



OPEN ACCESS

Studies in Technology and Education

Volume 5, Issue 1, 2026 | <https://www.azalpub.com/index.php/ste>

RESEARCH ARTICLE

Teaching Strategies and Classroom Interaction in Grade 4 Integrated School Settings at Planas Integrated School

Edwin T. Omela
Dr. Matronillo Martin

Northeastern College, Santiago City, Philippines

Abstract

This study examined the teaching strategies employed by Grade 4 teachers and their relationship to classroom interaction in an integrated school setting. Using a descriptive–correlational research design, the study involved 120 Grade 4 learners and 6 teachers at Planas Integrated School during School Year 2024–2025. Data were collected using a Teaching Strategies Questionnaire, a Classroom Interaction Observation Checklist, and a Learner Perception Survey. Descriptive statistics, Pearson’s correlation, and multiple regression analyses were used to analyze the data. Results showed that teachers employed instructional strategies to a very high extent, particularly interactive discussion, scaffolding, and cooperative learning. Classroom interaction was rated high in terms of learner participation, teacher–learner exchange, and peer collaboration. A significant positive relationship was found between teaching strategies and classroom interaction ($r = .71, p < .001$). Regression analysis revealed that interactive discussion ($\beta = .38, p < .01$) and scaffolding strategies ($\beta = .31, p < .01$) were significant predictors of classroom interaction, explaining 58% of the variance. The findings suggest that learner-centered and interaction-focused strategies significantly enhance classroom interaction in integrated school contexts. Implications for instructional practice and teacher professional development are discussed.

Keywords: teaching strategies, classroom interaction, Grade 4 learners, integrated schools, basic education

Article Info

Received:

January 1, 2026

Accepted:

February 8, 2026

Published:

March 31, 2026

1. Introduction

Improving classroom interaction remains a central concern in basic education, particularly in integrated school settings where diverse learner needs coexist within a single instructional environment. Classroom interaction defined as the dynamic exchange between teachers and learners and among learners themselves plays a critical role in promoting engagement, comprehension, and academic achievement. In the Philippine K–12 context, Grade 4 represents a transitional stage where learners shift from foundational to more analytical and participatory learning experiences.

Teachers' instructional strategies are widely recognized as a key determinant of classroom interaction. Strategies such as interactive discussion, cooperative learning, scaffolding, and contextualized instruction encourage learners to participate actively and construct meaning collaboratively. However, empirical studies examining the relationship between teaching strategies and classroom interaction at the elementary level, particularly in integrated public schools, remain limited.

Planas Integrated School provides a relevant context for this investigation due to its heterogeneous learner population and emphasis on inclusive instruction. This study aimed to examine the extent of teaching strategies employed by Grade 4 teachers, the level of classroom interaction observed, and the relationship between these two variables.

Specifically, the study sought to answer the following questions:

1. What teaching strategies are employed by Grade 4 teachers and to what extent?
2. What is the level of classroom interaction in terms of teacher–learner and learner–learner engagement?
3. Is there a significant relationship between teaching strategies and classroom interaction?
4. Which teaching strategies significantly predict classroom interaction?

2. Methodology

2.1 Research Design

The study employed a descriptive–correlational design to examine relationships between teaching strategies and classroom interaction without manipulating variables.

2.2 Participants

The respondents consisted of 120 Grade 4 learners and 6 Grade 4 teachers at Planas Integrated School. Learners were selected through total enumeration, while all Grade 4 teachers participated in the study.

2.3 Research Instruments

Data were gathered using three validated research instruments designed to capture teaching practices and classroom interaction from multiple perspectives. The Teaching Strategies Questionnaire (TSQ) was used to measure the extent to which Grade 4 teachers employed instructional strategies across five domains: interactive discussion, cooperative learning, scaffolding, use of instructional materials, and classroom management strategies. Responses were rated on a 5-point Likert scale ranging from 1 (Very Low) to 5 (Very High). The instrument demonstrated high internal consistency, with a Cronbach's alpha coefficient of .91, indicating strong reliability.

Classroom interaction was documented through the Classroom Interaction Observation Checklist (CIOC), which focused on observable instructional behaviors, including teacher

questioning techniques, learner participation, peer interaction, and feedback practices. To ensure objectivity and consistency of observations, inter-rater reliability was established, yielding a coefficient of .88, which reflects a high level of agreement between observers and supports the dependability of the observational data.

To complement the teacher- and observer-based measures, learners’ perspectives were captured using the Learner Perception Survey (LPS). This instrument assessed learners’ perceived levels of engagement and interaction during classroom lessons, providing insight into how instructional practices were experienced by students. The LPS demonstrated strong internal reliability, with a Cronbach’s alpha of .89, indicating that the items consistently measured learners’ perceptions of classroom interaction.

