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PERCEPTION OF TEACHERS ON MULTISENSORY APPROACHES IN DEVELOPING READING SKILLS OF GRADE THREE LEARNERs IN THE THIRD DISTRICT OF LAS PIÑAS

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ABSTRACT

This study examined the effectiveness of multisensory instructional approaches in improving the reading performance of Grade 3 learners, focusing on decoding, reading fluency, and comprehension. Anchored in multisensory learning theory and the principles of inclusive education, the study responded to the growing need for evidence-based literacy interventions that address learner diversity and support equitable learning outcomes in line with Sustainable Development Goal 4 (Quality Education). A quantitative quasi-experimental design was employed, involving an experimental group exposed to multisensory instruction and a control group taught using conventional reading strategies. Reading performance was measured using a researcher-developed and expert-validated assessment administered before and after the intervention. Pre-test results indicated no significant differences between the groups, establishing baseline equivalence. Post-test analysis revealed statistically significant gains among learners who received multisensory instruction across all reading domains. The experimental group demonstrated superior improvement in word recognition, reading fluency, and reading comprehension compared to the control group. These findings indicate that integrating visual, auditory, kinesthetic, and tactile modalities enhances learner engagement and supports the development of foundational literacy skills. The results affirm the effectiveness of multisensory instruction as a learner-centered and inclusive pedagogical approach that responds to varying learning needs. The study concludes that multisensory strategies are valuable tools for strengthening early literacy and reducing learning gaps in elementary education. It recommends the systematic integration of multisensory approaches into reading curricula and teacher professional development programs to support inclusive, equitable, and quality education outcomes consistent with SDG 4.

Keywords: *multisensory instruction, reading performance, Grade 3 learners, literacy intervention, inclusive education*

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I. INTRODUCTION

Reading proficiency in the early grades is a critical foundation for learners' academic success and lifelong learning. Globally, literacy remains a central concern in basic education, particularly in developing contexts where many learners fail to acquire age-appropriate reading skills. In the Philippines, national and international assessments have consistently revealed gaps in reading achievement among elementary learners, underscoring the urgency of evidence-based instructional interventions.

Multisensory instruction has gained attention as an effective approach to literacy development because it engages multiple sensory pathways visual, auditory, kinesthetic, and tactile during learning. This approach aligns with inclusive education frameworks, as it accommodates diverse learning styles and supports struggling readers. Prior studies suggest that multisensory strategies can enhance phonemic awareness, word recognition, and comprehension, particularly among learners with reading difficulties. However, empirical evidence at the elementary level, especially in Grade 3 reading contexts, remains limited.

This study addressed this gap by examining the effect of multisensory instructional approaches on the reading performance of Grade 3 learners. Specifically, it sought to determine whether learners exposed to multisensory instruction would demonstrate significantly higher reading gains than those taught using traditional methods.

Review of Related Literature

Reading development and early-grade intervention

Early literacy research has consistently shown that systematic and explicit instruction in foundational reading skills significantly improves early reading outcomes (National Reading Panel [NRP], 2000; Ehri et al., 2001; Castles et al., 2018). Meta-analytic studies further confirm that structured reading interventions are particularly effective for beginning and struggling readers (Gersten et al., 2020).

Multisensory and structured literacy approaches

Multisensory instruction has been widely associated with structured literacy approaches that integrate visual, auditory, kinesthetic, and tactile modalities to support decoding and word recognition (Ehri et al., 2001; Stevens et al., 2021). However, recent evaluations suggest that while multisensory components may support reading development, the effectiveness of Orton–Gillingham–based interventions varies depending on implementation fidelity and instructional quality (Stevens et al., 2021).

Differentiated instruction for diverse learners

Differentiated instruction has been conceptualized as a proactive approach to addressing learner variability through adjustments in content, process, and learning environment (Tomlinson, 2014). Research emphasizes that effective differentiation supports inclusive education but requires strong instructional planning and assessment literacy (Langelaan et al., 2024).

Culturally responsive teaching and engagement

Culturally responsive pedagogy has been shown to enhance student engagement and academic outcomes by affirming learners' cultural identities and leveraging their lived experiences in instruction (Ladson-Billings, 2014). In diverse classrooms, culturally responsive practices contribute to stronger classroom relationships and increased participation in literacy activities (Ladson-Billings, 2014).

