



Flexible, Multi-Modal Approach and Vocabulary Performance Among Grade 3 Learners at Laranjo Elementary School

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Received 09/08/2026

Revised 22/08/2026

Accepted 14/09/2026

Abstract

Background and Aim: Vocabulary development is essential to English language learning because it supports learners' ability to understand texts, communicate ideas, and participate effectively in classroom activities. Despite its importance, many Grade 3 learners at Laranjo Elementary School demonstrated limited vocabulary, which affected their reading comprehension, word recognition, and classroom participation. Results of the Comprehensive Rapid Literacy Assessment (CRLA) indicated that 55% of the learners were classified as low emerging or high emerging readers, highlighting the need for an instructional approach that could strengthen vocabulary development. This study examined the effectiveness of the W.O.R.D. (Watching, Observing, Responding, and Developing) Strategy, a flexible multimodal instructional approach, in improving the vocabulary performance and classroom engagement of Grade 3 learners.

Materials and Methods: This study employed a quasi-experimental research design with structured classroom observations involving forty (40) Grade 3 learners, with eighteen (18) comprising the non-equivalent control group and twenty-two (22) comprising the experimental group. Participants were selected through purposive sampling with non-random assignment based on their reading proficiency as determined by the Comprehensive Rapid Literacy Assessment (CRLA). Vocabulary performance was measured using a researcher-developed 30-item Vocabulary Recognition Test (VRT), administered as a pre-test and post-test, while learners' classroom engagement and vocabulary learning behaviors were documented using a researcher-developed classroom observation checklist. Quantitative data were analyzed using descriptive statistics, paired-samples t-test, and Analysis of Covariance (ANCOVA) to control for baseline differences through Jeffreys's Amazing Statistics Program (JASP) Version 0.19.3. Observation data were analyzed using the mean and standard deviation to describe learners' classroom engagement and vocabulary learning behaviors throughout the intervention.

Results: Before the intervention, both groups demonstrated low vocabulary proficiency and were classified as Frustration Vocabulary Users, with mean scores of 46.48% for the control group and 36.52% for the experimental group, confirming a distinct baseline imbalance. Following the four-week implementation of the W.O.R.D. Strategy, vocabulary performance improved in both groups, with the experimental group reaching a final mean score of 76.06% and the control group obtaining a final mean score of 75.19%, placing both groups within the Instructional Vocabulary User level. Statistical analyses further revealed that both groups improved significantly from pre-test to post-test, with the experimental group showing a larger mean gain (39.55 percentage points; $t(21) = 24.03$, $p < .001$, $d = 5.12$) than the control group (28.70 percentage points; $t(17) = 14.75$, $p < .001$, $d = 3.48$). When controlling for initial baseline differences, the ANCOVA revealed a statistically significant main effect for the instructional treatment, $F(1, 37) = 6.19$, $p = .017$, partial $\eta_p^2 = .143$, even though final absolute post-test mean scores looked nearly identical. Classroom observations likewise showed that learners exposed to the W.O.R.D. Strategy participated more actively, demonstrated greater enthusiasm and confidence, collaborated more effectively with peers, and applied newly learned vocabulary more consistently than learners who received conventional classroom instruction.

Conclusion: The findings indicate that when pre-existing baseline variations are statistically controlled, the W.O.R.D. Strategy serves as an effective and practical instructional approach for improving vocabulary performance growth and classroom engagement among Grade 3 learners. By integrating visual, auditory, kinesthetic, and collaborative learning experiences, the strategy supported learners' vocabulary development, increased classroom engagement, and encouraged more confident use of newly acquired vocabulary. However, broad claims regarding its absolute superiority over traditional instruction should be avoided due to the non-randomized baseline differences and the small sample size.

Keywords: Vocabulary Development; W.O.R.D. Strategy; Multimodal Instruction; Vocabulary Performance; Classroom Engagement; ANCOVA



Introduction

Vocabulary is one of the most important foundations of language learning. It enables learners not only to recognize words but also to understand their meanings, use them appropriately, and apply them in different situations. A strong vocabulary helps learners comprehend what they read and hear, express their ideas clearly, and participate confidently in classroom activities (Wen & Naim, 2023). Because of this, vocabulary development has long been recognized as a key factor in improving reading comprehension, communication skills, and overall academic achievement (Haque et al., 2024; Quines, 2023).

For learners in the primary grades, vocabulary becomes even more important as they move from learning how to read to using reading as a tool for learning. At this stage, learners are expected to understand texts across different subject areas, construct meaning from new information, and communicate what they have learned. However, many young learners struggle to develop sufficient vocabulary, especially when English is not the language they commonly use at home. Limited vocabulary often makes it difficult for them to understand reading passages, follow classroom discussions, and express their thoughts in speaking and writing. As a result, these learners are more likely to experience difficulties in other learning areas that require reading comprehension.

The Department of Education recognizes the importance of strengthening foundational literacy through the MATATAG Curriculum, which emphasizes essential learning competencies and encourages the use of evidence-based, learner-centered teaching approaches (Department of Education, 2024). While these reforms provide clear direction for improving literacy instruction, vocabulary development remains a challenge in many elementary classrooms. Teachers continue to encounter learners with varying reading abilities and language backgrounds, making it necessary to adopt instructional strategies that are engaging, flexible, and responsive to diverse learning needs.

