



Effectiveness of a vocabulary-building intervention in enhancing reading comprehension among multigrade learners: A quasi-experimental study

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Abstract

This study examined the effectiveness of a vocabulary-building intervention in improving the reading comprehension of Grade 5 and Grade 6 learners in a multigrade classroom at Upper New Visayas Elementary School. Anchored on the premise that vocabulary knowledge is fundamental to comprehension, the study aimed to enhance learners' word knowledge and overall understanding of texts through structured reading activities. A quasi-experimental research design was employed, involving twelve (12) learners over a four-week intervention period. Data were collected using validated pre-test and post-test instruments to measure changes in reading comprehension performance. Descriptive and comparative analyses were utilized to determine the impact of the intervention. Results revealed a significant improvement in learners' post-test scores compared to their pre-test performance, indicating that the vocabulary-building intervention effectively enhanced reading comprehension. The findings further suggest that explicit and systematic vocabulary instruction, when integrated into reading lessons, can address learning gaps and support literacy development in multigrade classrooms. The study concludes that vocabulary-focused interventions are essential in improving comprehension outcomes among diverse learners. It recommends the sustained implementation of structured vocabulary instruction and the development of similar intervention programs to strengthen literacy skills in multigrade educational settings.

Keywords: Vocabulary building, reading comprehension, multigrade classroom, intervention program, quasi-experimental research design

Introduction

Reading comprehension is a fundamental component of academic success, requiring learners to move beyond decoding and construct meaning from texts. Vocabulary knowledge plays a crucial role in this process, as learners with limited vocabulary often struggle to understand what they read despite accurate word recognition (Snow, 2010; Zhang & Zhang, 2020) [18, 23]. Research consistently shows that vocabulary is strongly linked to comprehension, as it supports meaning-making and interpretation of texts (Perfetti & Stafura, 2014; Ouellette & Beers, 2021) [16, 17].

The importance of vocabulary in literacy development is well established. Academic vocabulary enables learners to access content and engage in higher-order thinking (Nagy & Townsend, 2012) [13], while explicit and structured vocabulary instruction significantly improves reading comprehension outcomes (Beck *et al.*, 2013; Elleman, 2017; Cervetti *et al.*, 2023) [3, 7, 10]. Moreover, vocabulary knowledge is a strong predictor of reading success, particularly among developing readers (Hiebert & Kamil, 2013; Nation, 2017) [12, 14].

Globally, a persistent gap exists between decoding and comprehension. Findings from the Programme for International Student Assessment (OECD, 2019) [19] indicate that many learners can read aloud but fail to interpret texts effectively. Similarly, Spaul and Pretorius (2019) [19] reported that learners may demonstrate reading fluency yet exhibit limited comprehension, highlighting the widespread issue of "reading without understanding."

In the Philippine context, similar concerns have been documented. Bernardo (2010) and Hernandez (2019) [4, 11] reported that learners often demonstrate low vocabulary and comprehension levels, indicating difficulty in constructing

meaning from texts. These challenges are further intensified in multigrade classrooms, where diverse learner needs and limited instructional resources complicate effective instruction (Blocker, 2017; Brown & Little, 2020) [5, 6]. In such settings, comprehension strategies become less effective when learners possess limited vocabulary, emphasizing the need for explicit vocabulary instruction (Abao & Edpalina, 2024) [11].

In Upper New Visayas Elementary School, Grade 5 and 6 learners were observed to read fluently but struggle with comprehension due to limited vocabulary knowledge. This reflects broader literacy challenges in multigrade contexts.

Given these conditions, this study aims to examine the effectiveness of a vocabulary-building intervention in enhancing reading comprehension among multigrade learners. Specifically, it seeks to determine whether structured vocabulary instruction can improve comprehension and address identified learning gaps, thereby contributing to more effective literacy practices.

Research Questions

This study examines the effectiveness of vocabulary-building strategies in improving the reading comprehension of frustrated and instructional readers in a multigrade classroom at Upper New Visayas Elementary School. It evaluates learners' pre-test and post-test performance and determines whether a significant difference exists following the intervention. Thus, this research specifically aimed to address the following research questions:

1. What is the performance level of the learners in the pre-test on reading comprehension?
2. What is the performance level of the learners in the post-test on reading comprehension?

3. Is there a significant difference between the pretest and posttest in reading comprehension using vocabulary strategies?

Methodology

Research Design

This study employed a quasi-experimental one-group pretest–posttest design to examine the effectiveness of vocabulary-building strategies on learners’ reading comprehension. Pretest and posttest assessments were administered to measure changes following the intervention. This design is appropriate for classroom-based research where randomization and control groups are not feasible (Creswell & Creswell, 2018) ^[9].

Research Locale and Subjects

The study was conducted at Upper New Visayas Elementary School, a rural multigrade public school in Trento, Agusan del Sur, Philippines. The participants were 12 Grade 5 and 6 learners identified as instructional and frustration readers based on Phil-IRI results. These learners were purposively selected due to their need for targeted reading support.

Research Instruments

Data were collected using a researcher-adapted Phil-IRI reading comprehension test administered as pretest and posttest. The instrument measured word recognition and comprehension. Scores were computed as percentages and classified into independent, instructional, and frustration levels following standard Phil-IRI criteria.

Intervention Procedure

A four-week (20-session) vocabulary-building intervention was implemented, incorporating strategies such as pre-teaching vocabulary, use of context clues, repeated exposure, and interactive reading activities. Instruction was delivered during remedial sessions to improve learners’ vocabulary and comprehension skills.

