despite the recognition of their effectiveness, the implementation of progressive strategies remained limited. Hands-on activities and ICT integration were seldom used, largely due to constraints such as lack of training, limited resources, and teacher confidence. Teachers faced significant instructional challenges, including large class sizes, diverse student needs, and inadequate teaching materials. These factors hindered their ability to provide differentiated instruction and fully engage learners.

The study further revealed that addressing these challenges was essential to improving teaching effectiveness. Professional development opportunities, better resource allocation, and class size reduction were identified as necessary support mechanisms. With these in place, teachers would have been better equipped to apply varied and effective teaching strategies, ultimately enhancing learner performance in mathematics.

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REFERENCES

- [1.] Acosta, S. A., & Ramos, S. B. (2020). Numeracy skills of students in the Philippines: Challenges and opportunities. *International Journal of Innovation and Applied Studies*, 18(3), 446–455.
- [2.] Alim, J. (2018). Teaching resources and student performance: The Philippine experience. *Asian Journal of Education*, 6(1), 22–30.
- [3.] Boaler, J. (2016). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages, and innovative teaching*. Jossey-Bass.
- [4.] Borich, G. D. (2014). *Effective teaching methods: Research-based practice* (8th ed.). Pearson.
- [5.] Chen, H., Zhang, L., & Zhao, Y. (2018). The role of explicit instruction in the development of numeracy skills. *Mathematics Education Research Journal*, 30(3), 289–306.
- [6.] Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications.
- [7.] Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2020). *Effective teacher professional development*. Learning Policy Institute.
- [8.] De Guzman, J. B., & Gadon, M. A. (2017). Numeracy skills of Filipino high school students. *Journal of Education and e-Learning Research*, 4(3), 1–5.
- [9.] Demegillo, J. (2014a). *Changing directions in reading and mathematics performance of pupils at Tanecito Panolino Elementary School, Passi, Iloilo, Philippines* [Unpublished thesis]. Ifugao State University.
- [10.] Gagné, R. M., Wager, W. W., Golas, K. C., & Keller, J. M. (2005). *Principles of instructional design* (5th ed.). Wadsworth/Thomson Learning.

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- [11.] Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- [12.] Johnson, R., & Miller, A. (2019). The effectiveness of problem-solving approaches and collaborative learning on learners' numeracy skills. *Journal of Mathematics Education*, 12(2), 67–82.
- [13.] Killen, R. (2006). *Effective teaching strategies: Lessons from research and practice* (4th ed.). Cengage Learning.
- [14.] Linder, S. M., Smart, J. B., & Cribbs, J. (2015). A multi-method investigation of mathematics motivation for elementary-age students. *School Science and Mathematics*, 115(8), 392–403.
- [15.] Marzano, R. J. (2007). *The art and science of teaching: A comprehensive framework for effective instruction*. ASCD.
- [16.] Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.
- [17.] Pawan, F., & Sato, T. (2019). Differentiated instruction in diverse classrooms. *Teaching and Teacher Education*, 82, 170–180.
- [18.] Piaget, J. (1973). *To understand is to invent: The future of education*. Grossman Publishers.
- [19.] Schunk, D. H. (2012). *Learning theories: An educational perspective* (6th ed.). Pearson.
- [20.] Smith, J., & Jones, L. (2020). Formative assessment strategies and learners' numeracy skills. *Journal of Educational Psychology*, 112(4), 678–694.
- [21.] Tharp, R. G. (2019). *Rousing minds to life: Teaching, learning, and schooling in social context*. Cambridge University Press.
- [22.] Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). ASCD.
-

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- [23.] UNESCO. (2015). *Education 2030: Incheon declaration and framework for action for the implementation of Sustainable Development Goal 4*. <https://unesdoc.unesco.org>
- [24.] Young, M., Slota, S., Cutter, A. B., Jalette, G., Mullin, G., Lai, B., & Yukhymenko, M. (2012). Our princess is in another castle: A review of trends in serious gaming for education. *Review of Educational Research*, 82(1), 61–89.