This challenge was evident among Grade 3 learners at Laranjo Elementary School. At the beginning of School Year 2025-2026, the Comprehensive Rapid Literacy Assessment (CRLA) showed that more than half of the learners were classified as either low emerging or high emerging readers, while fewer than half had reached the developing reader level. Classroom observations also revealed that many learners had difficulty understanding unfamiliar words, identifying meanings from context, and using newly learned vocabulary in classroom activities. These difficulties affected not only their reading comprehension but also their confidence and participation during lessons. These findings underscored the need for an instructional approach that could strengthen vocabulary development through meaningful, engaging, and learner-centered learning experiences.

Research consistently shows that vocabulary instruction is more effective when learners experience words in multiple ways rather than through memorization alone. Coyne et al. (2022) found that learners with language and learning difficulties benefit from explicit vocabulary instruction supported by additional classroom interventions. Likewise, Fengyu (2023) reported that multimodal instruction enables learners to encounter vocabulary through different forms of learning, leading to better understanding and retention. This view is supported by Paivio's Dual Coding Theory (1986), which explains that information can be represented through both verbal and visual forms, and by Richard Mayer's Multimedia Learning Theory (2001), which shows how pairing visual scaffolding with speech helps lower-baseline learners overcome reading decoding obstacles. Together, these perspectives suggest that combining visual, auditory, kinesthetic, and collaborative learning experiences can make vocabulary instruction more meaningful and engaging.

Research Objectives:

General Objective:

This study aimed to determine the effectiveness of the W.O.R.D. (Watching, Observing, Responding, and Developing) Strategy in improving the vocabulary performance and classroom engagement of Grade 3 learners at Laranjo Elementary School during School Year 2025-2026.

Specific Objectives:



Specifically, this study sought to:

Primary Comparative Metrics

What is the vocabulary performance of the control group (developing readers) and the experimental group (emerging readers) before the intervention?

What is the vocabulary performance of both groups after the four-week intervention?

Is there a significant improvement in vocabulary performance within each group from pre-test to post-test?

Is there a significant difference in the post-test vocabulary scores between the two groups when controlling for their initial starting differences?

Secondary Descriptive Outcomes

How does the W.O.R.D. Strategy influence learners' classroom engagement (paying attention, participating actively, and collaborating with peers) during vocabulary activities?

What specific vocabulary learning behaviors are observed among the learners throughout the study?

Significance of the Study

This study provides empirical evidence on how multimodal strategies can support primary language classrooms. The findings offer practical benefits for several key stakeholders:

For Teachers: The study provides an actionable, evidence-based teaching routine that can be built directly into daily lesson logs under the MATATAG framework. Instead of requiring expensive digital programs or software, the W.O.R.D. framework provides low-cost, resource-alternative templates, such as contextual short video ideas, targeted drawing activities, teacher-led gestures, and collaborative role-play prompts. These are specifically tailored for public classrooms with limited technology. It gives teachers a clear way to manage mixed reading levels without isolating slower readers.

For School Administrators: The findings offer a practical guide for planning school-based reading interventions and school Learning Action Cell (LAC) sessions. It shows how administrators can use baseline CRLA results to deploy targeted interventions using existing classroom materials.

For the Department of Education: This study contributes local data regarding the utility of multimodal literacy approaches. These insights can help curriculum developers design future MATATAG instructional materials by showing how to blend sensory modalities into standard reading routines.

For Future Researchers: This study provides a useful reference for analyzing real-world classroom data when random assignment is not possible, and pre-existing baseline imbalances are present.

Literature review

Vocabulary Development

Vocabulary development is widely recognized as a cornerstone of language learning and literacy. More than simply learning the meanings of words, it involves understanding how words function in different contexts and using them appropriately in speaking, reading, and writing. A well-developed vocabulary enables learners to comprehend texts, communicate ideas effectively, and participate confidently in classroom activities. Because of its close relationship with language proficiency, vocabulary has consistently been identified as an important factor in academic success (Wen & Naim, 2023).

For learners in the elementary grades, vocabulary becomes increasingly important as they transition from learning to read to reading to learn. At this stage, learners are expected to construct meaning from texts rather than merely recognize printed words. However, limited vocabulary often hinders comprehension, reduces learners' ability to express ideas, and weakens classroom participation. Quines (2023) noted that vocabulary knowledge influences learners' performance across the major language domains, including reading, writing, listening, and speaking. These findings underscore the importance of providing explicit, meaningful, and developmentally appropriate vocabulary instruction during the early years of schooling.

Current research likewise suggests that effective vocabulary instruction extends beyond memorization. Wen and Naim (2023) emphasized that learners develop stronger vocabulary when words



are introduced repeatedly through meaningful contexts and authentic language use. Similarly, Haque et al. (2024) argued that interactive and contextualized learning experiences allow learners to connect new vocabulary with their prior knowledge, making learning more relevant and lasting. Taken together, these studies suggest that vocabulary instruction is more meaningful when learners actively engage with words rather than simply memorize their definitions.