Assessment, feedback, and responsive instruction

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Formative assessment research indicates that learning improves when teachers provide timely, specific, and actionable feedback aligned with clear learning goals (Black & Wiliam, 1998; Hattie & Timperley, 2007). Continuous assessment enables teachers to adjust instruction responsively to students' needs (Black & Wiliam, 1998).

Technology-supported instruction for personalization

Studies on technology integration suggest that digital tools can enhance differentiated instruction through adaptive learning systems and multimodal supports, provided that teachers possess sufficient pedagogical and technological competence (Tomlinson, 2014; Langelaan et al., 2024). Without adequate professional development, however, technology use alone does not guarantee improved learning outcomes (Langelaan et al., 2024).

Methods

Research Design

The study employed a quantitative quasi-experimental research design using a pretest–posttest control group format. This design allowed for comparison of reading performance between learners exposed to multisensory instruction and those who received conventional reading instruction.

Participants and Setting

The participants consisted of Grade 3 learners from a public elementary school. Two intact classes were purposively selected: one served as the experimental group and the other as the control group. Both groups were comparable in terms of age, curriculum exposure, and baseline reading ability.

Research Instrument

A researcher-developed reading assessment was used to measure learners' reading performance. The instrument assessed key components of reading, including word recognition, reading fluency, and comprehension. Content validity was established through expert review, and reliability testing yielded acceptable internal consistency.

Intervention Procedure

The experimental group received multisensory reading instruction over a specified period. Lessons incorporated visual aids, oral reading activities, movement-based tasks, and hands-on materials designed to reinforce phonics and comprehension skills. The control group continued with traditional reading instruction emphasizing textbook-based and teacher-centered methods.

Data Analysis

Pretest and posttest scores were analyzed using descriptive statistics and inferential tests. Mean scores, standard deviations, and t-tests were computed to determine differences within and between groups at a 0.05 level of significance.

Results

1. **Descriptive Statistics (Pre-test)**

Table 1. Pre-test levels of reading literacy skills (Experimental vs Control)

Variable	Group	Mean	SD	Interpretation
Word Recognition (Pre)	Experimental	2.710	0.1739	High
Word Recognition (Pre)	Control	2.640	0.2160	High
Reading Fluency (Pre)	Experimental	2.572	0.2313	High

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Variable	Group	Mean	SD	Interpretation
Reading Fluency (Pre)	Control	2.608	0.2676	High
Reading Comprehension (Pre)	Experimental	2.255	0.2261	Low
Reading Comprehension (Pre)	Control	2.296	0.2010	Low
Overall Reading Literacy (Pre)	Experimental	**2.5126**	**0.1513**	High
Overall Reading Literacy (Pre)	Control	**2.5147**	**0.1114**	High

Both the experimental and control groups began the study at statistically comparable pre-test levels, demonstrating High overall literacy performance but Low comprehension outcomes. This pattern indicates that reading comprehension constituted the primary baseline weakness among learners, despite adequate foundational skills in decoding and basic literacy. Such a profile is consistent with established reading research, which emphasizes that higher-level meaning-making processes such as inference, integration of ideas, and monitoring understanding typically require sustained, explicit, and strategically guided instruction beyond basic decoding proficiency. The findings suggest that while learners may develop surface-level reading skills through routine instruction, comprehension growth often lags without targeted pedagogical support, thereby reinforcing the need for structured interventions that deliberately bridge foundational skills and higher-order comprehension processes.

2. Descriptive Statistics (Post-test)

Table 2. Post-test levels of reading literacy skills (Experimental vs Control)

Variable	Group	Mean	SD	Interpretation
Word Recognition (Post)	Experimental	3.766	0.1610	Very High
Word Recognition (Post)	Control	2.840	0.1414	High
Reading Fluency (Post)	Experimental	3.697	0.2113	Very High
Reading Fluency (Post)	Control	2.792	0.2197	High
Reading Comprehension (Post)	Experimental	3.517	0.2300	Very High
Reading Comprehension (Post)	Control	2.408	0.2482	High
Overall Reading Literacy (Post)	Experimental	**3.660**	**0.1397**	Very High
Overall Reading Literacy (Post)	Control	**2.680**	**0.0944**	High