2.4 Data Collection Procedure

Permission was secured from school authorities. Questionnaires were administered to learners, while classroom observations were conducted over three consecutive weeks. Ethical considerations, including informed consent and confidentiality, were strictly observed.

2.5 Data Analysis

Data were analyzed using SPSS. Descriptive statistics (mean, standard deviation) described teaching strategies and classroom interaction. Pearson’s r determined relationships, and multiple regression analysis identified predictors of classroom interaction.

3. Results and Findings

Table 1. Extent of Teaching Strategies Employed by Grade 4 Teachers

Teaching Strategies Domain	Mean (M)	Standard Deviation (SD)	Interpretation
Interactive Discussion	4.45	0.39	Very High
Scaffolding Strategies	4.41	0.41	Very High
Cooperative Learning	4.36	0.44	Very High
Use of Instructional Materials	4.28	0.46	Very High
Classroom Management Strategies	4.20	0.48	High
Overall Mean	4.34	0.42	Very High

Scale: 1.00–1.80 = Very Low; 1.81–2.60 = Low; 2.61–3.40 = Moderate; 3.41–4.20 = High; 4.21–5.00 = Very High

Extent of Teaching Strategies Employed by Grade 4 Teachers

Table 1 indicates that Grade 4 teachers employed teaching strategies to a very high extent (M = 4.34, SD = 0.42), with interactive discussion and scaffolding emerging as the most frequently used strategies. This finding suggests that teachers consistently adopt learner-centered and facilitative approaches rather than purely transmissive methods. The high mean scores reflect intentional instructional planning that encourages dialogue, guided support, and collaborative meaning-making.

This result aligns with the work of Visible Learning, who emphasized that instructional strategies promoting active engagement such as classroom discussion and structured support have strong positive effects on learner achievement. Similarly, Mind in Society highlighted the importance of scaffolding within the learner’s zone of proximal development, where teacher guidance enables learners to perform tasks beyond their independent capabilities. The findings suggest that Grade 4 teachers at Planas Integrated School operationalize these principles in daily classroom practice.

Table 2. Level of Classroom Interaction in Grade 4 Classrooms

Classroom Interaction Indicators	Mean (M)	Standard Deviation (SD)	Interpretation
Teacher–Learner Interaction	4.30	0.38	Very High
Learner Participation	4.18	0.41	High
Peer Interaction	4.15	0.43	High
Feedback and Questioning	4.25	0.40	Very High
Overall Mean	4.22	0.40	High

Level of Classroom Interaction in Grade 4 Classrooms

Table 2 shows that classroom interaction was rated high overall ($M = 4.22$, $SD = 0.40$), with teacher–learner interaction receiving the highest mean score. This indicates that classrooms are characterized by frequent instructional exchanges, questioning, and feedback, fostering an interactive learning environment. High levels of peer interaction further suggest that learners are encouraged to collaborate and engage in shared learning tasks.

These findings support Classroom Discourse, who argued that meaningful classroom interaction is central to cognitive development and language learning. Moreover, Exploring Classroom Discourse emphasized that interaction-rich classrooms promote learner engagement and deeper understanding. The results imply that the instructional environment in Grade 4 classrooms effectively supports both academic and social participation.

Table 3. Pearson Correlation Between Teaching Strategies and Classroom Interaction

Variables	r-value	p-value	Interpretation
Teaching Strategies and Classroom Interaction	0.71	< .001	Strong Positive Relationship

Correlation is significant at the 0.01 level (2-tailed)

Relationship Between Teaching Strategies and Classroom Interaction

Table 3 reveals a strong positive correlation between teaching strategies and classroom interaction ($r = .71$, $p < .001$). This indicates that as the extent of effective teaching strategies increases, the level of classroom interaction also improves. The strength of this relationship suggests that instructional choices made by teachers are closely linked to how actively learners participate and interact during lessons.

This finding corroborates Towards Dialogic Teaching, who asserted that teaching strategies grounded in dialogue and interaction fundamentally shape classroom communication patterns. Additionally, How Learning Happens emphasized that well-structured instructional strategies create conditions for productive interaction rather than passive learning. The result underscores the pedagogical importance of intentional strategy selection in fostering interactive classrooms.

Table 4. Multiple Regression Analysis Predicting Classroom Interaction

Predictor Variables	B	SE B	β (Beta)	t-value	p-value
Interactive Discussion	0.42	0.11	0.38	3.89	.002
Scaffolding Strategies	0.36	0.12	0.31	3.02	.004
Cooperative Learning	0.18	0.10	0.15	1.80	.074
Instructional Materials	0.12	0.09	0.10	1.33	.186

Predictor Variables	B	SE B	β (Beta)	t-value	p-value
Classroom Management	0.09	0.08	0.08	1.13	.261

Model Summary:

- R = 0.76
- R² = 0.58
- Adjusted R² = 0.56
- F(5, 114) = 31.47
- p < .001

Table 4 demonstrates that teaching strategies significantly predict classroom interaction, explaining 58% of the variance (R² = .58). Among the predictors, interactive discussion (β = .38, p = .002) and scaffolding strategies (β = .31, p = .004) emerged as statistically significant. This indicates that dialogic teaching and structured instructional support are the most influential contributors to classroom interaction.