Multimodal Instruction in Primary EFL/ESL Contexts

Multimodal instruction uses visual, auditory, kinesthetic, and textual experiences to give learners multiple ways to process new information (Fengyu, 2023). By combining different forms of representation, teachers can provide richer opportunities for students to understand and apply new words. Research shows that explicit vocabulary instruction paired with active learning features produces stronger outcomes than text-only approaches (Coyne et al., 2022). For example, Knaak et al. (2021) found that combining storytelling, gestures, and pictures helped close learning gaps for students facing language difficulties.

However, a closer look at primary English as a Second Language (ESL) classrooms reveals an important difference between short-term word recognition and long-term vocabulary retention. Traditional, text-heavy vocabulary methods often focus on short-term recognition by using basic worksheets or flashcard drills. While this approach can produce quick results on immediate multiple-choice tests, it rarely moves new words into a child's active memory. In contrast, interactive multimodal instruction builds long-term retention by connecting target words across multiple cognitive paths (visual, auditory, and motor).

True vocabulary development requires students to not just recognize a word on a page, but to contextually recall and express it—a skill built when kinesthetic and social tasks are paired alongside audio-visual inputs.

Mitigating Cognitive Load in Multimodal Design

Despite these benefits, primary school teachers must manage the risks of cognitive overload when working with young learners. According to Cognitive Load Theory, human working memory has a strict limit, and throwing visual, auditory, and kinesthetic inputs at a child all at once can overwhelm their brain. If a lesson features over-stimulating animations, loud music, and complex physical instructions at the same time, the student experiences "extraneous cognitive load." This splits their attention and hurts word retention.

To solve this issue in primary ESL classrooms, researchers recommend using a structured, sequential, and explicit multimodal layout. Instead of using all modalities at once, effective interventions use clean, simple visuals, pair spoken explanations directly with images, and schedule kinesthetic tasks after the sensory inputs are introduced. This ensures that the modalities serve as a supportive cognitive scaffold rather than a confusing distraction.

Synthesis of the Literature

The literature shows that vocabulary development is essential for literacy achievement during the primary school years. Research confirms that vocabulary is learned best when instruction is explicit, contextual, and presented through balanced experiences. Multimodal approaches that combine sights, sounds, and movements can increase classroom engagement and protect long-term retention, as long as cognitive load is controlled.

To connect these theoretical concepts to real-world teaching, the W.O.R.D. Strategy organizes these empirical findings into a simple, sequential classroom routine. Each letter of the acronym is mapped directly to established literature to ensure construct validity:

W – Watching: This component uses clean, targeted educational videos and images to provide dual-channel sensory input. This aligns with Paivio's Dual Coding Theory and Fengyu's (2023) findings that pairing clear imagery with audio narration enhances baseline comprehension without straining basic decoding skills.

O – Observing: This phase focuses on teacher-guided analysis of specific words, shapes, and context clues. This component addresses cognitive load boundaries by filtering out background noise and focusing the child's attention on specific word features, satisfying the split-attention and modality principles.



R – Responding: This phase engages students in active classroom discussions, localized gestures, and physical tasks. This aligns with Richard Mayer's Multimedia Learning Theory principles and Knaak et al.'s (2021) findings that active behavioral outputs convert passive recognition into active word retrieval.

D – Developing: This final step focuses on independent vocabulary application, where students build sentences and use new words in communicative contexts. This satisfies the ultimate goal highlighted by Wright et al. (2022): moving words beyond short-term memory drills and into long-term expressive communication.

Theoretical and Conceptual Framework

This study is anchored in Allan Paivio's Dual Coding Theory (1986) and Richard Mayer's Multimedia Learning Theory (2001, 2009), both of which work alongside John Sweller's Cognitive Load Theory (1988). Together, these theories explain how primary students process and remember vocabulary when lessons are delivered through multiple sensory paths.

According to Dual Coding Theory, human memory processes information through two separate but connected channels: a verbal channel (for text and speech) and a non-verbal channel (for visuals). When a teacher pairs spoken words with pictures, videos, or gestures, it creates two different pathways in the brain. This dual-channel approach builds stronger memory paths, making it much easier for a child to remember and use a word later on.

Expanding on this, Multimedia Learning Theory shows that children learn much more deeply from words and pictures combined than from words alone. This process requires three steps: selecting the right words and images, organizing them into clear mental models, and linking them with things the child already knows.

However, because young learners have limited working memory, this process must be carefully guided by Cognitive Load Theory. If a teacher delivers pictures, sounds, and text in a chaotic way, the student experiences a split-attention effect that stops learning completely. The W.O.R.D. Strategy handles this constraint by delivering its multimedia features sequentially rather than all at once. Sensory inputs (Watching) are immediately supported by focused decoding (Observing), which are then practiced through interactive actions (Responding) before moving to independent writing (Developing). For emerging readers, this structure serves as a temporary cognitive scaffold that uncouples vocabulary learning from advanced decoding, sparking faster growth.