Data Analysis

Descriptive statistics (mean, percentage, and standard deviation) were used to summarize learners’ performance. A paired-samples t-test was employed to determine significant differences between pretest and posttest scores. Statistical analysis was conducted using SPSS and JASP.

Ethical Considerations

Ethical standards were observed throughout the study. Approval was secured from school authorities, and informed consent was obtained from parents. Participation was voluntary, and confidentiality and anonymity were maintained. Data were used solely for academic purposes.

Results and Discussion

This chapter presents the results and discussion of the study. The presentation follows the sequence of the research questions, focusing on learners’ reading comprehension performance before and after the intervention. Specifically, the discussion is organized into three sections: (a) learners’ performance in the pretest, (b) learners’ performance in the posttest, and (c) the significant difference between pretest and posttest results using vocabulary-building strategies. These sections provide a comprehensive analysis of the effectiveness of the intervention in improving reading comprehension among multigrade learners.

RQ1: What is the performance level of the learners in the pretest on reading comprehension?

This section presents the results of the first research question, which examines the learners’ performance in the pretest. The data focus on the baseline reading comprehension levels of the learners prior to the implementation of the vocabulary-building intervention.

Learners’ Performance in the Pretest on Reading Comprehension

The findings revealed that learners demonstrated low performance in reading comprehension, with a mean score of 3.00 (SD = 1.04). Most learners were classified under the instructional and frustration levels, indicating difficulty in understanding texts independently.

These results suggest that learners had limited vocabulary knowledge and struggled with comprehension skills such as interpreting and constructing meaning from texts. The relatively small standard deviation indicates that learners shared similar levels of difficulty prior to the intervention.

These results indicate limited vocabulary knowledge and weak comprehension skills, particularly in interpreting and constructing meaning from texts. Such findings align with August *et al.* (2006) ^[2], who emphasized that learners with limited vocabulary struggle to comprehend texts without explicit instruction. Similarly, Bernardo (2010) ^[4] reported that many Filipino learners remain at instructional and frustration levels due to insufficient exposure to effective reading strategies. Moreover, Perfetti and Stafura (2014) ^[17] highlighted that vocabulary knowledge is fundamental to meaning construction, explaining learners’ low baseline performance.

RQ2: What is the performance level of the learners in the posttest on reading comprehension?

This section presents the results of the second research question, which examines learners’ performance after the implementation of the vocabulary-building strategies.

Learners’ Performance in the Posttest on Reading Comprehension

The findings showed an improvement in learners’ reading comprehension performance, with a mean score of 4.50 (SD = 1.45). This increase indicates that learners were able to better understand and interpret texts after exposure to the intervention.

The higher standard deviation suggests variability in learners’ progress. While most learners improved, the extent of improvement differed among individuals, reflecting differences in learning pace, readiness, and engagement.

The findings suggest that vocabulary-building strategies positively influenced comprehension by enabling learners to decode unfamiliar words and construct meaning more effectively. This supports Wright and Cervetti (2017) ^[22], who found that systematic vocabulary instruction significantly enhances comprehension among struggling readers. Likewise, Beck *et al.* (2013) ^[3] emphasized that repeated and meaningful exposure to vocabulary strengthens understanding of academic texts. The observed variability is consistent with Tomlinson (2017) ^[20], who noted that learners in differentiated settings progress at varying rates.

RQ3: Is there a significant difference between the pretest and posttest in reading comprehension using vocabulary strategies?

This section presents the results of the third research question, which determines whether the observed improvement is statistically significant.

Significant Difference between Pretest and Posttest

The paired samples t-test revealed a statistically significant difference between pretest and posttest scores, $t(11) = -5.196, p < .001$. The mean difference of -1.50 (95% CI [-2.14, -0.86]) indicates that posttest scores were significantly higher than pretest scores.

These results confirm that the improvement in learners' reading comprehension was not due to chance but was significantly influenced by the vocabulary-building intervention. The strong positive correlation between pretest and posttest scores further suggests that while learners maintained consistent performance patterns, they demonstrated overall progress.

These results confirm that gains in comprehension were not due to chance but were significantly influenced by the vocabulary-building intervention. This finding supports Nagy (2007), who identified vocabulary knowledge as a strong predictor of reading comprehension. Similarly, Vaughn *et al.* (2009) [21] demonstrated that structured interventions integrating vocabulary instruction significantly improve comprehension outcomes.

Overall Discussion

The results of the study demonstrate that learners initially exhibited low comprehension skills due to limited vocabulary knowledge. However, after the implementation of vocabulary-building strategies, a significant improvement in reading comprehension was observed.

The findings confirm that explicit and structured vocabulary instruction is an effective approach in improving reading comprehension, particularly in multigrade classrooms where learners have diverse abilities. The intervention helped bridge learning gaps and provided learners with the necessary tools to better understand texts.

Overall, the study highlights the importance of integrating vocabulary instruction into reading programs to support literacy development and improve academic outcomes among struggling readers.

Conclusion

Based on the findings, learners initially demonstrated low reading comprehension performance, indicating limited mastery of the targeted competencies prior to the intervention. Following the four-week implementation of vocabulary-building strategies in a multigrade classroom, a significant improvement in posttest performance was observed, as confirmed by the paired samples t-test results.

The findings further indicate that structured instructional strategies—particularly explicit vocabulary instruction and reading-focused activities—played a critical role in enhancing learners' comprehension skills. These strategies effectively addressed learning gaps and supported the development of essential reading competencies.

Overall, the study concludes that vocabulary-based interventions are effective in improving reading comprehension among learners in multigrade settings. The results highlight the importance of integrating systematic vocabulary instruction into reading programs to promote

literacy development and improve academic outcomes among diverse learners.

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