The experimental group achieved **Very High** performance levels across all reading domains, whereas the control group remained at the **High** level following the intervention. This performance pattern highlights not only statistical significance but also meaningful instructional impact. The superior outcomes of the experimental group support the practical value of structured, skill-focused instructional supports, particularly when teaching systematically strengthens

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decoding and fluency foundations alongside comprehension and meaning-making processes. By reinforcing automatic word recognition and reading efficiency, learners were better positioned to engage with text at a deeper level, resulting in more robust comprehension gains. These findings affirm that literacy instruction is most effective when foundational skills and higher-order understanding are developed concurrently within a coherent instructional framework.

3. Between-Group Differences (Independent Samples t-test)

3.1 Pre-test equivalence (baseline)

Table 3. Independent t-test (Pre-test): Experimental vs Control

Variable	t	df	Sig.	Decision	Interpretation
Word Recognition (Pre)	1.325	52	.191	Fail to reject H0	Not significant
Reading Fluency (Pre)	-0.524	52	.602	Fail to reject H0	Not significant
Reading Comprehension (Pre)	-0.696	52	.489	Fail to reject H0	Not significant
Overall (Pre)	-0.055	52	.956	Fail to reject H0	Not significant

The absence of statistically significant differences at baseline indicates that the experimental and control groups were comparable prior to the intervention. This baseline equivalence strengthens the internal validity of the study, as it supports the conclusion that the significant post-test differences observed across all reading domains can be attributed to the implemented instructional intervention rather than to pre-existing group disparities. Establishing statistical comparability at pre-test is essential in quasi-experimental designs and enhances confidence in the causal interpretation of the intervention's effects.

3.2 Post-test outcomes

Table 4. Independent t-test (Post-test): Experimental vs Control

Variable	t	df	Sig.	Decision	Interpretation
Word Recognition (Post)	22.273	52	.000	Reject H0	Significant
Reading Fluency (Post)	15.402	52	.000	Reject H0	Significant
Reading Comprehension (Post)	17.036	52	.000	Reject H0	Significant
Overall (Post)	17.201	52	.000	Reject H0	Significant

Post-test comparisons revealed statistically significant differences across all reading domains, indicating that learners in the experimental group consistently outperformed those in the control group following the intervention. These findings demonstrate that the implemented multisensory approach produced superior outcomes in decoding, reading fluency, and comprehension. The results align with extensive literacy research showing that reading gains are strongest when instruction systematically targets foundational skills particularly word recognition and fluency while concurrently supporting comprehension development through structured and scaffolded activities.

Effect-size analysis further underscores the robustness of the intervention's impact. Using an *r*-effect approximation derived from the reported *t*-values and

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degrees of freedom, the post-test effects were very large across all outcomes (approximately $r \approx .91–.95$). These values far exceed conventional benchmarks for large effects, indicating not only statistical significance but also substantial practical significance. Such magnitudes suggest that the observed differences reflect meaningful improvements in learners' reading performance rather than chance variation or minimal instructional effects.

Taken together, the statistical and practical significance of the findings provide compelling evidence that multisensory, explicit, and structured reading instruction can markedly accelerate literacy development beyond what is achieved through routine classroom practices. The results reinforce the importance of instructional approaches that integrate repeated practice, clear skill progression, and multimodal engagement to strengthen foundational reading processes and promote higher-level comprehension.

4) Within-Group Gains (Paired Samples t-test)

4.1 Control group (Pre vs Post)

Table 5. Paired t-test (Control group)

Outcome Pair	Pre Mean	Post Mean	t	Sig.	Decision
Word Recognition	2.640	2.840	-5.477	.000	Significant
Reading Fluency	2.608	2.792	-4.822	.000	Significant
Reading Comprehension	2.296	2.408	-2.914	.008	Significant
Overall	2.51	2.68	-5.266	.000	Significant

The control group also demonstrated statistically significant improvements from pre-test to post-test, indicating normal developmental progress and the effects of routine classroom instruction. However, the magnitude of these gains was substantially smaller than those observed in the experimental group. This contrast suggests that while conventional instruction supports incremental reading development, it is less effective in accelerating literacy growth compared to targeted, structured interventions. The comparatively modest gains of the control group underscore the added instructional value of the multisensory approach, which provided more intensive, explicit, and varied practice opportunities that enhanced skill acquisition beyond what is typically achieved through standard instructional practices.

