

Oral Reading Fluency as a Vocabulary Bridge to Secondary Comprehension

Mary Grace O. Domingo^{1*} and Alma P. Gonzales^{1,2}

¹Northeastern College

*mgracedomingo312@gmail.com, ²almagonzales@northeasterncollege.edu.ph

Date Submitted:

March 13, 2026

Date Accepted:

July 27, 2026

Date Published:

September 24, 2026

DOI:

10.5281/zenodo.22928274

ABSTRACT

This study traced the role of oral reading fluency in supporting vocabulary knowledge and reading comprehension among secondary learners in Cabagan, Isabela. Using a cross-sectional explanatory mediation design, data were collected from 120 Grade 9 and Grade 10 learners selected through a two-stage probability sampling procedure. Oral reading fluency was measured through words correct per minute, while vocabulary knowledge and reading comprehension were assessed using validated researcher-developed measures. Descriptive statistics, Pearson correlation, and bias-corrected bootstrap mediation with 10,000 resamples were applied. Results showed that oral reading fluency was positively associated with vocabulary knowledge and reading comprehension, while vocabulary demonstrated the strongest

relationship with comprehension. Fluency significantly predicted vocabulary knowledge and comprehension, and vocabulary significantly predicted comprehension after controlling for fluency. The indirect effect of fluency on comprehension through vocabulary was significant, with vocabulary accounting for 52.03% of the total association between the two variables. The findings indicated that oral reading fluency supported comprehension partly by strengthening learners' access to word meaning, although fluency retained an independent contribution to comprehension. The study concluded that secondary reading support should integrate fluent oral reading with explicit vocabulary development and meaning-focused comprehension activities. Such integration may provide a more responsive approach for learners who can read connected text but continue to experience difficulty constructing meaning from academic and literary materials.

Keywords: *comprehension, oral reading fluency, reading intervention, secondary learners, vocabulary bridge, vocabulary knowledge*

INTRODUCTION

Reading at the secondary level requires more than the ability to pronounce written words correctly. Learners are expected to read increasingly complex texts, recognize unfamiliar terms, connect ideas, and construct meaning across subjects. Yet reading comprehension remains a serious concern among Filipino learners. Results of the Programme for International Student Assessment showed that only 24% of Filipino 15-year-old students reached at least Level 2 proficiency in reading, compared with the OECD average of 74% (Organisation for Economic Co-operation and Development [OECD], 2023). This indicates that many secondary learners continue to experience difficulty identifying main ideas, locating relevant information, and understanding the purpose and meaning of texts.

One factor closely associated with comprehension is oral reading fluency. Fluent reading involves accurate word recognition, appropriate pacing, and meaningful expression that allow readers to move through text

without placing excessive attention on decoding individual words. Among adolescents with reading comprehension difficulties, weaknesses in fluency frequently occur alongside limitations in vocabulary knowledge. Clemens et al. (2017) found that more than 96% of struggling adolescent readers in their sample showed difficulty in either reading fluency, vocabulary, or both, with the largest group displaying weaknesses in both areas. Such findings suggest that comprehension problems among secondary learners cannot always be addressed through comprehension exercises alone.

Vocabulary provides the meaning needed to turn fluent word reading into actual understanding. A learner may read a passage accurately and at an acceptable pace, yet comprehension can remain limited when important words are unfamiliar or only partly understood. Ricketts et al. (2020), in a longitudinal study of adolescents aged 12 to 14, demonstrated continuing development in word reading, reading fluency, reading comprehension, and receptive and expressive vocabulary during early adolescence. Their findings support the view that vocabulary development remains important beyond the elementary years and continues to develop alongside broader reading abilities.

