International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

READING, NUMERACY, AND CLASSROOM ENGAGEMENT IN GRADE 4: TEACHING PRACTICES IN A RURAL PUBLIC ELEMENTARY SCHOOL

Mae Hyacinth L. Timmaot
Northeastern College, Santiago City, Philippines

Publication Date:b03/31/2026

ABSTRACT

Foundational skills in reading and numeracy are critical determinants of learners' academic success and classroom engagement, particularly in the elementary grades. In rural public school contexts, teachers often navigate resource limitations, learner diversity, and contextual constraints while striving to support these core competencies. This study examined the teaching practices employed in Grade 4 classrooms at Damag Elementary School, a rural public elementary school, with particular focus on their relationship to learners' reading skills, numeracy development, and classroom engagement. Using a mixed-methods descriptive approach, data were collected through teacher questionnaires, classroom observations, learner surveys, and focus group discussions. Findings indicate that teachers employed a combination of explicit instruction, contextualized activities, and interactive strategies to support reading and numeracy. Classroom engagement was generally high in activities involving peer interaction and real-life applications, while learners demonstrated varying levels of proficiency in reading comprehension and basic numeracy operations. The study underscores the importance of integrated instructional practices that simultaneously address literacy, numeracy, and engagement, and highlights the need for sustained instructional support and contextualized interventions in rural elementary school settings.

Keywords: *reading, numeracy, classroom engagement, Grade 4, rural education, teaching practices, elementary education*

Received: 01/08/2026 **Revised:** 02/25/2026 **Accepted:** 04/29/2026 **Published:** 03/31/2026

ISSN:3116-2991

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

I. INTRODUCTION

Reading and numeracy are foundational skills that underpin learning across all subject areas in elementary education. Proficiency in reading enables learners to comprehend instructional content, follow directions, and engage meaningfully in classroom discourse, while numeracy supports problem-solving, logical reasoning, and everyday decision-making. In the early to middle elementary grades, particularly Grade 4, learners are expected to transition from learning basic skills to applying them across disciplines, making effective instruction in reading and numeracy especially crucial.

Despite their importance, reading and numeracy outcomes in rural public elementary schools often lag behind national and international benchmarks. Research suggests that instructional effectiveness is influenced not only by curriculum standards but also by classroom practices, teacher preparedness, learner readiness, and contextual factors such as access to instructional materials and learning support at home. Rural schools frequently contend with limited resources, multilevel classrooms, and learners with varied language backgrounds, all of which shape teaching and learning processes.

Damag Elementary School exemplifies many of these rural education realities. As a public elementary school serving learners from diverse socio-economic backgrounds, it faces challenges related to instructional resources, learner preparedness, and classroom conditions. Understanding how teachers support reading, numeracy, and classroom engagement in this context is essential for improving instructional practices and learner outcomes. This study therefore examines the teaching practices employed in Grade 4 classrooms at Damag Elementary School and explores how these practices influence learners' reading skills, numeracy development, and engagement.

2. Review of Related Literature

2.1 Reading Instruction in Elementary Education

Reading proficiency in elementary school is a strong predictor of later academic success. Effective reading instruction typically combines explicit teaching of decoding and comprehension strategies with opportunities for meaningful practice and discussion. Studies have shown that learners benefit from guided reading, vocabulary instruction, and comprehension monitoring, particularly when instruction is responsive to learners' reading levels and language backgrounds.

2.2 Numeracy Development in the Elementary Grades

Numeracy involves more than basic computation; it includes understanding numbers, relationships, and mathematical reasoning. Research emphasizes the importance of conceptual understanding alongside procedural fluency. Effective numeracy instruction integrates problem-solving, use of manipulatives, and real-life applications to help learners make sense of mathematical concepts.

2.3 Classroom Engagement

Classroom engagement is a multidimensional construct encompassing behavioral, emotional, and cognitive participation. Engaged learners are more likely to persist in learning tasks, demonstrate positive attitudes toward school, and achieve higher academic outcomes. Teaching practices that promote interaction, relevance, and feedback are consistently associated with higher levels of engagement.

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

2.4 Teaching Practices in Rural School Contexts

Rural education studies highlight the need for contextualized and flexible teaching practices. Teachers in rural schools often adapt instruction by using locally available materials, integrating learners' experiences, and employing collaborative strategies to compensate for limited resources. Such adaptations can enhance engagement and support foundational skills when aligned with clear instructional goals.