4.2 Experimental group (Pre vs Post)

Table 6. Paired t-test (Experimental group)

Outcome Pair	Pre Mean	Post Mean	t	Sig.	Decision
Word Recognition	2.710	3.766	-22.718	.000	Significant
Reading Fluency	2.572	3.697	-15.214	.000	Significant
Reading Comprehension	2.255	3.517	-18.526	.000	Significant
Overall	2.51	3.66	-19.038	.000	Significant

The experimental group demonstrated very large and statistically significant gains across all measured reading outcomes, including decoding accuracy, reading fluency, and comprehension. These findings are consistent with a substantial body of literacy research emphasizing the effectiveness of explicit, structured instruction combined with frequent and systematic practice opportunities. The observed gains suggest that the intervention successfully supported learners in developing automatic word recognition and fluency,

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which in turn facilitated improved comprehension. Repeated, guided practice embedded within a structured instructional framework likely strengthened phonological awareness, orthographic mapping, and reading efficiency, enabling learners to process text with greater accuracy and confidence. This pattern of results reinforces evidence that well-designed literacy interventions particularly those that integrate explicit instruction with scaffolded, cumulative practice are critical for accelerating reading development in the elementary grades.

Note: If the multisensory component resembled Orton-Gillingham-type features, it is worth interpreting results cautiously because synthesis studies report mixed average effects across contexts and implementations. Findings, however, show strong gains in this specific setting suggesting implementation quality/context may have been favorable.

Teacher Perceptions of Multisensory Approaches (Composite Means)

Table 7. Multisensory modality ratings (Pre, Post, Composite)

Modality	Pre Mean	Interpretation	Post Mean	Interpretation	Composite Mean	Interpretation
Visual	2.815	High	3.770	Very High	3.292	High
Auditory	2.800	High	3.652	Very High	3.226	High
Kinesthetic	2.863	High	3.407	High	3.135	High
Tactile	2.833	High	3.393	High	3.113	High
Overall	**2.828**	High	**3.556**	Very High	**3.192**	High

Teachers rated multisensory instructional approaches positively overall, with post-test ratings indicating a marked increase in perceived effectiveness compared to pre-intervention assessments. These improved ratings are consistent with evidence suggesting that multimodal instructional practices enhance learner engagement and sustain attention by activating multiple sensory pathways simultaneously. By providing repeated and varied input through visual, auditory, kinesthetic, and tactile channels, multisensory instruction reinforces phonological processing, decoding accuracy, and word recognition. Such reinforcement allows learners to establish stronger orthographic representations and more stable word-learning pathways, which are essential for fluent reading development. Moreover, the positive teacher evaluations suggest that multisensory approaches are not only pedagogically effective but also practical and manageable in classroom implementation, further supporting their integration into early literacy instruction.

Discussion

This study examined the effectiveness of the implemented reading intervention by comparing pre-test and post-test performance of experimental and control groups across word recognition, reading fluency, and reading comprehension. The statistical findings provide strong empirical support for the effectiveness of the intervention, particularly for learners exposed to the structured, multisensory approach.

Baseline Equivalence and Internal Validity

The independent samples *t*-test results for the pre-test indicated no statistically significant differences between the experimental and control groups across all reading domains. This baseline equivalence strengthens the internal validity of the study, confirming that post-intervention differences can be attributed to the implemented instructional approach rather than pre-

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existing disparities. Similar methodological rigor is emphasized in experimental literacy research, where pre-test equivalence is essential for attributing gains to instructional interventions (Gersten et al., 2020).

Impact of the Intervention on Reading Outcomes

Post-test results revealed statistically significant differences between the experimental and control groups across all reading domains, with the experimental group achieving markedly higher mean scores. The magnitude of the *t*-values and the consistently significant *p*-values indicate that the intervention produced not only statistically significant but also practically meaningful gains. These findings align with extensive evidence that structured and explicit reading instruction yields strong improvements in early literacy skills, particularly in decoding and fluency (National Reading Panel, 2000; Ehri et al., 2001).