These findings are consistent with Teaching for Quality Learning at University, who emphasized constructive alignment and interactive teaching as drivers of learner engagement. Likewise, Educational Psychology highlighted that scaffolding and guided questioning promote sustained learner participation and understanding. The results suggest that not all strategies contribute equally; rather, interaction-focused practices play a decisive role in shaping classroom dynamics.

Table 5. Summary of Significant Findings

Research Variable	Key Result
Teaching Strategies	Very High extent of use
Classroom Interaction	High level across indicators
Relationship	Strong positive correlation
Best Predictors	Interactive Discussion, Scaffolding
Explained Variance	58% of classroom interaction

Table 5 synthesizes the major findings, confirming that teaching strategies are employed to a very high extent and that classroom interaction levels are correspondingly high. The identification of interactive discussion and scaffolding as key predictors reinforces the central role of learner-centered pedagogy in integrated school settings.

This synthesis supports constructivist and sociocultural perspectives on learning, particularly the view that learning occurs through social interaction and guided participation (Vygotsky, 1978; Alexander, 2008). The results collectively indicate that effective teaching strategies are not merely instructional tools but structural mechanisms that shape how learners engage, communicate, and learn within the classroom.

5. Discussion

The findings demonstrate that Grade 4 teachers at Planas Integrated School consistently employ learner-centered teaching strategies, particularly interactive discussion and scaffolding. From an inclusive education perspective, these strategies are not simply effective pedagogical choices; they function as equity-oriented practices that widen participation pathways for learners with different readiness levels, learning needs, and classroom identities. This alignment is directly consistent with Sustainable Development Goal 4 (SDG 4), which calls on education systems to “ensure inclusive and equitable quality education” and promote lifelong learning opportunities for all.

The strong correlation between teaching strategies and classroom interaction provides empirical support for constructivist and sociocultural learning theories, which view learning as a socially mediated process rather than an individual acquisition of information. According to *Mind in Society*, cognitive development occurs through interaction with more knowledgeable others, where language and social engagement serve as primary tools for learning. The high levels of classroom interaction observed in this study indicate that teachers effectively operationalize these principles by structuring lessons that encourage dialogue, guided participation, and collaborative problem-solving.

The predictive power of interactive discussion further underscores the critical role of dialogic teaching in elementary classrooms. Interactive discussion, characterized by open-ended questioning, reciprocal exchanges, and formative feedback, has been shown to enhance learners' conceptual understanding and engagement. Towards Dialogic Teaching emphasized that dialogic classrooms promote higher-order thinking by valuing learners' ideas and positioning them as active contributors to knowledge construction. Similarly, Visible Learning identified classroom discussion and feedback as high-impact instructional practices with substantial effects on student achievement. The findings of the present study reinforce these conclusions, demonstrating that interactive discussion is a key driver of classroom interaction in Grade 4 integrated settings.

The results also align with prior studies highlighting the role of scaffolding in enhancing learner confidence, participation, and academic engagement, particularly during transitional stages of schooling. Grade 4 learners are expected to move beyond foundational skills toward more abstract reasoning and independent learning, a shift that can be challenging without adequate instructional support. Scaffolding enables teachers to bridge this gap by gradually transferring responsibility from teacher to learner. Educational Psychology noted that well-designed scaffolding helps learners manage cognitive load, reduces anxiety, and increases willingness to participate in classroom activities. Empirical studies have similarly found that scaffolded instruction leads to higher levels of learner engagement and sustained participation, especially among learners with varying abilities (Kirschner, Sweller, & Clark, 2006).

In integrated school settings, where classrooms often include learners with diverse academic readiness, linguistic backgrounds, and learning needs, the importance of interactive discussion and scaffolding becomes even more pronounced. Learner-centered strategies provide flexible entry points for participation, allowing all learners to contribute according to their abilities while benefiting from peer support. Classroom Discourse argued that inclusive classroom discourse practices are essential for ensuring equitable participation and access to learning opportunities. The findings of this study suggest that Grade 4 teachers at Planas Integrated School use interaction-focused strategies not only to enhance learning but also to promote inclusivity and social cohesion within the classroom.