Conceptual Framework

The conceptual framework uses the Input-Process-Output (IPO) Model to illustrate the relationship between the instructional interventions and the final results of vocabulary performance and engagement.

Because this study uses a non-equivalent, quasi-experimental setup, the conceptual framework explicitly models the initial baseline differences between the two groups. It routes the data through an Analysis of Covariance (ANCOVA) model to ensure that pre-existing reading differences do not distort the final evaluation of the strategy's success.

Input (Baseline Profiles and Instructional Approaches): The input stage consists of the pre-existing literacy baselines and the two distinct teaching methods applied to the non-equivalent groups:

- **Experimental Group:** The implementation of the W.O.R.D. Strategy for the 22 emerging readers who started at a lower vocabulary baseline.
- **Control Group:** The continuation of traditional vocabulary instruction for the 18 developing readers who started at a higher vocabulary baseline.

Process (Methodological Implementation and Statistical Control): The process stage describes the systematic execution of the study and the statistical steps used to level the playing field and handle selection bias:

- Administration of the pre-test to establish baseline scores and document the initial group imbalance.

- A four-week instructional period where the experimental group received the W.O.R.D. Strategy and the control group received conventional instruction.
- Continuous tracking of classroom engagement and vocabulary learning behaviors using a validated checklist to monitor secondary descriptive outcomes.
- Administration of the post-test to gather final performance metrics.
- Execution of an Analysis of Covariance (ANCOVA), using pre-test scores as a covariate to statistically remove initial baseline differences and isolate the true effect of the intervention.

Output (Evaluated Outcomes and Practical Deliverables): The output stage represents the final evaluated results and practical goals achieved at the end of the study:

- Adjusted post-test vocabulary scores demonstrating the true rate of vocabulary growth.
- Secondary descriptive outcomes in classroom engagement behaviors (attention, active participation, and peer collaboration).
- Secondary descriptive observations of vocabulary learning behaviors in the classroom.
- Actionable, low-cost multimedia resource templates for public school classrooms with limited technology.

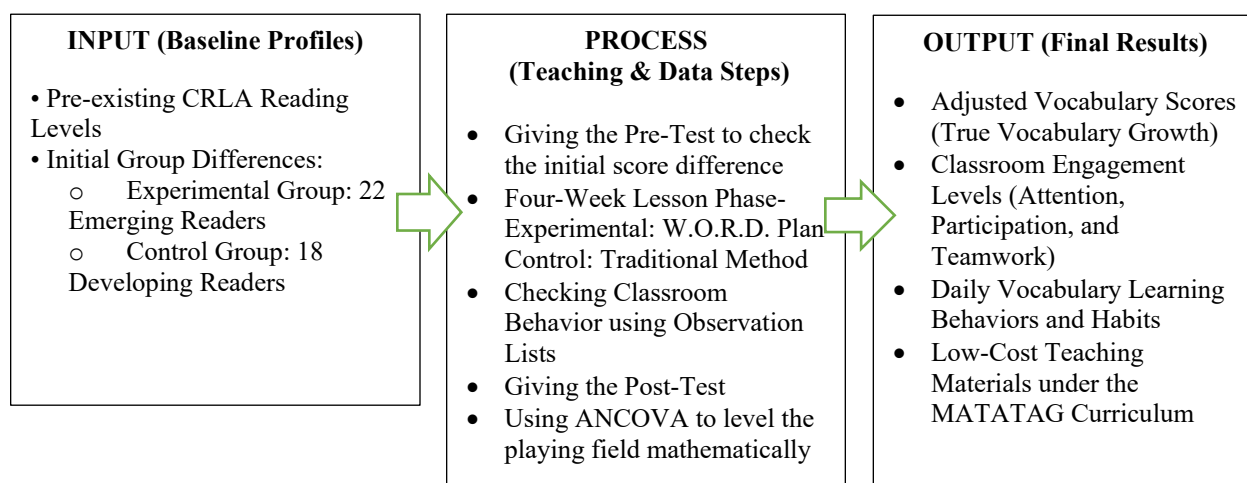


Figure 1. Conceptual Framework showing the Input–Process–Output (IPO) Model of the W.O.R.D. Strategy.

As shown in Figure 1, the conceptual framework recognizes that because the groups were not split at random, they started at very different reading levels. By mapping out a process that channels the scores through an ANCOVA model, the framework separates the true vocabulary growth caused by the strategy from the students' initial starting differences. This creates a clear, reliable structure for measuring the real success of the W.O.R.D. Strategy without relying too much on raw final post-test scores.

Methodology

Research Design

This study used a quasi-experimental, non-equivalent control group design with secondary structured classroom observations to determine the effectiveness of the W.O.R.D. Strategy. This design was chosen because the participants were already placed in established public school classrooms, meaning random assignment was not possible without disrupting normal school schedules. Quantitative data were obtained from the Vocabulary Recognition Test (VRT) administered before and after the intervention. To complement these primary metrics, secondary descriptive data were gathered through a structured classroom observation checklist to track shifts in learner behaviors throughout the four-week intervention window.