The largest gains were observed in word recognition and reading fluency, suggesting that systematic exposure to repeated, multimodal practice effectively strengthened foundational reading processes. According to the Simple View of Reading, automatic word recognition is a prerequisite for fluent reading and comprehension (Gough & Tunmer, 1986). The significant improvement in comprehension scores among experimental participants further supports this framework, indicating that strengthening lower-level decoding skills facilitated higher-level meaning construction.

Within-Group Improvements and Instructional Value

Paired samples *t*-test results demonstrated significant pre-to-post gains for both groups, although gains were substantially larger in the experimental group. The improvement observed in the control group likely reflects natural reading development and the effects of regular classroom instruction. However, the experimental group's markedly higher gains underscore the added instructional value of the intervention. This finding is consistent with prior studies showing that while typical instruction can lead to incremental progress, targeted and explicit interventions accelerate reading growth, particularly among learners with initial comprehension weaknesses (Castles et al., 2018).

Role of Multisensory Instruction

Teacher ratings indicated high to very high effectiveness of multisensory strategies, particularly in the post-intervention phase. These findings suggest that visual, auditory, kinesthetic, and tactile modalities contributed to improved learner engagement and skill acquisition. While recent meta-analyses caution that multisensory instruction alone does not guarantee superior outcomes (Stevens et al., 2021), the present results indicate that when multisensory elements are embedded within structured and explicit instruction, they can meaningfully enhance reading development. This supports the view that instructional quality and alignment with evidence-based literacy principles are more critical than modality alone.

Implications for Early Literacy Instruction

Collectively, the findings suggest that structured, multisensory-supported reading instruction is particularly effective in improving foundational literacy skills and addressing comprehension weaknesses. The significant gains across all domains highlight the importance of early, explicit intervention in preventing persistent reading difficulties. These results reinforce calls for literacy programs that integrate systematic decoding instruction, repeated fluency practice, and scaffolded comprehension activities, especially in contexts where learners demonstrate early reading vulnerabilities (Gersten et al., 2020).

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Limitations and Directions for Future Research

Despite the strong findings, the study is limited by its sample size and contextual scope. Future research should replicate the intervention across larger and more diverse populations to enhance generalizability. Longitudinal studies are also recommended to examine the sustainability of reading gains over time. Additionally, further investigation into which specific components of the intervention contributed most strongly to learner outcomes would refine instructional design and implementation.

Conclusion

This study provides robust empirical evidence supporting the effectiveness of multisensory instructional approaches in enhancing the reading performance of Grade 3 learners. By engaging learners through visual, auditory, kinesthetic, and tactile modalities, multisensory instruction significantly improved decoding accuracy, reading fluency, and reading comprehension compared to conventional teaching approaches. These findings reinforce the view that early literacy development is not a uniform process and that instructional practices must be responsive to learners' diverse cognitive, linguistic, and sensory needs.

The results demonstrate that multisensory instruction is particularly effective in strengthening foundational reading skills, which are critical for learners' long-term academic success. Improved decoding and fluency enabled learners to allocate greater cognitive resources to meaning-making, thereby supporting higher levels of comprehension. This progression aligns with established reading theories that emphasize the interdependence of lower- and higher-level reading processes. The study further confirms that learner-centered, structured, and explicit instruction when supported by multisensory engagement can mitigate early reading difficulties and reduce achievement gaps in the elementary grades.

Beyond its instructional value, the study contributes to the discourse on inclusive education by illustrating how multisensory strategies promote equitable access to learning. Learners who struggle under traditional, text-heavy instruction benefited substantially from the multimodal nature of the intervention, highlighting its potential to support learners with varied learning profiles. In this sense, the findings directly advance the objectives of Sustainable Development Goal 4 by demonstrating a practical, classroom-based approach to delivering inclusive and quality education.

Thus, the study concludes that multisensory instructional approaches represent a powerful and evidence-based pedagogical strategy for improving early literacy outcomes. Their systematic integration into elementary reading programs can enhance instructional effectiveness, foster learner engagement, and support inclusive educational practices. Future research is encouraged to examine the long-term sustainability of these gains, explore implementation across diverse educational contexts, and identify the most impactful components of multisensory instruction to further strengthen literacy education.

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