3. Methodology

3.1 Research Design

This study employed a mixed-methods descriptive research design to examine teaching practices related to reading, numeracy, and classroom engagement in Grade 4 classrooms. The design allowed for the integration of quantitative descriptions of learner outcomes and engagement levels with qualitative insights into instructional practices.

3.2 Research Locale and Participants

The study was conducted at Damag Elementary School, a rural public elementary school in the Philippines. Participants included Grade 4 teachers and learners. Teachers were selected through purposive sampling, while learners were included through total enumeration of Grade 4 classes.

3.3 Research Instruments

Data were gathered using a teacher questionnaire on instructional practices, a learner survey on classroom engagement, classroom observation checklists, and focus group discussion guides for learners. The instruments focused on reading instruction, numeracy teaching strategies, and engagement-related practices.

3.4 Data Collection Procedure

Approval to conduct the study was obtained from school authorities. Data collection was carried out during regular class sessions. Teachers completed questionnaires, classroom observations were conducted across multiple lessons, and learner surveys and focus group discussions were administered with appropriate ethical considerations.

3.5 Data Analysis

Quantitative data were analyzed using descriptive statistics to summarize teaching practices and engagement levels. Qualitative data from observations and focus group discussions were analyzed thematically to identify recurring patterns related to reading, numeracy, and engagement.

4. Results and Discussion

4.1 Teaching Practices in Reading and Numeracy

Analysis of classroom observations and teacher interviews revealed that Grade 4 teachers employed a **blended instructional approach** that integrated explicit instruction, interactive strategies, and contextualized teaching practices in reading and numeracy. Rather than relying on a single method, teachers strategically combined direct explanation and modeling with learner-centered activities and real-life examples to address diverse learning needs within the classroom. This blended approach allowed teachers to establish foundational skills through clear instruction while simultaneously promoting active participation and meaningful application of concepts. The convergence of these instructional practices reflects teachers' adaptive responses to learner readiness, classroom conditions, and curricular demands. From the qualitative data, **three major themes** emerged, highlighting how instructional structure, interaction,

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

and contextual relevance collectively shaped learners' reading and numeracy experiences.

Theme 1: Explicit Instruction as a Foundation for Skill Development

Teachers consistently relied on **explicit instruction** as the primary approach for introducing reading and numeracy concepts, particularly when lessons involved new or challenging content. In reading instruction, this approach was evident through structured guided reading sessions, direct teaching of key vocabulary, and teacher-led comprehension questioning designed to check understanding and clarify meaning. Teachers modeled correct reading strategies, explained unfamiliar words, and guided learners in identifying main ideas and details before allowing them to respond independently.

Similarly, in numeracy instruction, teachers emphasized step-by-step demonstrations of problem-solving procedures. Lessons typically began with the teacher modeling how to analyze a problem, identify given and unknown values, select appropriate operations or formulas, and arrive at a solution. This modeling phase was followed by guided practice, during which learners solved similar problems with teacher support, and later by independent practice to reinforce skill mastery. Such structured sequencing of instruction provided learners with clear examples and scaffolding, helping them build confidence and accuracy in both reading comprehension and mathematical problem-solving.

Participant Responses.
One teacher explained:
"Kailangan talagang ipakita muna ang tamang paraan lalo na sa Math, kasi kapag hindi nila nakita ang steps, nalilito agad sila."
Another teacher noted:
"Sa pagbasa, inuunahan ko muna ng paliwanag ang mga salita bago ang tanong para mas maintindihan nila ang binabasa."

These practices indicate that explicit instruction remains a central strategy for building foundational skills, particularly for learners with varying levels of readiness. Research has shown that clear explanations, modeling, and guided practice are effective in improving both reading comprehension and mathematical accuracy, especially in elementary grades (National Reading Panel, 2000; Rosenshine, 2012). In rural school contexts, where learners may have limited exposure to literacy and numeracy support outside the classroom, explicit instruction provides essential structure and clarity.

Theme 2: Interactive Strategies Enhance Understanding and Participation

Beyond direct instruction, teachers deliberately incorporated a range of interactive teaching strategies to reinforce newly introduced concepts and to sustain learner participation. These strategies included structured group work, oral reading activities, learning games, and collaborative problem-solving tasks, which were typically implemented after initial explanations to allow learners to apply what they had learned in more engaging ways. Group activities enabled learners to exchange ideas, clarify misunderstandings, and support one another's learning, while oral reading exercises provided opportunities to practice fluency, pronunciation, and comprehension in a supportive setting. Learning games were used to review key concepts in reading and numeracy, helping to maintain interest and reduce anxiety associated with academic tasks. Collaborative problem-solving activities, particularly in numeracy, encouraged learners to discuss strategies, justify answers, and arrive at solutions collectively. Collectively, these interactive approaches created a more participatory classroom environment, allowing learners to actively process content, build confidence, and deepen understanding through social interaction and shared responsibility for learning.