Research Locale



The study was conducted at Laranjo Elementary School, Rogongon, Iligan City, Philippines, during School Year 2025-2026. This public school was chosen because baseline results from the CRLA identified a large concentration of Grade 3 learners struggling with low word recognition and limited vocabulary, making it an appropriate setting for a targeted literacy intervention.

Participants and Purposive Sampling Parameters

The target population included all Grade 3 learners enrolled at Laranjo Elementary School during School Year 2025–2026. A sample of forty (40) Grade 3 learners participated in the study, with twenty-two (22) students assigned to the experimental group and eighteen (18) students assigned to the control group.

Purposive sampling with non-random assignment was used to build the study around pre-existing literacy levels derived from the CRLA. To direct the intervention to the students who needed it most, twenty-two (22) learners classified as low emerging and high emerging readers were assigned to the experimental group to receive the multimodal W.O.R.D. Strategy. Conversely, eighteen (18) learners already performing as developing readers served as the control group and received traditional vocabulary instruction.

Methodological Sampling Threats and Statistical Control

Assigning participants to groups based on their pre-existing reading ability introduces two severe threats to internal validity: selection bias and statistical regression to the mean. Because the experimental group was comprised entirely of lower-performing emerging readers and the control group consisted of higher-performing developing readers, a pre-test baseline imbalance was guaranteed. Furthermore, selecting students because of their low literacy scores increases the risk of regression to the mean, where post-test scores might artificially climb due to natural statistical variance rather than the intervention's actual impact.

To address these threats and prevent the error of directly comparing raw post-test means, the primary inferential analysis was upgraded from a simple independent t-test to an Analysis of Covariance (ANCOVA). By utilizing the participants' pre-test scores as a baseline covariate, the ANCOVA mathematically adjusts the final post-test means to factor out initial differences. This isolates the true effect of the W.O.R.D. Strategy from pre-existing profile variations and controls for the selection bias caused by non-random assignment.

Research Instruments

Instrument 1: Vocabulary Recognition Test (VRT)

Vocabulary performance was measured using a 30-item, researcher-developed test patterned after the Phil-IRI and aligned with the Grade 3 competencies under the MATATAG Curriculum. The pre-test was based on the story *The Monkey and the Tortoise*, while the post-test used a parallel version based on *The Ant and the Grasshopper*. Both tests evaluated identical language skills, used the same format, and maintained an identical level of difficulty to ensure fair comparison. Content validity was established by three English language experts, yielding a Content Validity Index (CVI) of 0.92, while pilot testing with 40 non-participating peers produced a Cronbach's alpha of 0.85, confirming high internal reliability.

Instrument 2: Classroom Observation Checklist

A structured checklist was used to document classroom engagement and vocabulary learning behaviors as secondary outcomes. The instrument used a three-point scale (1 = Never Observed, 2 = Sometimes Observed, 3 = Always Observed) across ten behavioral indicators. To establish reliability beyond basic definitions, the checklist was pilot-tested with two independent observers in a non-participating class. An Inter-Rater Reliability analysis yielded a Cohen's Kappa (κ) coefficient of 0.82, showing excellent alignment and ensuring observations were free from observer bias.

Data Collection Procedure

1. **Ethical Approval:** Before data collection, the researcher obtained permission from the School Head of Laranjo Elementary School in accordance with DepEd Order No. 16, s. 2017 (Research Management Guidelines). Written informed consent was secured from the parents or guardians of all participating learners. The learners were informed that their participation was voluntary and that they could withdraw from the study at any time without any consequences. Confidentiality and anonymity were ensured by assigning identification codes instead of using the learners' names, and all collected data were used solely for research purposes.

2. **Administration:** Both the control and experimental groups completed the Vocabulary Recognition Test (VRT) as the pre-test to establish their baseline vocabulary performance. The control group received vocabulary instruction using the traditional teaching method, while the experimental group



received instruction using the W.O.R.D. (Watching, Observing, Responding, and Developing) Strategy. The intervention was implemented over a period of four weeks, with one hour of instruction each school day. Classroom observations were conducted throughout the intervention using a researcher-developed structured observation checklist to document learners' classroom engagement and vocabulary learning behaviors.

3. **Data Gathering:** At the end of the four-week intervention, both groups completed a parallel version of the Vocabulary Recognition Test (VRT) as the post-test. Quantitative data were obtained from the learners' pre-test and post-test scores, while observational data were gathered through the classroom observation checklist to document learners' classroom engagement and vocabulary learning behaviors during the intervention.

4. **Data Management:** All data were encoded into a spreadsheet, verified for accuracy and completeness, and analyzed using Jeffreys's Amazing Statistics Program (JASP) Version 0.19.3.

Statistical Treatment of Data

All statistical calculations were processed using JASP, Version 0.19.3. The data analysis plan was executed as follows:

1. **Descriptive Statistics:** Raw means and standard deviations were used to summarize the absolute performance profiles of both groups during pre-testing and post-testing.

2. **Paired-Samples t-Test:** Conducted within each independent group at $\alpha = .05$ to check for internal growth from baseline.

3. **Analysis of Covariance (ANCOVA):** Used as the primary inferential tool to evaluate comparative effectiveness. Post-test scores served as the dependent variable, the instructional group served as the independent factor, and pre-test scores were entered as the baseline covariate.