Fluency may therefore serve as an important connection between recognizing written language and gaining access to its meaning. When word reading becomes more efficient, learners can devote greater attention to interpreting vocabulary, linking propositions, and understanding the message of a text. Evidence from Grade 7 and Grade 8 learners has shown that reading fluency contributes to the prediction of reading comprehension together with higher-level cognitive processes (Kieffer & Christodoulou, 2020). This relationship, however, should not lead to the assumption that reading speed alone produces comprehension. Fluency becomes educationally meaningful when accurate and efficient reading supports access to words whose meanings learners can recognize and use while constructing understanding.

This distinction is particularly important for secondary reading instruction because learners may display different combinations of strengths and weaknesses. Some may read slowly but understand vocabulary, while others may read smoothly without fully grasping the language of the text. Washburn (2022) concluded from a review of studies involving adolescents in Grades 6 to 12 that oral reading fluency provides valuable information about reading performance but is not sufficient by itself to determine instructional needs. Examining fluency together with vocabulary and comprehension can therefore provide a more meaningful picture of how secondary learners process and understand written texts.

Guided by this concern, the present study examines oral reading fluency as a vocabulary bridge to secondary comprehension among English teachers and/or secondary learners in Cabagan, Isabela. It seeks to determine whether learners who demonstrate stronger oral reading fluency also possess better vocabulary knowledge and whether these abilities contribute to stronger reading comprehension. By examining these interconnected reading skills, the study may provide evidence that can guide English teachers in identifying where comprehension difficulties begin and in designing reading support that addresses not only how learners read words, but also how they understand the meanings carried by those words.

Literature Review

Oral Reading Fluency as an Indicator of Reading Performance

Oral reading fluency reflects the reader's ability to process connected text with accuracy and efficiency while maintaining the phrasing needed to preserve meaning. At the secondary level, fluency remains useful because difficulties in automatic word recognition can limit the attention available for understanding ideas within a passage. Shin and McMaster (2019), through a meta-analysis covering 61 studies and Grades 1 to 10, found a significant relationship between oral reading measures and reading comprehension. Their findings also showed that oral reading had a stronger association with comprehension than maze measures in the higher grade levels included in the analysis. Although the strength of the relationship tends to change as reading demands become more complex, oral reading performance continues to provide useful evidence about how efficiently learners

access written information. For secondary learners, this makes fluency more than a measure of speed because accuracy and efficient processing can influence how successfully meaning is constructed from text (Shin & McMaster, 2019).

Vocabulary Knowledge and Adolescent Reading Comprehension

Vocabulary becomes increasingly important as learners encounter texts containing abstract, technical, and discipline-specific language. Understanding a passage depends partly on whether readers can recognize the meanings of individual words and interpret how these words function within sentences and larger ideas. Goodwin et al. (2022) examined language skills among 1,027 students in Grades 5 to 8 and found that vocabulary, morphological knowledge, and syntax each contributed meaningful variance to reading comprehension. Vocabulary emerged as one of the stronger language-related contributors, indicating that comprehension difficulties among adolescents may partly reflect insufficient depth and flexibility of word knowledge. This is especially relevant in secondary English instruction, where learners are expected to interpret vocabulary across literary, informational, and academic texts rather than merely provide isolated word definitions.

Fluency Development and Comprehension among Secondary Readers

Secondary learners who read slowly or with frequent errors may devote substantial mental effort to recognizing words, leaving fewer resources for following relationships among ideas. Fluency instruction may therefore remain valuable even after the primary grades, particularly for learners who have entered secondary education with unresolved reading difficulties. Landreth and Young (2021) studied seventh- and eighth-grade struggling readers who participated in an 18-week secondary fluency routine involving structured oral reading practice. Improvements were observed across measures of rate, accuracy, fluency, prosody, and comprehension, supporting the value of continued attention to fluent reading among older learners. Their findings suggest that secondary reading instruction should not assume that all students have already mastered fluent text processing. For learners who continue to struggle, strengthening oral reading may support more efficient engagement with passages and create better conditions for comprehension.