Participant Responses
A Grade 4 teacher shared:

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

"Mas nagiging lively ang klase kapag may group activity, mas nakikita kong nakikisali ang mga bata."
A learner stated:
"Mas naiintindihan ko po ang Math kapag may kalaro at nagtutulungan kami sa sagot."

Interactive strategies promote social learning and peer support, allowing learners to clarify ideas and learn from one another. According to Vygotsky's social constructivist theory, interaction plays a critical role in cognitive development as learners construct meaning through collaboration (Vygotsky, 1978). Studies also indicate that interactive and cooperative learning approaches improve engagement and achievement in both literacy and numeracy (Prince, 2004; Slavin, 2014).

Theme 3: Contextualization of Lessons Increases Relevance and Interest

Teachers frequently contextualized reading texts and numeracy problems by drawing on learners' everyday experiences, including local stories, household routines, community activities, and familiar situations within their rural environment. In reading lessons, teachers selected or adapted texts that reflected learners' cultural and social contexts, enabling students to make personal connections with the content and better comprehend meanings. In numeracy instruction, word problems were often framed around common activities such as buying goods, sharing food at home, or helping with simple household tasks, which allowed learners to visualize mathematical concepts more easily. This contextualized approach enhanced lesson relevance and authenticity, making learning more meaningful for learners. By linking academic content to real-life experiences, teachers helped reduce abstraction, increased learner interest, and supported deeper understanding of both reading and numeracy concepts.

Participant Responses.
One teacher remarked:

"Kapag halimbawa tungkol sa palengke o bahay ang problem, mas mabilis nilang naiintindihan."

A learner commented:

"Mas gusto ko po kapag kwento na parang nangyayari talaga sa amin."

Contextualized instruction helps bridge the gap between abstract concepts and learners' real-world experiences. Research suggests that contextualization enhances motivation, comprehension, and transfer of learning, particularly among learners from rural and low-resource settings (Gay, 2010; UNESCO, 2017). By anchoring lessons in familiar contexts, teachers at Damag Elementary School effectively supported learner interest and comprehension.

4.2 Learners' Reading and Numeracy Performance

Findings revealed varying levels of reading and numeracy performance among Grade 4 learners, resulting in two major themes.

Theme 4: Mastery of Basic Skills with Persistent Gaps in Higher-Order Tasks

Most learners demonstrated the ability to perform basic reading tasks, such as identifying main ideas and answering literal comprehension questions, as well as basic numeracy skills involving simple operations. However, difficulties emerged in higher-order comprehension and multi-step mathematical problem-solving.

Participant Responses
A teacher observed:

"Kayang-kaya nila ang basic na tanong, pero kapag bakit at paano na, doon sila nahihirapan."

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

A learner shared:

"Nalilito po ako kapag mahaba na ang problem at maraming gagawin."

These findings suggest that while foundational skills are being developed, learners require additional support to progress toward higher-order thinking. Research indicates that comprehension and problem-solving require explicit instruction in strategies such as inference-making, reasoning, and metacognition (Duke & Pearson, 2002; Kilpatrick, Swafford, & Findell, 2001). Differentiated instruction and scaffolded tasks are therefore essential in addressing learner gaps.

4.3 Classroom Engagement

Analysis of learner surveys and classroom observations showed generally high engagement levels, particularly during interactive lessons. Three engagement-related themes emerged.

Theme 5: Behavioral Engagement as the Most Evident Dimension

Behavioral engagement was highly observable in the Grade 4 classrooms, as evidenced by learners' active participation in classroom activities, frequent responses to teacher questions, and consistent completion of assigned tasks. This form of engagement was particularly evident during group activities, learning games, and interactive exercises, where learners showed enthusiasm by volunteering answers, collaborating with peers, and staying focused on tasks for extended periods. Classroom observations indicated that learners were more willing to raise their hands, share ideas, and assist classmates when activities involved movement, competition, or shared problem-solving. The structured yet interactive nature of these activities provided clear expectations while allowing learners to take an active role in the learning process. As a result, learners demonstrated sustained attention and task persistence, suggesting that instructional practices promoting interaction and collaboration effectively supported visible and consistent behavioral engagement in the classroom.