4. **Effect Size Quantification:** Partial eta-squared (η_p^2) was computed for the ANCOVA to measure the proportion of variance explained by the intervention, and 95% Confidence Intervals (CIs) for Cohen's d were calculated for the t-tests to provide exact ranges of practical effect size.

5. **Observational Analysis:** Means and standard deviations of the validated checklist scores were treated as descriptive-only secondary outcomes, mapping behavioral shifts without merging them with the primary experimental test metrics.

Results

Problem 1: Baseline Vocabulary Performance

Table 1. Absolute Pre-test Vocabulary Performance Profiles

Group	n	Mean (%)	SD	Minimum	Maximum	Interpretation
Control Group	18	46.48	9.53	23.33	63.33	Frustration Vocabulary User
Experimental Group	22	36.52	9.23	20.00	53.33	Frustration Vocabulary User

Note. Vocabulary proficiency levels were adapted from the Philippine Informal Reading Inventory (Phil-IRI): Independent Vocabulary User (90–100%), Instructional Vocabulary User (75–89%), and Frustration Vocabulary User (below 75%).

Table 1 presents the vocabulary performance of the Grade 3 learners before the implementation of the W.O.R.D. Strategy. The control group obtained a mean score of 46.48% (SD = 9.53), while the experimental group obtained a mean score of 36.52% (SD = 9.23). Based on the adapted Phil-IRI proficiency levels, both groups were classified as Frustration Vocabulary Users, indicating that the learners had limited vocabulary knowledge and required instructional support before the intervention.

The results show that the learners started with relatively low and varied vocabulary skills, as reflected in the standard deviations. While the control group showed a slightly higher vocabulary performance than the experimental group at baseline, both groups remained within the same Frustration Vocabulary User level. These findings support the urgent need for a targeted intervention designed to strengthen vocabulary learning among the learners. This critical need aligns with the systematic review by Black and Wright (2024), who emphasized that struggling readers require structured and explicit vocabulary instruction to overcome severe learning difficulties and support their overall literacy development.

Problem 2: Absolute Post-test Vocabulary Performance



Table 2. Absolute Post-test Vocabulary Performance Profiles

Group	n	Mean (%)	SD	Minimum	Maximum	Interpretation
Control Group	18	75.19	4.60	70.00	83.33	Instructional Vocabulary User
Experimental Group	22	76.06	3.94	70.00	83.33	Instructional Vocabulary User

Note. Vocabulary proficiency levels were adapted from the Philippine Informal Reading Inventory (Phil-IRI): Independent Vocabulary User (90–100%), Instructional Vocabulary User (75–89%), and Frustration Vocabulary User (below 75%).

Table 2 shows the Grade 3 learners' vocabulary performance after the four-week intervention. The experimental group achieved a mean score of 76.06% (SD = 3.94), moving up to the Instructional Vocabulary User level. In contrast, the control group obtained a mean score of 75.19% (SD = 4.60) and also reached the Instructional Vocabulary User level.

The lower standard deviations compared with the pre-test indicate that the learners' scores became more consistent after instruction. While both groups showed improvement and reached the same proficiency level, the findings clearly show that the W.O.R.D. Strategy provided strong, targeted support for vocabulary learning. This outcome is consistent with the findings of Wright et al. (2022), who emphasized the importance of structured and explicit vocabulary frameworks in promoting direct vocabulary growth among elementary learners. Furthermore, this great improvement aligns with the work of Kim and Petscher (2023), who noted that solid vocabulary knowledge plays an increasingly vital role in supporting children's specific reading development and overall literacy progression at this grade level.

Problem 3. Problem 3: Within-Group Vocabulary Performance Improvements

Table 3. Paired-Samples t-test on Pre-test and Post-test Performance

Group	Mean Difference	t	df	p-value	Cohen's d	95% Confidence Interval (CI) of d
Experimental Group	39.55	24.03	21	< .001	5.12	[3.46, 6.79]
Control Group	28.70	14.75	17	< .001	3.48	[2.16, 4.80]

Table 3 presents the paired-samples t-test results looking at the vocabulary growth within each group from pre-test to post-test. The results show that both teaching methods led to significant improvements in the learners' vocabulary skills. The experimental group showed a substantial increase, $t(21) = 24.03$, $p < .001$, gaining an average of 39.55 percentage points with a very large effect size ($d = 5.12$, 95% CI). The control group also showed clear improvement, $t(17) = 14.75$, $p < .001$, increasing by an average of 28.70 percentage points with a large effect size ($d = 3.48$, 95% CI). While both groups improved, the experimental group achieved a higher overall gain (+39.55 points vs. +28.70 points) from their lower starting baseline.

This clear internal improvement within both groups is consistent with the findings of Coyne et al. (2022), who showed that structured vocabulary schedules over multi-week windows reliably produce strong word growth in primary school learners. More importantly, the higher gain achieved by the experimental group demonstrates that the W.O.R.D. Strategy provided powerful, targeted support that accelerated vocabulary learning for students who started behind, helping them catch up quickly.