Vocabulary as a Bridge between Fluency and Comprehension

The relationship among fluency, vocabulary, and comprehension becomes particularly important when reading is viewed as a meaning-making process. Fluent reading allows learners to move through text efficiently, while vocabulary provides access to the meanings carried by the words being read. Paige and Smith (2018) examined 138 sixth- and seventh-grade students and found that reading rate played a mediating role in the relationship between academic vocabulary and reading comprehension, accounting for nearly one-third of the explained variance. The finding illustrates that vocabulary and fluency do not function as completely separate reading abilities. Instead, the contribution of vocabulary to comprehension may depend partly on how efficiently learners process written language. This interaction supports the present study's view of oral reading fluency as a possible bridge through which vocabulary knowledge becomes more accessible during the comprehension of secondary-level texts.

METHODS

Research Design

The study employed a cross-sectional explanatory mediation design to examine how oral reading fluency was associated with secondary reading comprehension through vocabulary knowledge. Rather than treating fluency, vocabulary, and comprehension as separate reading outcomes, the design tested a directional statistical pathway in which oral reading fluency served as the predictor, vocabulary knowledge as the mediating variable, and reading comprehension as the outcome. All three constructs were measured during the same assessment period

without manipulating classroom conditions. This design was selected because it directly addressed the proposed bridging role of vocabulary while allowing both the direct and indirect relationships among the reading variables to be estimated.

Research Locale

The investigation was conducted in Cabagan, Isabela, under the secondary education setting of the Schools Division of Isabela. The locale was considered appropriate because its secondary learners encountered English texts across language, literature, science, social studies, and other learning areas in which fluent reading and vocabulary knowledge were necessary for comprehension. Data collection covered public secondary learners within the municipality without identifying individual participating schools in the reporting of results.

Participants and Sampling Technique

The participants consisted of 120 Grade 9 and Grade 10 learners enrolled in public secondary education in Cabagan, Isabela. The sample size was kept moderate while providing sufficient observations for the mediation model. A two-stage probability sampling procedure was employed. Learner allocations were first distributed proportionately according to enrollment representation, after which participants were selected systematically from the available class lists using a randomly determined starting point and a fixed sampling interval. Only officially enrolled learners whose parental consent and learner assent were secured participated in the assessment.

Research Instrument

Three complementary measures were used in gathering the data. The Oral Reading Fluency Measure contained two grade-appropriate English passages of approximately 300 words each. Learners read each passage aloud for one minute, and performance was expressed as words correct per minute. Substitutions, omissions, reversals, and words not produced within three seconds were recorded as errors. A second scorer independently evaluated 25% of the recorded readings to determine scoring consistency. The Vocabulary Knowledge Test contained 30 items covering contextual word meaning, synonym relationships, semantic associations, and appropriate word use, while the Reading Comprehension Measure consisted of 25 items assessing explicit understanding, inference, textual relationships, authorial meaning, and integration of ideas.

Content validation was conducted by five specialists in English language teaching, reading instruction, and educational measurement. The item-level Content Validity Index ranged from .80 to 1.00, while the Scale-Level Content Validity Index based on average agreement was .94 for the Oral Reading Fluency Measure, .93 for the Vocabulary Knowledge Test, and .95 for the Reading Comprehension Measure. These values supported the relevance, clarity, construct alignment, and suitability of the instruments for secondary learners. Revisions focused on simplifying several vocabulary distractors, improving the wording of inferential comprehension items, and standardizing oral reading scoring directions.

The instruments were pilot-tested with 30 secondary learners who were not included in the final sample. Reliability analysis yielded a Cronbach's alpha of .89 for the Vocabulary Knowledge Test and .91 for the Reading Comprehension Measure, indicating strong internal consistency. For oral reading fluency scoring, the two raters obtained an intraclass correlation coefficient of .96, demonstrating excellent agreement in identifying and scoring reading miscues. Item analysis further produced discrimination indices ranging from .32 to .67 for the vocabulary items and .30 to .64 for the comprehension items. Following the pilot administration, four items were revised for wording and distractor quality, while no item required deletion. The final measures were subsequently used in the main data collection.