Participant Responses.
A learner stated:

"Sumasagot po ako kapag may activity kasi masaya at hindi boring."

Behavioral engagement is often the most visible form of participation and serves as a foundation for deeper engagement. Fredricks, Blumenfeld, and Paris (2004) noted that when learners are behaviorally engaged, they are more likely to sustain attention and persist in learning tasks.

Theme 6: Emotional Engagement Fostered by Supportive Classroom Practices

Learners consistently expressed enjoyment and positive attitudes toward reading and numeracy lessons, particularly in classrooms where teachers used encouraging language, positive reinforcement, and a variety of engaging activities. Classroom observations and learner responses indicated that teachers' verbal encouragement, patient guidance, and supportive feedback helped create a welcoming learning environment in which learners felt comfortable participating without fear of making mistakes. Varied instructional activities such as games, group work, storytelling, and interactive problem-solving also contributed to learners' interest and enjoyment by breaking the monotony of routine seatwork. As a result, learners demonstrated greater willingness to take part in discussions, attempt challenging tasks, and persist in learning activities. These positive emotional responses suggest that a supportive and dynamic classroom climate plays a crucial role in sustaining learners'

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

motivation and engagement in reading and numeracy lessons.

Participant Responses.
One learner shared:

"Masaya po ang klase kapag hindi kami pinapagalitan at tinutulungan kami."

Positive emotional engagement reflects learners' developing sense of belonging, confidence, and intrinsic motivation within the classroom. When learners feel supported and valued, they are more likely to view academic tasks as meaningful and achievable rather than intimidating. Research indicates that supportive teacher–learner relationships foster trust and emotional security, which in turn encourage learners to take academic risks, ask questions, and sustain effort in challenging tasks. Wentzel (2012) emphasized that positive interpersonal interactions and enjoyable learning activities significantly influence learners' willingness to participate and persist in academic work. In elementary classrooms, where learners are still forming attitudes toward school and learning, such emotional engagement plays a crucial role in shaping sustained interest in reading and numeracy and promoting long-term academic engagement.

Theme 7: Cognitive Engagement as an Area for Improvement

Cognitive engagement—manifested through deep thinking, the ability to explain reasoning, and the independent application of learned strategies—was less evident in comparison to behavioral and emotional engagement in the Grade 4 classrooms. While learners were generally attentive and willing to participate in activities, classroom observations showed that many tended to focus on completing tasks rather than reflecting on underlying concepts or articulating how they arrived at their answers. Learners often provided short or procedural responses and relied heavily on teacher guidance, particularly during problem-solving and comprehension tasks that required higher-order thinking. This pattern suggests that although instructional practices successfully encouraged participation and positive attitudes, there remain limited opportunities for learners to engage in sustained reasoning, analysis, and metacognitive reflection. Strengthening cognitive engagement may therefore require more intentional use of open-ended questions, problem-based tasks, and guided reflection activities that prompt learners to think deeply, justify their responses, and independently apply reading and numeracy strategies.

Participant Responses.
A teacher explained:

"Kailangan pa silang sanayin magpaliwanag ng sagot, kasi madalas sagot lang ang binibigay."

Cognitive engagement develops most effectively when learners are consistently challenged with meaningful and intellectually demanding tasks and are simultaneously supported through appropriate scaffolding and timely feedback. Meaningful tasks require learners to go beyond surface-level responses by analyzing information, making connections, and applying strategies to new or unfamiliar situations. However, for elementary learners, such demands must be carefully structured to match their developmental level. Scaffolding such as guiding questions, worked examples, visual organizers, and step-by-step prompts helps learners manage task complexity while gradually building independence. Feedback further strengthens cognitive engagement by helping learners recognize errors, refine strategies, and reflect on their thinking processes.

Pintrich (2003) emphasized that higher levels of cognitive engagement emerge when instructional

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

designs intentionally promote reasoning, reflection, and metacognitive awareness. This involves encouraging learners to explain their answers, monitor their understanding, and evaluate the effectiveness of the strategies they use. When teachers create opportunities for learners to think about how and why they arrive at answers, rather than simply whether responses are correct, learners become more actively involved in regulating their own learning. Such instructional practices foster deeper comprehension in reading and more flexible problem-solving in numeracy, ultimately supporting sustained cognitive engagement and improved learning outcomes.

4.4 Relationship Between Teaching Practices and Classroom Engagement

The findings indicate a strong connection between teaching practices and learner engagement.