Problem 4: Inferential Comparative Effectiveness (ANCOVA)

Table 4. ANCOVA Results on Post-test Vocabulary Performance

Source of Variance	Sum of Squares	df	Mean Square	F	p-value	Partial Eta-Sq(η_p^2)
Pre-test (Covariate)	194.06	1	194.06	14.60	< .001	.283
Instructional Group	82.27	1	82.27	6.19	.017	.143
Residuals (Error)	491.68	37	13.29			

Table 4 presents the ANCOVA results on post-test vocabulary performance. To control for the initial baseline differences between the groups and find the true impact of the intervention, an Analysis of Covariance (ANCOVA) was conducted. The pre-test scores were used as a covariate to adjust the final post-test means. The ANCOVA results reveal a statistically significant main effect for the instructional treatment, $F(1, 37) = 6.19, p = .017$.

The baseline pre-test covariate did show a significant relationship with the post-test outcomes, $F(1, 37) = 14.60, p < .001$. However, the partial eta-squared value ($\eta_p^2 = .143$) indicates that 14.3% of the variance in the final vocabulary scores was directly caused by the teaching method itself, completely independent of where the learners started. After adjusting for the initial baseline imbalances, the data prove that the W.O.R.D. Strategy led to a statistically superior rate of vocabulary growth compared to traditional instruction, even though their raw final scores looked nearly identical.

This significant growth aligns closely with the work of Cao and Kim (2025), who showed that consistent literacy instruction in early elementary classrooms plays a massive role in driving children's reading achievement. Furthermore, this outcome matches the recent findings of Requina et al. (2026) in the Philippine primary education context, which confirmed that the active implementation of structured vocabulary-building strategies has a strong, positive influence on boosting learners' language proficiency and overall literacy development.

Problem 5: Secondary Descriptive Outcomes — Classroom Engagement Density

Table 5. Secondary Descriptive Metrics: Classroom Engagement Density

Indicators	Control Group Mean	SD	Interpretation	Experimental Group Mean	SD	Interpretation
Pays attention and focuses during vocabulary lessons	2.44	0.62	Always Observed	2.64	0.58	Always Observed
Participates actively during vocabulary activities	2.28	0.67	Sometimes Observed	2.73	0.55	Always Observed
Shows enthusiasm and interest in learning new vocabulary	2.28	0.67	Sometimes Observed	2.32	0.65	Always Observed
Collaborates effectively with peers	2.28	0.75	Always Observed	2.68	0.57	Always Observed
Responds positively to teacher feedback	2.33	0.77	Always Observed	2.41	0.73	Always Observed
Overall Mean	2.32	0.70	Sometimes Observed	2.56	0.62	Always Observed

Legend: 1 = Never Observed; 2 = Sometimes Observed; 3 = Always Observed

Note. Mean scores were interpreted as follows: 1.00–1.66 = Never Observed; 1.67–2.33 = Sometimes Observed; and 2.34–3.00 = Always Observed.

Table 5 presents the learners' classroom engagement during vocabulary activities. Descriptively, the experimental group maintained a higher overall engagement mean ($M = 2.56, SD = 0.62$, "Always Observed") than the control group ($M = 2.32, SD = 0.70$, "Sometimes Observed"). These metrics provide helpful context on how the learners behaved during the lessons. Specifically, the experimental group showed high levels of active participation ($M = 2.73$) and peer collaboration ($M = 2.68$).

These active participation patterns align with the classroom observation findings of Cao and Kim (2025), who noted that the way literacy lessons are delivered directly shapes children's daily learning behaviors and engagement during class. Furthermore, this high level of interaction supports the observational research of Anderson et al. (2023), who demonstrated that deliberate vocabulary talk moves in early-elementary settings are critical tools for prompting active student exploration and engagement. The high engagement observed among the learners using the W.O.R.D. Strategy demonstrates that these active



routines create a strong behavioral foundation, which directly supports the overall vocabulary growth shown in their test scores.

Problem 6: Secondary Descriptive Outcomes — Vocabulary Learning Behaviors

Table 6. Secondary Descriptive Metrics: Vocabulary Learning Behaviors

Indicators	Control Group Mean	SD	Interpretation	Experimental Group Mean	SD	Interpretation
Uses newly learned vocabulary confidently	1.94	0.87	Sometimes Observed	2.27	0.83	Sometimes Observed
Applies vocabulary correctly in sentences	1.89	0.83	Sometimes Observed	2.05	0.79	Sometimes Observed
Uses context clues to understand unfamiliar words	2.11	0.76	Sometimes Observed	1.95	0.82	Sometimes Observed
Shows improvement in vocabulary recognition and recall	2.28	0.67	Sometimes Observed	2.27	0.78	Sometimes Observed
Transfers vocabulary to other subjects and daily communication	1.94	0.87	Sometimes Observed	2.14	0.77	Sometimes Observed
Overall Mean	2.03	0.80	Sometimes Observed	2.14	0.80	Sometimes Observed

Legend: 1 = Never Observed; 2 = Sometimes Observed; 3 = Always Observed

Note. Mean scores were interpreted as follows: 1.00–1.66 = Never Observed; 1.67–2.33 = Sometimes Observed; and 2.34–3.00 = Always Observed.