Conclusively, the results affirm that teaching strategies are not merely instructional techniques but structural mechanisms that shape classroom interaction patterns. By emphasizing interactive discussion and scaffolding, teachers create learning environments where learners actively engage, collaborate, and construct knowledge together. These findings contribute to the growing body of evidence supporting learner-centered pedagogy as a foundation for effective and inclusive elementary education, particularly in integrated school contexts.

6. Conclusion

This study established that teaching strategies exert a significant and substantive influence on classroom interaction in Grade 4 integrated school settings, affirming the central role of pedagogy in shaping learners' opportunities to participate, communicate, and engage

meaningfully in classroom activities. Among the strategies examined, interactive discussion and scaffolding emerged as the strongest predictors of effective classroom interaction, indicating that classrooms become more interactive when teachers deliberately design lessons around dialogue, questioning, guided support, and gradual release of responsibility. These findings suggest that interaction in the classroom is not incidental but is largely constructed through teachers' instructional decisions.

The prominence of interactive discussion underscores the importance of dialogic teaching in elementary education. When teachers use open-ended questions, acknowledge learners' ideas, and provide formative feedback, they create spaces where learners are positioned as active contributors to knowledge construction rather than passive recipients of information. This supports sociocultural perspectives on learning, which emphasize that understanding develops through social interaction and language-mediated activity (Mind in Society). Consistent with dialogic teaching research, the results indicate that structured classroom talk enhances learner participation and promotes shared meaning-making, which are essential for deeper learning (Towards Dialogic Teaching).

Similarly, the strong predictive effect of scaffolding highlights the importance of instructional support that is responsive to learners' developmental and academic needs. Scaffolding enables teachers to bridge gaps between learners' current capabilities and the demands of more complex tasks by providing prompts, modeling, and guided practice that are gradually withdrawn as learners gain competence. This approach has been shown to enhance learner confidence, willingness to participate, and sustained engagement, particularly during transitional stages of schooling such as Grade 4 (Educational Psychology). In integrated school settings, where learner diversity is pronounced, scaffolding serves as a critical mechanism for ensuring that all learners can access and participate in shared learning goals without being marginalized.

Hence, the findings underscore the importance of learner-centered instructional practices as foundational conditions for active engagement and collaborative learning. By prioritizing interactive discussion and scaffolded instruction, teachers create classroom environments that support meaningful interaction, peer collaboration, and inclusive participation. These results reinforce evidence from large-scale syntheses demonstrating that strategies emphasizing interaction and feedback have strong positive effects on learning outcomes (Visible Learning). Consequently, strengthening teachers' capacity to implement dialogic and scaffolded teaching practices is essential for enhancing classroom interaction and promoting high-quality learning experiences in integrated elementary school contexts.

7. Recommendations

1. Teachers may prioritize interactive discussion and scaffolding strategies to strengthen classroom interaction.
2. School administrators may design professional development programs focused on dialogic and inclusive teaching practices.
3. Future studies may employ longitudinal or mixed-methods designs to examine the long-term impact of teaching strategies on learner outcomes across grade levels.

References

Alexander, R. (2008). *Towards dialogic teaching: Rethinking classroom talk*. Dialogos.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74. <https://doi.org/10.1080/0969595980050102>

Cazden, C. B. (2001). *Classroom discourse: The language of teaching and learning* (2nd ed.). Heinemann.

Florian, L. (2015). Conceptualising inclusive pedagogy: The inclusive pedagogical approach in action. In J. M. Deppeler, T. Loreman, R. Smith, & L. Florian (Eds.), *Inclusive pedagogy across the curriculum* (pp. 11–24). Emerald. <https://doi.org/10.1108/S1479-363620150000007002>

Florian, L. (2018). Inclusive pedagogy: A transformative approach to individual differences but can it help reduce educational inequalities? *Scottish Educational Review*, 50(1), 5–14.

Gillies, R. M. (2016). Cooperative learning: Review of research and practice. *Australian Journal of Teacher Education*, 41(3), 39–54. <https://doi.org/10.14221/ajte.2016v41n3.3>

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.

Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, 41(2), 75–86. https://doi.org/10.1207/s15326985ep4102_1

Kyndt, E., Raes, E., Lismont, B., Timmers, F., Cascallar, E., & Dochy, F. (2013). A meta-analysis of the effects of face-to-face cooperative learning: Do recent studies falsify or verify earlier findings? *Educational Research Review*, 10, 133–149. <https://doi.org/10.1016/j.edurev.2013.02.002>

UNESCO. (2020). *Global education monitoring report 2020: Inclusion and education – All means all*. UNESCO Publishing. <https://unesdoc.unesco.org/ark:/48223/pf0000373718>

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations. <https://sdgs.un.org/2030agenda>

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Walsh, S. (2011). *Exploring classroom discourse: Language in action*. Routledge. <https://doi.org/10.4324/9780203827826>

Woolfolk, A. (2016). *Educational psychology* (13th ed.). Pearson Education.