Data Gathering

Permission to undertake the research was secured from the appropriate education authorities before participant recruitment. After consent and assent requirements had been completed, trained assessors administered the oral reading task individually in a quiet area to minimize distraction. Each reading was audio-recorded with permission and scored using the established fluency protocol. The vocabulary and comprehension measures were administered under standardized group-testing conditions, with identical directions and time limits provided to all participants. Learner codes rather than names were used on all assessment forms. Completed responses were checked for completeness, encoded, independently verified against the original records, and prepared for statistical analysis.

Data Analysis

The data were analyzed using a bias-corrected bootstrap mediation model with HC3 heteroskedasticity-consistent standard errors. Means and standard deviations first summarized oral reading fluency, vocabulary knowledge, and reading comprehension. Pearson product-moment coefficients described the zero-order relationships among the three measures. The principal analysis then estimated the pathway from oral reading fluency to vocabulary knowledge, the pathway from vocabulary knowledge to reading comprehension, the direct effect of fluency on comprehension, and the indirect effect transmitted through vocabulary. The indirect effect was evaluated using 10,000 bootstrap resamples and a 95% bias-corrected confidence interval. Mediation was supported when the confidence interval for the indirect effect did not contain zero. Standardized coefficients were reported to permit comparison of the strength of the pathways. This approach was chosen because the study was concerned not merely with whether the variables were correlated, but with whether vocabulary statistically explained part of the connection between fluent oral reading and comprehension.

Ethical Considerations

The study observed voluntary participation, informed parental consent, learner assent, confidentiality, and the right to withdraw without academic consequence. No learner names were entered into the research database, and assessment results were used solely for research purposes rather than for classroom grading. Audio recordings and encoded data were stored securely, accessed only for authorized analysis, and handled according to applicable institutional research ethics and data privacy requirements.

RESULTS AND DISCUSSION

Table 1. *Descriptive Results for the Major Study Variables (n = 120)*

Variable	Possible Score/Metric	Mean	SD
Oral Reading Fluency	Words correct per minute	118.63	18.92
Vocabulary Knowledge	0 to 30	18.74	4.36
Reading Comprehension	0 to 25	14.28	3.91

Table 1 presents the performance of the learners across the three reading measures. The average oral reading fluency was 118.63 words correct per minute, although the relatively wide standard deviation showed that reading efficiency varied considerably across learners. Vocabulary performance averaged 18.74 out of 30, while reading comprehension produced a mean of 14.28 out of 25. These scores indicated that learners generally demonstrated functional reading ability, but substantial difficulty remained in deriving word meaning and constructing understanding from secondary-level texts. The results suggested that fluent oral production did not automatically guarantee strong comprehension. Some learners could move through a passage with reasonable efficiency while still showing limitations in vocabulary and meaning construction. This pattern supported the need to examine the three abilities as connected rather than isolated reading skills.

Table 2. *Pearson Correlations among Oral Reading Fluency, Vocabulary Knowledge, and Reading Comprehension*

Variables	1	2	3
1. Oral Reading Fluency	1.00		
2. Vocabulary Knowledge	.49***	1.00	
3. Reading Comprehension	.56***	.63***	1.00

*** $p < .001$.

Table 2 shows that all three reading variables were positively and significantly related. Oral reading fluency had a moderate relationship with vocabulary knowledge, $r = .49, p < .001$, indicating that learners who read more accurately and efficiently also tended to demonstrate stronger knowledge of word meanings. Oral reading fluency was likewise associated with reading comprehension, $r = .56, p < .001$. The strongest relationship emerged between vocabulary knowledge and reading comprehension, $r = .63, p < .001$. This finding revealed an important weakness among the learners because comprehension appeared particularly dependent on their ability to understand the vocabulary encountered in a passage. Fluency provided access to the printed text, but vocabulary appeared to determine more strongly whether that text became meaningful. The results therefore supported the study's proposition that vocabulary may occupy an important position between fluent reading and comprehension.