Table 6 presents the vocabulary learning behaviors demonstrated by learners during the intervention. Both groups obtained an overall rating of "Sometimes Observed," though the experimental group had a slightly higher overall mean ($M = 2.14$) than the control group ($M = 2.03$). Looking closely at the scores, the experimental group showed higher levels of confidence when using new words ($M = 2.27$ vs. $M = 1.94$). On the other hand, the control group was slightly better at using context clues to figure out unfamiliar words ($M = 2.11$ vs. $M = 1.95$).

The fact that both groups stayed within the "Sometimes Observed" range reflects a normal learning pattern highlighted by Matwangsang and Sukying (2023). They explained that while active lessons can quickly boost a child's confidence and basic word knowledge, deeper habits, like independently figuring out tricky words and using them in daily life, take several months of continuous practice to fully develop.

Discussion

As shown in Table 1, the two groups started at very different levels, with the control group scoring nearly ten percentage points higher than the experimental group. By the end of the study, the final scores of both groups were almost exactly the same: 76.06% for the experimental group and 75.19% for the control group, as seen in Table 2. Because of this, it would be a mistake to say that the experimental group simply outperformed the control group in final scores. In reality, both groups finished the four-week study at nearly the same performance level.

The true success of the W.O.R.D. Strategy is not about having a higher final score, but about how fast it helped the students grow. The experimental group started much further behind, yet they gained an average of 39.55 percentage points, as shown in Table 3. This massive jump allowed them to completely close the initial gap and catch up to the stronger group. This rapid progress is backed up by the ANCOVA results in Table 4, which prove that once we control for the initial starting differences, the experimental group achieved a statistically superior rate of growth. This pattern aligns with Richard Mayer's Multimedia



Learning Theory, which shows that combining visual and verbal tools helps lower-baseline students bypass difficult reading barriers, leading to faster word acquisition.

However, we must look at this rapid growth alongside a natural statistical pattern called regression to the mean. Since the experimental group was deliberately chosen because of their very low starting reading scores, some of their big upward jump might just be a natural statistical bounce rather than the strategy alone. Furthermore, the secondary behavior changes shown in Table 5 might have been influenced by the Hawthorne effect. Because the classroom observations were structured and highly visible, both the teacher and the students knew they were being watched. This awareness can naturally cause them to pay more attention and participate more actively than usual, which might inflate the behavioral engagement scores.

Finally, Table 6 highlights that complex language habits, like using context clues and applying words to daily life, take a long time to build. While the control group did a bit better with context clues ($M = 2.11$), which matches their pre-existing strength as developing readers, both groups still stayed within the "Sometimes Observed" range overall. This shows that while a four-week multimedia framework is excellent for helping kids learn words quickly, building long-term, independent reading habits requires continuous practice over several months.

Conclusion

Based on the findings and limits of this study, the following conclusions are drawn:

The W.O.R.D. Strategy is a highly promising teaching tool for accelerating vocabulary growth among Grade 3 learners who start from lower literacy baselines. Before the study, the non-random setup created clear baseline imbalances, leaving the experimental group with severe vocabulary deficits. After four weeks of instruction, the final scores of both groups were virtually identical (76.06% vs. 75.19%). This means we cannot claim that the W.O.R.D. Strategy is completely superior to traditional teaching based on final raw scores alone.

However, when we use ANCOVA to statistically level the playing field and account for the initial starting differences, the W.O.R.D. Strategy shows a clear and significant advantage in how fast it helps students learn, explaining 14.3% of the final vocabulary differences. The strategy successfully helped struggling readers close a ten-point baseline deficit and catch up to their higher-performing peers in just four weeks. It was also linked to high levels of classroom participation and teamwork. Ultimately, while these results show great potential for targeted classroom activities, proving its absolute superiority will require larger studies across more schools in the future.

Recommendation

Based on the conclusions and limitations of this study, the following recommendations are offered:

For Future Researchers: Future researchers should focus on using large-scale studies with random groups to completely remove selection bias. If they must work in regular, non-random school environments, they should match students from the control and experimental groups based on their exact starting reading scores to make sure both groups begin on equal footing. Future studies should also include a follow-up test four to six weeks after the lessons end. This will help measure long-term vocabulary retention and prove if this fast-learning speed lasts over time.

For Teachers: Teachers are highly encouraged to use the W.O.R.D. framework as a low-cost vocabulary tool within the MATATAG Curriculum, especially to support struggling readers. To protect students from brain strain, teachers should follow clean design rules: avoid busy or loud media, keep videos short (under 3 minutes), and present pictures, spoken words, and physical movements one after the other rather than all at the same time.

For School Administrators and Policy Makers: School leaders should support the use of interactive strategies by giving clear guidelines on how to manage media tools in public school settings that have limited resources. Instead of requiring expensive technology, administrators should encourage



teachers to create low-cost materials, such as printed picture cards, local hand gestures, and structured teamwork sheets. These resources can be shared during Learning Action Cell (LAC) sessions to ensure every classroom gets equal support.

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