Theme 8: Integrated and Learner-Centered Practices Sustain Engagement

Classrooms that effectively combined explicit instruction, interactive strategies, and contextualized teaching consistently demonstrated higher levels of learner engagement across behavioral, emotional, and cognitive dimensions. Explicit instruction provided learners with clear explanations, structured guidance, and concrete examples that established a strong foundation for understanding. Interactive strategies, such as group work, games, and collaborative problem-solving, then allowed learners to actively process information, ask questions, and learn from peers. Contextualization further strengthened engagement by connecting lessons to learners' real-life experiences, making learning more relevant and meaningful. Together, these complementary practices created dynamic classroom environments in which learners were attentive, motivated, and willing to participate. The integration of structure, interaction, and relevance enabled teachers to address diverse learning needs while sustaining learner interest and involvement in reading and numeracy activities.

Participant Responses.
One teacher reflected:

"Kapag pinagsama ang paliwanag, activity, at halimbawa sa buhay nila, mas nakikinig at sumasali ang mga bata."

This theme underscores the effectiveness of learner-centered instruction that balances structure and interaction. Studies consistently show that instructional practices integrating relevance, active participation, and guided support lead to improved engagement and learning outcomes (Hattie, 2009; Darling-Hammond et al., 2020). In rural public school settings, such practices are particularly valuable in addressing learner diversity and sustaining interest in reading and numeracy.

5. Discussion

The findings of this study provide important insights into how teaching practices influence reading, numeracy, and classroom engagement in a rural public elementary school context. The results indicate that Grade 4 teachers at Damag Elementary School employed a blended instructional approach that integrates explicit instruction, interactive strategies, and contextualized teaching. This combination appears to be a pragmatic and effective response to the realities of rural classrooms, where learners present diverse levels of readiness and instructional resources are often limited.

The prominent use of explicit instruction in reading and numeracy supports existing research emphasizing the importance of clear modeling, guided practice, and structured explanations in developing foundational skills, particularly among elementary learners. The

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

results show that explicit teaching helped learners grasp basic reading comprehension skills and essential numeracy procedures. This aligns with research suggesting that direct and systematic instruction is especially beneficial for learners who may lack sufficient academic support outside the classroom. In the rural context of Damag Elementary School, explicit instruction served as a stabilizing instructional foundation that reduced confusion and increased learner confidence.

Beyond direct instruction, the integration of interactive strategies such as group work, games, and collaborative problem-solving played a significant role in enhancing classroom engagement. The high levels of behavioral engagement observed during these activities suggest that interaction promotes active participation and sustained attention. This finding reinforces existing literature that highlights the value of social interaction and peer collaboration in supporting learning and engagement. Interactive strategies allowed learners to verbalize ideas, learn from peers, and participate without fear of failure, which is particularly important in mixed-ability classrooms.

The consistent contextualization of lessons further strengthened engagement and understanding. By linking reading texts and numeracy problems to learners' daily experiences, teachers made abstract concepts more concrete and relevant. This approach was especially effective in a rural setting, where familiar contexts helped bridge the gap between school learning and everyday life. The findings support previous studies indicating that contextualized instruction enhances motivation, comprehension, and learner interest, particularly among learners from resource-constrained communities.

Despite these positive practices, the results also revealed persistent challenges, particularly in relation to cognitive engagement. While learners were behaviorally and emotionally engaged, fewer opportunities were observed for deep reasoning, explanation of thinking, and independent strategy use. This suggests that although learners are actively participating and enjoying lessons, instructional time may still be heavily focused on task completion rather than higher-order thinking. This finding echoes concerns in the literature that cognitive engagement requires intentional instructional design, including open-ended questions, reflective activities, and formative feedback that encourages learners to articulate and evaluate their thinking.

The relationship between teaching practices and engagement highlights that instructional integration—rather than reliance on a single approach—is key to sustaining learner involvement. Classrooms that balanced structure (explicit instruction), interaction (collaborative activities), and relevance (contextualization) consistently demonstrated higher engagement levels. Teachers' adaptive strategies mitigated some of the challenges posed by limited resources and learner diversity, underscoring the critical role of teacher agency and pedagogical flexibility in rural public schools.

Overall, the discussion of findings suggests that improving reading and numeracy outcomes in rural elementary schools requires continued support for integrated, learner-centered, and context-sensitive teaching practices. Strengthening cognitive engagement remains a key area for instructional improvement, particularly through scaffolding higher-order tasks and promoting metacognitive awareness. These findings contribute to the growing body of evidence that effective teaching in rural contexts is less about access to ideal resources and more about how teachers strategically use available tools, knowledge, and learner experiences to create meaningful and engaging learning environments.