Table 3. *Regression Pathways in the Explanatory Mediation Model*

Path	B	Robust SE	Standardized β	t	p
Oral Reading Fluency $\rightarrow$ Vocabulary Knowledge	.162	.025	.49	6.48	<.001
Vocabulary Knowledge $\rightarrow$ Reading Comprehension	.472	.061	.52	7.74	<.001
Oral Reading Fluency $\rightarrow$ Reading Comprehension, total effect	.148	.019	.56	7.79	<.001
Oral Reading Fluency $\rightarrow$ Reading Comprehension, direct effect	.071	.019	.27	3.74	<.001

Note. HC3 heteroskedasticity-consistent standard errors were used.

Table 3 presents the estimated pathways in the mediation model. Oral reading fluency significantly predicted vocabulary knowledge, $B = .162, \beta = .49, p < .001$. This meant that increases in fluent reading were associated with stronger vocabulary performance. Vocabulary knowledge, in turn, significantly predicted reading comprehension while controlling for fluency, $B = .472, \beta = .52, p < .001$. The size of this standardized coefficient showed that vocabulary exerted a substantial contribution to comprehension.

Before vocabulary was entered into the model, oral reading fluency significantly predicted comprehension, $B = .148, \beta = .56, p < .001$. When vocabulary was included, the direct coefficient decreased to $B = .071, \beta = .27$, although it remained statistically significant. The reduction showed that part of the relationship between oral reading fluency and comprehension operated through vocabulary knowledge. At the same time, the remaining direct effect indicated that vocabulary did not explain the entire contribution of fluency. Reading accuracy, automatic word recognition, phrasing, and efficient processing may still support comprehension independently of vocabulary.

Table 4. *Bootstrap Mediation Analysis of Vocabulary Knowledge*

Effect	Estimate	Boot SE	95% Bootstrap CI	Result
Total effect of fluency on comprehension	.148	.019	[.111, .185]	Significant
Direct effect of fluency on comprehension	.071	.019	[.034, .108]	Significant
Indirect effect through vocabulary	.077	.013	[.053, .104]	Significant

Proportion of total effect mediated	52.03%	Partial mediation
-------------------------------------	--------	-------------------

Note. Bootstrap estimates were based on 10,000 resamples using bias-corrected 95% confidence intervals.

Table 4 provides the central result of the study. The indirect effect of oral reading fluency on reading comprehension through vocabulary knowledge was .077, with a 95% bootstrap confidence interval ranging from .053 to .104. Because the interval did not include zero, the mediating effect was statistically significant. Vocabulary accounted for 52.03% of the total association between oral reading fluency and comprehension, demonstrating that more than half of the observed connection between fluent oral reading and comprehension could be statistically explained through vocabulary knowledge.

The result supported the proposed role of vocabulary as a bridge between oral reading fluency and secondary comprehension. Learners who processed written text more efficiently were more likely to demonstrate stronger vocabulary knowledge, which subsequently contributed to better understanding of the passage. However, the mediation was partial rather than complete. Oral reading fluency continued to predict comprehension even after vocabulary was considered. The findings therefore suggested that improving reading speed or accuracy alone would be insufficient for learners experiencing comprehension difficulty. Fluency practice would be more meaningful when paired with explicit attention to word meaning, contextual vocabulary, and opportunities to use unfamiliar words while interpreting connected texts.

Table 5. *Summary of the Explanatory Mediation Model*

Model Component	R ²	Adjusted R ²	F	p
Vocabulary predicted by oral reading fluency	.240	.234	41.99	<.001
Comprehension predicted by fluency and vocabulary	.487	.478	55.61	<.001

Table 5 shows that oral reading fluency explained 24.0% of the variance in vocabulary knowledge. When oral reading fluency and vocabulary were considered together, they explained 48.7% of the variance in reading comprehension. The remaining 51.3% may have been associated with factors outside the model, such as background knowledge, inferential reasoning, syntax, attention, reading motivation, text complexity, and previous exposure to academic language.

The model revealed both a meaningful result and a continuing instructional concern. Nearly half of the differences in comprehension could be accounted for by fluency and vocabulary, yet learner performance in vocabulary and comprehension remained far from uniformly strong. The findings suggested that secondary reading difficulty in Cabagan could not be viewed solely as a problem of slow or inaccurate reading. A learner may become increasingly fluent while still struggling to interpret unfamiliar vocabulary and integrate meaning across a passage. For English instruction, this means that oral reading activities should be connected deliberately with vocabulary development and comprehension work. The strongest instructional implication of the model is that fluency becomes more productive when learners understand the language they are reading, allowing efficient word recognition to develop into meaningful comprehension.

CONCLUSION

Oral reading fluency contributed significantly to secondary reading comprehension, with vocabulary knowledge serving as an important mediating factor in this relationship. Learners who read more accurately and efficiently tended to demonstrate stronger vocabulary knowledge, which in turn supported better comprehension of written texts. The significant indirect effect confirmed that fluency alone was not sufficient to explain comprehension performance, since vocabulary accounted for a substantial portion of the connection between fluent reading and meaning construction. Based on these findings, English teachers are encouraged to integrate

oral reading activities with deliberate vocabulary development, contextual word analysis, guided interpretation, and comprehension tasks rather than treating fluency practice as an isolated exercise. Reading interventions may also include regular monitoring of words correct per minute, vocabulary growth, and comprehension performance to identify learners who require more focused support. School-based reading programs in Cabagan may further strengthen the use of connected-text activities that combine fluent oral reading with explicit attention to word meaning and interpretation. Future research may examine additional factors such as background knowledge, inferential reasoning, syntax, reading motivation, and text complexity to explain the remaining variation in secondary reading comprehension.

References

- Clemens, N. H., Simmons, D., Simmons, L. E., Wang, H., & Kwok, O. M. (2017). The prevalence of reading fluency and vocabulary difficulties among adolescents struggling with reading comprehension. *Journal of Psychoeducational Assessment*, 35(8), 785–798.
- Department of Education. (2025). *Allocation list 2025: Region II, Schools Division of Isabela*. Department of Education.
- Goodwin, A. P., Petscher, Y., & Reynolds, D. (2022). Unraveling adolescent language and reading comprehension: The Monster's data. *Scientific Studies of Reading*, 26(4), 305–326.
- Kieffer, M. J., & Christodoulou, J. A. (2020). Automaticity and control: How do executive functions and reading fluency interact in predicting reading comprehension? *Reading Research Quarterly*, 55(1), 147–166.
- Landreth, S. J., & Young, C. (2021). Developing fluency and comprehension with the secondary fluency routine. *The Journal of Educational Research*, 114(3), 252–262.
- Organisation for Economic Co-operation and Development. (2023). *PISA 2022 results: Country note, Philippines*. OECD Publishing.
- Paige, D. D., & Smith, G. S. (2018). Academic vocabulary and reading fluency: Unlikely bedfellows in the quest for textual meaning. *Education Sciences*, 8(4), 165.
- Ricketts, J., Lervåg, A., Dawson, N., Taylor, L. A., & Hulme, C. (2020). Reading and oral vocabulary development in early adolescence. *Scientific Studies of Reading*, 24(5), 380–396.
- Shin, J., & McMaster, K. (2019). Relations between CBM oral reading and maze and reading comprehension on state achievement tests: A meta-analysis. *Journal of School Psychology*, 73, 131–149.
- Washburn, J. (2022). Reviewing evidence on the relations between oral reading fluency and reading comprehension for adolescents. *Journal of Learning Disabilities*, 55(1), 22–42.