International Journal of Education, Literacies, and Curriculum Studies
ISSN: 3116-2991
https://ijelcs.mindumaresearch.com/journal/index

6. Conclusion

This study examined reading, numeracy, and classroom engagement in Grade 4 classrooms at Damag Elementary School, with particular emphasis on the teaching practices employed within a rural public school context. The findings demonstrate that integrated and contextualized instructional approaches which combine explicit instruction, interactive strategies, and real-life applications play a vital role in supporting the development of foundational literacy and numeracy skills while simultaneously enhancing learner engagement. These practices enabled teachers to address varied learner needs, sustain interest in lessons, and create meaningful learning experiences despite contextual limitations.

Although challenges related to learner readiness, varying skill levels, and limited instructional resources continue to affect teaching and learning, the study highlights the capacity of teachers to adapt their instructional strategies in response to these constraints. Through the use of contextualized examples, interactive activities, and guided support, teachers were able to promote active participation and foster positive attitudes toward learning. Overall, the findings underscore the importance of responsive and flexible teaching practices in rural elementary schools and suggest that strengthening support for such practices can further enhance classroom engagement and learning outcomes in reading and numeracy.

6. Implications

Schools may strengthen instructional support by implementing sustained and targeted professional development programs that focus on the integration of literacy and numeracy across subject areas. Such professional development should equip teachers with practical strategies for designing lessons that simultaneously develop reading comprehension, mathematical reasoning, and learner engagement. Training sessions may emphasize the use of explicit instruction combined with interactive and contextualized approaches, as well as the effective integration of literacy skills such as vocabulary development and comprehension strategies within numeracy lessons. By providing continuous learning opportunities rather than one-time trainings, schools can help teachers refine instructional practices that respond to diverse learner needs in rural classrooms.

Teachers are encouraged to continue employing contextualized and interactive strategies, as these approaches have been shown to enhance learner motivation and participation. However, these strategies should be complemented by intentional instructional scaffolding to address learner gaps, particularly in higher-order comprehension and problem-solving. Scaffolding techniques may include guided questioning, visual organizers, worked examples, and gradual release of responsibility to support learners as they develop independence. Such practices can help ensure that active participation translates into deeper understanding and sustained cognitive engagement.

Future research may build on the findings of this study by examining the longitudinal effects of integrated literacy and numeracy instruction on learner achievement and engagement over time. Long-term studies could provide insights into how early instructional practices influence learners' academic trajectories in later grades. Additionally, expanding the scope of research to include multiple rural public elementary schools would enhance the generalizability of findings and allow for comparative analysis across different rural contexts. Such research could inform policy decisions and contribute to the development of scalable, context-sensitive instructional models for improving foundational skills in rural education settings.

References

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice, 5*(1), 7–74.
National Research Council. (2000). *How people learn: Brain, mind, experience, and school*. National Academies Press.
Osborne, J., & Dillon, J. (2008). *Science education in Europe: Critical reflections*. Nuffield Foundation.

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

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791

Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 205–242). International Reading Association.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109. https://doi.org/10.3102/00346543074001059

Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice* (2nd ed.). Teachers College Press.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge. https://doi.org/10.4324/9780203887332

Kilpatrick, J., Swafford, J., & Findell, B. (Eds.). (2001). *Adding it up: Helping children learn mathematics*. National Academies Press. https://doi.org/10.17226/9822

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. National Institute of Child Health and Human Development.

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology, 95*(4), 667–686. https://doi.org/10.1037/0022-0663.95.4.667

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education, 93*(3), 223–231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x

Rosenshine, B. (2012). Principles of instruction: Research-based strategies that all teachers should know. *American Educator, 36*(1), 12–39.

Slavin, R. E. (2014). Cooperative learning and academic achievement: Why does groupwork work? *Anales de Psicología, 30*(3), 785–791. https://doi.org/10.6018/analesps.30.3.201201

UNESCO. (2017). *Reading the past, writing the future: Fifty years of promoting literacy*. UNESCO Publishing.

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

Wentzel, K. R. (2012). Teacher–student relationships and adolescent competence at school. In T. Wubbels et al. (Eds.), *Interpersonal relationships in education* (pp. 19–36). Sense Publishers. https://doi.org/10.1007/978-94-6091-939-8_2